Model B-P1
Machine Code: M002/M003/M004

Field Service Manual

19 June, 2009

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. 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.
6. Always connect the power cord directly into a wall outlet. Never use an extension cord.
7. Inspect the power cord for damage. Never cut or attempt to modify the power cord in any way.
8. Keep the machine away from dust and high humidity. Never expose the machine to corrosive gases.
9. Never use flammable liquids or aerosols around the machine.
10. 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 LD (Laser Diode) array in the image writing unit.

   Important

   - **This machine is rated as a Class 1 LD 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. The NVRAM on the controller board has a lithium battery which can explode if replaced incorrectly. Replace the NVRAM only with an identical type. However, the manufacturer recommends replacing the entire NVRAM, not just the battery. Never recharge or incinerate a used NVRAM battery. Dispose of a used NVRAM or NVRAM battery in accordance with local regulations.
3. The danger of explosion exists if the battery on the controller board is incorrectly replaced. Replace the battery only with the equivalent type recommended by the manufacturer. Discard the used controller board battery in accordance with the manufacturer's instructions and local regulations.
4. 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

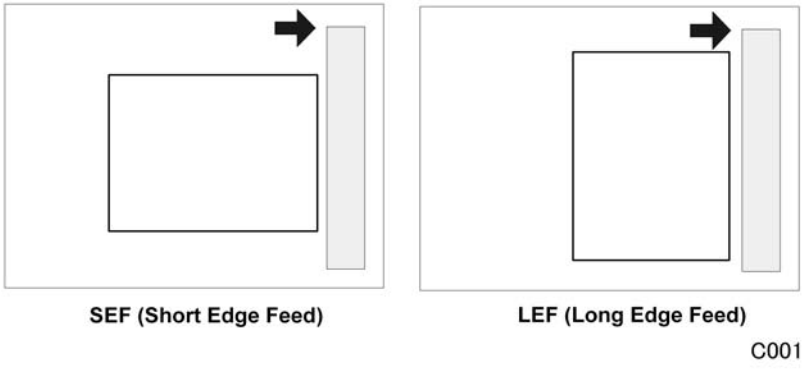
- The danger of explosion exists if a battery of this type is incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer. Discard used batteries in accordance with the manufacturer's instructions.

Conventions and Trademarks

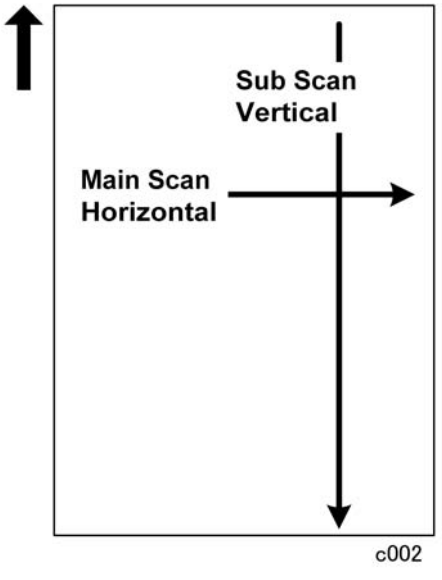
Conventions

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

Symbol	What it means
	Harness clamp



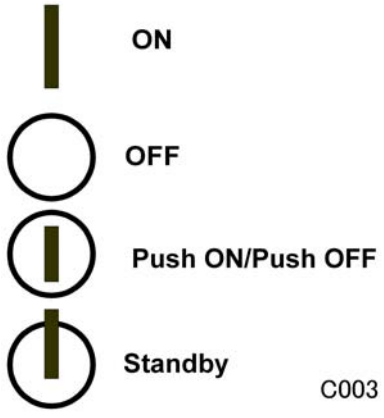
The notations "SEF" and "LEF" describe the direction of paper feed. The arrows indicate the direction of paper feed.



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.

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.

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3. Preventive Maintenance

4. Replacement and Adjustment

5. System Maintenance Reference

6. Troubleshooting Guide

1. Product Information

Specifications

See "Appendices" for the following information:

- Specifications: Main Machine
- Specifications: Options-1
- Specifications: Options-2

What's New?

This is a brief summary about the new and common features of the B-C4 and B-P1.

1

Product Names and Numbers

Product Codes Used in Service Manual

No.	Name
M002-17	B-P1a (90 ppm)
M003-17	B-P1b (110 ppm)
M004-17	B-P1c (135 ppm)

Note

- Throughout this service manual the printer is referred to as the "B-P1", "B-P1", or simply "the machine".
- When it is necessary to point out differences among the three models, the numbers M002, M003, M004 are used.

Copier and Printer Versions Compared

This section describes some differences between the printer version (M002/M003/M004) and the earlier copier version (D059/D050/D061).

A Quick Comparison

Item	B-C4	B-P1
Controller	GW Type-Ex 1 only	DC Controller (GW Type-Ex 1 + Egret 4)
PPM	90/110/135 ppm	90/110/135 ppm
Resolution	300/600/1200 dpi	300/600/1200 dpi
PDL	RPCS/PCL/PS*/IPDS*	PS/PCL/IPDS*
Utility	Web Image Monitor, @Remote, Web SmartDeviceMonitor	Web Interface (Egret), Web Image Monitor, @Remote

Item	B-C4	B-P1
Peripherals	Interposer, Multi-Folding Unit, High Capacity Stacker, Finisher, Booklet Finisher with Trimmer, Perfect Binder, Ring Binder	Interposer, Multi-Folding Unit, High Capacity Stacker, Finisher, Booklet Finisher with Trimmer

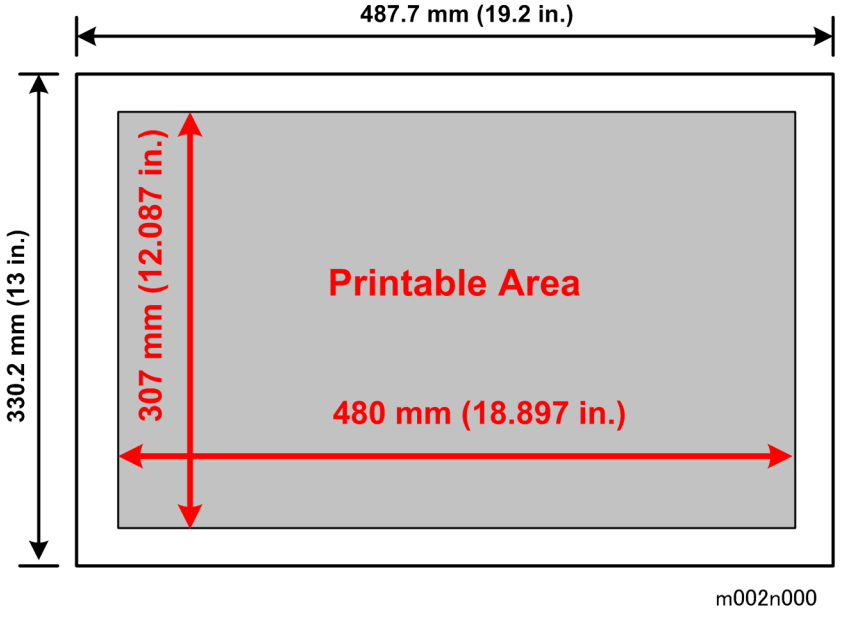
Comments

In the table above:

- * Options
- B-P1 has no ADF (no copier/scanner functions)
- The Decurl Unit is required for the B-P1 (it is not optional)
- The Attention Light AL5000 is a new option for B-P1 (it is not available for B-C4).
- DC CTL. This is a new controller, provided as standard with the B-P1.
- Perfect Binder, Ring Binder cannot be used with the B-P1.

General Common Points Between B-C4 and B-P1

- **Operation panel**. The copier and printer versions use the same operation panel.
- **Board layout**. The board replacement and adjustment procedures are the same with one exception. The printer version has one additional controller board mounted below the GW controller board.
- **Paper weight**. Heavier paper can be used with both machines, up to 300 g/m^2. Also, coated paper can be used with both machines.



- **Paper size**. Accommodates paper of up to 19.2 in.

Detailed Common Points Between B-C4 and B-P1

Paper Feed

- **Feed rollers**. Feed roller replacement has been improved for TCRU. Handles have been redesigned on the paper tray drawers for easier handling during TCRU. This is the same for both the copier and printer.
- **Double-feed detection**. Both machines also use ultra-sound sensors to improve detection of double-feeding

Development Unit

- **Auger**. The angle of the oval plate of the auger screw has been changed to prevent the deterioration of images at the leading edges.
- **TD sensor**. A mylar has been attached to the detection surface of the TD sensor to improve image density control. This prevents accumulation of residual toner which can cause dark images.

Note

- The development units of the copier and printer version of this machine are interchangeable.

Around the Drum

- **Drum thickness**. To improve the durability of the drum, the thickness of the drum surface membrane has been increased from 0.035 mm to 0.045 mm (an increase of 0.007 mm). Service life has been extended to 2500K (from 2000K).
- **Color change**. The color of the plate behind the OPC has been changed from black to gray. This distinguishes the OPC of the new unit from the old unit (which is black).
- **PTL stay**. The shape of the PTL stay has been changed, so thicker paper can be used in the new machine.

Note

- The drum units of the copier and printer version of this machine are interchangeable.

Drum Cleaning

- **1st cleaning blade**. To improve the efficiency of drum cleaning, the base material of the 1st cleaning blade has been changed to make it harder.

Fusing Unit

- **Web unit**. The web in both the copier and printer version of this machine is longer and the web take-up speed is faster. This change was implemented to improve cleaning of A3 paper as well as smaller paper sizes.
- **Fusing guide**. To improve paper transport, the shape of the fusing guide plate has been changed (it has a more convex shape), and the shape of the slot where paper enters the fusing unit has also been changed.

- **New anti-static brush**. An anti-static brush has been added. This new brush discharges static from the pressure roller to reduce black spotting and other problems caused by static offset.

Paper Output

- **Transport guide**. The band on the transport guide has been eliminated. (The band scraped coated paper and caused discoloration in prints so it was eliminated.)
- **Better cooling**. To prevent formation of dew, the transport guide is perforated and a fan has been added.
- **Transport rollers, belt**. The material of the transport rollers and belt has been changed from black to gray. This prevents dirty images and roller tracks on printed sheets.
- **Drive rollers**. Polyurethane is used for some of the drive rollers. This prevents roller swelling due to moisture and the high temperature of the paper. (Swollen rollers in the previous machine did not return to their normal size after cooling.)
- **Idle rollers**. The material of the idle rollers has also changed to polyurethane to prevent the rollers from transferring streaks to printed sheets.

Duplex Unit

- **Transport rollers**. The color of the transport rollers has been changed from black to gray to prevent dirty images and roller tracks on prints.
- **Drive, idle rollers**. Polyurethane material is used on some of the drive rollers and idle rollers. This prevents roller swelling due to moisture and the high temperature of the paper. (Swollen rollers in the previous machine did not return to their normal size after cooling.)
- **Guide plate**. A mylar covers the complete surface of the guide plate to improve paper transport.

Control

- **Line speed**. The line speed when feeding large sizes has been increased by shortening the gap between sheets to improve PPM with large paper sizes.

Peripheral Units

These are the older peripheral units that can be used with either the B-C4 or B-P1 version of this machine:

- Multi Bypass Tray BY5000 (B833-17)
- Cover Interposer Tray CI5010 (B835)
- Finisher SR5000 (B830)
- Punch Unit PU5000 NA, EU, SC (B831-01, -02, -03) (for Finisher SR5000)

Important

- **The Ring Binder and Perfect Binder can be used with the B-C4 but not with the B-P1.**

The peripheral units listed below can be used with either the copier or printer version of this machine.

These are new peripherals, but have only minor differences with previous units:

- **LCIT RT5030 (D452-17)**. Nearly identical to the LCIT RT5000 (A4/LT). One cooling fan has been added.
- **LCIT RT5040 (D453-17)**. Nearly identical to the LCIT RT5010 (A3/DLT). Seven cooling fans have been added: 1 fan inside the LCIT, 6 fans for the trays. (Each tray has two fans, one for the front and one for the back.)

These are peripherals that were new for the B-C4 which can also be used with the B-P1.

- **Decurl Unit DU5000 (D457-17)**. Installed on the left side of the main machine. A nip between a large soft roller and small metal roller removes paper curl. Also, if a paper jam occurs in any downstream peripheral device, this unit drops two plates to shunt paper into a purge tray and stops printing.

  Important

  - **The Decurl Unit is an option for the B-C4 but is required for the B-P1.**
- **Multi-Folding Unit FD5000 (D454-17)**. Performs six types of folds on up to three sheets of paper.
- **High Capacity Stacker SK5010 (D477-17)**. Stacks up to 5,000 sheets of large-size paper, or 2,500 sheets of small-size paper on a pull-away cart. Two of these units can be installed in the same line, depending on which other finishing options are installed.
- **Booklet Finisher SR5020 (D434-17)**. Performs booklet center folding and stapling in addition to corner stapling.
- **Punch Unit PU5020 NA, EU, SC** (D449-17, -27, 28) (for Booklet Finisher SR5020). This is a "smart punch" that automatically adjusts its position above the paper before punching.
- **Trimmer Unit TR5020 (D455-17)**. Trims the fore edges of folded/stapled booklets sent from the Booklet Finisher SR5020. The trimmer unit is used with the SR5020 only (it cannot be used with the SR5000).

Details About B-P1

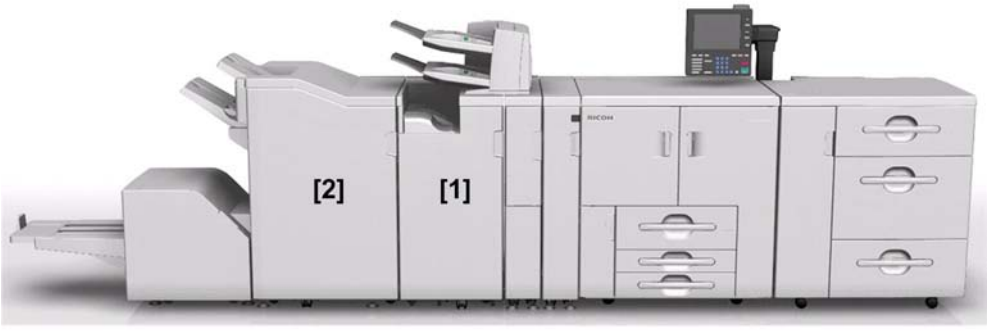
Configurations

m002n001

The Decurl Unit [1] is required for the installation (it is not an option). It is shipped with the main machine and must be installed at the customer site when the main machine is installed.

m002n002

Up to two High Capacity Stackers [1] and [2] can be installed in the same line if no Multi Folding unit is installed. A High Capacity Stacker can be the last unit in the line.



m002n003

If the Multi Folding Unit [1] is installed:

- Only one High Capacity Stacker can be installed
- Either the Booklet Finisher B834 [2] or Finisher B830 must be installed.

TCRU (Trained Customer Replaceable Units)

Like the B-C4, the B-P1 will be part of the TCRU system. Trained operators will be able to replace key components (including paper feed rollers) without calling for service. The objective of the system (initiated with B-C1) is to reduce down time.

1. Drum
2. Development Unit
3. Cleaning Unit
4. Charger
5. Pre-Charge
6. Fusing Unit
7. Cleaning Web
8. Paper Feed Rollers

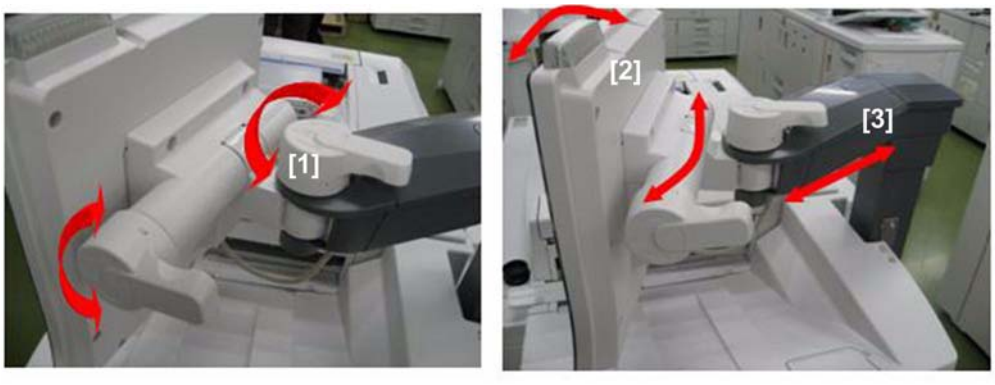
Note

- The toner bottle is a CRU (Customer Replaceable Unit) which can be replaced easily by the operator.

Operation Panel

m002n004

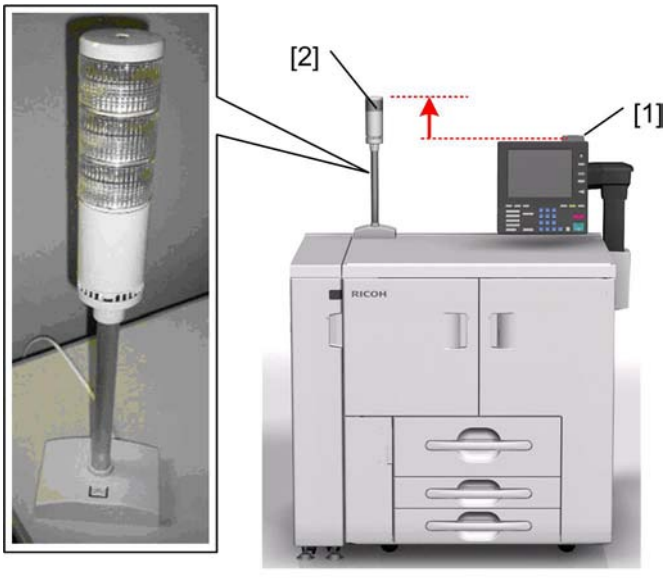
The operation panel is the same Flexible Super VGA operation panel used with the B-C4. However, there is no [Stop] key [1], and on the left at [2], the number and layout of the cutouts for option keys is slightly different.



m002n005

Like the B-C4, the operation panel of the B-P1 can be turned side to side [1] and tilted up and down [2] to give the operator the best view. The panel arm [3] can also be extended forward by the service engineer at installation or later.

Attention Light (Option)



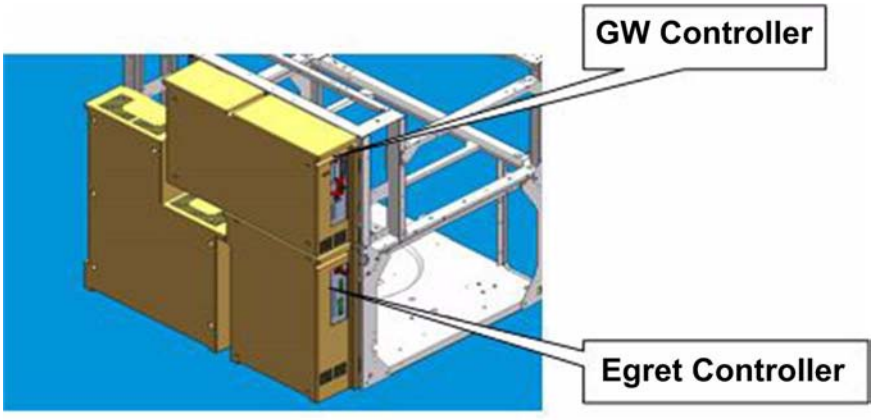
Like the B-C4, the B-P1 is equipped with a status lamp [1] on top of the operation panel. In a large open work area, however, this status light may be more difficult to see. The attention light [2] alleviates this problem with its beacon light that stands several centimeters higher than the top of the operation panel. The attention light is an option for the B-P1 only (it cannot be installed with the B-C4).

The DC (Data Center) Controller

The GW controller board with the Egret controller board comprise the DC (Data Center) Controller.

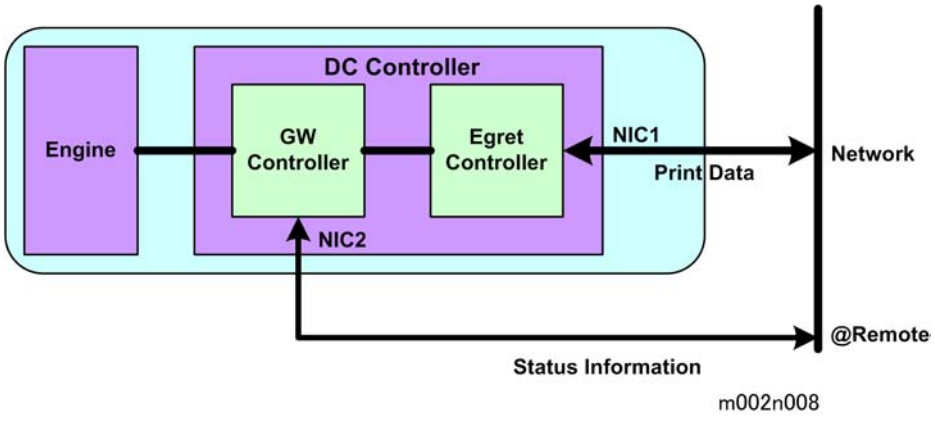
- GW Board: Manages peripherals and Ricoh software tools
- Egret Board: Handles print data

Both boards are mounted in the controller box on the back of the machine.



m002n007

The GW board is at the same location as that of B-C4. In the B-P1 the Egret board mounted below the GW controller as shown above.



m002n008

The DC Controller employs two CPUs.

- The GW Controller CPU manages engine control and the Egret Controller CPU manages data processing.
- This Twin CPU arrangement allows the Egret Controller to focus on processing the print job data.
- There is also an HDD unit for each controller.

More About Egret Board Functions

The Egret controller supports important features that are required in the production printing market.

- **VPT (Virtual Printer Technology)**. Allows the operator to set up a job with pre-defined settings then assign these settings to a virtual printer that can be used repeatedly for the same type of job. System administrators can create up to 64 virtual printers with pre-defined settings. The virtual printer can be operated with a normal windows printer driver and can be shared over a network.

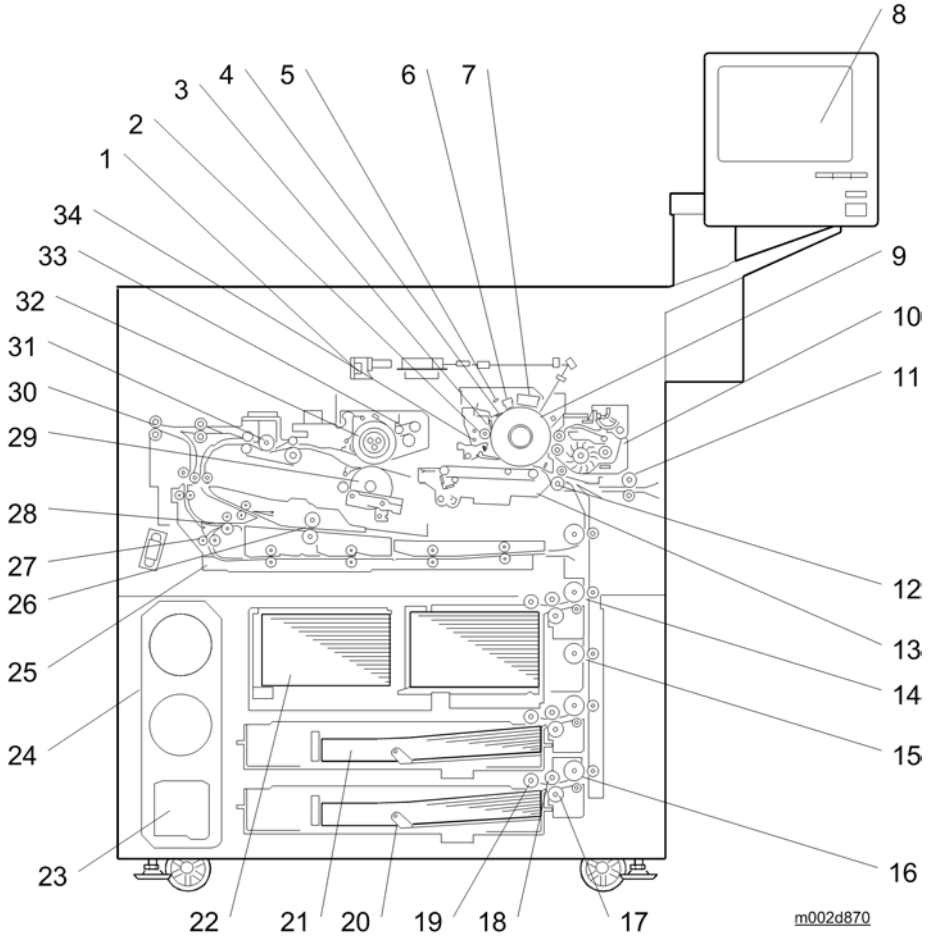
- **Print Jobs Over 2GB**. The DC controller can handle jobs larger than 2GB (50 to 100K sheets) over 2GB with raw TCP and lpr protocol.
- **Mixplex mode**. Allows paper printed on one side (simplex) to feed through the duplex paper path when a job requires both simplex and duplex printing. The printer feeds paper through the duplex path only and there is no need for path switching.
- **One Job Spooling**. Does not allow the printer to receive another print job until the current print job has completed.
- **Reverse Order Print**. After the job has been stored on the hard disk, the machine will start printing from the last page to the first.
- **Rotate by 180 Degrees**. The operator can rotate the image by 180 degrees from the operation panel, Web Interface (Egret), and by PJL command.
- **Image Shift**. Allows shifting of the printed area on the paper. Settings can be set separately for front and back sides of the page. This is useful for shifting the images on pages bound in booklets.
- **Tray Linkage**. When the selected tray runs out of paper, the machine will pull paper from another tray if it is holding the same size and type of paper.
- **PS Tray Mask & Set Tray**. The operator uses a Postscript command to specify a tray as the paper source, or to mask (disable) a tray. This is useful when the print job needs to select more than one type of paper for printing.
- **PS BestFit**. If the required paper size is not available in any tray, the printer will select the closest paper size from another tray. If the selected paper is smaller than the page size, the image will be scaled down to fit in the selected paper. If the substitute paper is larger than the requested page size, the image size does not change.
- **Tray Preset Setting**. Allows the operator to set up paper attributes (size, type, color, weight) for each paper tray. Up to 16 attribute settings are allowed for each tray. These settings are done on the machine operation panel.
- **Setting Per Page within a Job (Subset Stapling)**. Allows stapling a set of pages within a print job.
- **LD Banner Page**. The banner page is printed as the first or last page. The banner page contains: User name, Host name, Class name, Job name, Start time, and Session ID.
- **Account Information Report.** This report is printed at the end of each job. The operator can use this information to determine the charge for each job and to keep track of print jobs. The report contains 16 items, from the Client IP Address, Client Network Name, User Name, and so on.
- **Test Print Mode for checking setting of the finishing device.** After the operator adjusts the printer settings in the Skilled Operator mode, the operator can test the settings with the Test Print function.
- **Sample Print**. Duplicates one of the pages currently being processed and outputs it to the proof (top) tray.
- **Display the number of printer pages/total pages of the job**. Allows the operator to check the status of each job with the Web Interface (Egret). Specifically, the items that can be checked are Job ID, User Name, Status, Ripped Pages, Output Pages, Document Name, Printed Sets. Total Number of Sets, and Time.

- **Job Log**. Job logs can be downloaded from Web Interface (Egret) by the System Administrator (administration rights) for up to 3 months. The following are the items listed in the job log: Job ID, Record Version, Status, Session ID, Channel Source, VPT, PDL Source, File Size, User Name, Document Name, Completed Pages, Completed Sheets, PDL Pages, PDL Sheets, Total Sheets, Added Pages, Jams, Lost Pages, Date Created, Time Created, and Duration.

Overview

1

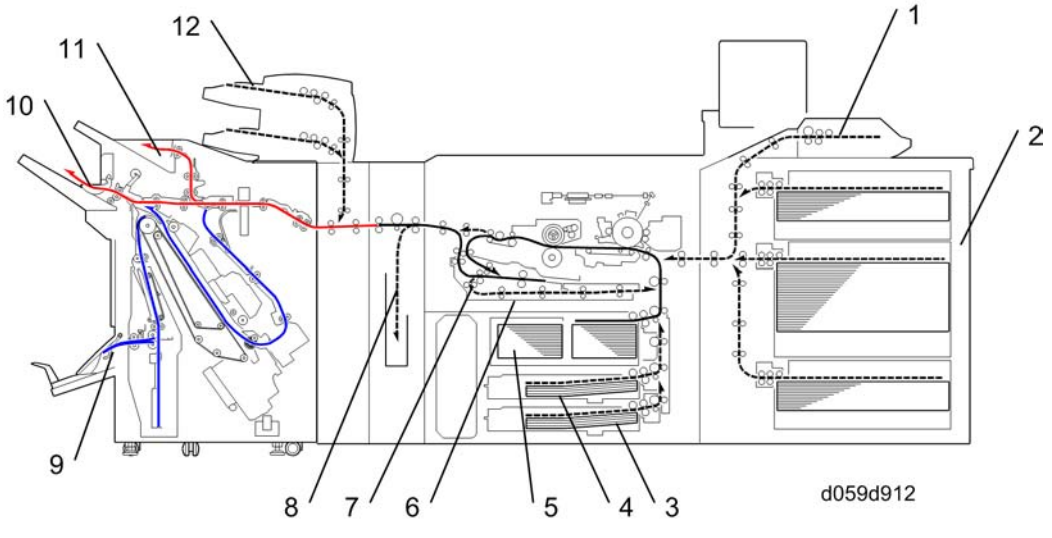
Overall Machine Layout



1. Laser Diode Board	18. 3rd Paper Feed Roller
2. Cleaning Brush	19. 3rd Pickup Roller
3. Cleaning Blade	20. 3rd Tray (500 Sheets)
4. 2nd Cleaning Blade	21. 2nd Tray (500 Sheets)
5. Quenching Lamp	22. 1st Tray (Tandem Tray, 1,100 Sheets Each)

6. Pre-Charge Unit	23. Toner Collection Bottle
7. Charge Corona Unit	24. Toner Bank Unit
8. Operation Panel	25. Duplex Tray
9. Drum	26. Switchback Roller
10. Development Unit	27. Inverter Roller 2
11. LCT Relay Roller	28. Inverter Roller 1
12. Registration Roller	29. Pressure Roller
13. Transfer Belt Unit	30. Exit Roller
14. Upper Relay Roller	31. Paper Cooling Pipe
15. Vertical Relay Roller	32. Hot Roller
16. 3rd Grip Roller	33. Cleaning Fabric
17. 3rd Separation Roller	34. Drum Cleaning Unit

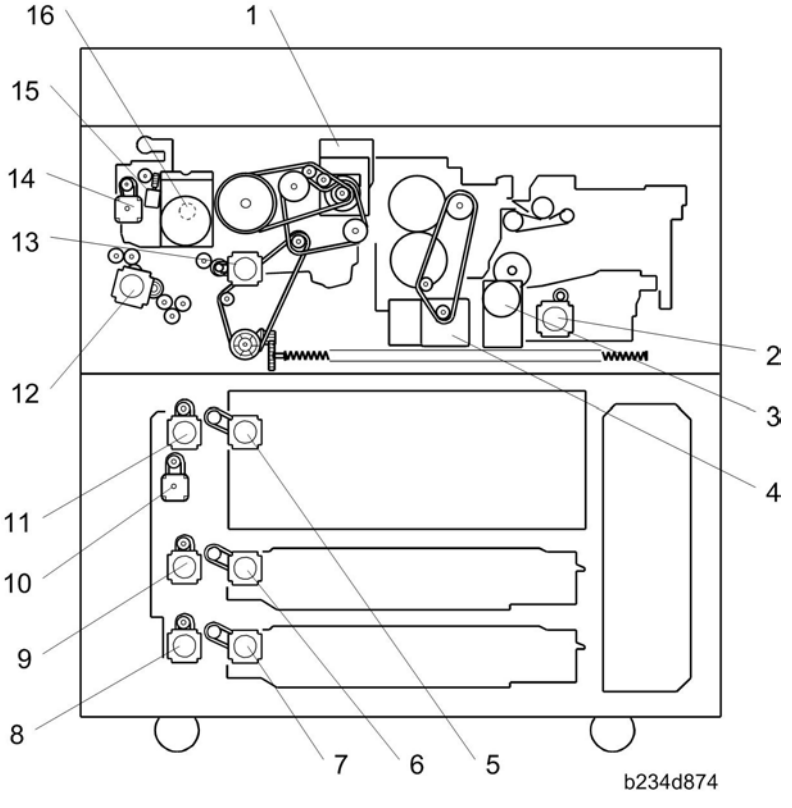
Paper Path



1. Bypass Tray	7. Inverter Unit
2. Optional LCT	8. Decurl Unit

3. Tray 3	9. Booklet Finisher
4. Tray 2	10. Shift Tray
5. Tray 1	11. Proof Tray
6. Duplex Unit	12. Cover Interposer

Drive Layout



1.	Drum Motor	9.	2nd Grip Motor
2.	Duplex Inverter Motor	10.	Vertical Relay Motor
3.	Exit Motor	11.	1st Grip Motor
4.	Fusing Motor	12.	Upper Relay Motor
5.	Paper Feed Motor	13.	Registration Motor

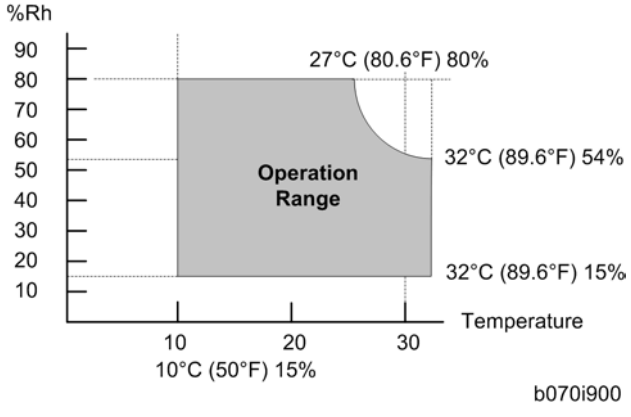
6.	2nd Paper Feed Motor	14.	Toner Supply Motor
7.	3rd Paper Feed Motor	15.	Hopper Agitator Motor
8.	3rd Grip Motor	16.	Development Motor

2. Installation

Installation Requirements

Environment

1. Temperature Range: 10°C to 32°C (50°F to 89.6°F)
2. Humidity Range: 15% to 80% RH



3. Ambient Illumination: Less than 1,500 lux (do not expose to direct sunlight or strong light)
4. Ventilation: Room air should turn over at least 3 times per hour per person
5. Ambient Dust: Less than 0.075 mg/m3
6. If the place of installation is air-conditioned or heated, do not place the machine where it will be:
   1) Subjected to sudden temperature changes
   2) Directly exposed to cool air from an air-conditioner
   3) Directly exposed to heat from a heater
7. Do not place the machine where it will be exposed to corrosive gases.
8. Do not install the machine at any location over 2,000 m (6,500 feet) above sea level.
9. Place the machine on a strong and level base.
10. Do not place the machine where it may be subjected to strong vibrations.
11. Do not connect the machine to a power source shared with another electrical appliance.
12. The machine can generate an electrical field which could interfere with radio or television reception.

Power Requirements

⚠CAUTION

- Make sure that the power outlets are near the main machine and peripherals and are easily accessible.
- Make sure the plugs are firmly inserted in the outlet.
- Avoid multi-wiring.
- Be sure to ground the main machine and peripheral units.
- Never set anything on a power cord.

Separate power cords are provided for the main machine and the following optional peripheral units. Each power cord requires an independent power outlet:

- Booklet Finisher SR5020 (D434-17)
- High Capacity Stacker SK5010 (D447-17)
- Booklet Finisher SR5020 (D434-17)
- Multi-Folding Unit FD5000 (D454-17)
- Trimmer Unit TR5020 (D455-17)

Input Voltage Level: Main Machine (and Peripheral Units)

Machine	Area	
	NA	Europe/Asia
M002	208-240V 60 Hz Minimum 20A	220-240V 50/60 Hz Minimum 16A
M003		
M004		
Permissible voltage fluctuation:		10% (Trimmer Unit TR5020 only: -10% to +6%)

⚠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 to switch the power off, wait for the power LED to go off, and then switch the main power switch off.

The Main Power LED (⏻) lights or flashes at the following times:

- While the main machine is communicating with the network server
- While the machine is accessing the hard disk or memory when reading or writing data.

There are two power switches on the machine:

Main Power Switch

Located on the front left corner of the machine and covered by a plastic cover. This switch should always remain on unless the machine is being serviced.

Operation Power Switch

Located on the right side of the operation panel. This is the switch normally used by the customer to power the machine on and off.

Machine Level

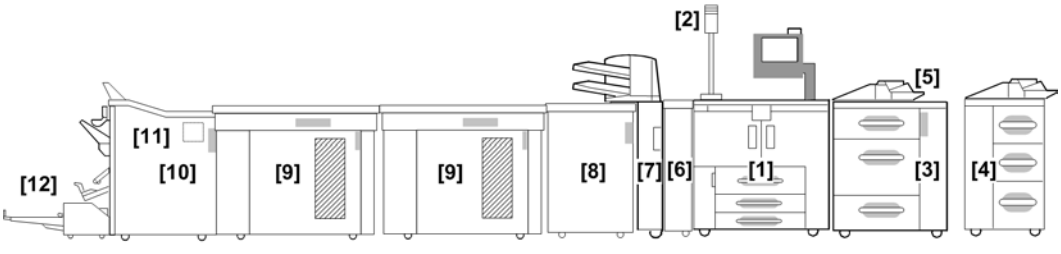
1. Front to back:	Within 5 mm (0.2") of level
2. Right to left:	Within 5 mm (0.2") of level

Note

- The machine legs can be raised or lowered in order to level the machine. Set a carpenter's level on the exposure glass.

Configuration Rules

Configuration 1



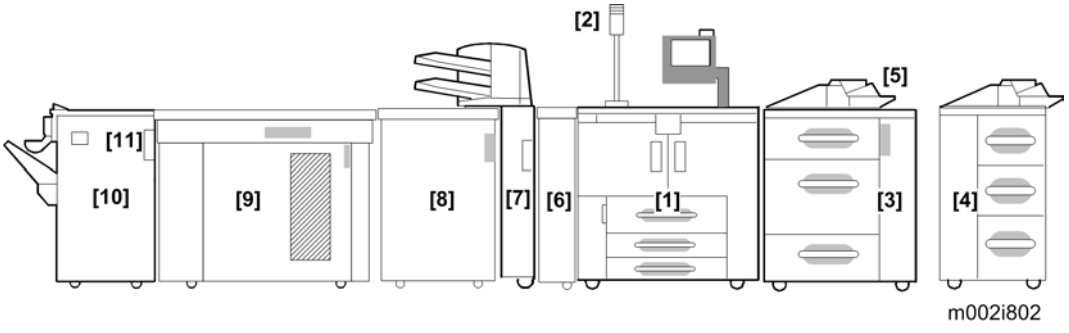
[1]	Main Machine (M002/M003/M004)
[2]	Attention Light (AL5000)
[3]	LCIT RT5040 (D453-17)
[4]	LCIT RT5030 (D452-17)

[5]	Multi Bypass Tray BY5000 (B833-17) • The multi bypass tray can be installed on either LCIT. • The multi bypass tray must be installed on the LCIT before the LCIT is docked to the main machine.
[6]	Decurl Unit DU5000 (D457-17).
[7]	Cover Interposer Tray CI5010 (B835) • The base of the cover interposer tray is narrow and cannot support the tray unit standing alone. (After installation, the top of the cover interposer tray unit rests on top of the downstream unit.) • To prevent the cover interposer tray from falling during installation, dock the next downstream unit to the base of the cover interposer tray before installing the tray unit on top of the cover interposer tray base.
[8]	Multi-Folding Unit FD5000 (D454-17)
[9]	High Capacity Stacker SK5010 (D447-17)
[10]	Booklet Finisher SR5020 (D434-17)
[11]	Punch Unit PU5020 NA, EU, SC (D449-17, -27, 28)
[12]	Trimmer Unit TR5020 (D455-17)

Rules for This Configuration

1. Either LCIT (D452) [4] or LCIT (D453) [3] (not both) can be installed on the right side of the main machine.
2. The Multi Bypass Tray BY5000 (B833) [5] can be installed on top of either the LCIT (D452) [4] or LCIT (D453) [3].
3. The Decurl Unit (D457) [6] is the first downstream unit (left side of the main machine). The Decurl Unit is required for this machine (it is not an option).
4. **Two** High Capacity Stacker units (D447) [9] can be installed in the same line, but only one is allowed if Multi Folding Unit (D454) [8] is installed.
5. If two high capacity stackers are installed in the same line, the second stacker must be installed on the left side of the first stacker.
6. The High Capacity Stacker (D447) [9] can be installed as the last unit downstream, but only if Multi Folding Unit (D454) [8] is not installed.
7. If Multi Folding Unit (D454) [8] is installed, the Booklet Finisher (D434) [10] must be installed as the last unit downstream.
8. The Trimmer Unit (D455) [15] can be attached only to the Booklet Finisher (D434) [13]

Configuration 2



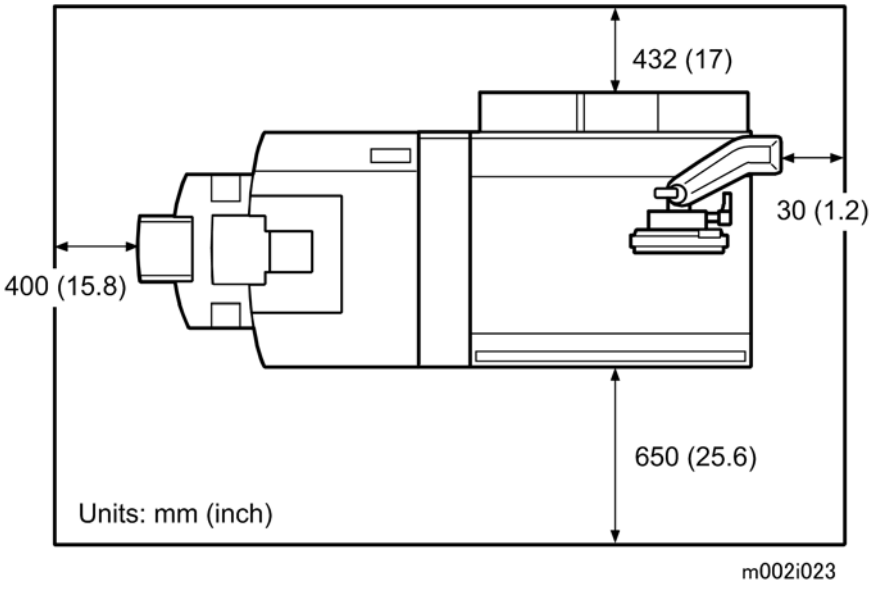
[1]	Main Machine (M002/M003/M004)
[2]	Attention Light (AL5000)
[3]	LCIT RT5030 (D452-17)
[4]	LCIT RT5040 (D453-17)
[5]	Multi Bypass Tray BY5000 (B833-17) • The multi bypass tray can be installed on either LCIT. The multi bypass tray must be installed on the LCIT before the LCIT is docked to the main machine.
[6]	Decurl Unit DU5000 (D457-17)
[7]	Cover Interposer Tray CI5010 (B835) • The base of the cover interposer tray is narrow and cannot support the tray unit standing alone. (After installation, the top of the cover interposer tray unit rests on top of the downstream unit.) • To prevent the cover interposer tray from falling during installation, dock the next downstream unit to the base of the cover interposer tray before installing the tray unit on top of the cover interposer tray base.
[8]	Multi-Folding Unit FD5000 (D454-17)
[9]	High Capacity Stacker SK5010 (D447-17)
[10]	Finisher SR5000 (B830)
[11]	Punch Unit PU5000 NA, EU, SC (B831-01, -02, -03)

1. Either LCIT (D452) [4] or LCIT (D453) [3] (not both) can be installed on the right side of the main machine.

2. The Multi Bypass Tray BY5000 (B833) [4] can be installed on top of either the LCIT (D452) [4] or LCIT (D453) [3].
3. The Decurl Unit (D457) [5] is the first downstream unit (left side of the main machine. The Decurl Unit is required for this machine (it is not an option).
4. The High Capacity Stacker (D447) [9] can be installed as the last unit downstream, but only if Multi Folding Unit (D454) [8] is not installed.
5. If Multi Folding Unit (D454) [8] is installed, the Finisher SR5000 (B830) [10] must be the last unit downstream.

Space Requirements

Space Around the Machine



The machine requires the minimum amount of space around the installation as shown above.

Note

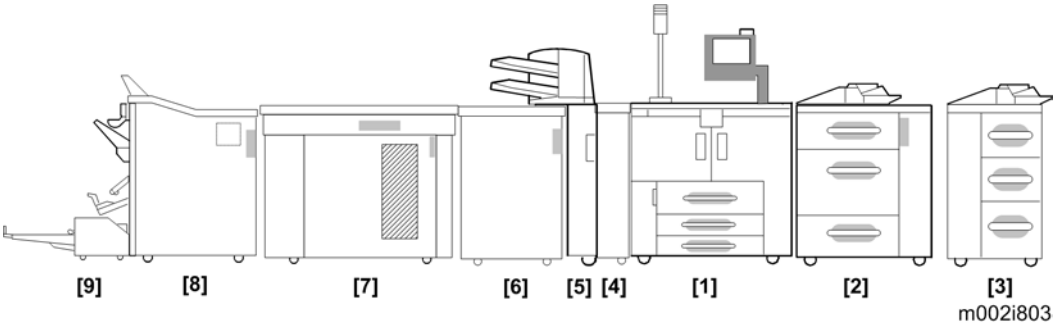
- The controller box door [A] and PSU door [B] on the back of the main machine swing open and can be removed.
- Both doors can be removed to allow the machine to pass through a narrow doorway.

Total Space Required

In the two tables below:

- The depth (D) and height (H) measurements of the main machine ([1] in the table below) are the minimum depth and height required for the installation of all peripheral units as well as the main machine.
- Determine the number of peripheral units to be installed, then refer to the table below. Add the widths (W) of the main machine and each peripheral device to determine the maximum amount of space to accommodate the entire length of the installation.
- Be sure to add the distance required for "space around" (see the previous section) to determine the total amount of space required.

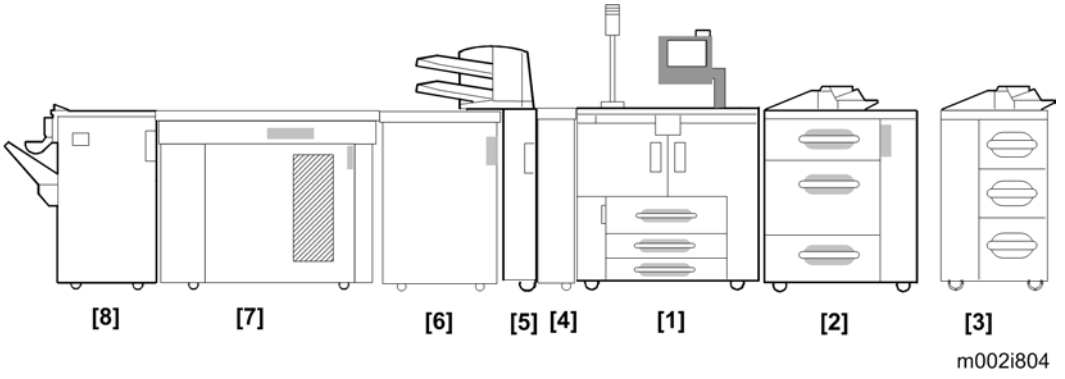
Configuration 1



No.		Dimensions		
		W	D	H
[1]	M002	870 mm (34")	860 mm (34")	1370 mm (54")*1
[2]	D453	850 mm (34")	---	---
[3]	D452	540 mm (22")	---	---
[4]	D457	160 mm (7")	---	---
[5]	B835	164 mm (7")	---	---
[6]	D454	460 mm (19")	---	---
[7]	D447	900 mm (36")	---	---
[8]	D434	650 mm (26")	---	---
[9]	D455	1120 mm (45")	---	---

*1: 1550 mm (61") with Attention Light AL5000 (option)

Configuration 2



No.		Dimensions		
		W	D	H
[1]	M002	**870 mm (34")**	**860 mm (34")**	**1370 mm (54")*1**
[2]	D453	850 mm (34")	---	---
[3]	D452	540 mm (22")	---	---
[4]	D457	160 mm (7")	---	---
[5]	B835	164 mm (7")	---	---
[6]	D454	460 mm (19")	---	---
[7]	D447	900 mm (36")	---	---
[8]	B830	800 mm (32")	---	---

*1: 1550 mm (61") with Attention Light AL5000 (option)

Before You Begin...

Follow the order of presentation in this installation manual to install the main machine, peripheral units, and controller options.

The table below lists some special points about installation of the peripheral units that you should know before you begin installation.

No.	Name	Skew	S-to-S	Other	Brk SW	PC
D452	LCIT		**Yes**	**IPS S**		
D453	LCIT		**Yes**	**IPS S**		

No.	Name	Skew	S-to-S	Other	Brk SW	PC
M002	Main				Yes	Yes
D457	Decurler					
D835	Cover Interposer	Yes	Yes			
D454	Multi Folder	Yes	Yes		Yes	Yes
D447	Multi Stacker	Yes	Yes		Yes	Yes
D434	Booklet Finisher	Yes	Yes		Yes	Yes
B830	Finisher	Yes	Yes			

Table Key

1. "Yes" indicates that a special procedure is required.
2. "Skew", "S-to-S"

   Paper "Skew" and "Side-to-Side Registration". After each peripheral device is installed, test paper output to determine the presence of skew and to make sure that side-to-side registration is correct.
3. "IPS S"

   This is an "Image Position Sensor Strength" calibration, required for either the LCIT (D452) or LCIT (D453).
4. "Brk SW"

   This means "Breaker Switch". The breaker switch must be tested at installation. After installation, the breaker switch must be tested at least once a year.
5. "PC"

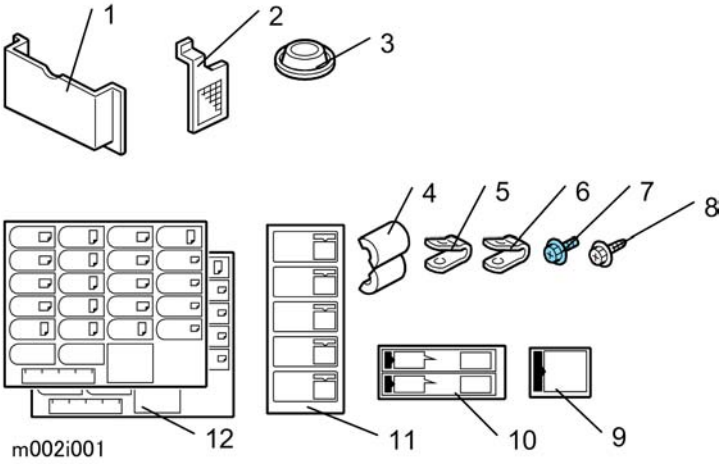
   "Power Cord". These peripheral units each have a separate power cord that requires an independent power supply.

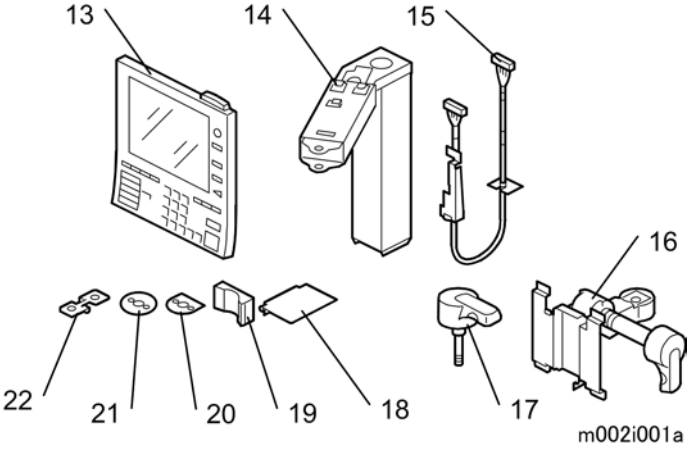
Main Machine (M002/M003/M004)

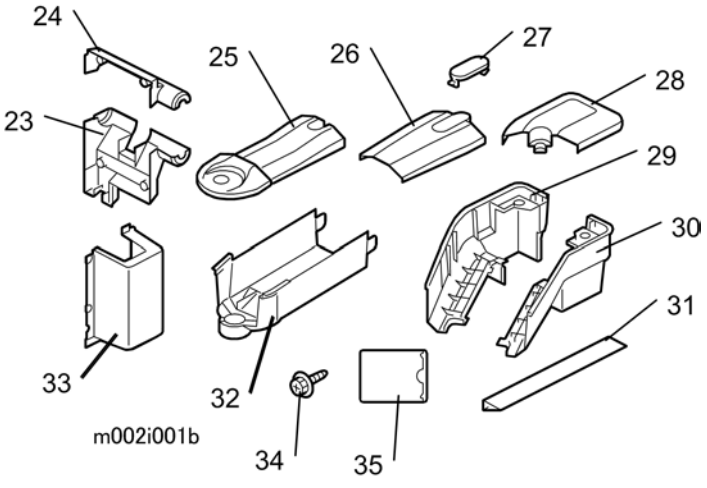
Accessories

2

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







No.	Description	Q'ty
1.	Operating Instructions Holder	1
2.	Dust Filter	1
3.	Leveling Shoes	4
4.	Ferrite Core	1
5.	Cable Clamp (Metal)	1
6.	Cable Clamp (Nylon)	1
7.	Screws M4x8 (Round Head)	1
8.	Screws M4x8	34
9.	Power Off Instruction Decals	1
10.	Paper Loading Decals	4
11.	Fusing Unit Removal Instruction Decals	1
12.	Paper Size Decals	2
13.	Operation Panel	1
14.	Arm	1
15.	Long Harness	1
16.	Operation Panel Base	1

No.	Description	Q'ty
17.	Angle Adjustment Lever	1
18.	Connector Cover	1
19.	Spacer	1
20.	Lock Plates	1
21.	Swivel Plate	1
22.	Arm Adjustment Spacer	1
23.	Base Bottom Cover	1
24.	Base Top Cover	1
25.	Arm Cover – Top Front	1
26.	Arm Cover – Top Center	1
27.	Cap	1
28.	Arm Cover – Top Rear	1
29.	Arm Cover – Bottom Left	1
30.	Arm Cover – Bottom Right	1
31.	LCT Gap Cover	1
32.	Arm Cover – Bottom Front	1
33.	Arm Connection Cover	1
34.	Screws M4 x 10	2
35.	Name Card Holder	2

The following items (not shown in the illustration above) are also provided in North America:

User's Manual (CD-ROM)	1
Administrator Manual (CD-ROM)	1
About the Machine	1
Quick Reference	1

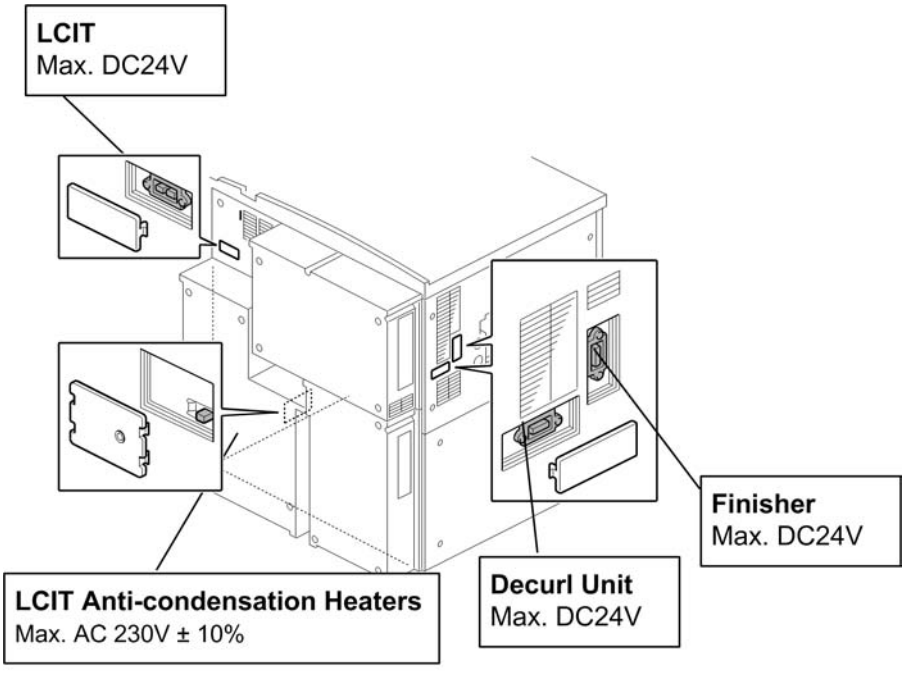
Troubleshooting Guide	1

Installation

Rating Voltage for Peripheral Units at Connection Points

⚠CAUTION

- Be sure to plug the cables into the correct sockets.



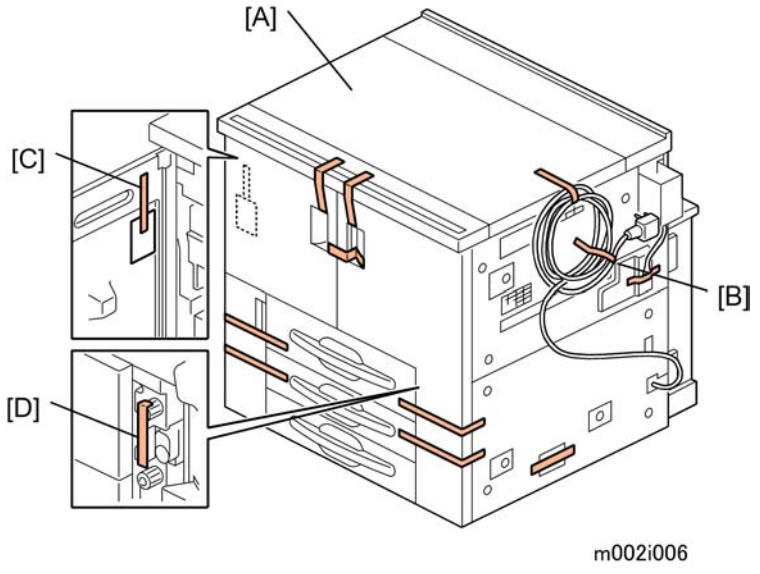
m002i025

External Tape and Retainers

The installation procedure is not packed with the main machine. Always bring this service manual with you.

⚠CAUTION

- Before performing the following procedures, make sure that the machine is unplugged from the power source.



1. Remove:

   [A] Visible exterior tapes

   [B] Tape and retainers from power cord

   [C] Tape, paper from inside left front door

   [D] Tape, retainer on inside, right side of tandem tray

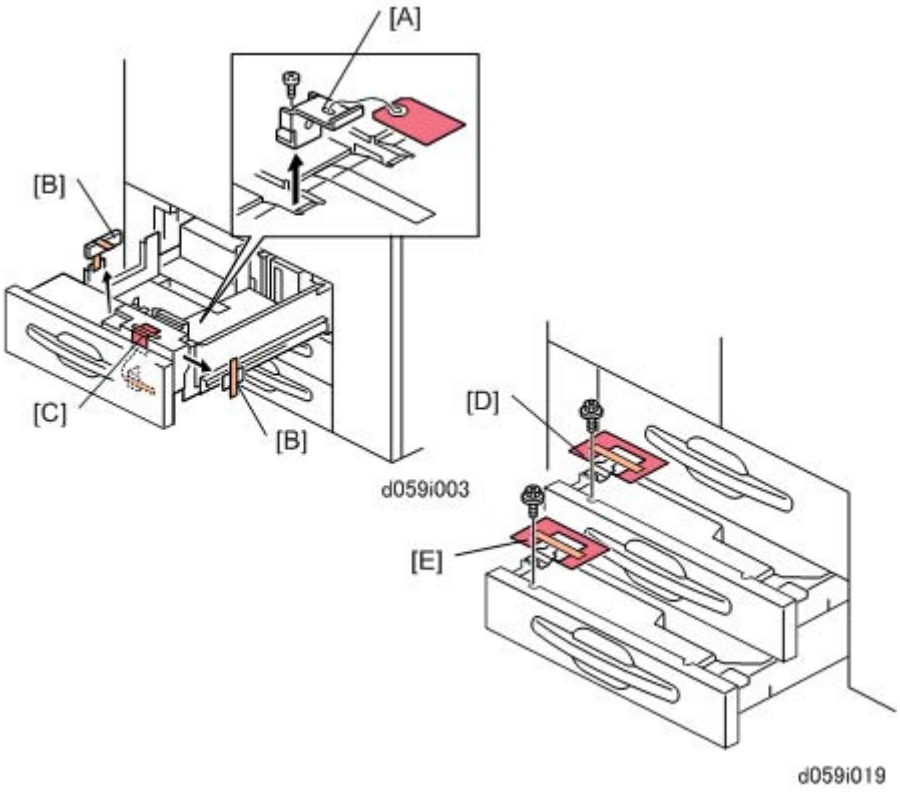
2. Remove the tape and retainers from the power cord and cables [B].

   Note

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

3. Set the leveling shoes [A] (x 4) under the feet [B], then level the machine.

Internal Tape and Retainers: Paper Trays



1. Pull out the tandem tray (1st tray) completely, remove the tray lock plate [A] (☞ x 1), and remove the cushion [B].
2. Push in the right tray of the tandem tray, then remove the cushion [C].
3. Pull out the 2nd tray and remove the lock plate [D] (☞ x 1).

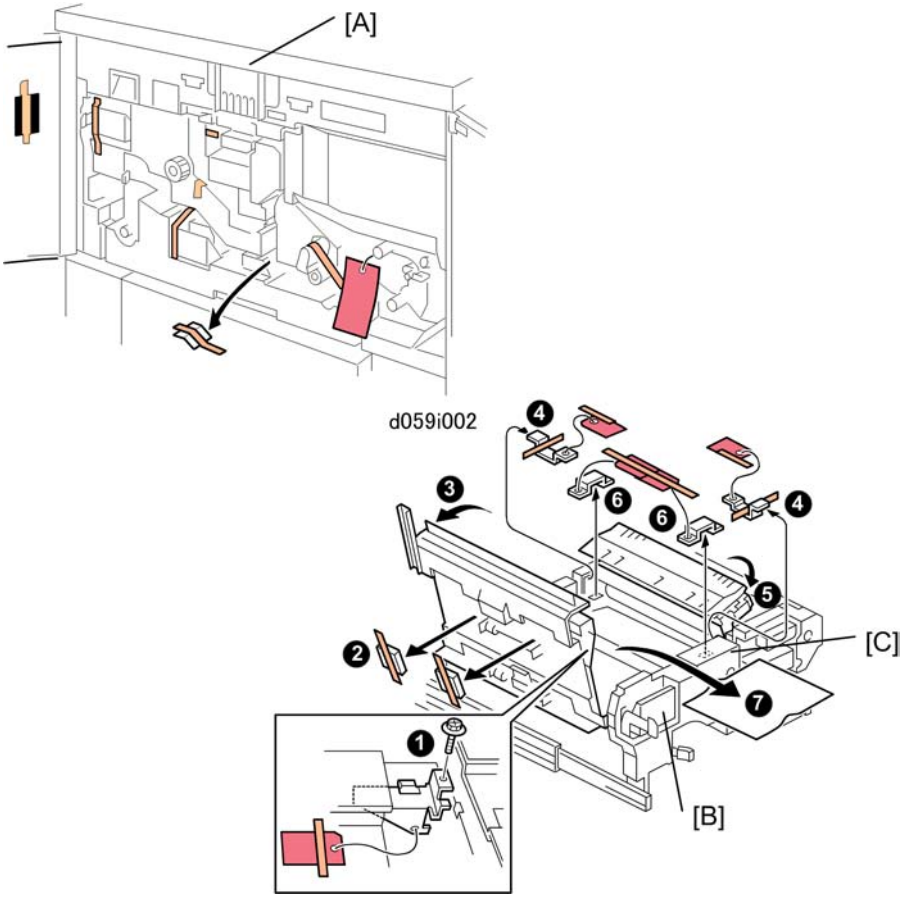
   Note

   - Be sure the re-attach the screw to the same hole. Do not discard the screw.
4. Pull out the 3rd tray and remove the lock plate [E] (☞ x 1).

   Note

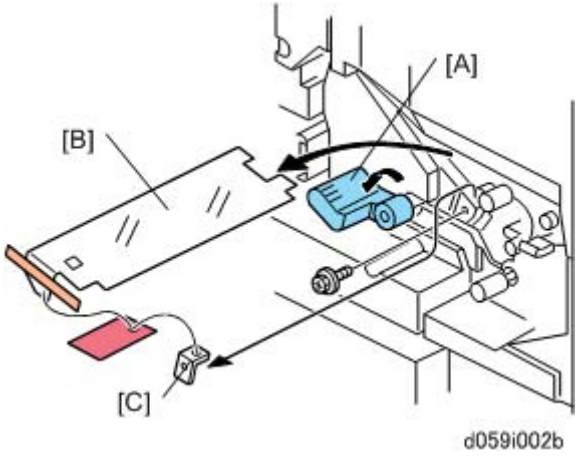
   - Be sure to re-attach the screw to the same hole. Do not discard the screw.

Internal Tape and Retainers: Fusing Unit



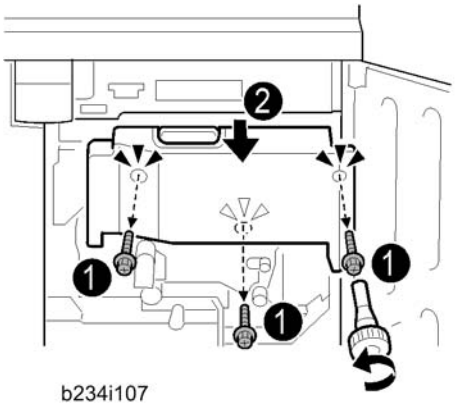
1. Open the front doors and remove all visible tape and retainers from inside the machine [A].
2. Press down lever **D2** [B], pull out the fusing unit [C], and remove all tape and retainers from the fusing unit:
   - (1) Retainer (x1)
   - (2) Tape, retainers (x2)
   - (3) Raise **D3**.
   - (4) Remove retainer.
   - (5) Raise **D4**.
   - (6) Remove retainer.
   - (7) Protective sheet
3. Push in the fusing unit.

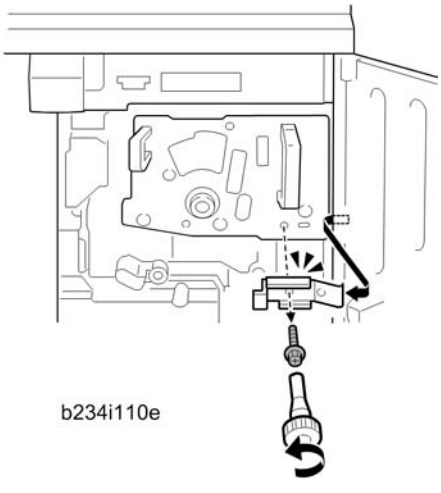
Internal Tape and Retainers: Transfer Unit



1. Lower the lever C1 [A].
2. Remove all tape, tags [B], and retainers [C] from the transfer unit (x1).

Internal Tape and Retainers: Drum Cleaning Unit





1. Open the right front door.
2. Remove the black screws at (1) (x3).
3. Take off the inner cover (2).

Note

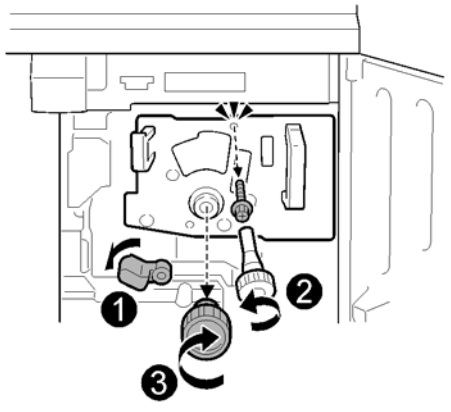
- These illustrations show removal using the hex driver provided to the customer. This tool is not required for removal of these screws. You can use a common Phillips head (plus) screwdriver to remove these screws.

2

Important

- **This cover functions as a duct in the ventilation path of the machine. It must be reinstalled.**

4. Remove the ground plate (x1).



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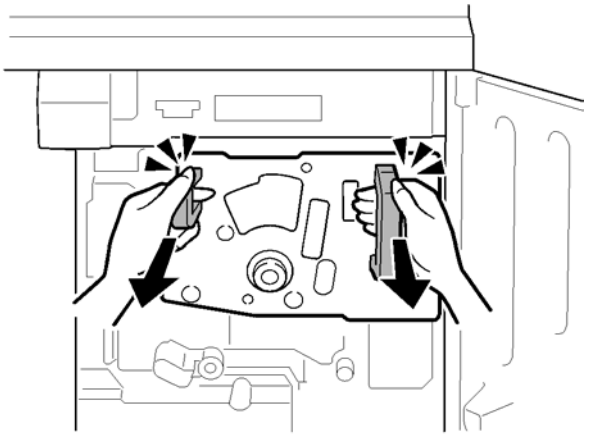
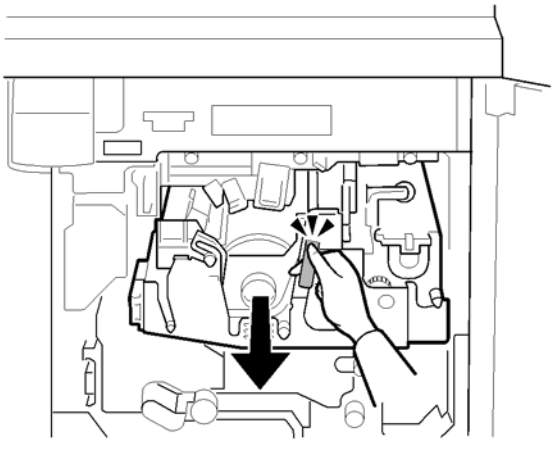
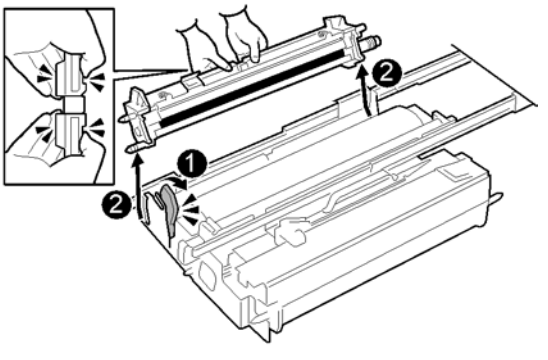


b234i110a

5. Remove the faceplate.
   (1) Lower C1
   (2) Screw (x1)
   (3) Remove the knob.
6. Remove the faceplate.



b234i111



b234i113

7. Pull the purple handle toward you until the drawer stops.

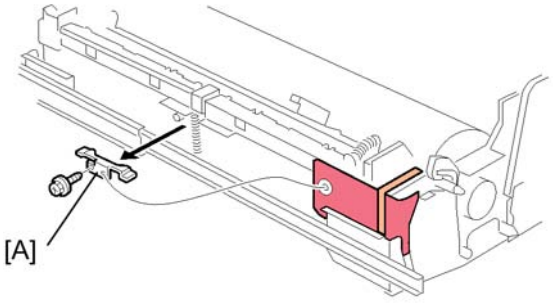
Note

- The development unit (1) will shift slightly to the right as you pull the drawer out.

8. Remove the drum cleaning unit.
   - Raise the purple lever (1) and pull the cleaning unit to the left Ë until it disengages the lever
   - Lift the unit out of the drawer

Important

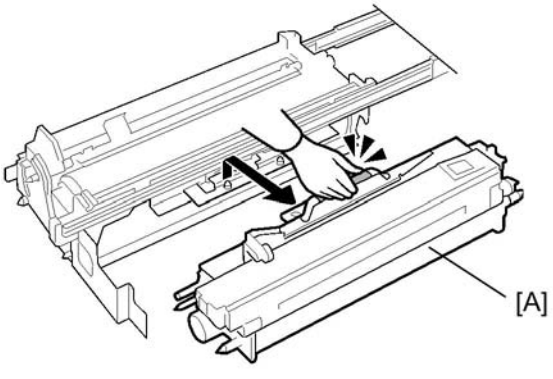
- **Grasp the cleaning unit by its handles as shown and lift it straight up.**



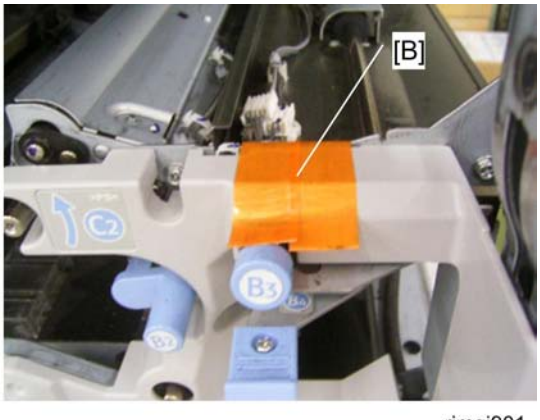
b234i117

9. Remove the retainer [A] from the cleaning unit (x1).

Pouring Developer

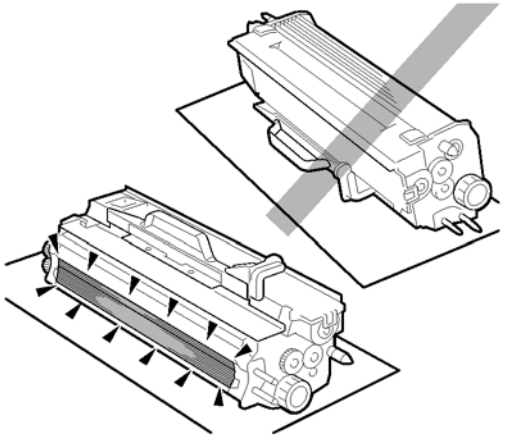


b234i112

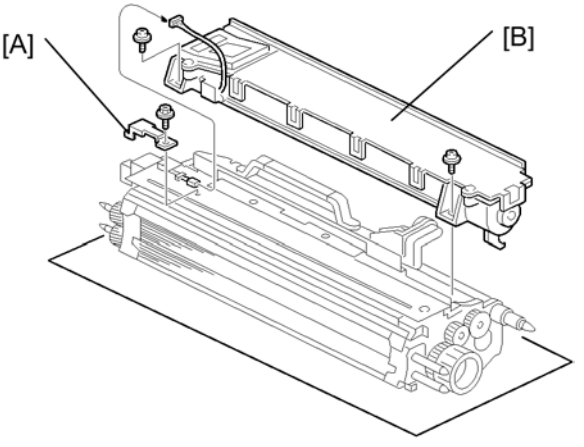


rimgi901

1. Lift the development unit [A] by its purple handle and hold it level as you remove it.
2. Remove the shipping tape from the inner cover [B].

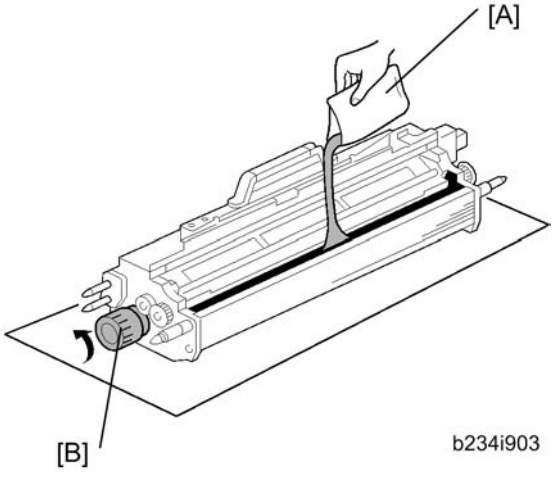


b234i112c



b234i902

3. Place the development unit on the spread paper as shown.
4. Remove the bracket [A] (x1).
5. Disconnect the toner hopper [B] (x1, x2).
6. Tilt the hopper slightly when you remove it.



b234i903

7. Pour the developer into the development unit.
   - Take a note of the developer lot numbers on the developer packet. These numbers will be required for the developer initialization.
   - Move the toner packet [A] from side to side while you pour a small amount of toner across the length of the gap.

RTB 11: Wording correction

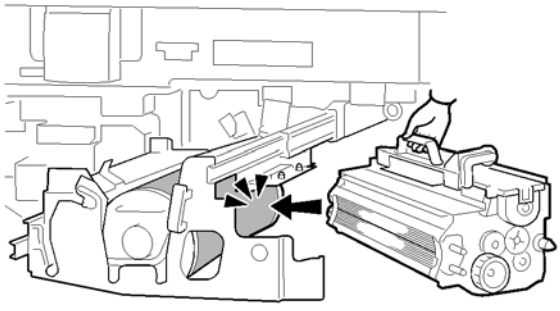
   - Stop pouring and turn the knob [B] so that the toner settles into the development unit.
   - Repeat this sequence until the packet is empty.
8. Reattach the hopper to the development unit. (x1, x2)

Important

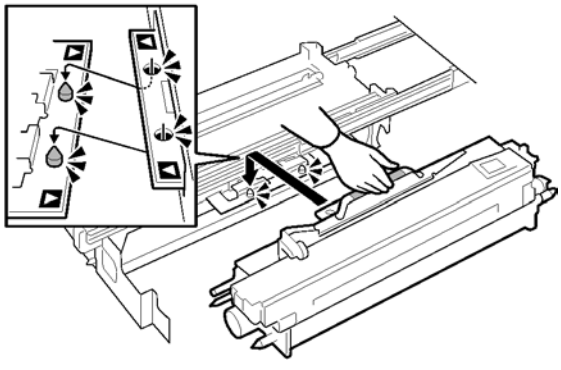
- **Confirm that the TD harness is connected properly.**
- **Confirm that the harness is not pinched.**

9. Set the connected harnesses between the toner hopper and the metal plate.
10. Re-attach the bracket [A] removed at Step 4 (x1).

Reinstalling the Development Unit



b234i112b



b234i112a

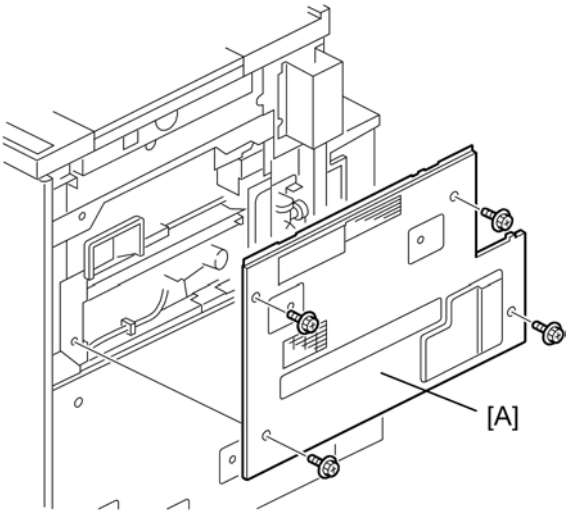
Important

- **When you reinstall the development unit, handle it carefully.**
- **Never allow the development roller to hit the OPC drum or any other part of the frame of the development unit drawer.**
- **Scratches or other damage to either the drum or development roller will adversely affect the operation of the machine.**

1. Align the triangular reference marks of the development unit and drawer frame.
2. Place the holes on the edge of the development unit over the pegs on the drawer frame.
3. Push the development unit drawer into the machine, reattach the faceplate, ground plate and inner cover (removed in "Internal Tape and Retainers: Drum Cleaning Unit"), then close the right front door.

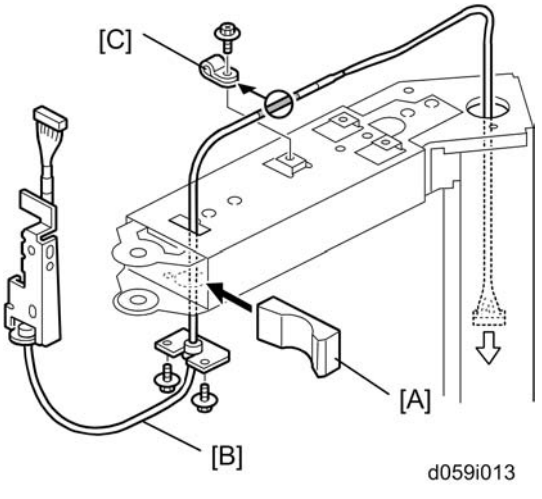
Operation Panel

Right Upper Cover

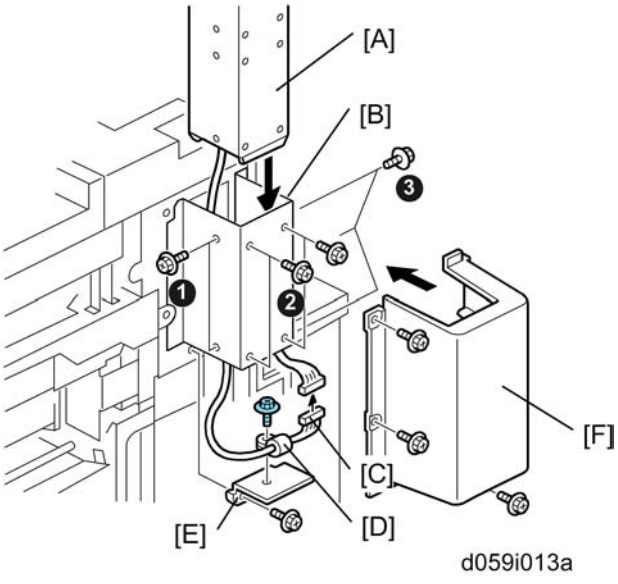


1. Remove the right upper cover [A] (x4).

Operation Panel Arm Installation and Length Adjustment



1. Insert spacer [A].
2. Route harness [B] as shown.
3. Attach nylon clamp [C].



4. Set arm [A] in sleeve [B].
5. Fasten the arm:
   (1) Front (x2)
   (2) Side (x4)
   (3) Rear (x3)
6. Connect harness [C] (x1).
7. Fasten metal clamp [D] (x1).
8. Attach connector cover [E] (x1).
9. Attach arm connection cover [F] (x3).

As shown in the next two sections, the length of the operation panel arm can be adjusted:

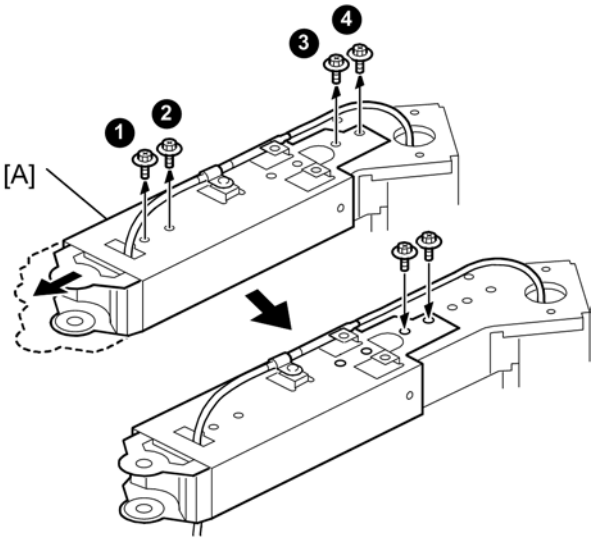
- The length of the arm has three positions: short, medium, long.
- When the machine is shipped from the factory, the arm is set at the short position.

Note

- This adjustment is optional. Discuss this adjustment with the operators before changing the length of the arm.

2

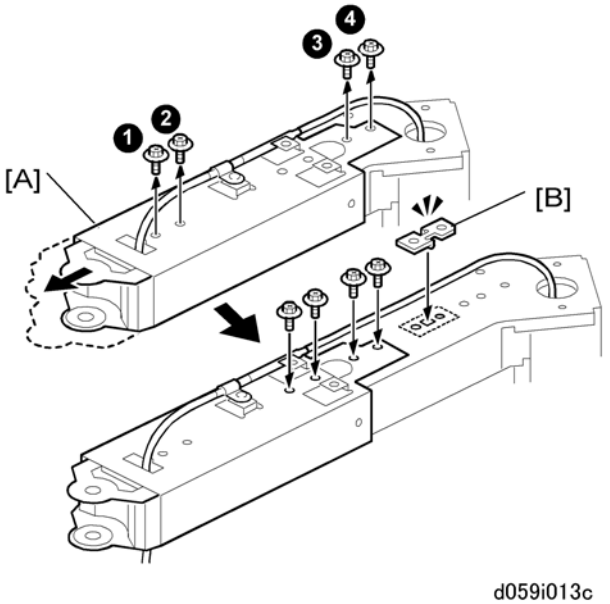
Medium Extension



d059i013b

1. Remove the four screws.
2. Slide the arm extension [A] forward and set it as shown.
3. Re-attach the four screws.

Long Extension



d059i013c

1. Remove the four screws.

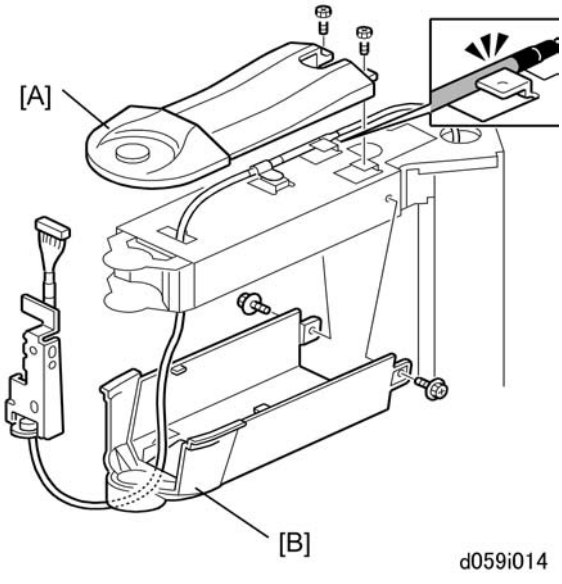
2. Slide the arm extension [A] forward and set it as shown.
3. Set the arm adjustment spacer [B] over the holes.

Note

- The long extension requires the spacer. The medium extension does not require the spacer.

4. Re-attach the four screws.

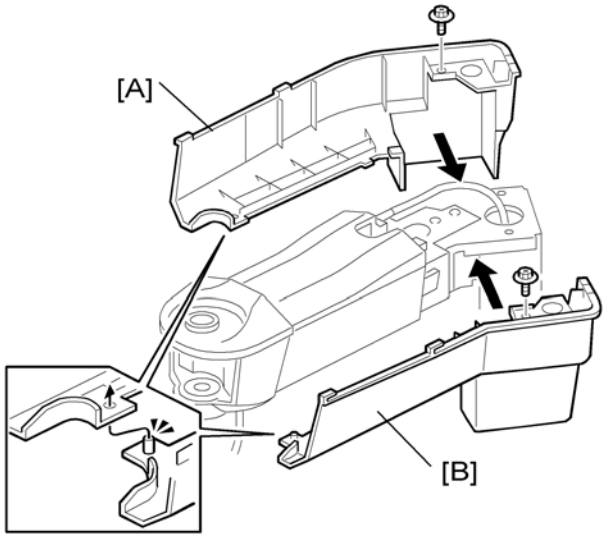
Completing Operation Panel Installation



1. Attach:

   [A] Top front arm cover (x2)

   [B] Bottom front arm cover (x2)

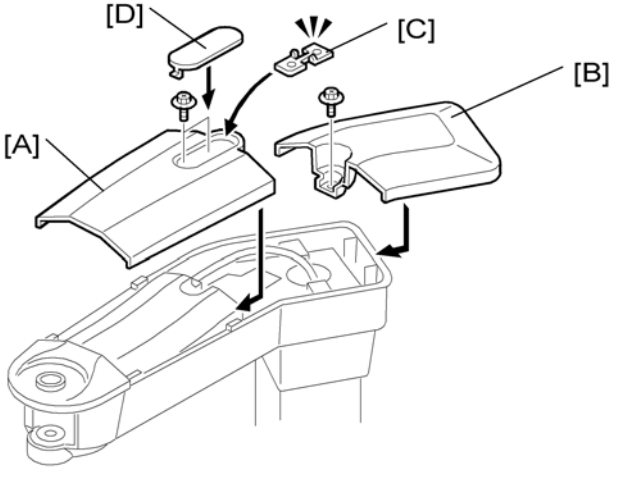


d059i014a

2. Attach:

   [A] Bottom left arm cover (x1)

   [B] Bottom right arm cover (x2)



d005i014b

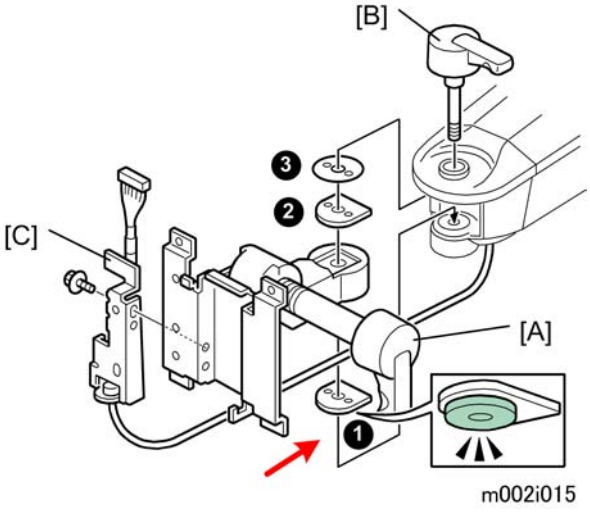
3. Attach:

   [A] Top center arm cover (x2)

   [B] Top rear arm cover (x1)

4. If the arm adjustment spacer was not used to extend the arm to its maximum length, store the spacer here [C] for future use.

5. Snap on cap [D].

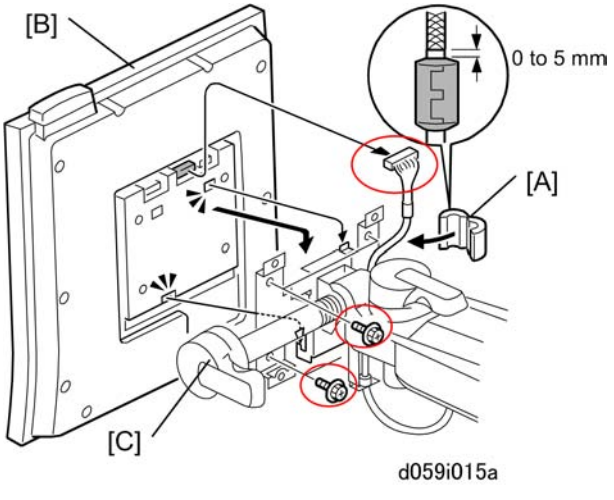


6. Set the spacers (1), (2), (3).

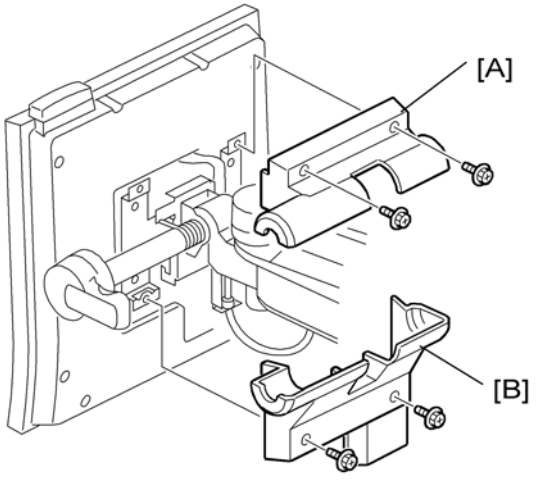
Note

- Spacer (1) must be installed as shown with the colored washer facing down.

7. Insert operation panel base [A] into the end of the arm.
8. Screw on angle adjustment lever [B].
9. Attach long harness bracket [C] to the operation panel base.

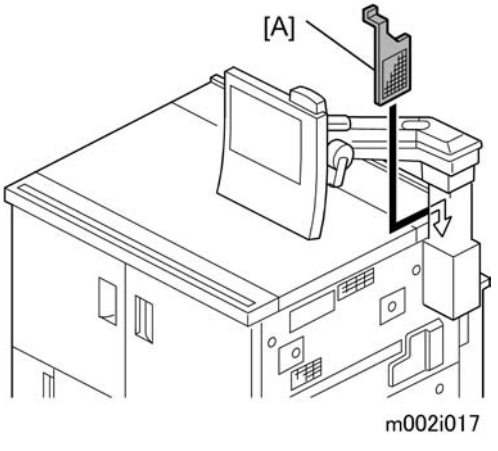


10. Attach ferrite core [A].
11. Attach the operation panel [B] to base [C] (x2, x1).



12. Attach:
    [A] Base top cover (x 2)
    [B] Base bottom cover (x 2).

Drum Dust Filter



1. Set the drum dust filter [A].
2. Loosen the bottom knob, adjust the view angle of the operation panel, then tighten the knob.
3. Loosen the side knob, adjust the tilt of the operation panel, then tighten the knob.

Initializing the Machine

Important

- **Follow this procedure carefully.**
- **Do not switch on the machine until you are instructed to do so.**
- **Carefully follow the instructions about opening and closing the front doors.**

1. Make sure that the machine is OFF.
2. Open the front doors.
3. Make sure that all tapes, clamps, and other shipping materials have been removed.
4. Connect the main power cord and turn on the machine.
5. Enter the SP mode.

   Important

   - **The front doors must be open before you turn the machine on and enter the SP mode.**
   - **If you switch on the machine with the front doors closed and do not enter the SP mode, auto processing control will automatically execute and start initialization for conditions around the drum, but initialized settings for the toner density and TD sensor will not be correct.**
6. Close the front doors.

   Important

   - **You must close the front doors now.**
   - **If you fail to close the front doors, the following SP codes (executed in the following steps) will not execute: SP2801-001 (TD Sensor Initial Setting), SP2207-002 (Toner Supply: Toner Bank Setup), SP2962 (Auto Process Control Execution).**
7. Do SP2801-002.
   - Open the soft keyboard on the operation panel.
   - Enter the developer lot numbers and touch [OK]. (Lot numbers are embossed on the top edges of the developer packets.)

   Important

   - **If you do not enter the 7-digit lot numbers first, you will not be able to execute SP2801-001 (pressing [EXECUTE] will have no effect).**
8. Do SP2801-001.
   - Touch [EXECUTE] on the operation panel to initialize the TD sensor. Initialization requires about 1 minute after you press [EXECUTE].

   Important

   - **Do not switch off the machine or open the front doors until you are instructed to do so.**
9. Set the toner bottles.

- Do not shake the toner bottles.
- Set the lower toner bottle first then the upper bottle.

10. Do SP2207-002.
    - Touch [EXECUTE] on the operation panel.
    - If the SP execution ends within about 2 sec., or if the process is interrupted by an SC code alert, execute this SP again. The process should take about 5 min.
11. Do SP2962 and touch [EXECUTE]. This executes auto process control.

Power Cord, Breaker Switch Test

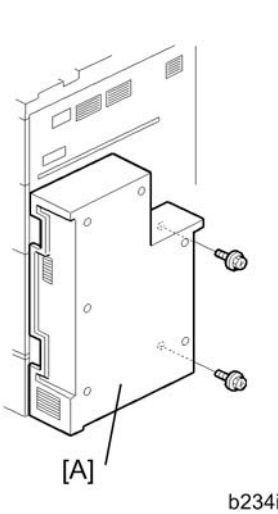
1. Test the breaker switch (☛ p.207).

Connecting the Tray Heaters of the Main Machine

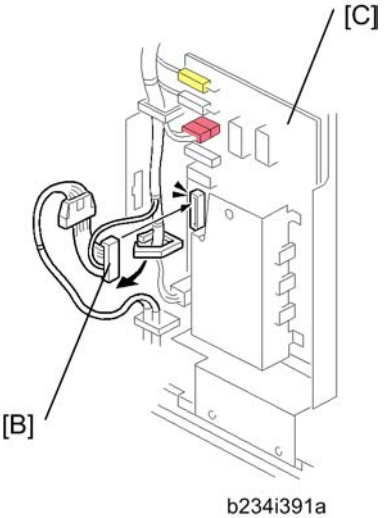
The machine comes from the factory with the tray heaters already installed but disconnected. Tray heater connection is optional. The heaters should be connected if the location has high humidity. Consult with the customer before connecting the tray heaters.

Doing this procedure connects the following anti-condensation heaters inside the main machine at the following locations:

- One unit below the transfer unit
- Two units in the paper tray unit (if installed)
- One unit in the LCIT (if installed)



b234i901



b234i391a

1. Switch off the main power switch and disconnect the power cord from the power source.
2. Open the PSU box [A] (🔩 x 2).

To set the connector

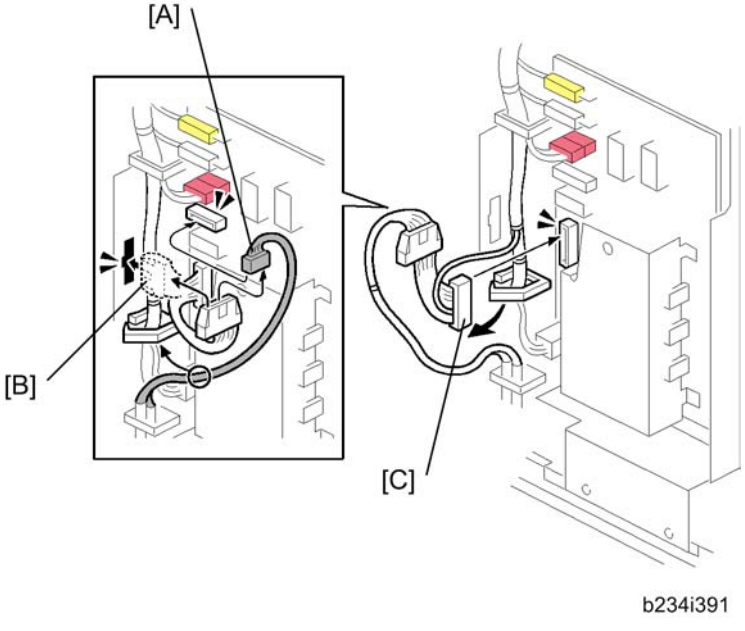
1. Connect the white connector [B] to **CN602** on the AC drive board [C].

Note

- Connect the large connector clamped near the side of the board.
- This step is not required if the LCIT anti-condensation heater will be connected.

To supply power 24 hours a day

- Doing the connection in the previous procedure assures that power is supplied to the machine for the heaters even after the main machine is switched off with the main power switch (for example, in auto off mode). However, with only this connection, the heaters do not operate while the main machine is operating.
- The connection method described below allows the heaters in the paper tray unit to switch on and off while the main machine is operating.
- This connection will also allow the LCIT heater (option) to operate while the main machine is switched off with the main power switch (for example, in auto off mode). In energy saver and low power modes, the heaters switch off.



b234i391

1. Remove the small connector [A] from the relay connector, then connect it to connector **CN606**.
2. Clamp the relay connector [B] to bracket of the AC drive board.
3. Connect the large connector [C] to connector **CN602** as described in the previous procedure.

Completing the Installation

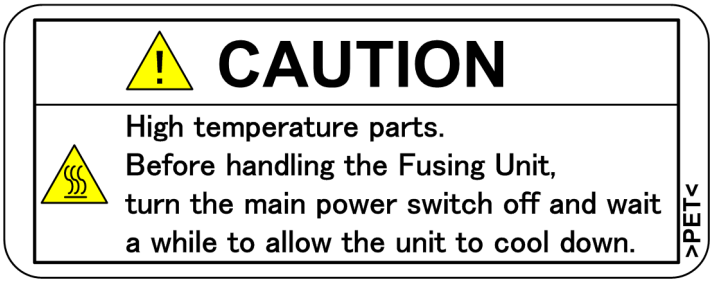
Setting Paper Sizes for the Paper Trays

1. Set the required paper sizes for all paper trays.

Unit	Name	No.	Setting
Main Machine	1st Tray	1	SP5019 -2
	2nd Tray	2	Automatic side fence detection.
	3rd Tray	3	Automatic side fence detection.
LCIT (D452)	1st Tray	4	Paper size dial at rear of tray
	2nd Tray	5	Paper size dial at rear of tray.
	3rd Tray	6	SP5019 -7
LCIT (D453)	1st Tray	4	Automatic side fence detection.
	2nd Tray	5	Automatic side fence detection.
	3rd Tray	6	Automatic side fence detection.
Bypass Tray (B833)	---	7	Automatic side fence detection
Cover Inserter (B835)	1st, 2nd Tray	---	Automatic side fence detection.

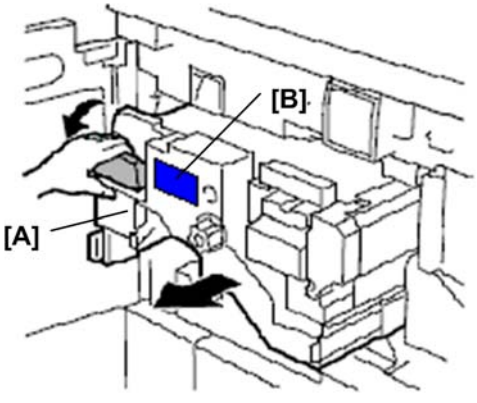
2. If the customer wants to use a custom size, they must:
    - Press the Tray Paper Settings button.
    - Press the icon for the appropriate tray.
    - Press the "Paper Size" tab, select "Custom Size".
    - Enter the required paper size.
3. Attach the appropriate paper size decal to each tray (decals are provided in the accessories bag).
4. Check print quality and machine operation.
5. Input the supply name with SP5841.
6. Input the following telephone numbers with SP 5812.
    - Service technician telephone number: SP5812 -1
    - For ordering consumables: SP5812 -3
    - Sales representative: SP5812 -4
7. Install the language firmware if necessary.

TCRU Safety Label for Fusing Unit



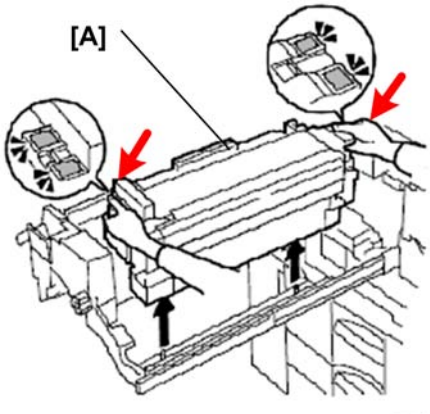
d059i912

1. Find the safety decal (1 of 7 languages) included with the TCRU material provided at installation.



d059i910

2. Open the front doors.
3. Pull out the fusing unit [A].
4. Attach the safety decal at [B].



d059i911

Both ends of the fusing unit [A] near the handles become hot during operation. The safety decal cautions the operator about removing the fusing unit for TCRU procedures.

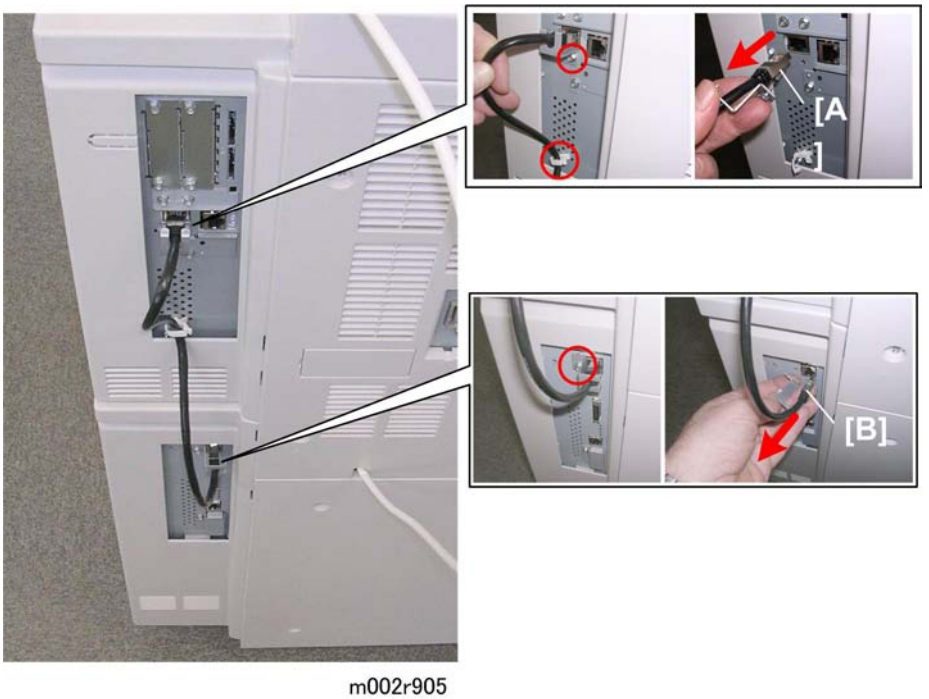
Important

- **Enter the Service Mode, open SP5185 and confirm that this SP code is switched ON. If it is not, select ON, close the SP mode and cycle the machine off/on.**
- **This ensures that the TCRU items [0119], [0120], [0121] will appear in the Skilled Operators' menus accessed from the User Tools screen.**

Controller Box, PSU Box Removal

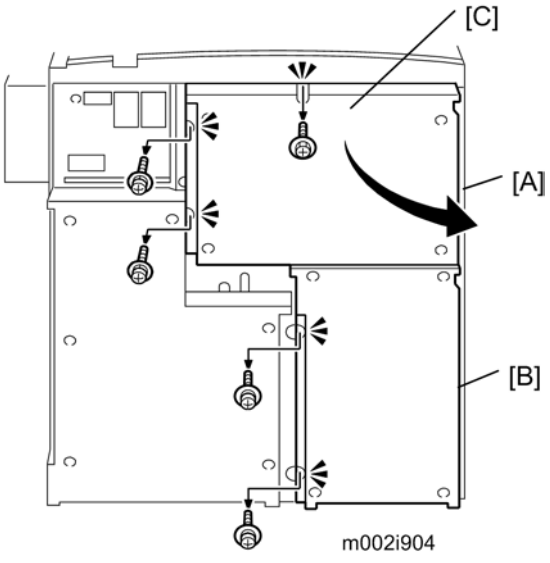
Remove the controller box and PSU box only if the machine is too large to pass through a narrow door or passageway.

Removing the Controller Box

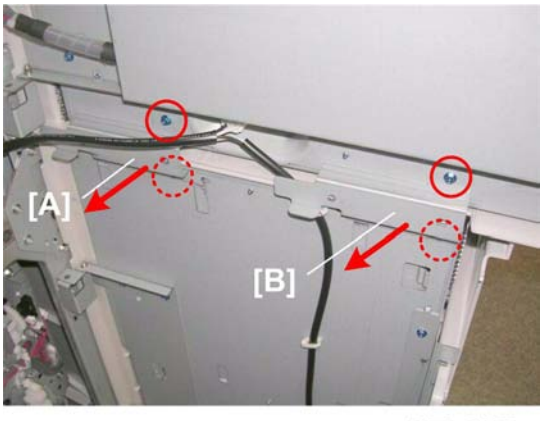


m002r905

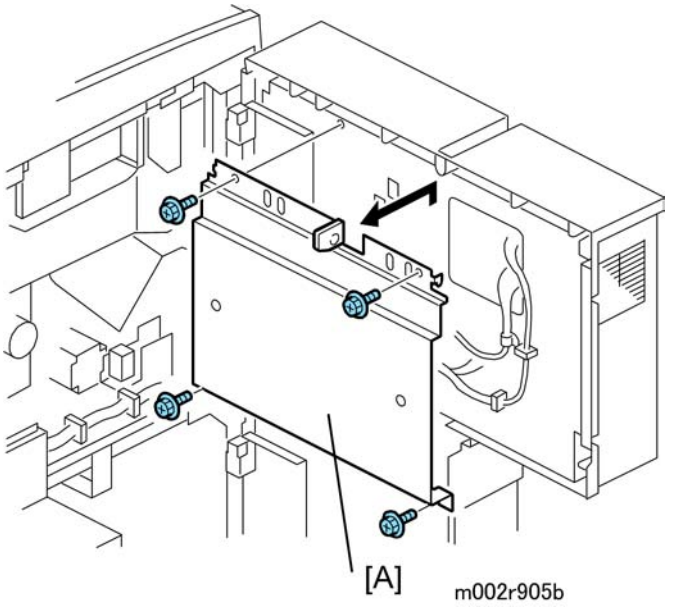
1. Disconnect the upper controller box cable [A] and lock plate (x1, x1, x1).
2. Disconnect the lower controller box cable [B] and lock plate (x1, x1).
3. If there are any other cables connected to either controller box, disconnect them now.



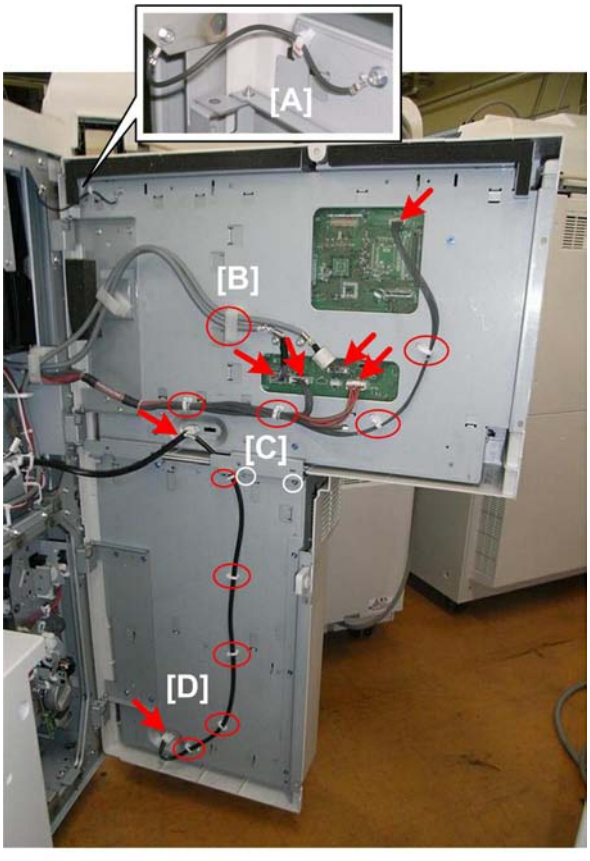
4. Make sure that all cables have been disconnected from the upper controller box [A] and lower controller box [B].
5. Open the controller box [C] (x 5).



6. Remove:
   - Lock plate [A] (x2).
   - Lock plate [B] (x2).

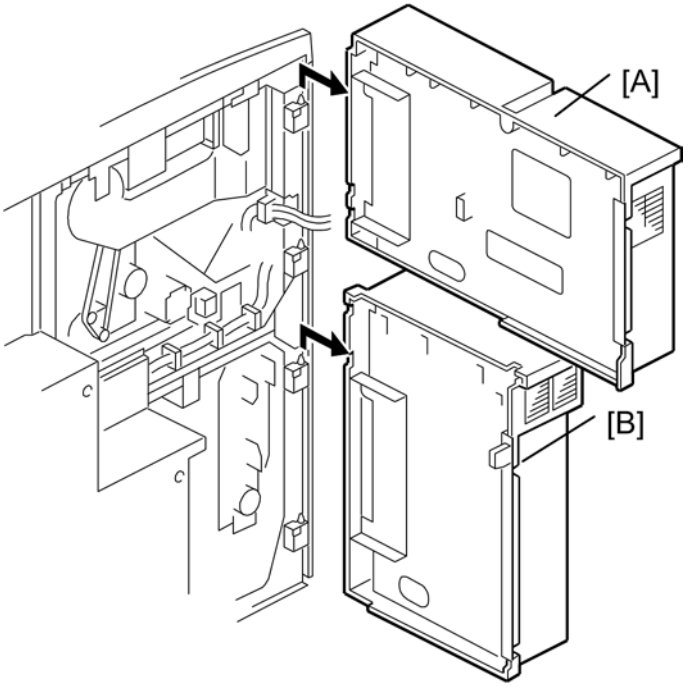


7. Remove harness cover [A] (x4).



m002r905c

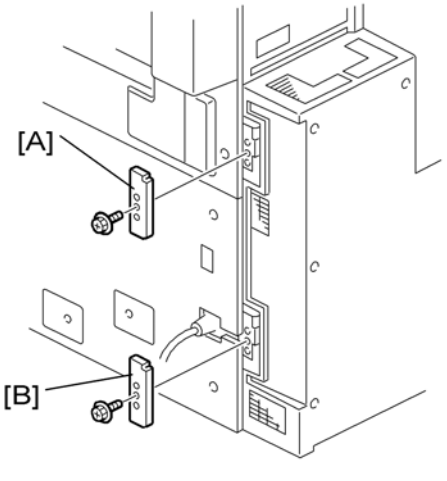
8. Disconnect ground wire [A] (x1, x1).
9. Disconnect upper controller box [B] (x5, x6)
10. Remove plate [C] (x2)
11. Disconnect lower controller box [D] (x5, x1)



m002r905d

12. Lift off and remove:
    [A] Upper controller box
    [B] Lower controller box

Removing the PSU Box

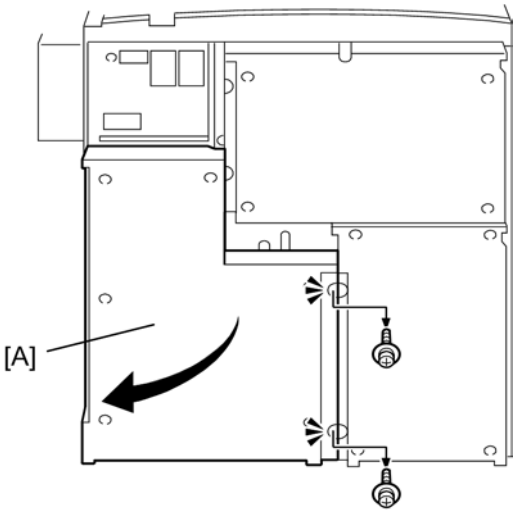


d059i906

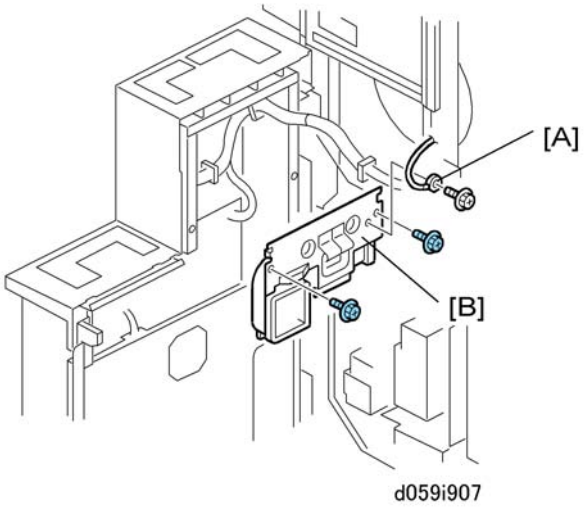
1. Remove:

   [A] Upper hinge cover (x1)

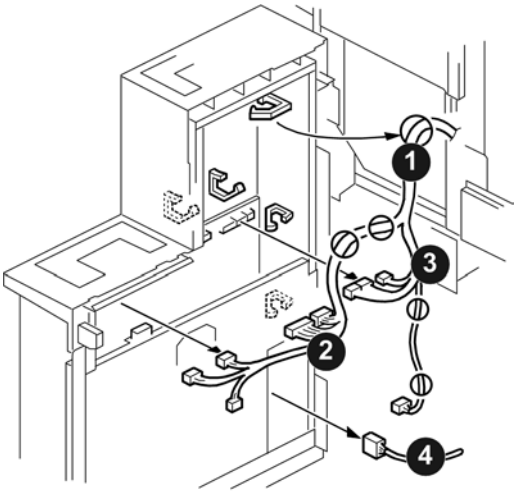
   [B] Lower hinge cover (x1)



2. Open the PSU box [A] (x2)

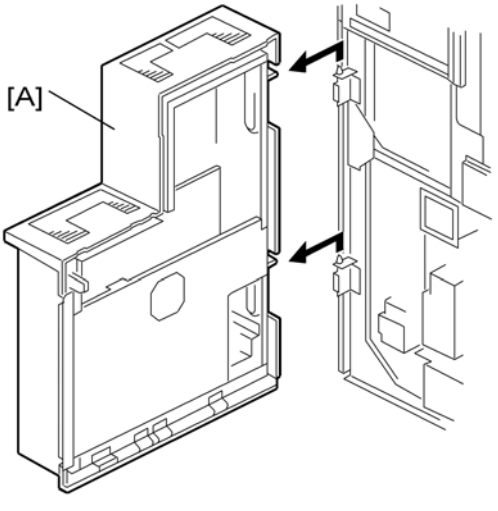


3. Disconnect ground wire [A] (x 1).
4. Remove duct [B] (x 2)



m002i908

5. Disconnect the four harnesses (x8, x 10).



d059i908a

6. Lift the PSU box [A] off its hinges.

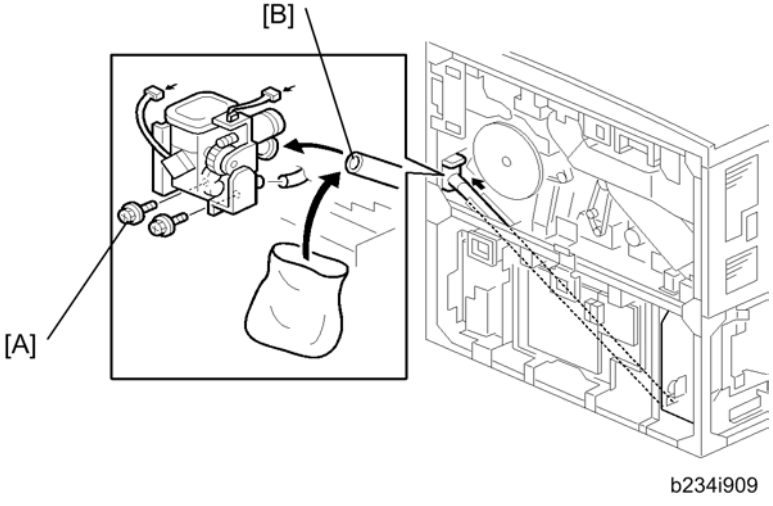
Transporting the Main Machine

To prevent blockages in the toner supply path, always follow the procedure below before transporting the main machine. If this procedure is not done, SC592 (Toner Bank Motor Error) or SC495 (Toner Bottle Unit Error) may be displayed, requiring replacement of the toner transport hose and screw.

⚠CAUTION

- To prevent damaging the toner supply coil inside the toner hose, never bend the toner hose. If the coil is bent, SC592 will be displayed and the hose must be replaced.

Before Moving the Main Machine



b234i909

1. Use SP5804-41 (Upper Bottle) and SP5804-42 (Lower Bottle) to close the toner caps.
2. Turn off the operation switch.

   Note

   - If you turn off the main power switch, you cannot remove the toner bottles.
3. Then remove the toner bottles from the bank.
4. Remove the rear cover.
5. Open the PSU box and controller box (do not remove them!).
6. Remove the left upper cover, left lower cover, and right upper cover.
7. Remove the two screws [A] securing the toner supply cylinder.
8. Cover the end of the toner transport coil tube [B] with a plastic bag.
9. Turn on the operation switch.
10. Execute SP5804-38 and SP5804-39 to actuate the toner bank motor and toner supply coil clutch for 2 minutes and remove all toner in the supply hose.
11. Re-install all removed parts except the toner bottles.
12. Make sure that three tubes are connected to the toner supply cylinder when putting it back.

After Moving the Main Machine

1. Turn the main power switch on.
2. Load the toner bottles into the toner bank.
3. Start to supply toner from the toner bank to the toner hopper:
   1) Select SP2207-2.
   2) Press "Execute" on the LCD.

This procedure supplies toner to the toner hopper and the toner transport path.

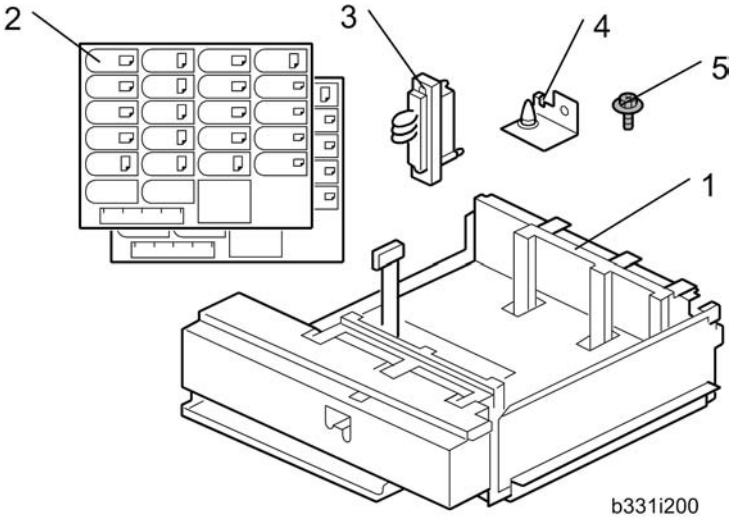
It will stop automatically in about 6 minutes.

Important

- **If SP2207-2 fails after SP2801 is completed (an SC code is displayed), repeat only SP2207-2.**

A3/11"x17" Tray Unit TK5010 (B331-14)

Accessories



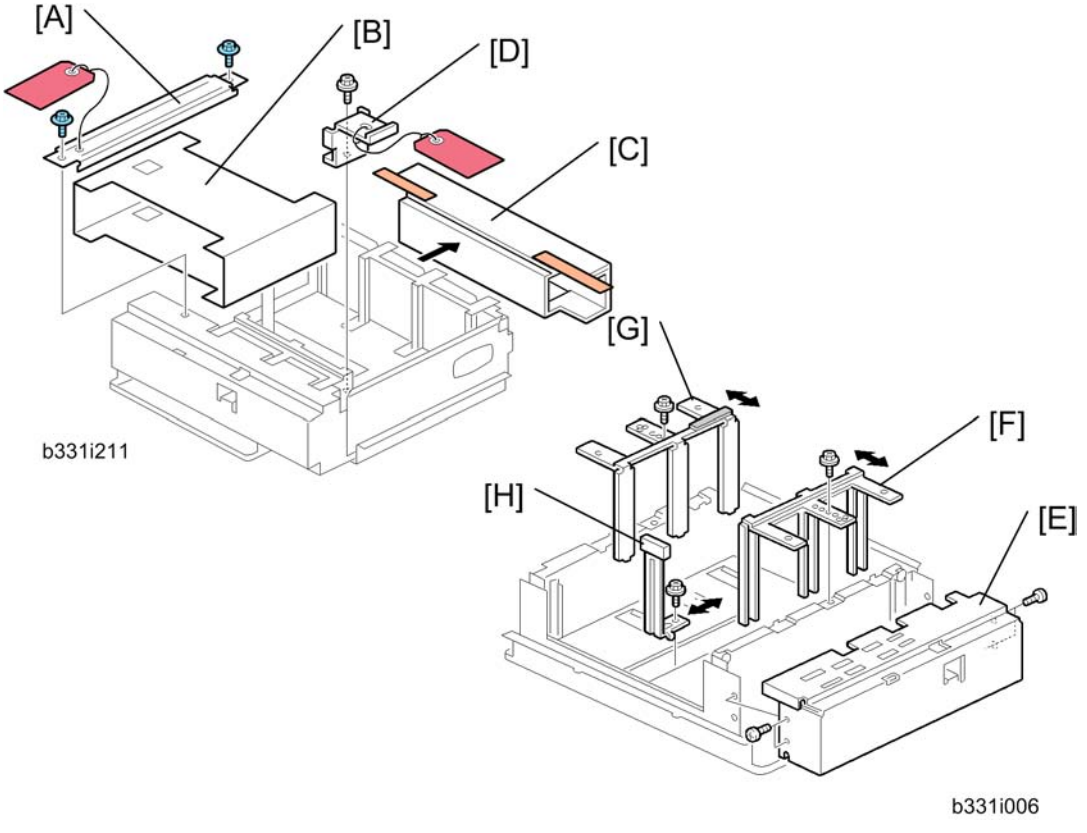
Check the quantity and condition of the accessories in the box against the following illustration and list.

No.	Description	Q'ty
1.	A3/DLT Tray	1
2.	Paper Size Decal	2
3.	Short Connector	1
4.	Pin Bracket	1
5.	Screw	2

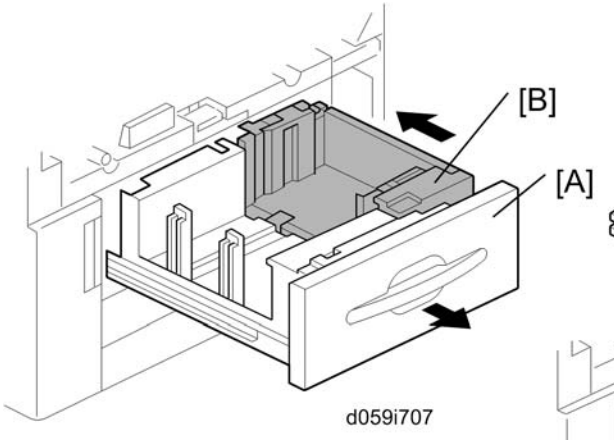
Installation

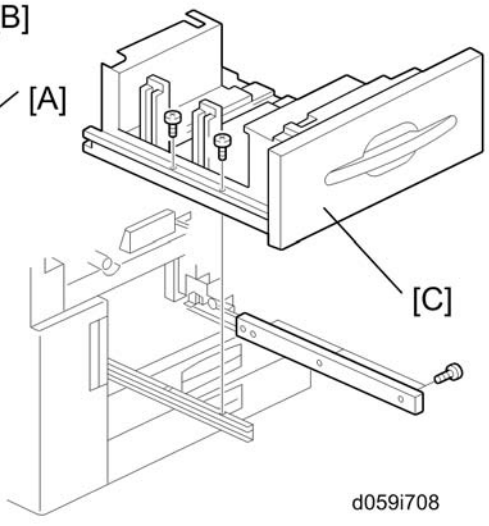
⚠CAUTION

- Switch the machine off and unplug it from the power source before starting the following procedure.

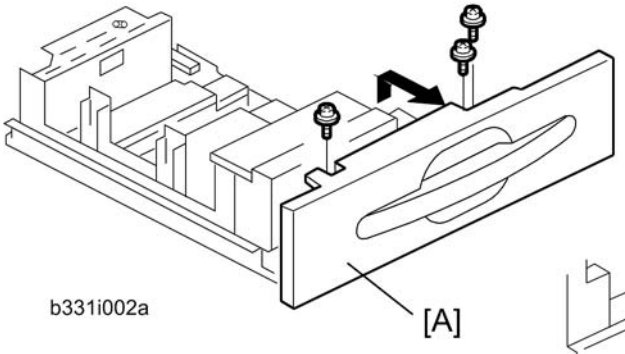


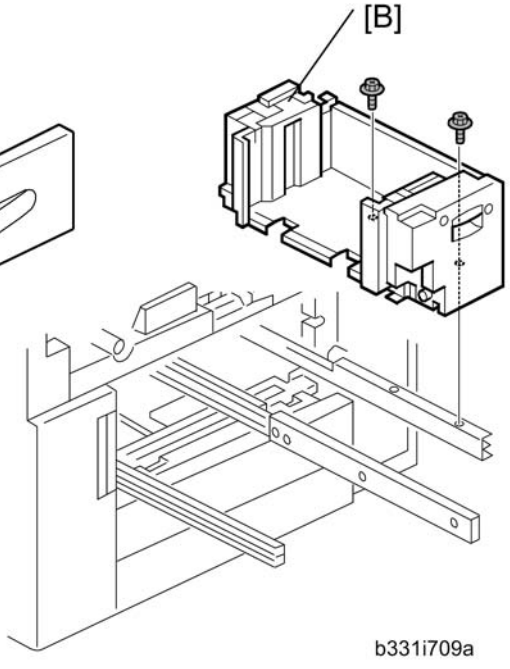
1. Remove the stay [A] (☞ x 2).
2. Remove the retainers [B] [C] and the shipping material [D] (☞ x 1).
3. Check the position of the front and back side fences and make sure that they are set for DLT or A3.
4. If you need to adjust the positions of the side fences for the paper to be loaded in the tray, remove the front panel [E] (☞ x 4).
5. Remove the fences and adjust their positions for the paper to be loaded: front fence [F] (☞ x 1), back fence [G] (☞ x 1), and end fence [H] (☞ x 1)





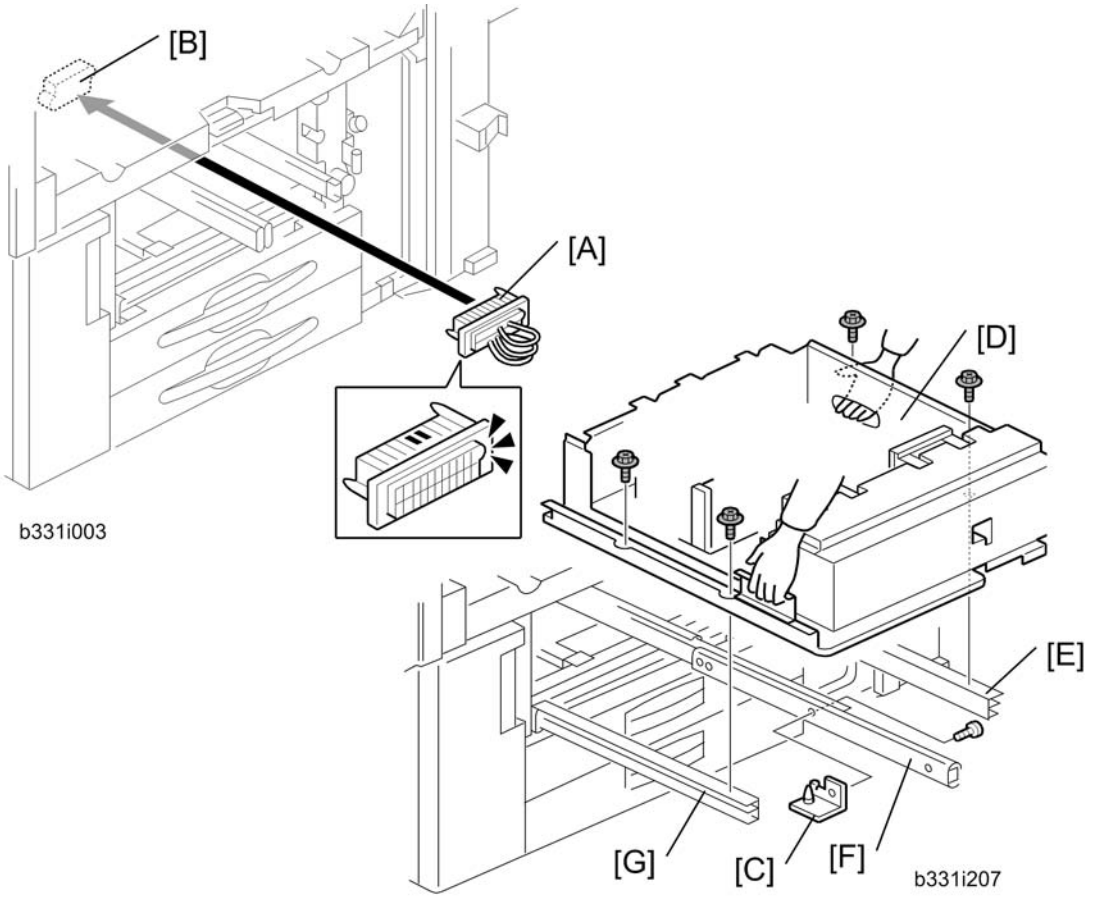
6. Open the front doors.
7. Pull out the tandem feed tray [A] completely.
8. Push the right tandem tray [B] into the machine.
9. Remove the left tandem tray [C] (x 2 left, x 3 right).





10. From the left tandem tray, remove the front cover [A] (x 3).

11. Pull out the right tandem tray [B] then remove it (x 2).

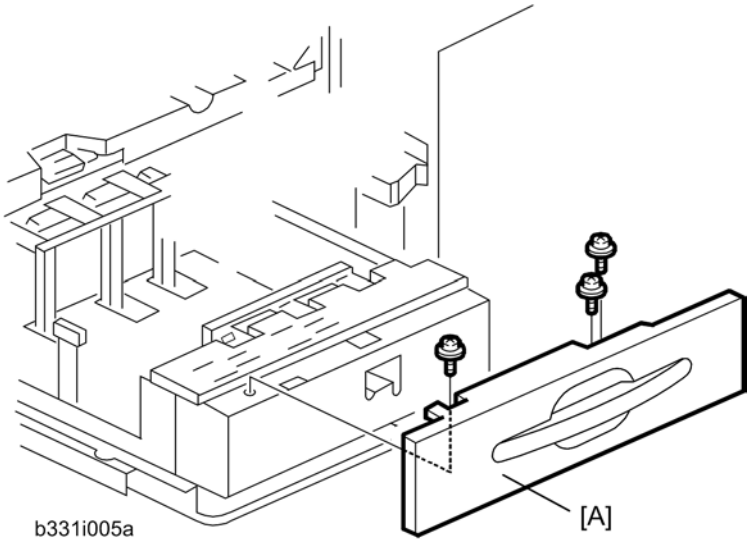


12. Insert the short connector [A] into the socket inside the machine [B].

Note

- Hold the connector as shown in the illustration.

13. Using the screw removed in Step 9, attach the pin bracket [C] to the center rail.
14. Using the screws removed in Steps 11 for the right rail and screws provided in the accessories for the left rail, install the tray [D] on the right rail [E], center rail [F], left rail [G].
    - Make sure that the pin on the bracket [C] is put through the hole in the bottom plate of the tray [D].



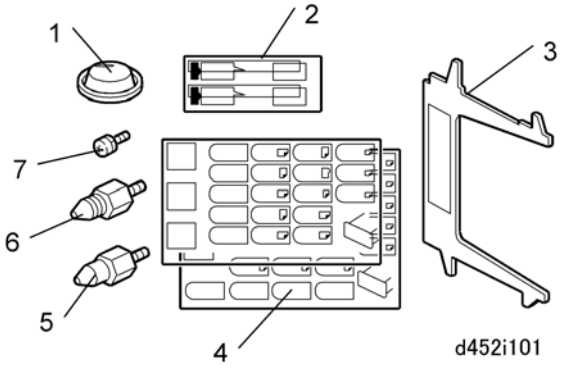
15. Re-install the front cover [A] (x 3).
16. Use SP5019-2 to select the paper size for Tray 1 (A3 or DLT).
17. After selecting the paper size, switch the machine off and on to change the indicator on the operation panel.

LCIT RT5030 (D452-17)

Accessories

2

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



No.	Description	Q'ty
1.	Leveling Shoes	3
2.	Decal – Paper Set	3
3.	Tab Paper End Fence	1
4.	Decal – Paper Size	2
5.	Lower Joint Pins	2
6.	Upper Joint Pins	2
7.	Philips Screw - M4 x 8	1
	Installation Procedure – English (not shown)	1

Note

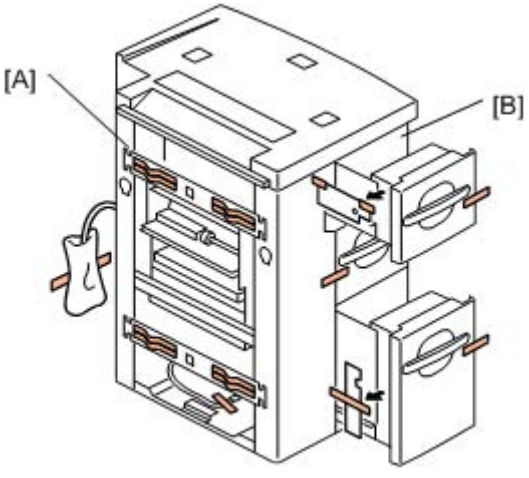
- The tab paper end fence (3) is located in the LCIT unit, mounted on hooks behind the front door.

Installation

⚠CAUTION

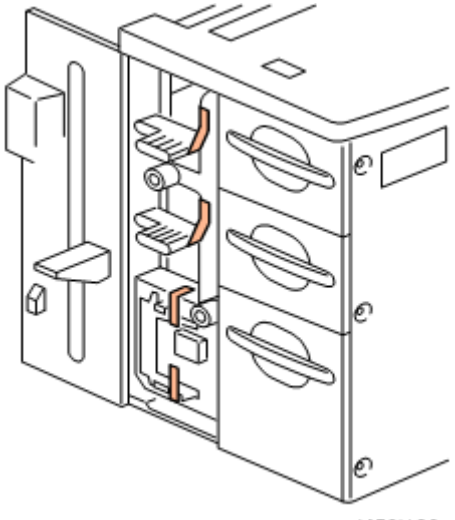
- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

Tapes, Retainers



d452i103

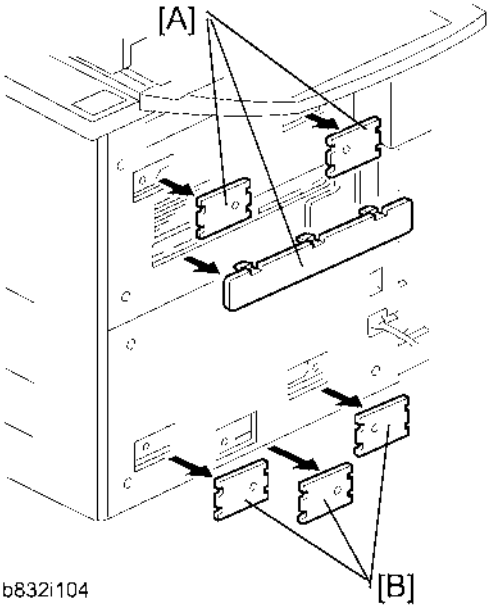
1. From the left side [A], remove the visible tape and other items.
2. At the front [B], open the trays and remove the tapes and retainers.



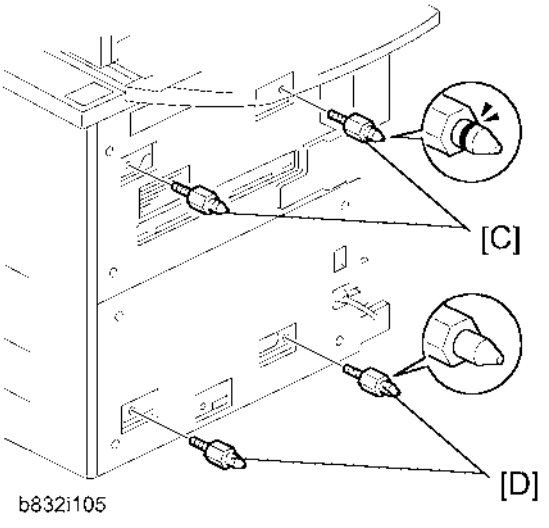
d452i102

3. Open the front door and remove the tapes attached to the levers.

Docking

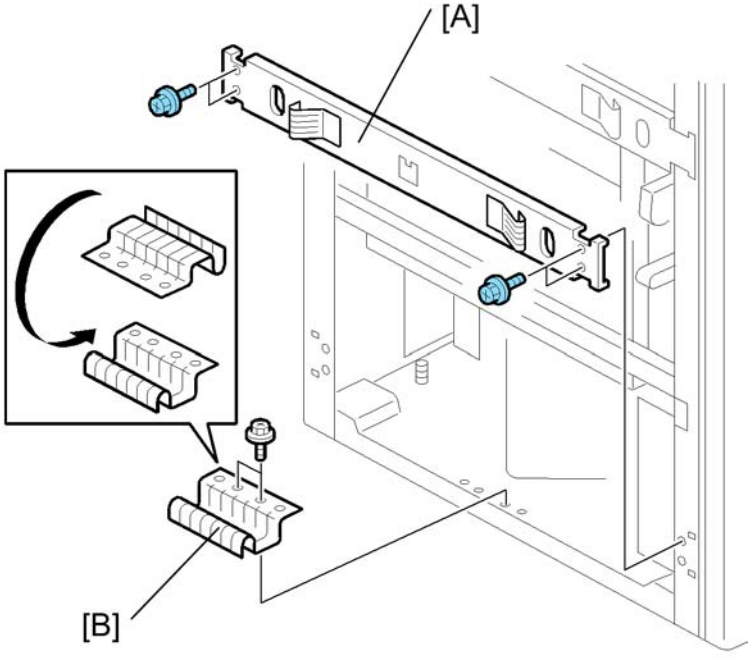


b832i104



b832i105

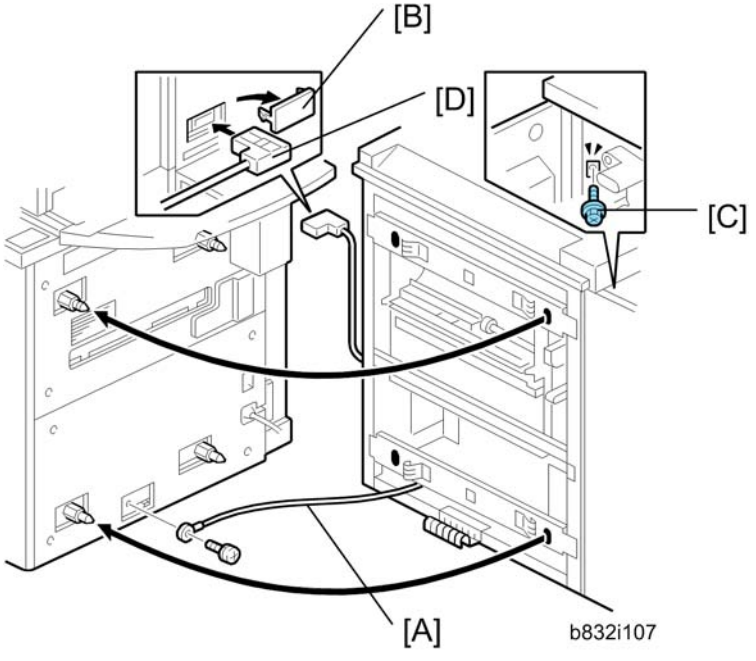
1. Remove the covers [A] from the right upper side.
2. Remove the covers [B] from the right lower side.
3. Install the pins with the grooved rings [C] on the right upper cover.
4. Install the other pins [D] on the right lower cover.



5. Remove the lower stay [A] (x 4).
6. Remove the two screws that secure the ground plate [B].
7. Turn over the ground plate and use the screws to fasten it to the same holes as shown (x 2).

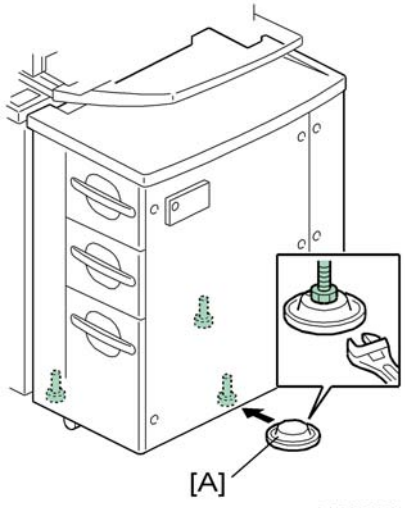
Important

- **If you are going to install the Multi Bypass Tray B833, it must be installed before the LCIT is docked to the main machine.**



8. Move the LCIT to the right side of the main machine.
9. Fasten the ground wire [A] (x 1).
10. Remove cover [B].
11. Open the LCIT front door and remove screw [C] (x 1).
12. Align the LCIT on the joint pins, and dock the LCIT with the right side of the main machine.
13. Fasten screw [C] to lock the LCIT to the side of the main machine.
14. Attach connector [D].

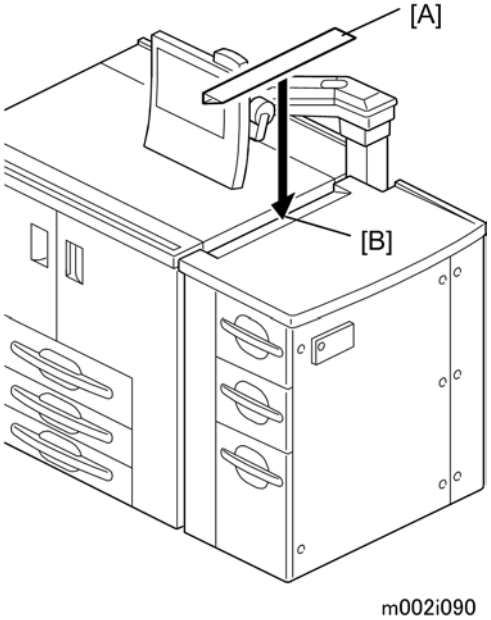
Height Adjustment



d452i108

1. Set the leveling shoes [A]. (☛ p.207)
2. Adjust the height of the unit and make sure that it is level.

Gap Cover



m002i090

1. Place the LCT cover [A] over the gap between the LCT and the main machine.

Note

- The LCT gap cover [A] is provided as an accessory with the main machine.

Image Position Sensor, Paper Registration Adjustment

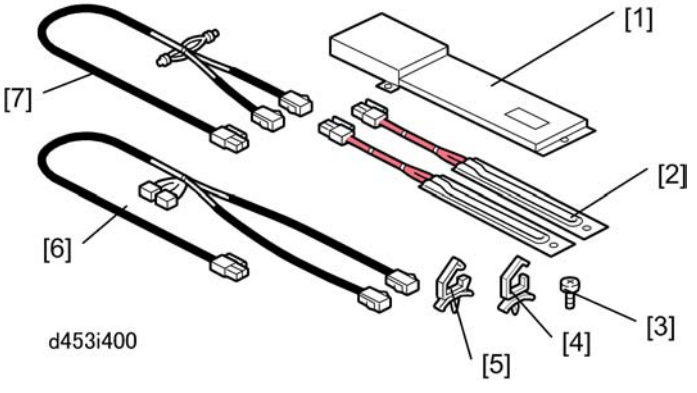
2

1. Calibrate the image position sensor. (p.207)
2. Check side-to-side registration and adjust if necessary.

LCIT (D452) Tray Heaters

Accessories

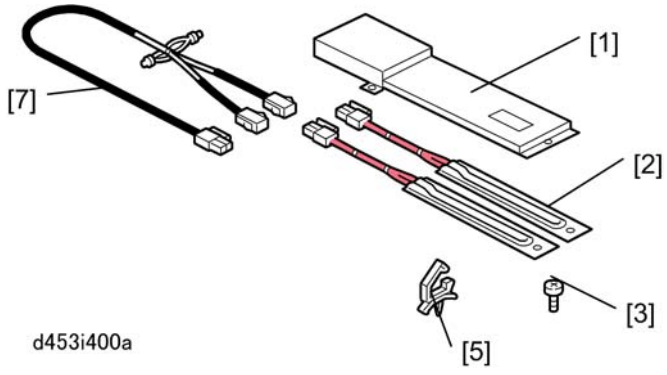
Check the accessories against the list below.



No.	Description	Qty
1.	Cover Plate	1
2.	Heaters (230V 18W)	2
3.	Screws (M4x6)	7
4.	Harness Clamps (small)	2
5.	Harness Clamps (large)	2
6.	Relay Harness (long)	1
7.	Relay Harness (short)	1

Important

- The accessory kit contains the accessories for both the LCIT D452 and LCIT D453. Only the items shown below are required for the LCIT D452.

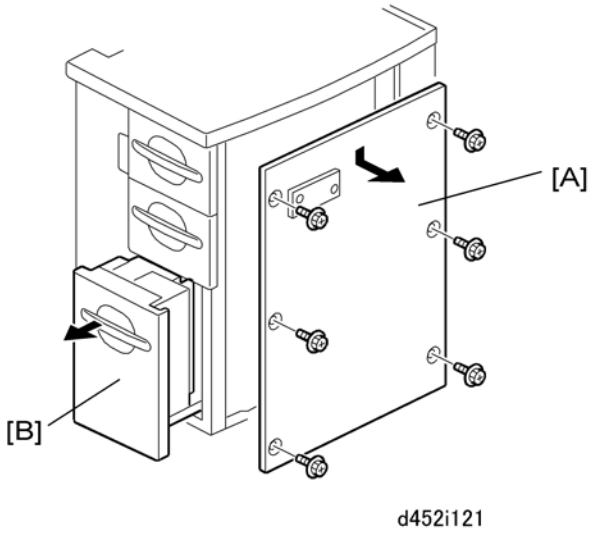


Installation

⚠CAUTION

- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

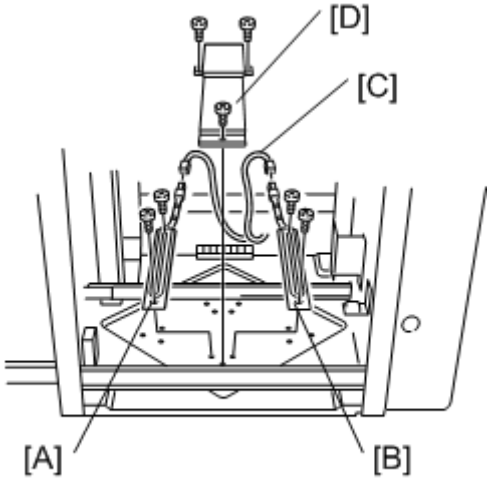
1. If the LCIT is already installed, disconnect the LCIT:
   - Lock bar (x1)
   - Interface cable
   - Ground wire (x1)



2. Remove the right cover [A] (x6).
3. Open the bottom tray [B], remove all the paper, then pull out the tray completely.

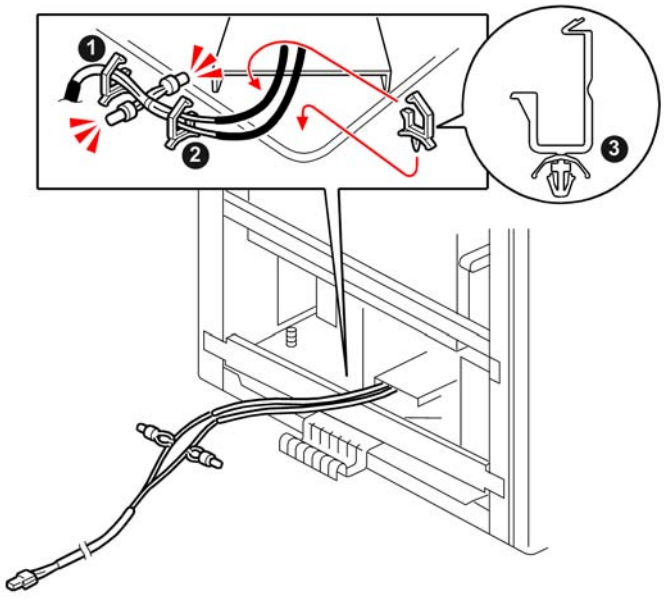
Important

- **Do not remove either tray.**



d059i122

4. Attach the front heater [A] (x2).
5. Attach the rear heater [B] (x2).
6. Pass the relay harness [C] through the right side of the LCIT and connect it to the heaters (x2).
7. Attach the cover plate [D] (x3).
8. Load paper in the bottom paper tray.
9. Push the bottom paper tray into the LCIT.
10. Reattach the right cover (x6).



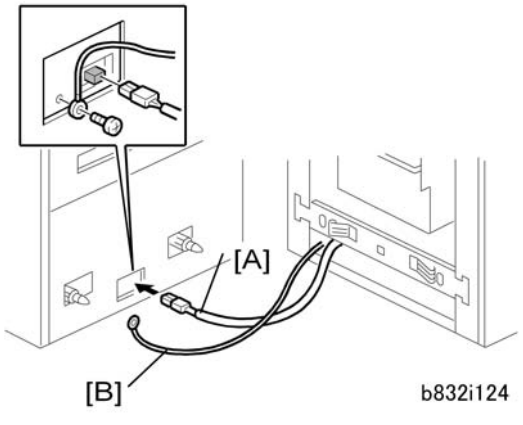
d453i401

11. Attach the three harness clamps.

Note

- Harness clamps (1) and (2) are already attached to the unit. Harness clamp (3) is provided with the accessory kit.

12. Set the harnesses in the clamps, then close them (x3).



b832i124

13. Attach the LCIT relay harness [A] to the main machine.
14. Reconnect the ground wire [B] to the main machine (x1).
15. Dock the LCIT to the main machine.
    - Lock bar (x1)

- Interface cable

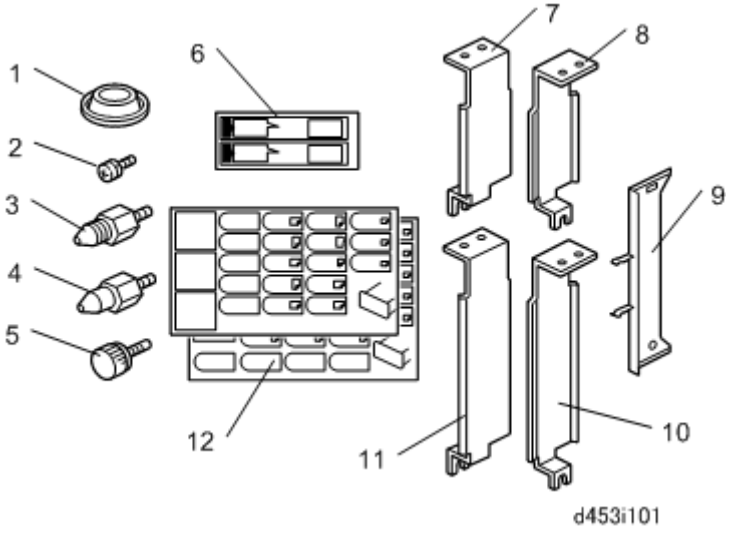
Note

- Confirm that the relay harness and the ground wire are not pinched between the main machine and the LCIT.

LCIT RT5040 (D453-17)

Accessories

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



No.	Description	Q'ty
1.	Leveling Shoes	4
2.	Philips Screw - M4 x 8	1
3.	Upper Joint Pins	2
4.	Lower Joint Pins	2
5.	Knob Screws	4
6.	Decal – Paper Set	3
7.	Postcard fence – tray 4 or 6 (with the main machine)	1
8.	Postcard fence – tray 4 or 6 (with the main machine)	1
9.	Tab Paper End Fence	1
10.	Postcard fence – tray 5 (with the main machine)	1
11.	Postcard fence – tray 5 (with the main machine)	1

No.	Description	Q'ty
12.	Decals – Paper Size	2
	Installation Procedure – English (not shown)	1

2

Note

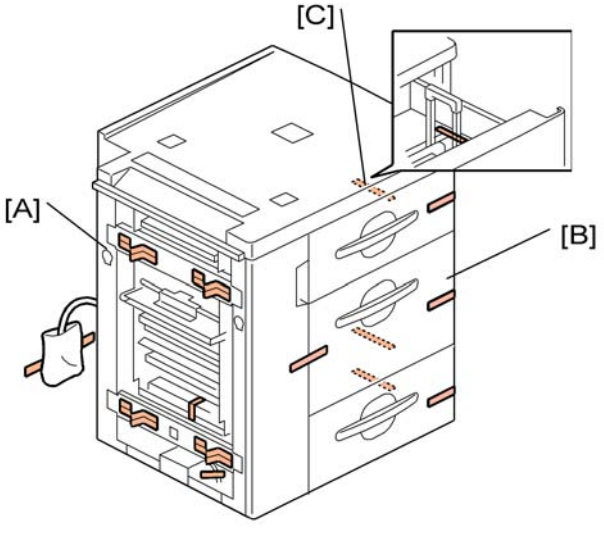
- The tab paper end fence (9) is located in the LCIT unit, mounted on hooks behind the front door.

Installation

⚠CAUTION

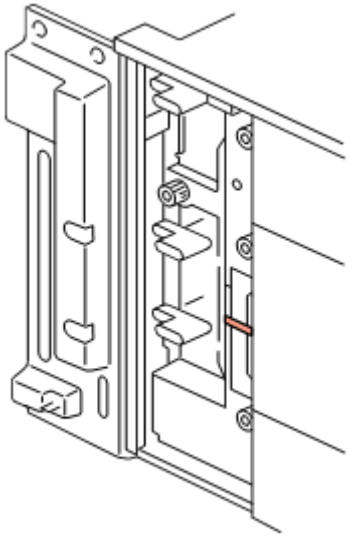
- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

Tapes, Retainers



d453i102

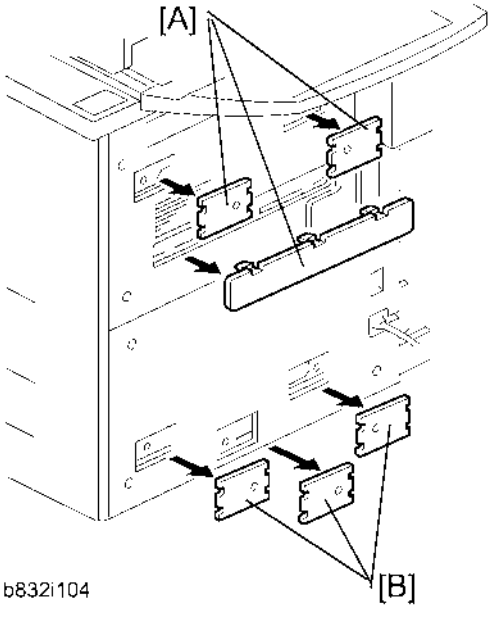
1. On the left side [A], remove all the visible and packing materials.
2. At the front [B], remove all visible tapes.
3. Open the top tray [C] and remove the tape inside.



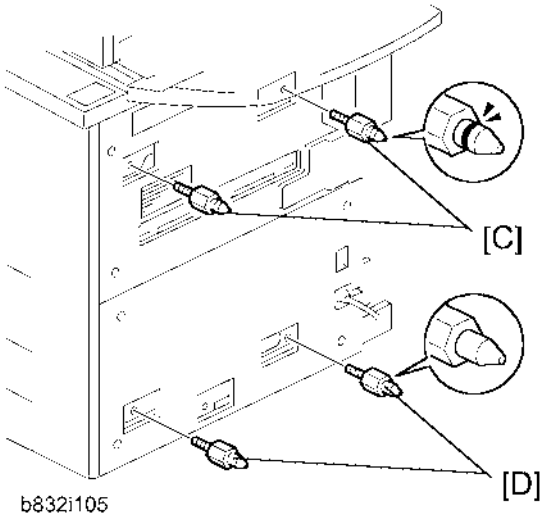
d453i103

4. Open the front door and remove the tape.

Docking

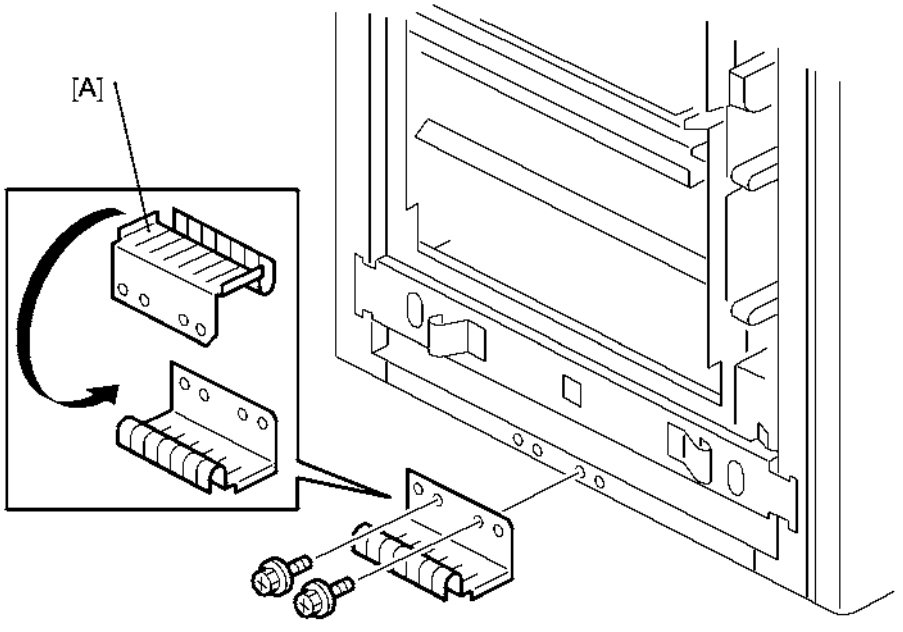


b832i104



b832i105

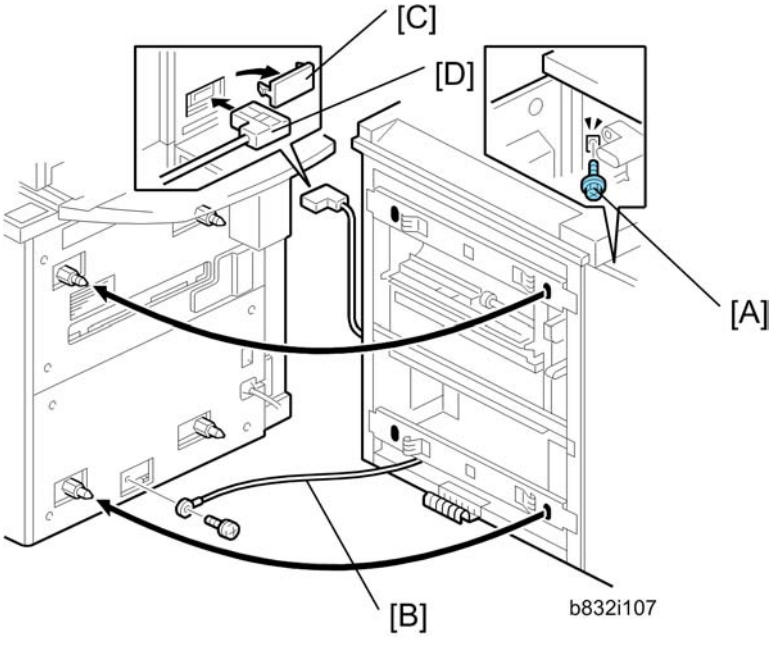
1. Remove the covers [A] from the right upper side.
2. Remove the covers [B] from the right lower side.
3. Install the pins with the grooved rings [C] on the right upper cover.
4. Install the other pins [D] on the right lower cover.



5. Remove the two screws that secure the ground plate [A].
6. Turn over the ground plate and use the screws to fasten it to the same holes as shown (x 2).

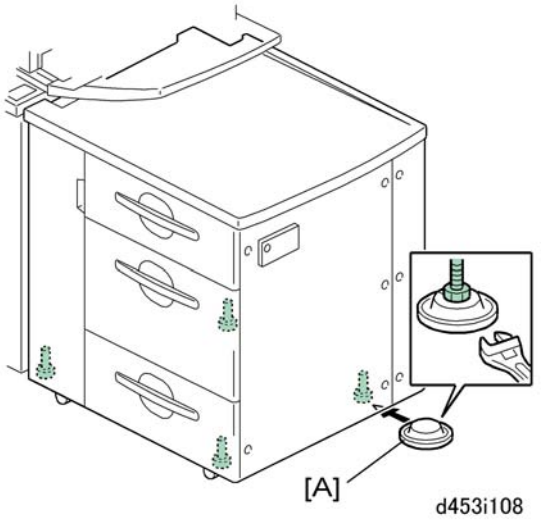
Important

- **If you are going to install the Multi Bypass Tray B833, it must be installed before the LCIT is docked to the main machine.**



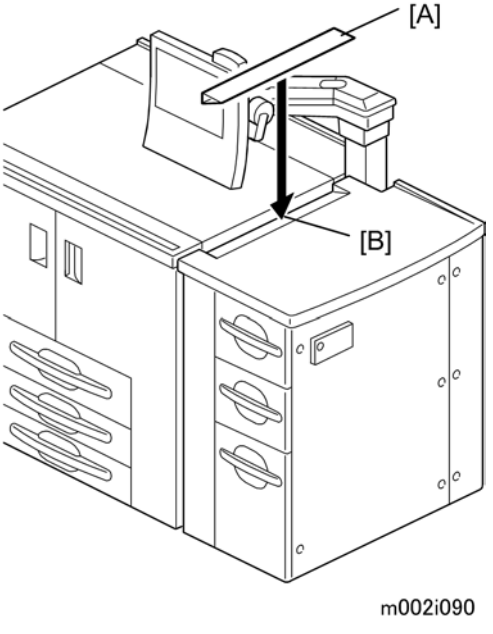
7. Move the LCIT to the right side of the main machine.
8. Open the LCIT front cover and remove screw [A] (x 1).
9. Fasten the ground wire [B] (x 1).
10. Remove cover [C] from the back side of the main machine.
11. Attach connector [D].
12. Align the LCIT on the joint pins, and dock the LCIT with the right side of the main machine.
13. Fasten screw [A] to lock the LCIT to the side of the main machine.

Height Adjustment



1. Set the leveling shoes [A] (p.207).
2. Adjust the height of the unit and make sure that it is level.

Gap Cover



1. Place the LCIT cover [A] over the gap between the LCIT and the main machine.

Note

- The LCIT gap cover [A] is provided as an accessory with the main machine.

Image Position Sensor, Paper Registration Adjustment

1. Calibrate the image position sensor (p.207).
2. Check side-to-side registration and adjust if necessary.

Coated Paper and NCR

Coated Paper

If operators intend to use coated paper for the first time, replace the parts listed below at installation. Replace the following three parts at the feed station in the A3/DLT LCIT where coated paper is being fed.

Name	Part Number
Pick-up roller	AF030071
Feed roller	AF031041A
Separation roller	AF032041A

Important

- **Please remember that the durability and service lives of these rollers for coated paper is lower than the replaced rollers.**

NCR

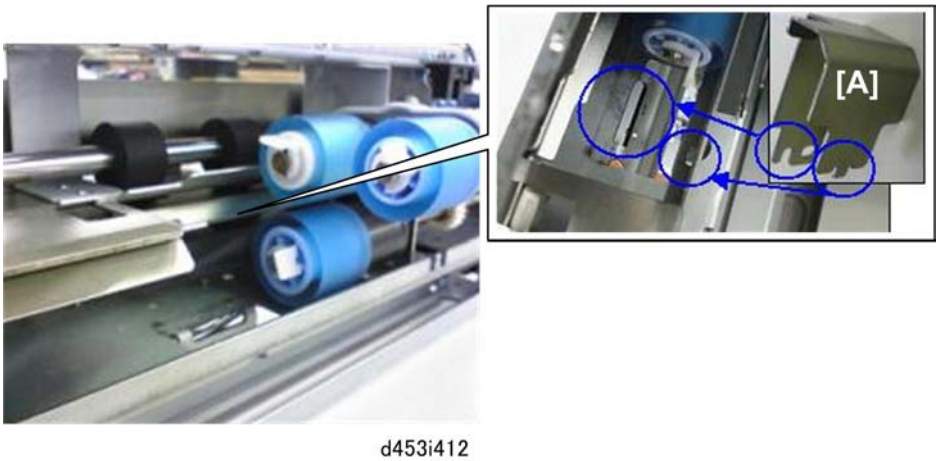
If operators intend to use NCR paper for the first time, install the auxiliary guide plate.

d453i411

Name	Part Number
Guide Plate: Reverse Auxiliary	D4532552

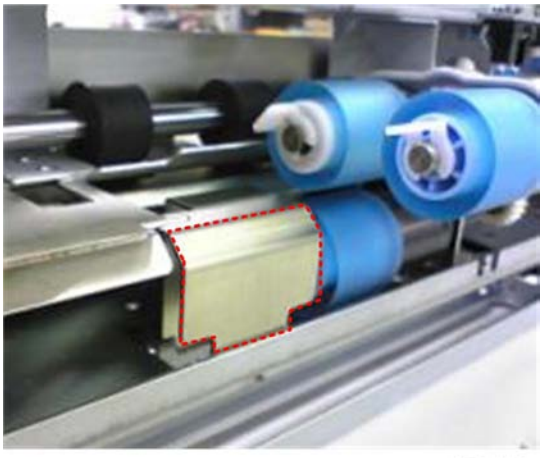
The auxiliary plate ensures smooth feeding of NCR.

1. The plate is installed near the feed rollers.
2. Consult the customer and determine which feed tray will be used to feed NCR.
3. Do the procedure for feed roller replacement on the tray where the plate will be installed (do not remove the rollers). Please refer to the LCIT replacement instructions, or TCRU guide for details.



d453i412

4. Install the plate [A] as shown above.



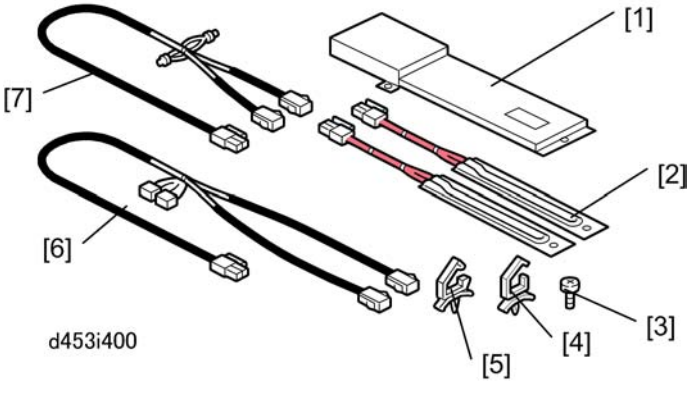
d453i413

5. The illustration above shows the plate installed correctly.

LCIT (D453) Tray Heaters

Accessories

Check the accessories against the list below.



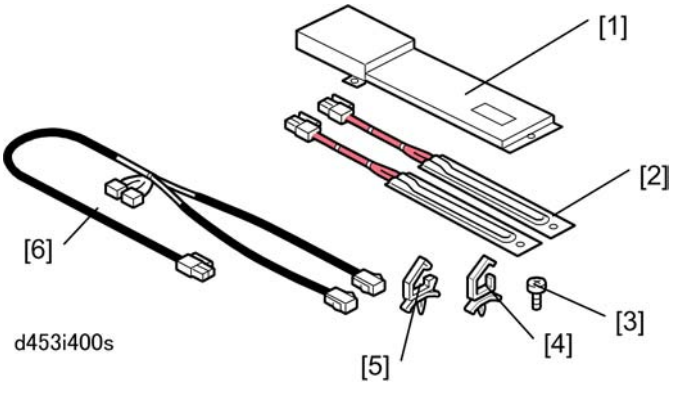
No.	Description	Qty
1.	Cover Plate	1
2.	Heaters (230V 18W)	2
3.	Screws (M4x6)	7
4.	Harness Clamps (small)	2

No.	Description	Qty
5.	Harness Clamps (large)	2
6.	Relay Harness (long)	1
7.	Relay Harness (short)	1

2

Important

- **The accessory kit contains the accessories for both the LCIT D452 and LCIT D453. Only the items shown below are required for the LCIT D453.**

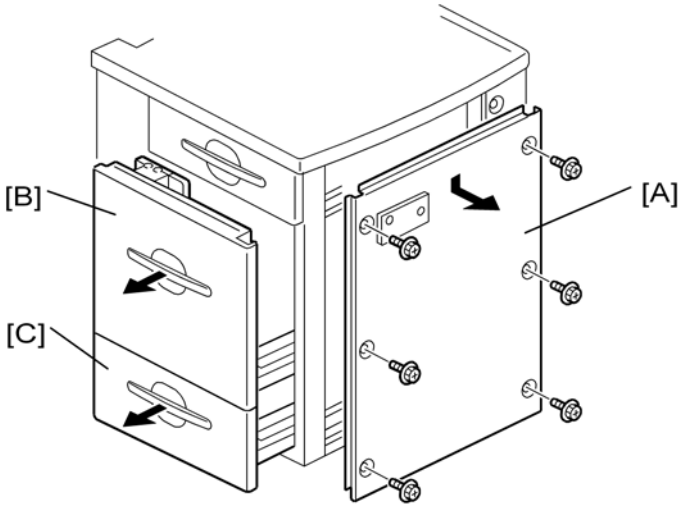


Installation

⚠CAUTION

- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

1. If the LCIT is already installed, disconnect it:
   - Lock bar (x1)
   - Interface cable
   - Ground wire (x1)

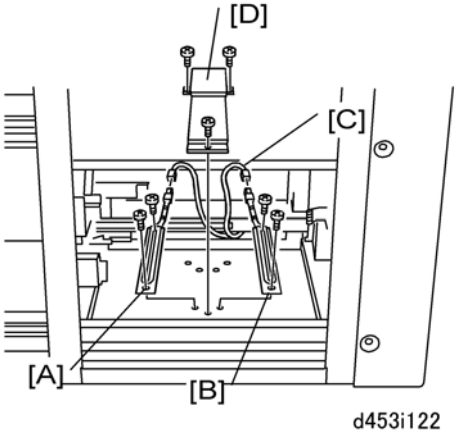


d453i121

2. Remove the right cover [A] (x6).
3. Open the top tray [B] and bottom tray [C], remove all the paper, then pull out the trays until they stop.

Important

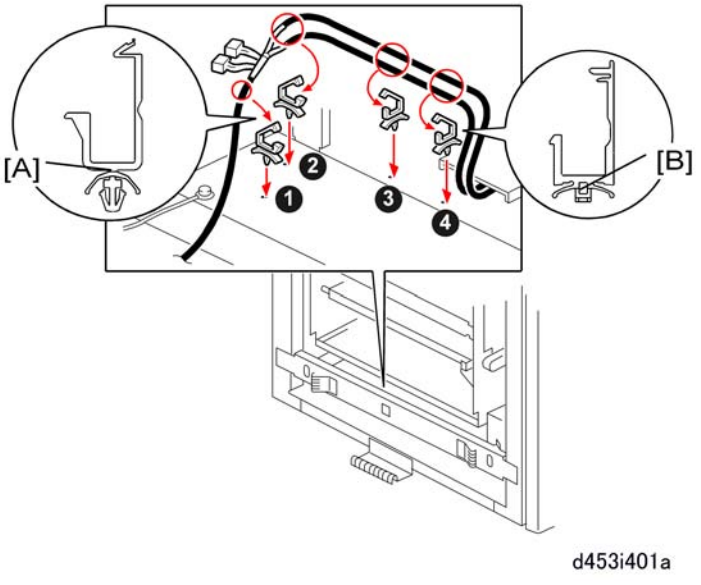
- **Do not remove either tray.**



d453i122

4. Attach the front heater [A] (x2).
5. Attach the rear heater [B] (x2).
6. Pass the relay harness [C] through the right side of the LCIT and connect it to the heaters (x2).
7. Attach the cover plate [D] (x3).
8. Load paper in the paper trays.
9. Push the trays into the LCIT.

10. Reattach the right cover (x6).

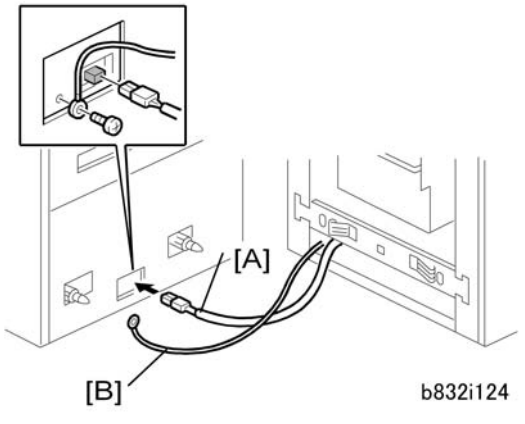


11. Attach the four harness clamps to the LCIT.

Note

- Be sure to use the correct type of clamps. On the left use type [A], and on the right use type [B].

12. Set the harnesses in the clamps, then close them (x4).



13. Attach the LCIT relay harness [A] to the main machine.
14. Reconnect the ground wire [B] to the main machine (x1).
15. Dock the LCIT to the main machine.
    - Lock bar (x1)
    - Interface cable

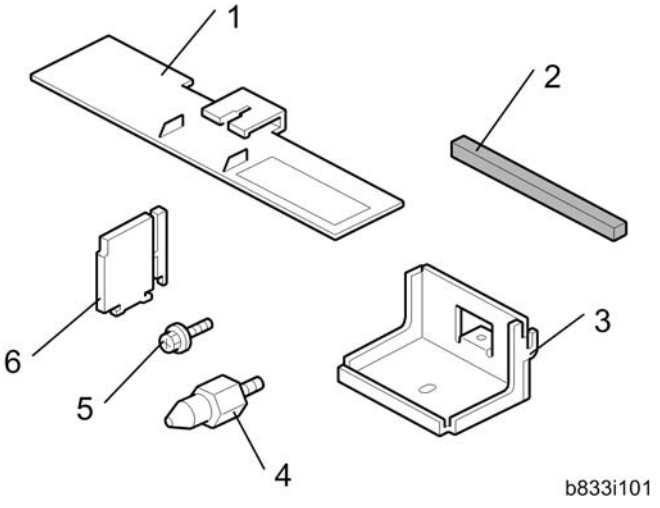
Note

- Confirm that the relay harness and the ground wire are not pinched between the main machine and the LCIT.

Multi Bypass Tray BY5000 (B833-17)

Accessories

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



No.	Description	Q'ty
1.	Tab Sheet Fence	1
2.	Sponge Strip	1
3.	Bracket	1
4.	Joint Pins	2
5.	Tapping Screws	4
6.	End Fence	1

Important

- **The Multi Bypass Unit must be installed on top of the LCIT D453 or D452 before the LCIT is docked to the main machine.**
- **If the LCIT is already installed, it must be disconnected from the main machine before installation of the Multi Bypass Unit B833.**

Installation

The Multi Bypass Tray B833 can be installed on either the LCIT RT5000 D452 or the LCIT RT5010 D453.

⚠CAUTION

- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

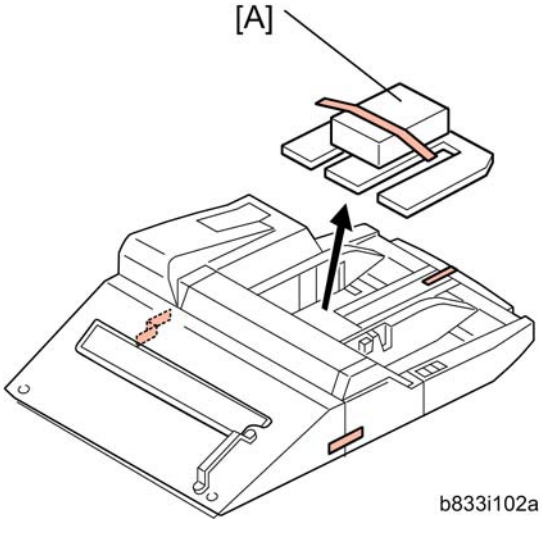
Before Installing the Multi Bypass Tray

If the LCIT is connected to the machine, disconnect it.

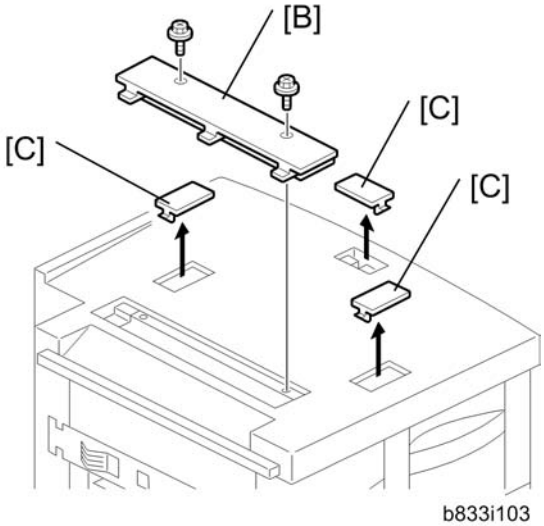
To prevent damage to the connectors and ground wire, before pulling the LCIT away from the main machine:

- Pull the LCIT about 20 cm (8") away from the main machine.
- Disconnect the connectors and the ground wire (🔩 x 1)
- Pull the LCIT completely away from the machine.

LCIT (D452)

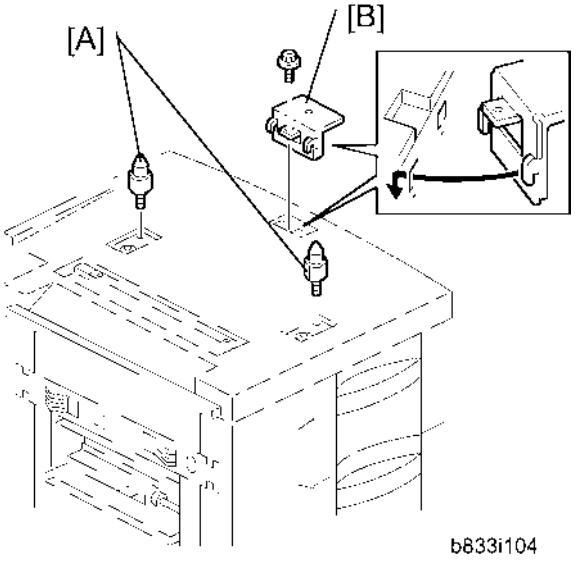


b833i102a

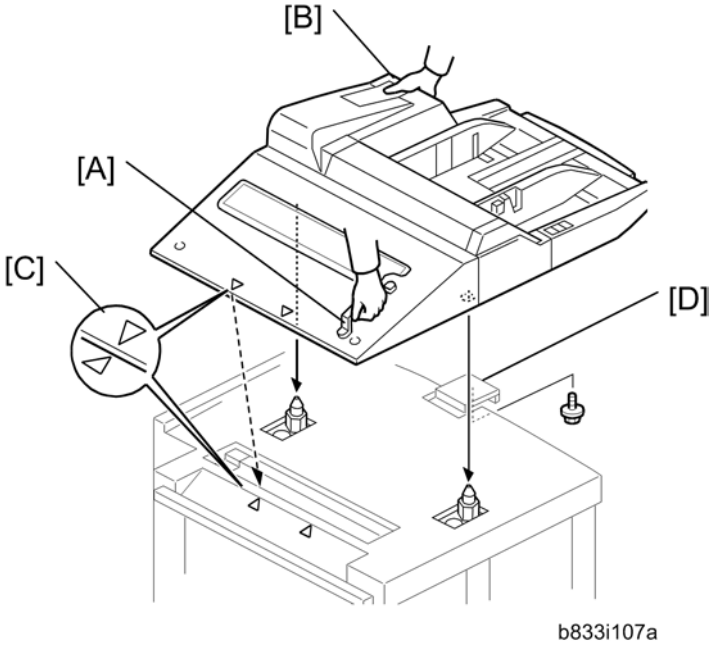


b833i103

1. Remove the accessory packet [A].
2. Remove all other tape and shipping materials.
3. Remove the paper slot cover [B] (🔩 x 2) and discard the screws.
4. Use the edge of a fine tip flathead screwdriver to remove the smaller three covers [C].

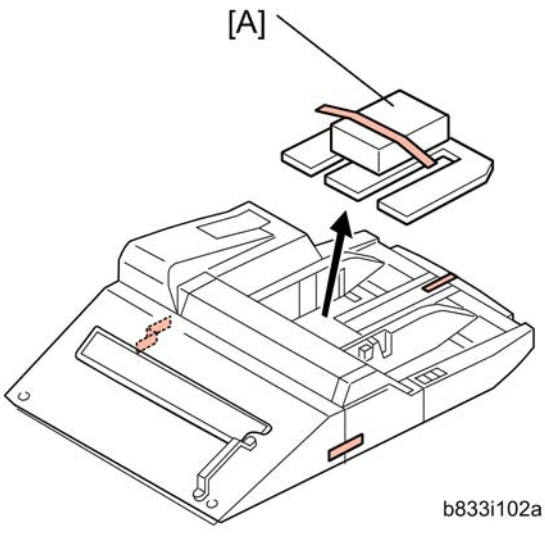


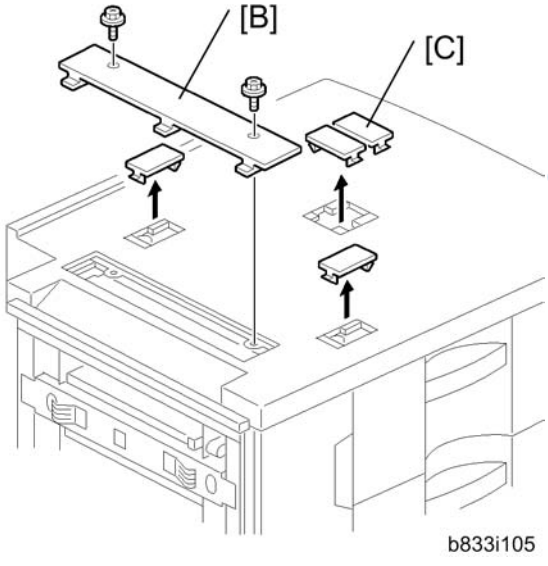
5. Screw in the guide pins [A].
6. Attach the bracket [B] (x 1).



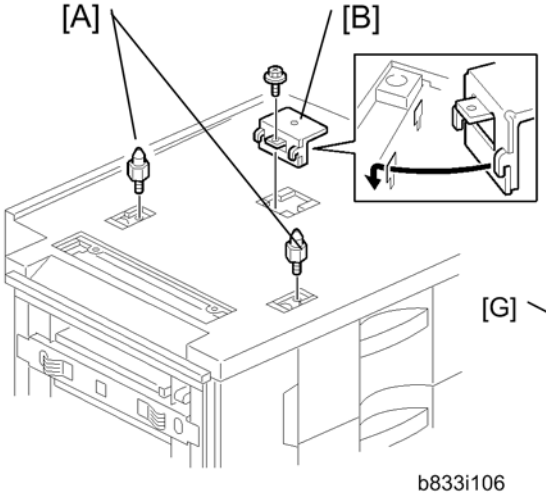
7. Grip the bypass tray unit handle [A] and place your hand under the corner [B] diagonal to the handle, lift the unit and set it on top of the LCIT.
8. Align the embossed arrows on the top left cover [C] of the bypass tray with the arrows on the LCIT top.
9. Fasten the bypass tray to the right bracket [D] (x 1).

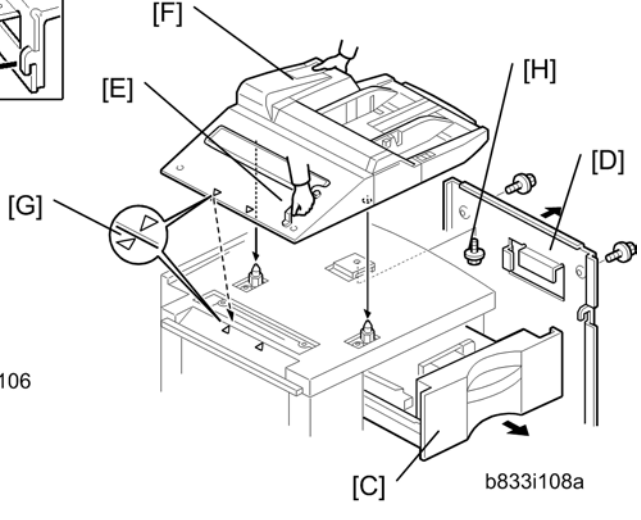
LCIT (D453)





1. Remove the accessory packet [A].
2. Remove all other tape and shipping materials.
3. Remove the paper slot cover [B] (x 2) and discard the screws.
4. Use the edge of a fine tip flathead screwdriver to remove the smaller four covers [C].

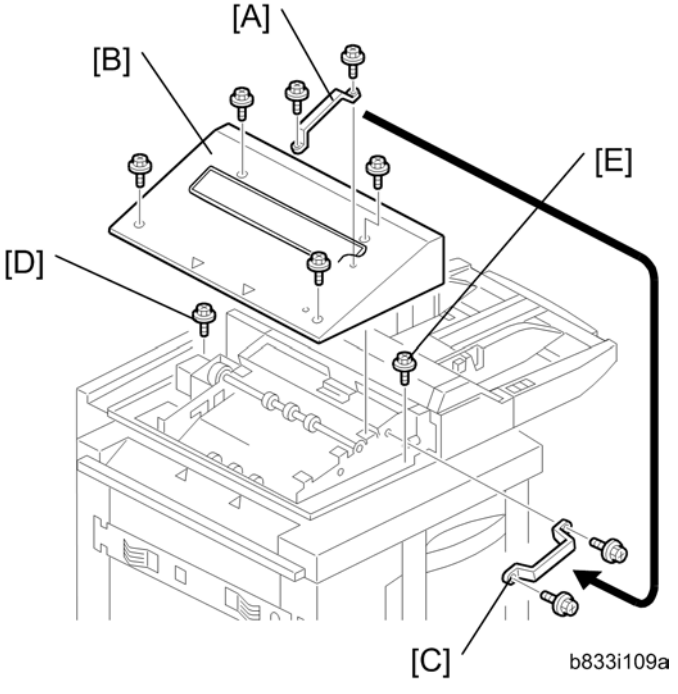




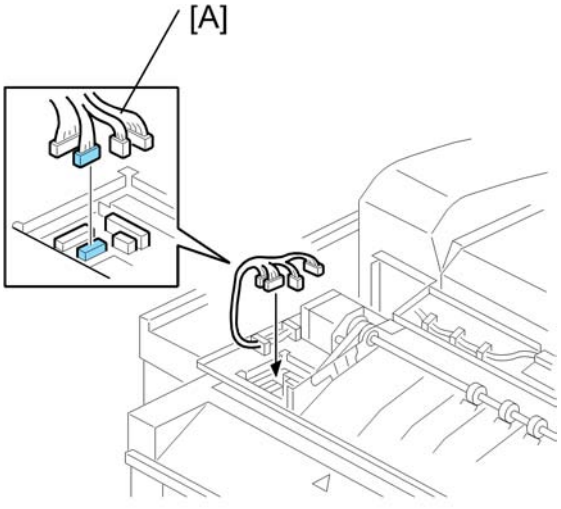
5. Screw in the guide pins [A].
6. Attach the bracket [B] (x 1).

7. Open Tray 1 [C].
8. Remove the right cover [D] (x 6).
9. Grip the bypass tray unit handle [E]. Then place your hand under the corner [F] diagonal to the handle, then lift the unit and set it on top of the LCIT.
10. Align the embossed arrows on the top left cover [G] of the bypass tray with the arrows on the LCIT top.
11. Under the top of the LCIT, attach the lock screw [H].
12. Close Tray 1, then reattach the right cover.

Both LCIT Units



1. Remove the handle [A] (x 2). **Keep these screws**.
2. Remove the cover [B] (x 4).
3. Use the screws removed above to attach the handle [C] to the front frame.
4. Fasten the bypass tray rear frame [D] to the LCIT (x 1).
5. Fasten the bypass tray front frame [E] to the LCIT (x 1).



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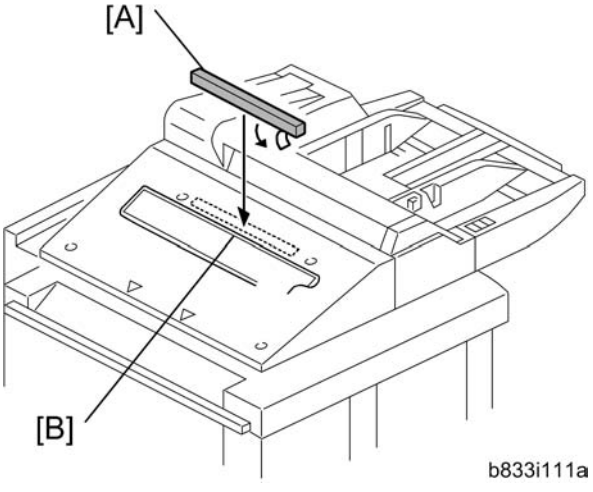
6. Connect the bypass tray harness [A] to the LCIT (x4).
7. Re-attach cover [B] removed at Step 2.



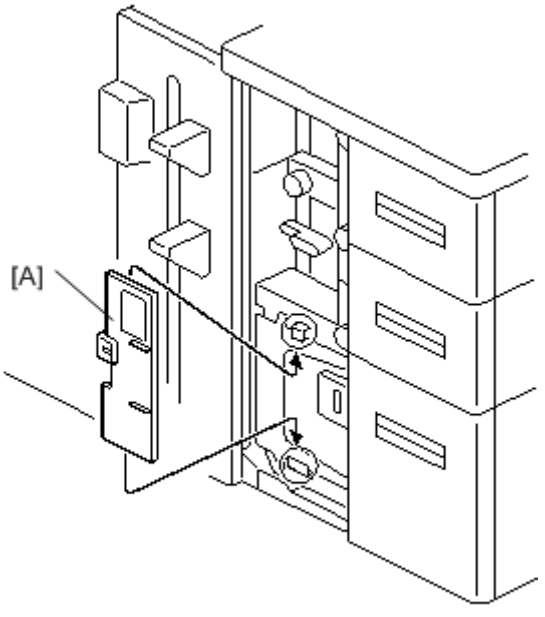
b833i111a

8. Remove the tape from the sponge strip [A] and attach it to the top left cover of the bypass tray.
9. Position the strip in the center above the three roller housings [B].

Note

- The sponge strip prevents paper or other objects from accidentally falling between the output tray and the left cover.

10. Attach the end fence (follow the instructions on the decal attached to the top of the bypass tray).



b512i009

Note

- Open the LCIT front door. Hang the tab sheet fence on the hooks [A] on top of the LCIT tab fence. When feeding tab sheets from the bypass tray, follow the decal instructions on the tab fence to install the fence.

Decurl Unit DU5000 (D457-17)

Important

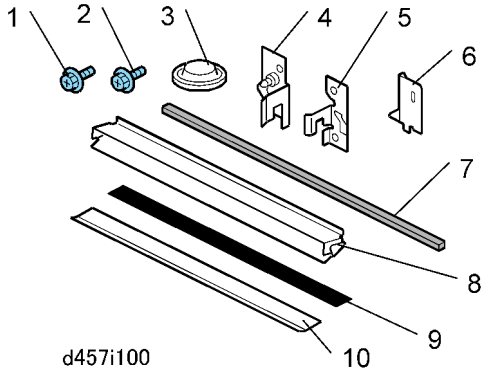
- **The Decurl Unit is provided separately but it is not an option. The Decurl Unit must be installed with the M002/M003/M004 machines.**

⚠CAUTION

- The decurl unit is top heavy and has an extremely narrow base. It can fall over easily. Work carefully to avoid knocking it over.
- Do not set this unit upright until you are ready to install it and dock it to the side of the main machine.
- Never leave this unit standing upright and unattended in the work area during installation.

Accessories

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



No.	Description	Q'ty
1.	Screws M3x6	3
2.	Screws M4x8	5
3.	Leveling Shoes	3
4.	Joint Bracket – L	1
5.	Joint Bracket – R	1
6.	Small Bracket	1
7.	Sponge Strip	1

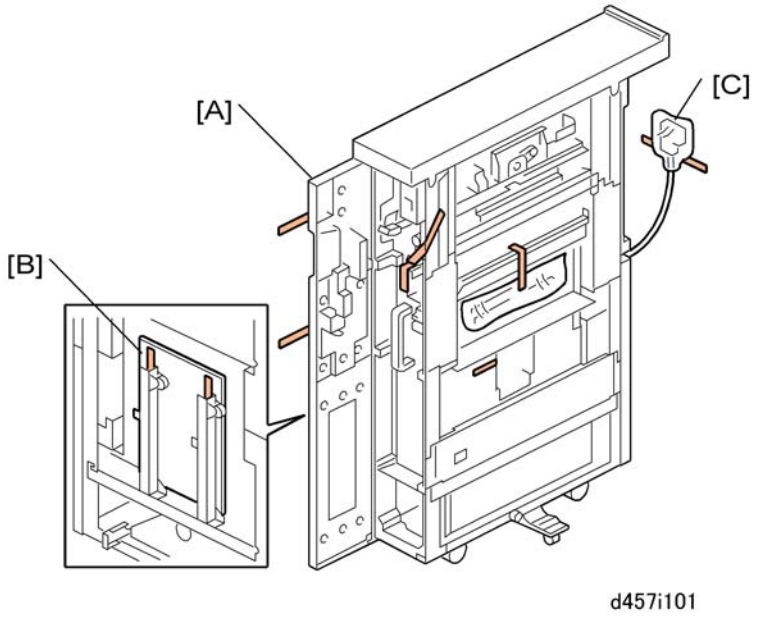
No.	Description	Q'ty
8.	Paper Guide	1
9.	Mylar – Black	1
10.	Mylar – Transparent	1

Installation

⚠CAUTION

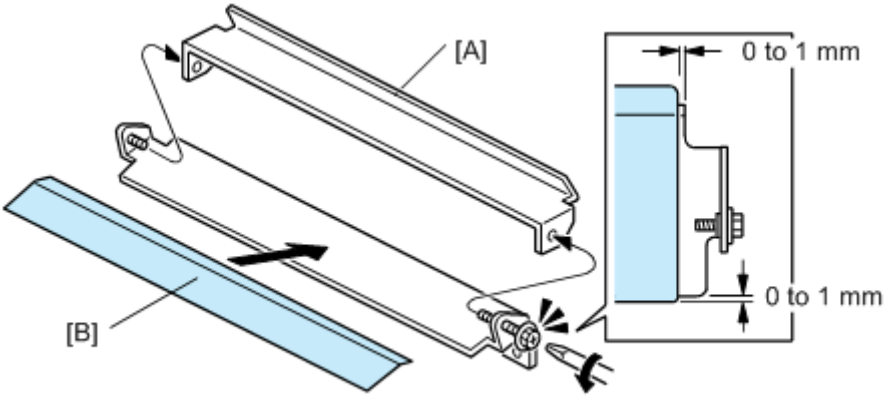
- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

Tapes

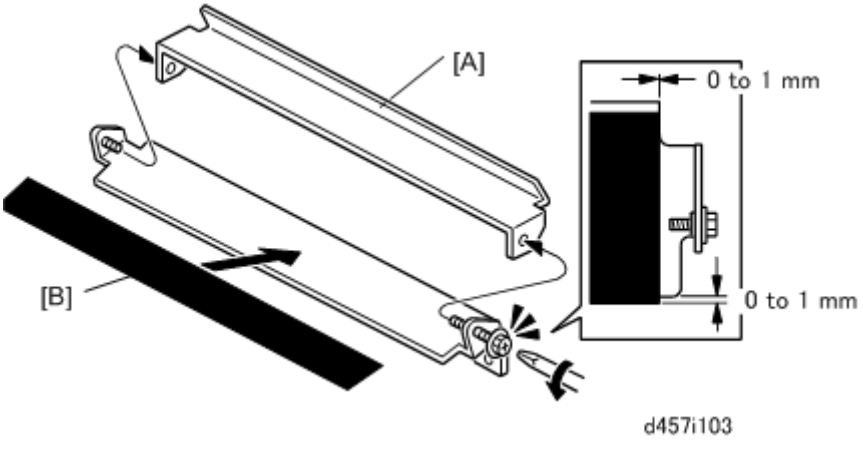


1. Open the front door [A].
2. Remove tape and retainer [B].
3. Remove tape and cover [C].

Mylars

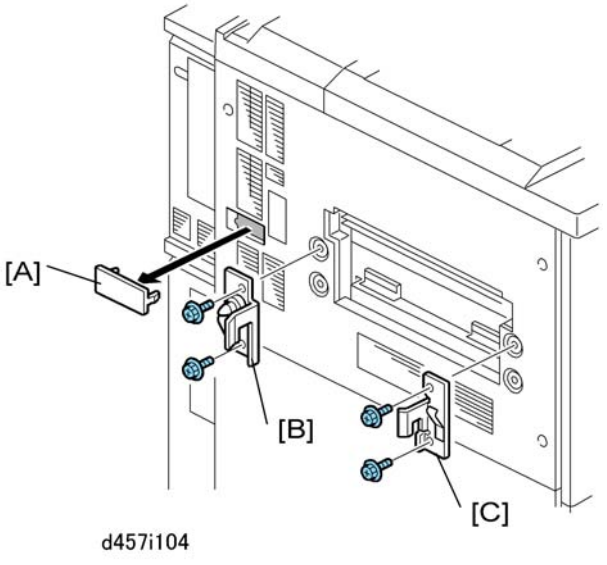


1. Disassemble the paper guide for this peripheral unit [A] (x2).
2. Attach transparent mylar [B].



3. Remove the paper guide of the downstream peripheral device.
4. Disassemble the paper guide [A] (x2).
5. Attach the black mylar [B].

Docking



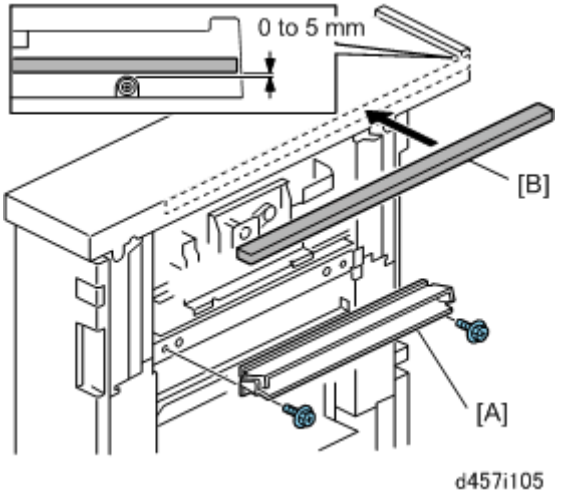
Important

- **This peripheral unit must be connected to the main machine.**

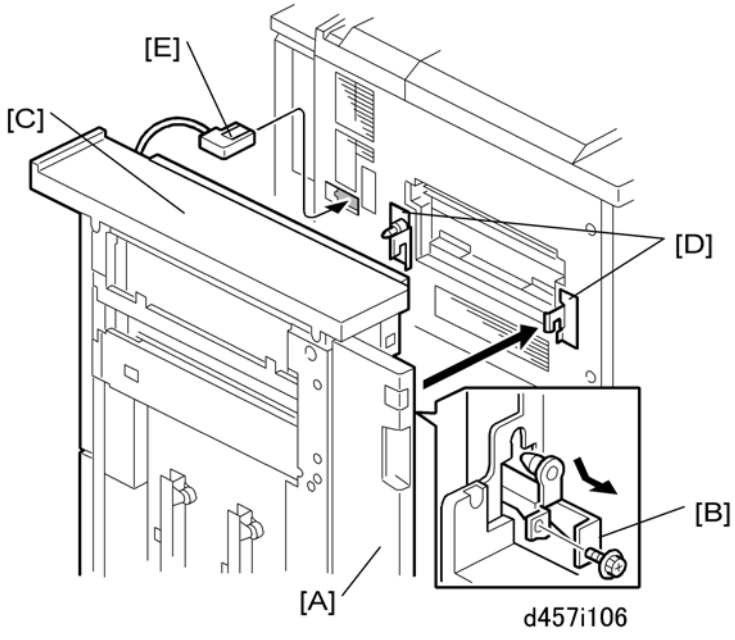
1. Remove the interface connector cover [A] from the main machine.
2. Attach the following to the main machine:

   [B] Left joint bracket, marked "**L**" (x2, M4x8).

   [C] Right joint bracket, marked "**R**" (x2, M4x8)

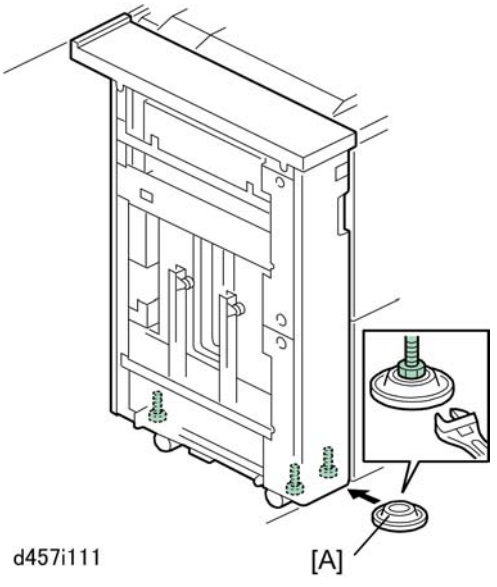


3. Attach the paper guide [A] (x2 M3x6).
4. Peel the tape from the sponge strip [B] and attach it to the top right edge of the unit.



5. Open the front door [A].
6. Remove the screw of the lock bar [B]. **Keep this screw.**
7. Pull out the lock bar until it stops.
8. Push the finisher [C] against the main machine so that the lock bar is below the joint brackets [D].
9. Connect the I/F cable [E] to the main machine.
10. Push in the lock bar and fasten it with the screw removed in **Step 6**.

Height Adjustment

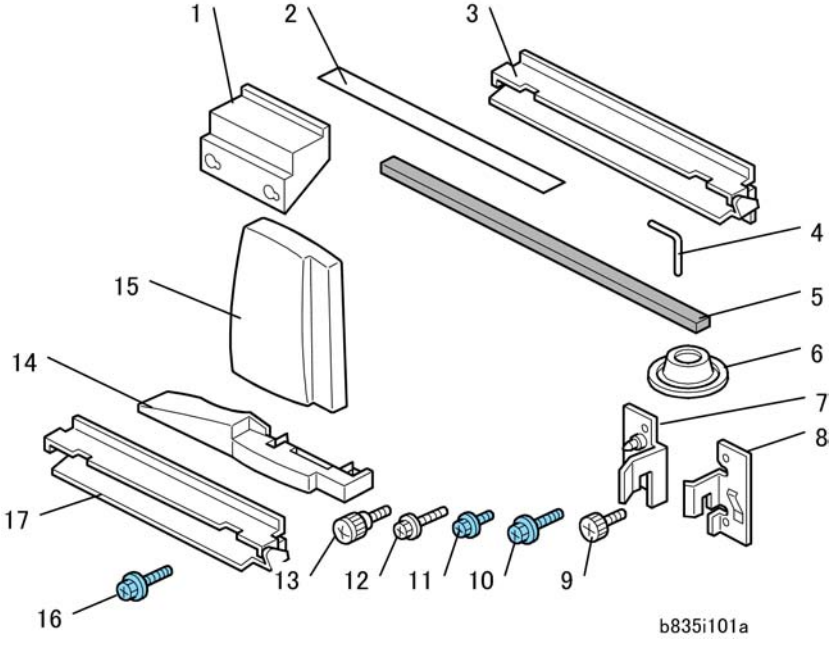


1. Set the leveling shoes [A] (p.207).
2. Adjust the height of the unit and make sure that it is level.

Cover Interposer Tray CI5010 (B835)

Accessories

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



No.	Description	Q'ty
1.	Spacer	1
2.	Black Mylar	1
3.	Relay Guide Plate	1
4.	"L" Hinge Pins (Tray Unit Front Cover)	2
5.	Sponge Strip	1
6.	Leveling Shoes	4
7.	Rear Joint bracket	1
8.	Front Joint bracket	1
9.	Flat Knob Screw	1

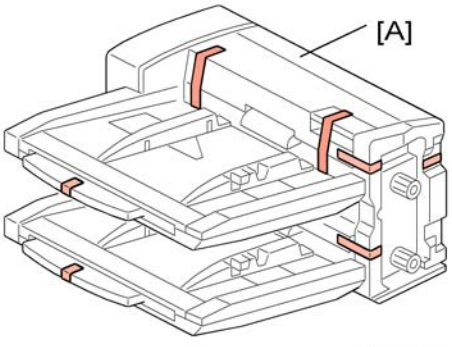
No.	Description	Q'ty
10.	Screw (M4 x 8)	4
11.	Screw (M3 x 6)	2
12.	Screw (M4 x 14)	4
13.	Knob Screw	3
14.	Base Cover (Tray Unit)	1
15.	Rear Cover	1
16.	Relay Guide Plate Not used	1
17.	Screw (M3 x 8) Not used	1

Installation

⚠CAUTION

- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

Tapes



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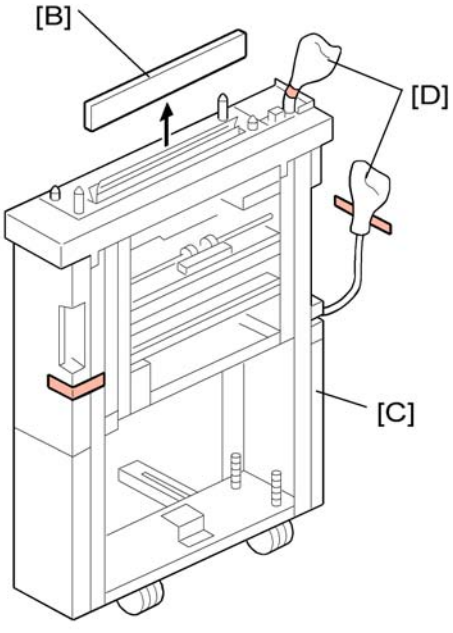
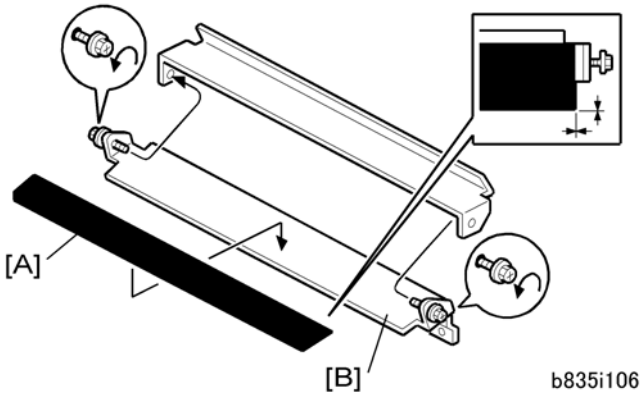


b835i103

1. Remove all the tape and shipping materials from the tray unit [A].
2. Remove cover [B].
3. Remove all tape and shipping materials from the transport unit [C].
4. Remove tape and covers from both connectors [D].

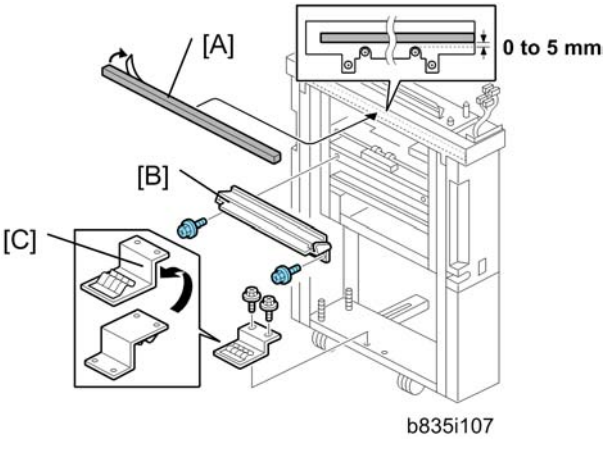
Attaching the Black Mylar to the Downstream Unit



b835i106

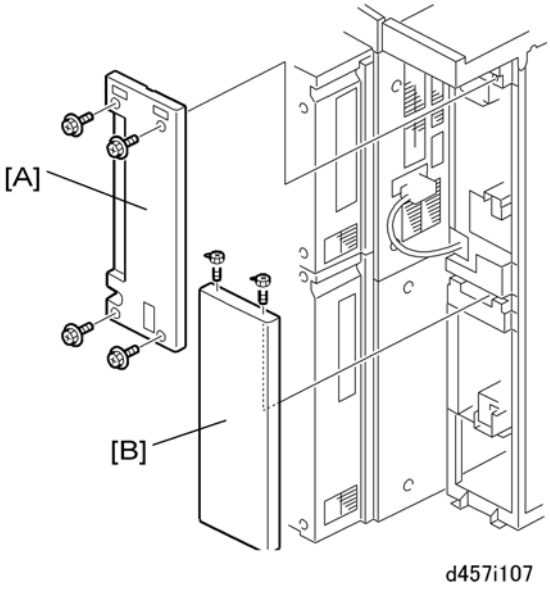
1. Remove the paper guide of the downstream unit and disassemble it (x2).
2. Attach the black mylar [A] to the relay guide plate [B].
3. Re-attach the paper guide to the downstream unit.

Sponge Strip, Paper Guide, Ground Plate

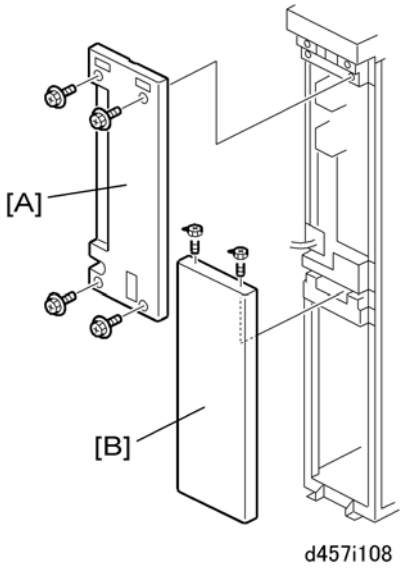


1. Peel the tape from the back of the sponge strip [A] and attach it as shown.
2. Attach the paper guide [B] (x2).
3. Remove the ground plate [C] from the bottom cross-piece (x2).
4. Turn the ground plate over.
5. Reattach the ground plate with the same screws as shown (x2).

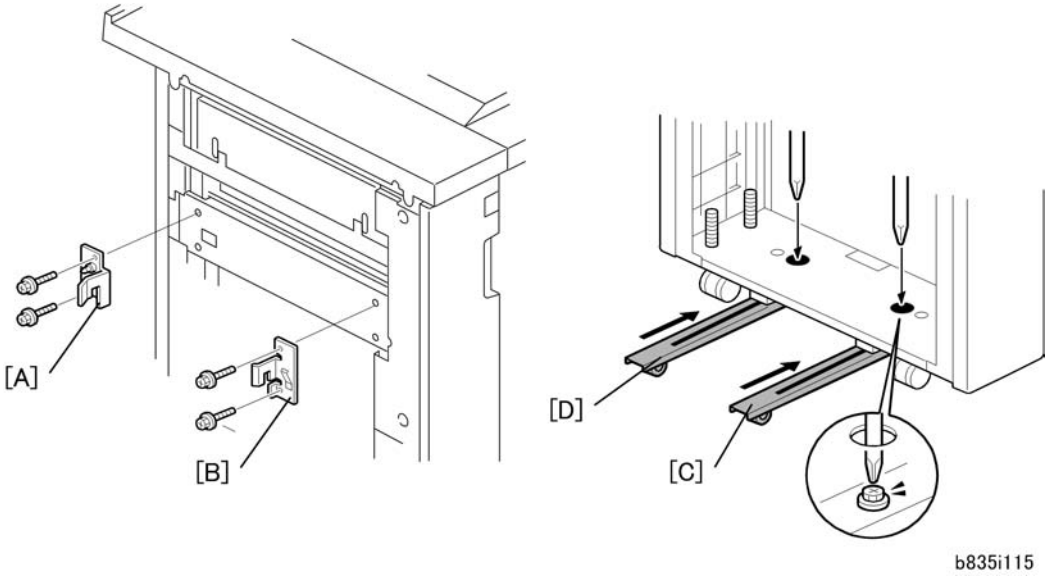
Docking



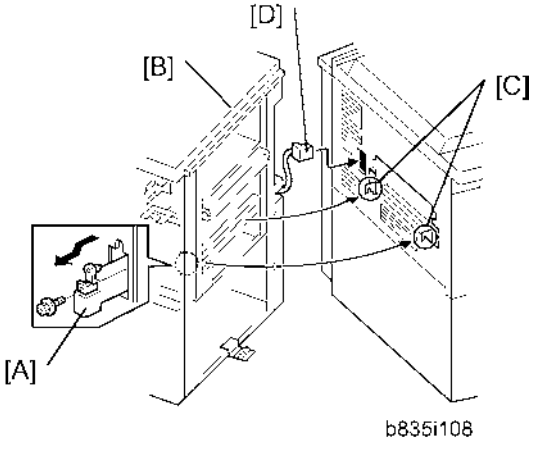
1. At the back of the docked de-curler unit, remove:
   [A] Rear upper cover (x2)
   [B] Rear lower cover (x2)



2. At the back of the cover interposer tray, remove:
   [A] Upper cover (x4)
   [B] Lower cover (x2)

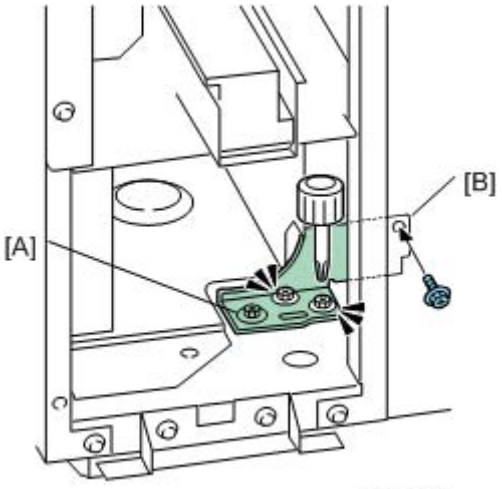


3. Attach:
   [A] Left bracket (x2)
   [B] Right bracket (x2)
4. Loosen the screws of runner [C] and runner [D].
5. Push the runners in and re-fasten with the screws.



6. Open the front door of the cover interposer tray.
7. Remove the screw of the lock bar [A]. **Keep this screw**.
8. Pull out the lock bar until it stops.
9. Push the finisher [B] against the side of the upstream unit so the lock bar is below the joint brackets [C].
10. Connect the cable [D] to the upstream unit.

11. Push in the lock bar and fasten it with the screw removed in **Step 7**.
12. Close the front door.



13. Use a short screwdriver to loosen bracket [A] (x2).
14. Fasten the bracket to the de-curler unit at [B] (x1).
15. Tighten the screws (x3).
16. Re-attach the rear covers.

Dock the Downstream Peripheral Device

The tray unit of the cover interposer tray is supported by the cover interposer transport unit and the top of the downstream peripheral unit. The next peripheral device downstream must be docked to the cover interposer tray relay unit (the base) before the tray unit can be installed.

Go to the appropriate section to dock the next downstream peripheral unit before installing the tray unit of the cover interposer tray:

- Multi Folding Unit (D454)
- High Capacity Stacker (D447)
- Booklet Finisher (D434)
- Finisher SR5000 (B830)

⚠CAUTION

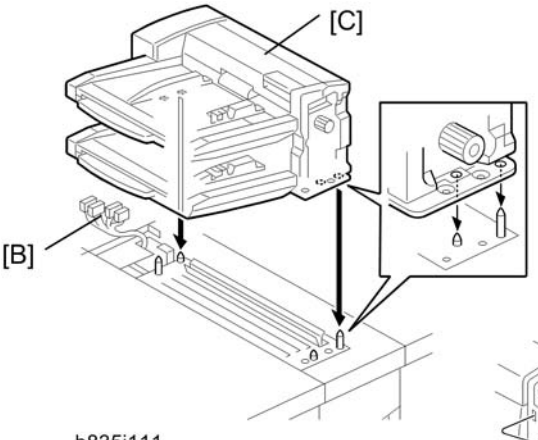
- Never attempt to mount the cover interposer tray until the next downstream peripheral unit has been docked to the transport unit (base) of the cover interposer tray.
- To prevent bending the frame of the tray unit and damaging its alignment, always remove the tray unit from the cover interposer tray transport unit at the following times: 1) Before disconnecting either

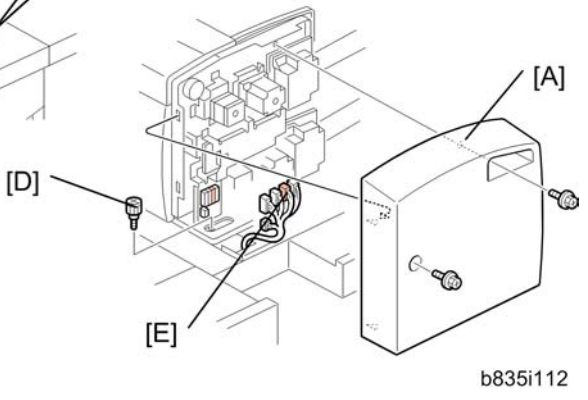
the cover interposer tray or the next downstream peripheral unit, or 2) Before doing any maintenance on either the cover interposer tray or the next downstream peripheral unit.

Mounting the Tray Unit

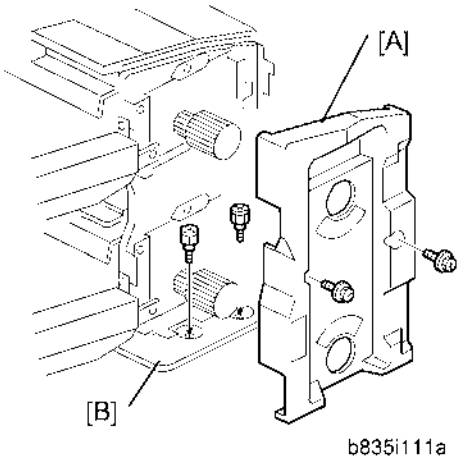
Important

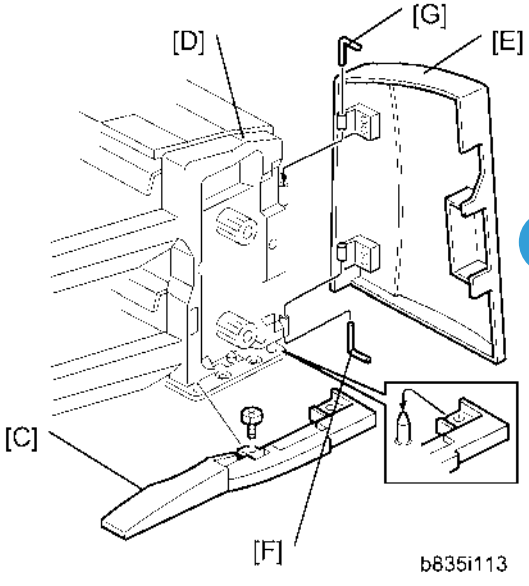
- **If the next downstream unit is the Multi Folding Unit (D454), three parts must be removed from the Multi Folding Unit before the tray unit of the cover interposer tray can be installed. (☛ Multi Folding Unit (D454)). Do this now.**





1. Remove the rear cover [A] (x2).
2. Confirm that the connectors [B] are free.
3. Place the tray unit [C] on top of the cover interposer transport unit and the downstream unit.
4. Attach the knob screw [D] (x1).
5. Connect the harness connectors [E] (x5)
6. Reattach the rear cover.



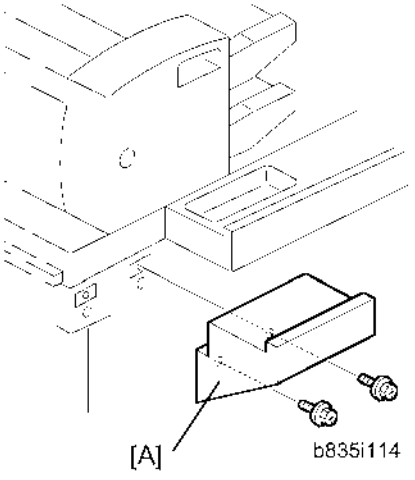


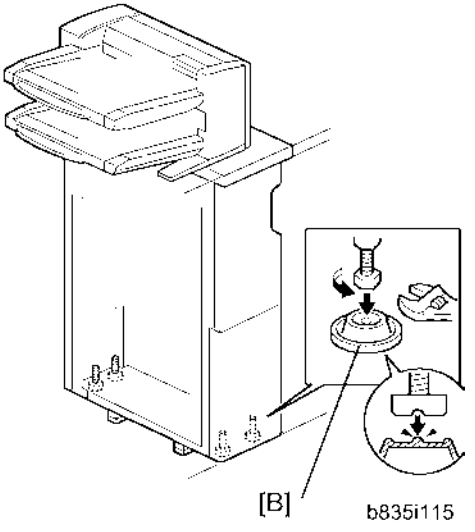
7. Remove the front inner cover [A] from the dual tray (x2).
8. Fasten the tray unit to the top of the transport unit with the knob screws [B] (x2).
9. Attach the base cover [C] (x1).

Important

- **Make sure the holes in the cover are matched with the positions of the reference pins.**

10. Re-attach the front inner cover [D] (removed at [A] above).
11. Position the tray unit front door [E] so its hinges match the posts on the frame of the tray unit.
12. Hold the lower L-pin [F] as shown, insert it halfway, push it up, then rotate it into its groove.
13. Hold the upper L-pin [G] as shown, insert it halfway, push it down, then rotate it into its groove.



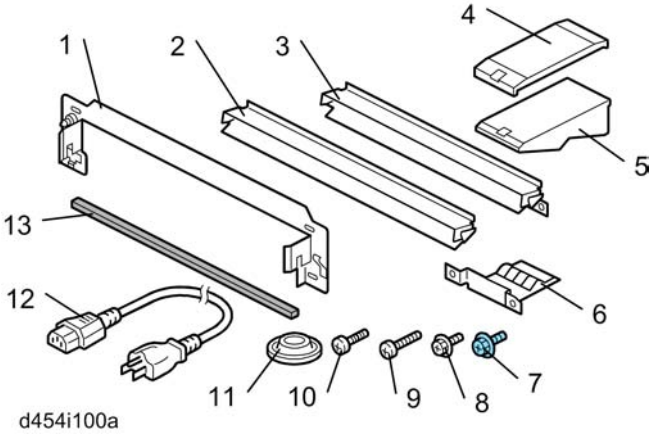


14. Attach the spacer [A] to the rear of the transport unit (x2).
15. Set the leveling shoes [B].
16. Adjust the height of the unit and make sure that it is level.

Multi Folding Unit (D454)

Accessories

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



No.	Description	Q'ty
1.	Joint Bracket	1
2.	Paper Guide – Long (for M002/M003/M004)	1
3.	Paper Guide – Short (for D062/D064/D065/D066)	1
4.	Proof Tray Auxiliary Plate - Top	1
5.	Proof Tray Auxiliary Plate – Bottom	1
6.	Ground Plate	1
7.	Screws M3x6	2
8.	Screws M3x6	2
9.	Screws M4x20 (not Used)	4
10.	Screws M4x14	4
11.	Leveling Shoes	5
12.	Power Cord*1	1
13.	Sponge Strip	1

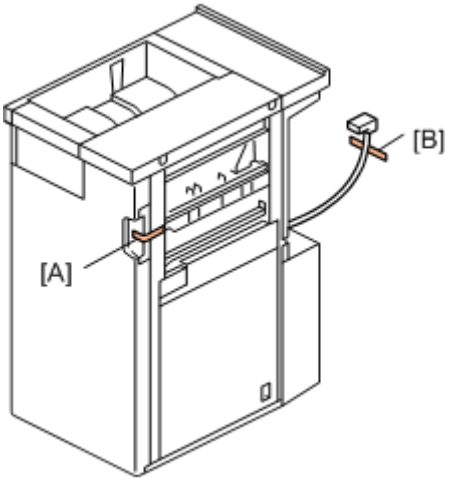
*1: In case of using this unit in China, do not use the power cord in the accessories of the Multi Folding Unit (D454). Ask your supervisor and use a power cord specified for China's usage.

Installation

⚠CAUTION

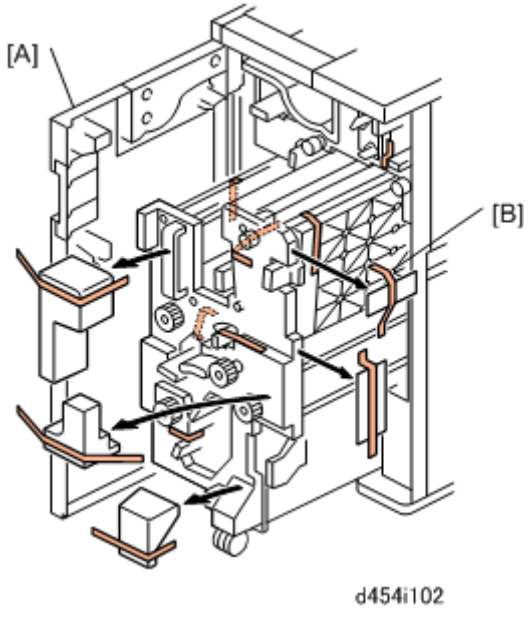
- The unit must be connected to a power source that is close to the unit and easily accessible.
- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

Tapes



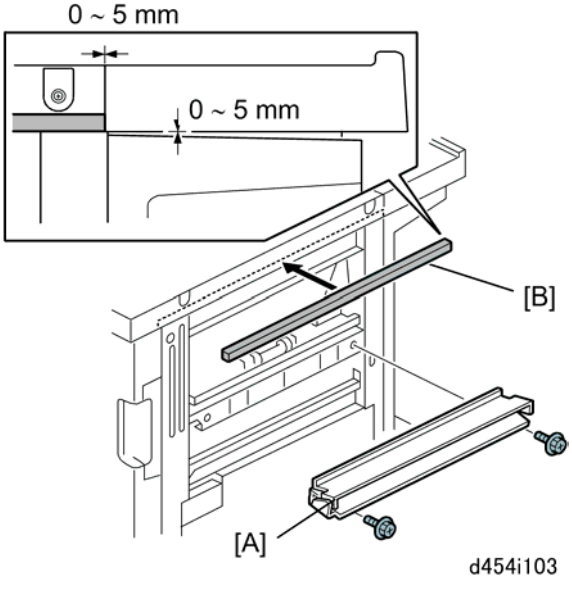
d454i101

1. Remove tape from front [A] and rear [B].



2. Open the front door [A].
3. Remove all tape from inside [B].

Paper Guide, Sponge Strip



1. Select the long paper guide for this installation.
    - Two paper guides are provided.

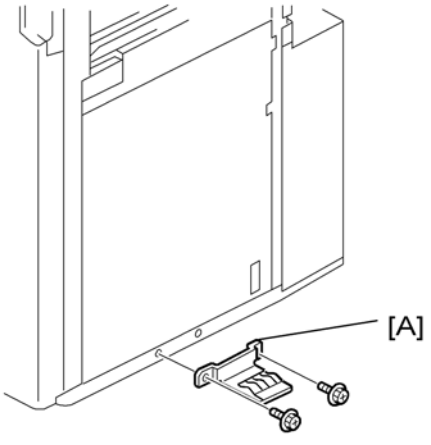
- The short paper guide is for another machine (D062/D063/D065/D066).

Important

- **If the upstream peripheral device is the Cover Interposer Tray (B835), attach the black mylar provided with the cover interposer tray to this paper guide.**

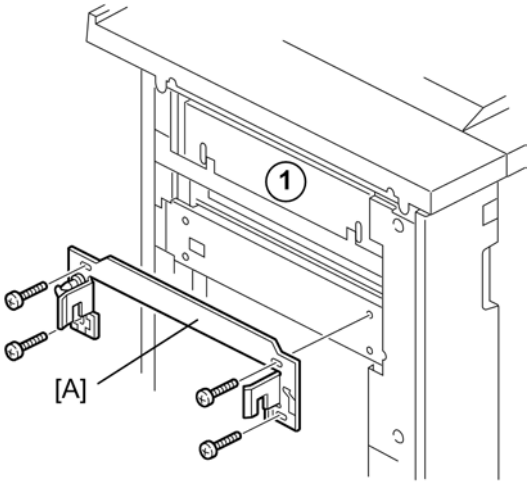
2. Attach the long paper guide [A] (x2 M3x6).
3. Peel the tape from the sponge strip [B] and attach the strip to the top right edge of the unit.

Ground Plate

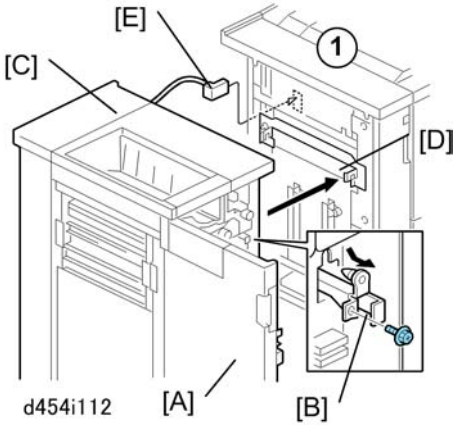


1. Attach the ground plate [A] to the lower right edge of the unit (x2 M3x6).

Docking



1. Fasten the joint bracket [A] to the left side of the upstream unit ((1) is the decurl unit) (x4 M4x14)



Note

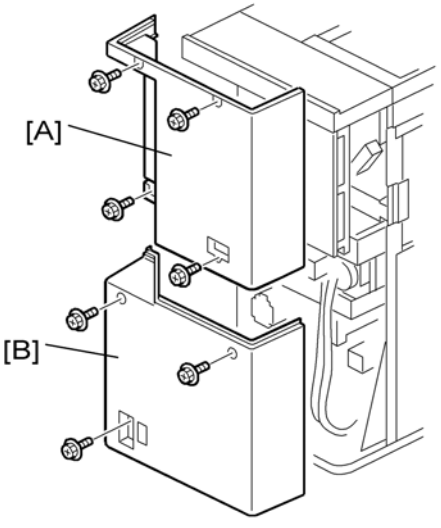
- In the illustration above, (1) is the Decurl Unit (D457).

2. Open the front door [A].
3. At the front right corner, remove the screw of the lock bar [B] (x1 M3x6). **Keep this screw.**
4. Push in the lock bar.
5. Slowly push the unit [C] against the left side of the upstream unit so that the lock bar is directly and squarely under the arms of the joint bracket.
6. Pull out the lock bar so it slides up into the notches in the arms on both ends of the joint bracket [D].
7. Fasten the lock bar by re-attaching the screw removed in **Step 3** (x1).
8. Connect the I/F cable [E] to the upstream unit.

2

Note

- Do the following steps only if the upstream unit is the Cover Interposer Tray or the Decurler unit.

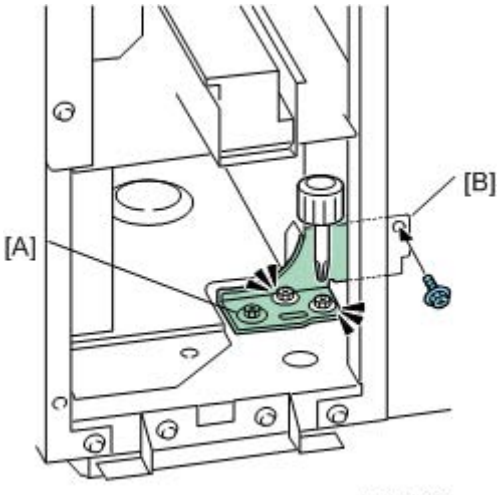


d454i106

9. Remove:

   [A] Rear upper cover (x4)

   [B] Rear lower cover (x3)



d457i110

10. Remove the rear cover of the upstream unit.
11. Use a short screwdriver to loosen bracket [A] (x2).
12. Fasten the bracket to the upstream unit at [B] (x1).
13. Tighten the screws (x3).

14. Re-attach the rear covers.

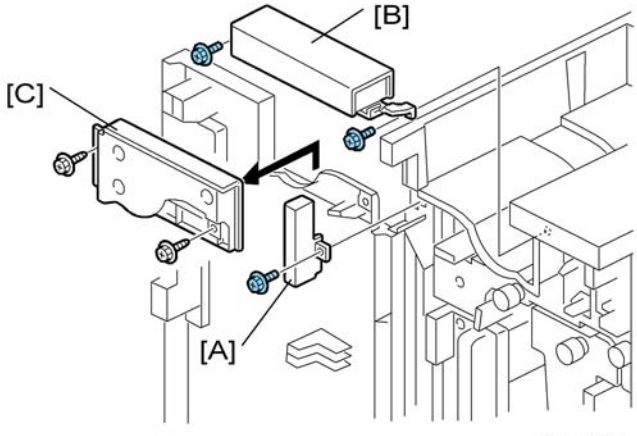
Removing Parts for the Cover Interposer Tray (B835)

Three parts must be removed before the tray unit of the cover interposer tray can be mounted on top of the Multi Folding Unit.

1. Open the front door.

Important

- **The following parts require removal only if the upstream unit is the Cover Interposer Tray (B835).**
- **These parts must be removed so that the tray unit of the Cover Interposer Tray will fit on top of the Multi Folding Unit.**



2. Remove:

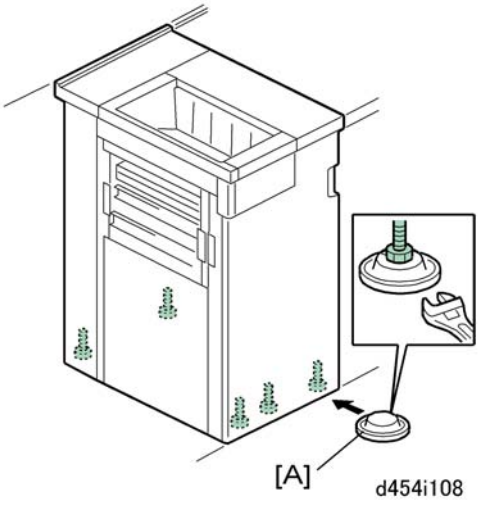
   [A] Bracket (x1)

   [B] Cross-piece (x2)

   [C] Metal plate from the door (x2)

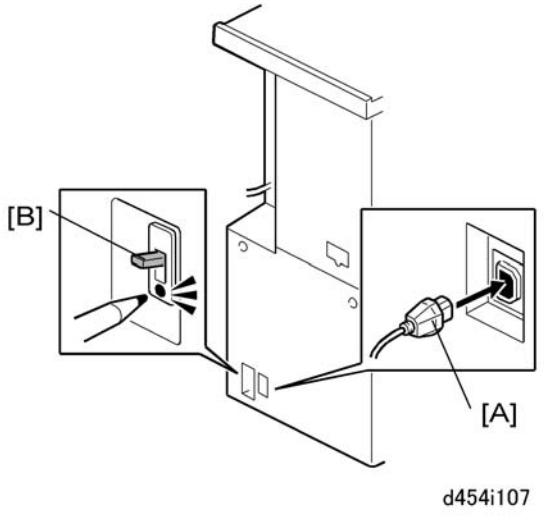
3. After removing [B] and [C], reattach [A].

Height Adjustment



1. Set the leveling shoes [A] (p.207).
2. Adjust the height of the unit and make sure that it is level.

Power Cord, Breaker Switch Test



1. Insert the power cord socket [A] into the power connection point.

Important

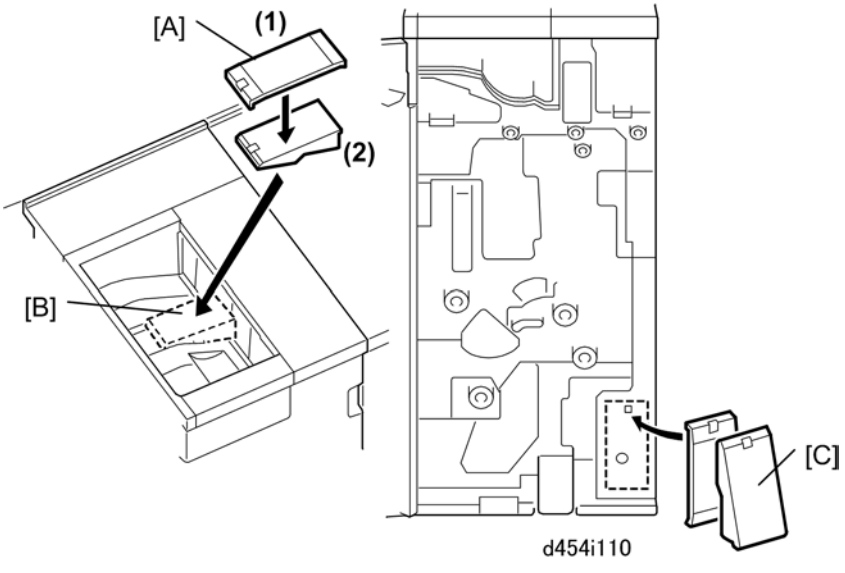
- In case of using this unit in China, do not use the power cord in the accessories of the Multi Folding Unit (D454). Ask your supervisor and use a power cord specified for China's usage.

2. Connect the power supply cord plug into a power outlet.
3. Test the breaker switch [B] (p.207).

Check for Skew and Correct Side-to-Side Registration

1. Load some B4 paper in Tray 2 of the main machine.
2. Make several prints that will exit to the upper tray.
3. Watch each sheet as it exits the machine to check for the presence of skew, and check that the side-to-side registration is correct (p.207).

Proof Tray Auxiliary Plate



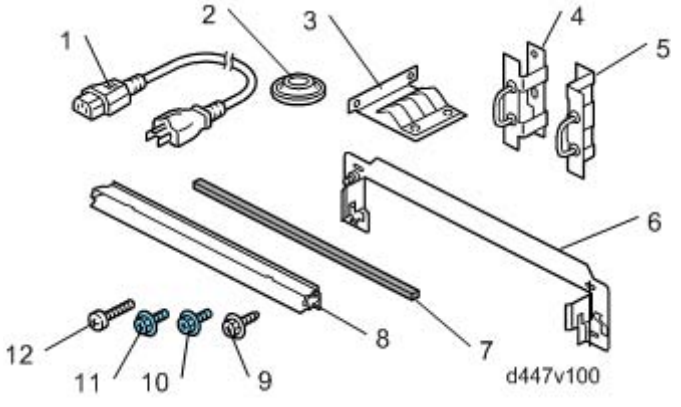
1. Install the proof tray auxiliary plate.
   - Assemble the top (1) and bottom (2) of the plate [A].
   - Set the assembled plate in the center aligned with the diagonal groove at [B].
   - The back should be flat against the end fence.
2. When the plate is not being used, open the front door and store the assembled plate at [C] inside the inner cover.
   - The plate should be used when Z-folded paper (all sizes) is output to the proof tray.
   - If the plate is not used with Z-folded output, the pages could mix and overlap.

High Capacity Stacker (D447)

Accessories

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

High Capacity Stacker (D447)

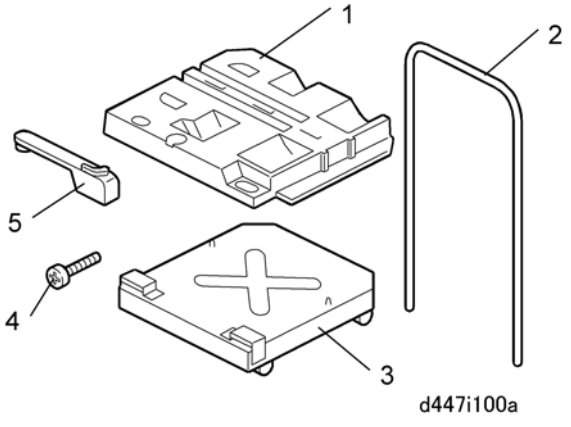


No.	Description	Q'ty
1.	Power Cord*1	1
2.	Leveling Shoes	4
3.	Ground Plate	1
4.	Lock Hasp – Left*2	1
5.	Lock Hasp – Right	1
6.	Joint Bracket	1
7.	Sponge Strip	1
8.	Paper Guide	1
9.	Screws M4x8	2
10.	Screws M3x6	4
11.	Screws M4x6	2
12.	Screws M4x14	4

*1: In case of using this unit in China, do not use the power cord in the accessories of the High Capacity Stacker (D447). Ask your supervisor and use a power cord specified for China's usage.

*2: A lock is not provided.

Roll-Away Cart Type 5010 (456-17)



No.	Description	Q'ty
1.	Paper Tray	1
2.	Tray Cart Handle	1
3.	Tray Cart Base	1
4.	Screws M10x25	2
5.	Paper Press Lever	1

Important

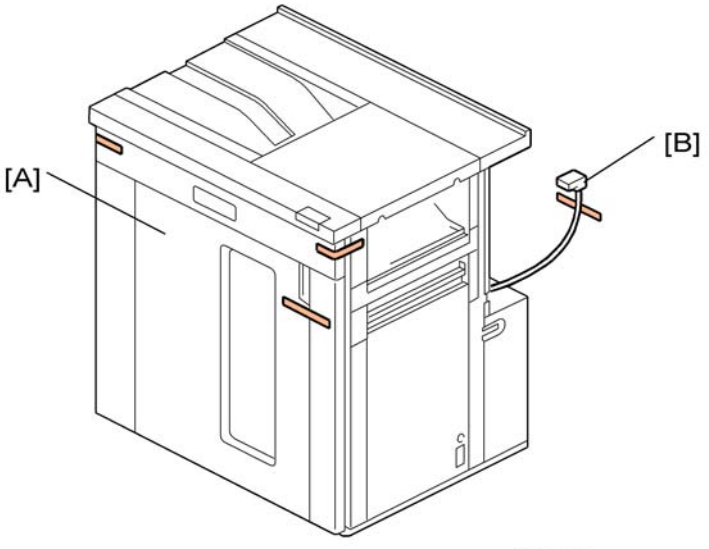
- **If two high capacity stackers are to be installed in the same line, the second stacker must be installed on the left side of the first stacker.**

Installation

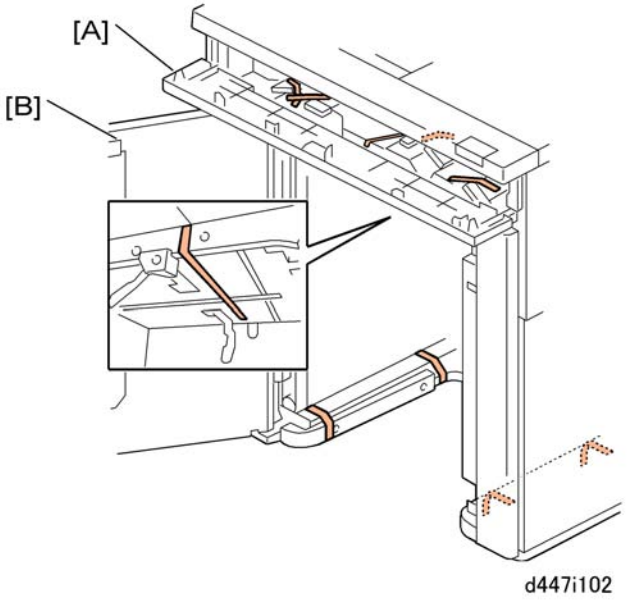
⚠CAUTION

- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

Shipping Tapes

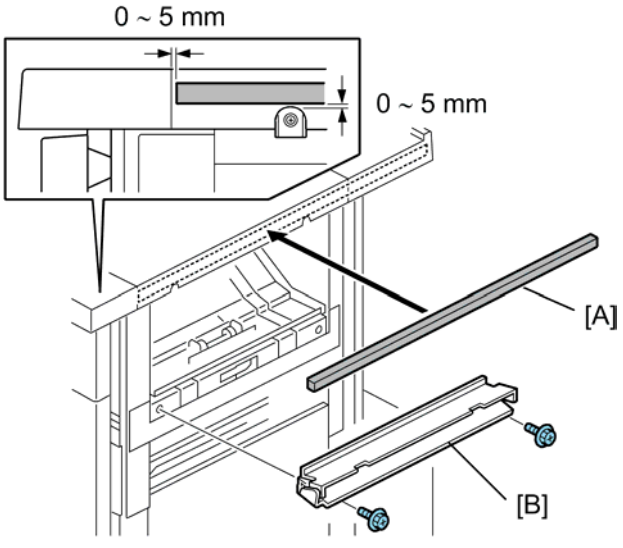


1. Remove all visible tape from the front [A] and back [B].



2. Open the front panel [A] and remove all visible tapes.
3. Open the front door [B] and remove all visible tapes.

Paper Guide, Sponge Strip, Ground Plate



d447i105

1. Remove the tape from the sponge strip [A] and attach the strip to the top right edge of the unit.

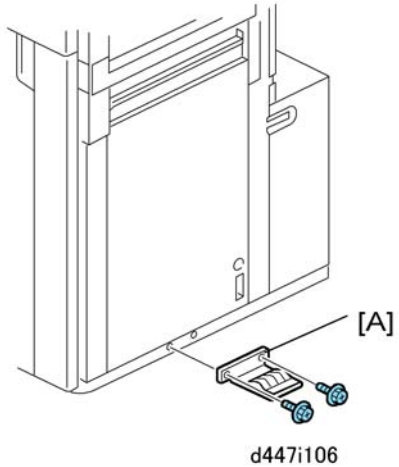
Note

- The sponge strip closes the gap between the stacker and the upstream unit to prevent paper or other objects from falling between the units.

2. Fasten the paper guide [B] to the right side of the unit (x2).

Important

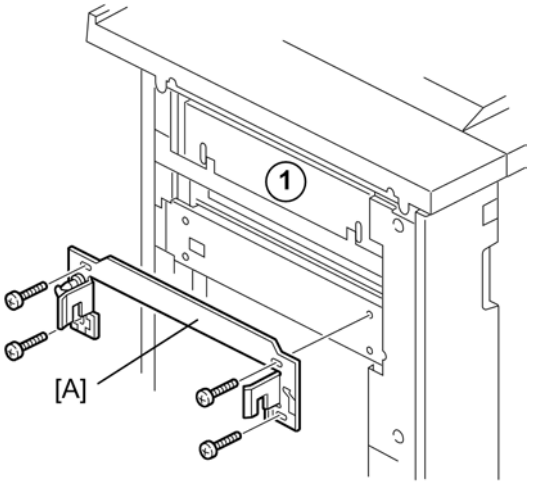
- **If the upstream peripheral device is the Cover Interposer Tray (B835), attach the black mylar provided with the cover interposer tray to this paper guide.**



d447i106

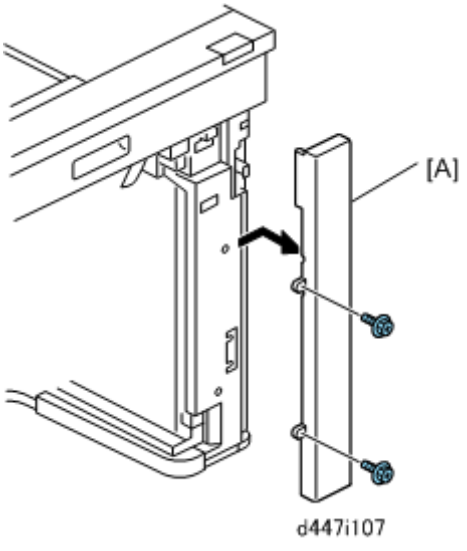
3. Attach the ground plate [A] to the bottom right edge of the unit (x2 M3x6).

Docking



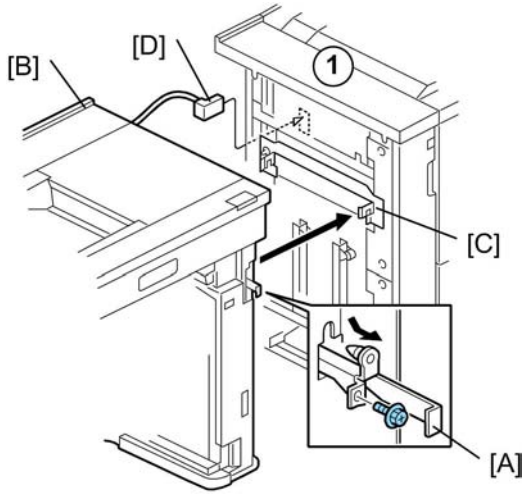
d447i104

1. Fasten the joint bracket [A] to the upstream unit (x4). (1) is the de-curler unit attached to the side of the main machine.
2. Open the front door.



d447i107

3. Remove the front right cover [A] (x2).



d447i116

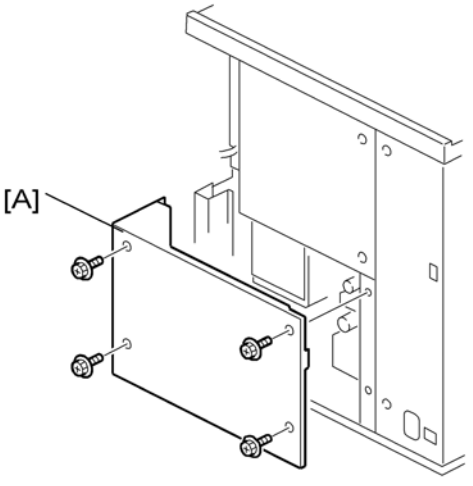
Note

- In the illustration above, (1) is the Decurl Unit (D457).

4. At the front right corner, remove the screw of the lock bar [A] (x1 M3x6). **Keep this screw.**
5. Pull the lock bar toward you until it stops.
6. Slowly push the unit [B] against the left side of the upstream unit so that the lock bar is directly and squarely under the arms of the joint bracket [C].
7. Push the lock bar in completely so that it slides up into the notches in the arms on both ends of the joint bracket.
8. Fasten the lock bar by re-attaching the screw removed in **Step 4**. (x1).
9. Attach the I/F cable [D] to the upstream unit.

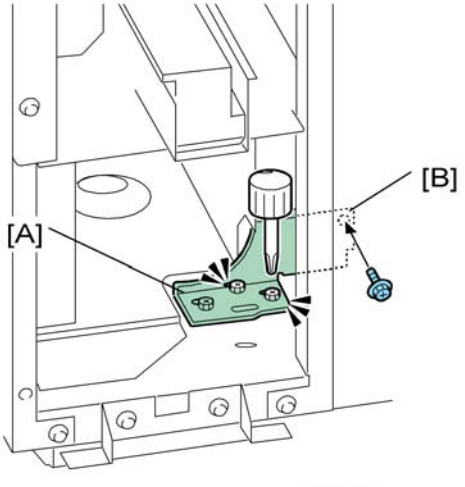
Note

- Do the following steps only if the upstream unit is the Cover Interposer Tray or the Decurler unit.



d447i109

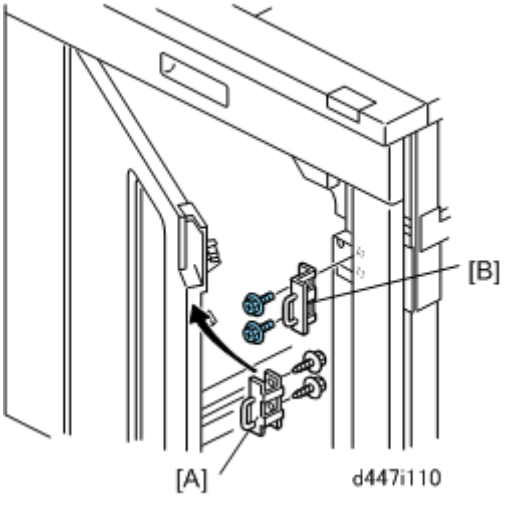
10. Remove the right rear lower cover [A] (x4).



d447i109a

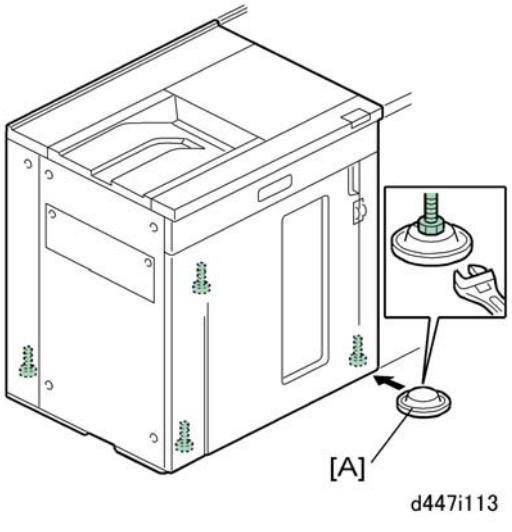
11. Remove the rear cover of the upstream unit.
12. Use a short screwdriver to loosen bracket [A] (x2).
13. Fasten the bracket to the upstream unit at [B] (x1).
14. Tighten the screws (x3).
15. Re-attach the rear covers.

Lock Hasps



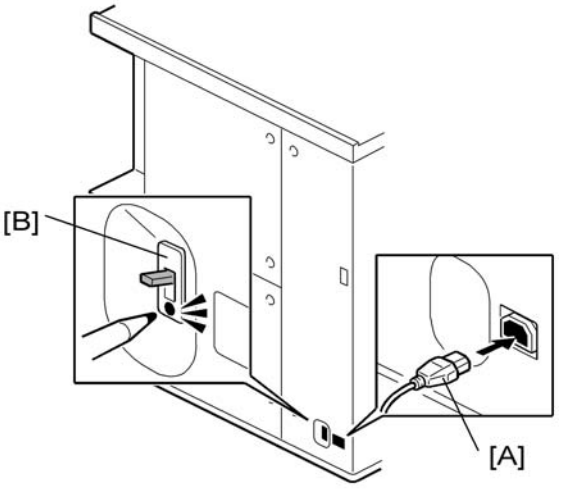
1. Fasten left lock hasp [A] (x2) to the door.
2. Fasten right lock hasp [B] to the door frame (x2).

Height Adjustment



1. Set the leveling shoes [A] (p.207).
2. Adjust the height of the unit and make sure that it is level.

Power Cord, Breaker Switch Test



1. Insert the socket of the power cord [A] into the power connection point.

   Important

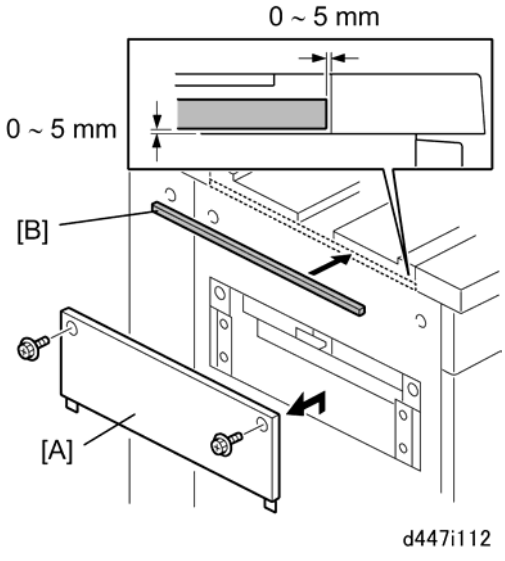
   - **In case of using this unit in China, do not use the power cord in the accessories of the High Capacity Stacker (D447). Ask your supervisor and use a power cord specified for China's usage.**

2. Connect the power supply cord plug into a power outlet.
3. Test the breaker switch [B] (p.207).

Check for Skew and Correct Side-to-Side Registration

1. Load some A3/DLT paper in Tray 2 of the main machine.
2. Make several prints that will exit to the top tray.
3. Watch each sheet as it exits the machine to check for the presence of skew, and check that the side-to-side registration is correct (p.207).

Docking: Downstream

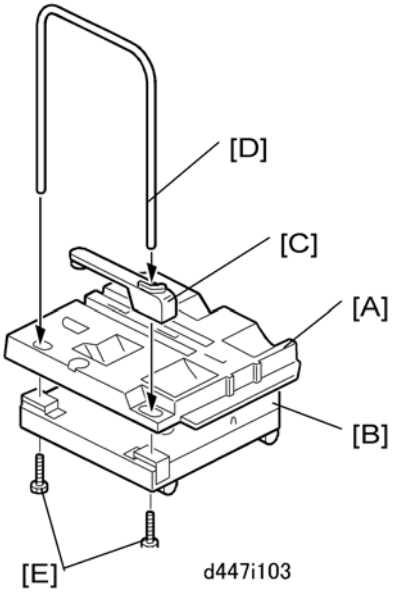


Important

- **Do this procedure only if a second high capacity stacker unit will be installed.**

1. Remove the left exit cover [A] from the left side of the unit (x2).
   - The joint bracket of the downstream unit will be attached here (x4).
2. Peel the tape from the back of the sponge strip [B] and attach the strip as shown above.

Roll-Away Cart (D456)

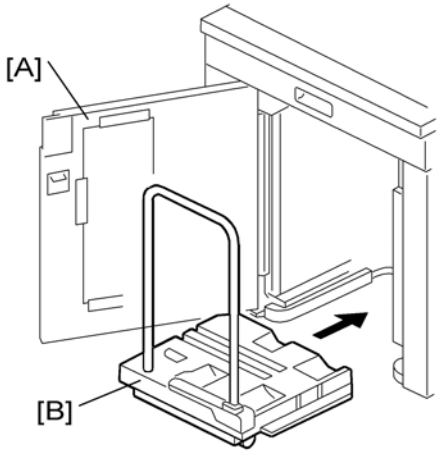


1. Align the holes in the brackets of the paper tray [A] with the studs of the tray base [B].
2. Set the holes over the studs.
3. Set the paper press lever [C] into the recessed cut-out in the paper tray.
4. Insert the ends of the tray cart handle [D] into the handle holes. One end of the handle passes through the paper press lever on the paper tray.

d447i115

5. Lay the assembly down with the handles on the floor.
6. Fasten the end of each handle (x1 each M10x25).
7. Make sure that both screws [E] are fastened securely.

8. Set the cart upright on its casters.



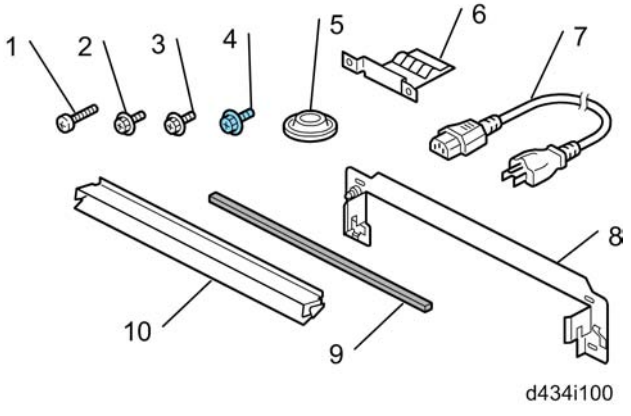
d447i111

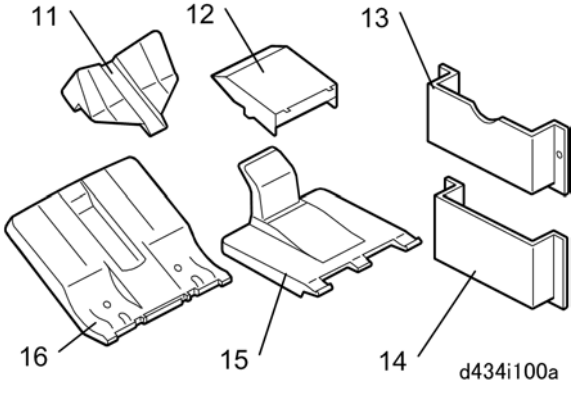
9. Open the front door [A].
10. Push the tray cart [B] into the unit and close the door.

Booklet Finisher SR5020 (D434-17)

Accessories

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





No.	Description	Q'ty
1.	Screws M4x14 (Joint Bracket)	4
2.	Screws M3x8 (Shift Tray)	4
3.	Screws M3x6 (Ground Plate)	2
4.	Screws M3x6 (Paper Guide)	2
5.	Leveling Shoes	4
6.	Ground Plate	1

No.	Description	Q'ty
7.	Power Cord*1	1
8.	Joint Bracket	1
9.	Sponge Strip	1
10.	Paper Guide	1
11.	Auxiliary Tray – Glossy Paper	1
12.	Auxiliary Tray – Z-Fold Paper	1
13.	Auxiliary Tray Holder – Glossy Paper	1
14.	Auxiliary Tray Holder – Z-Fold Paper	1
15.	Booklet Tray	1
16.	Shift Tray	1

*1: In case of using this unit in China, do not use the power cord in the accessories of the Booklet Finisher SR5020 (D434). Ask your supervisor and use a power cord specified for China's usage.

Installation

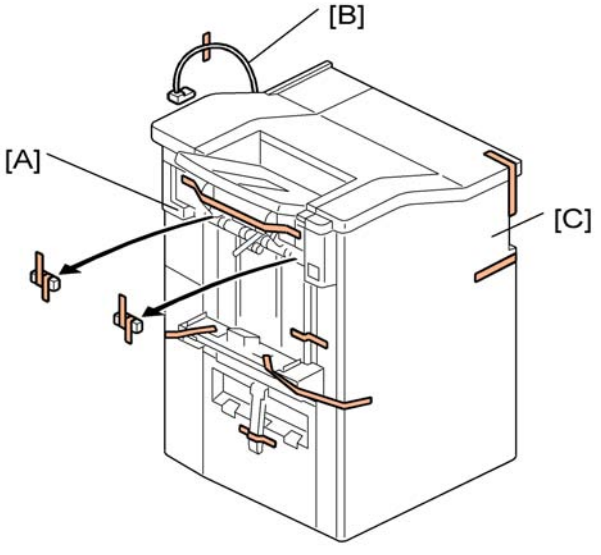
⚠CAUTION

- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

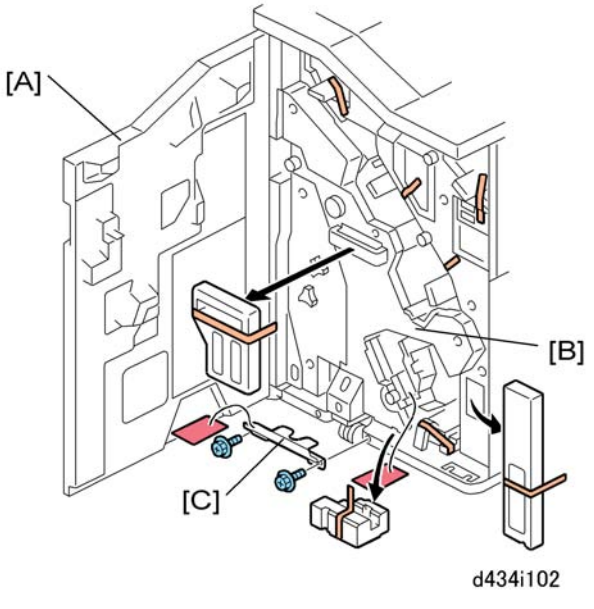
Tapes, Retainers, Shipping Plates

Important

- **The shipping plates prevent the staple unit from moving during transport. The plates should be kept and re-attached before the unit is transported to another location.**



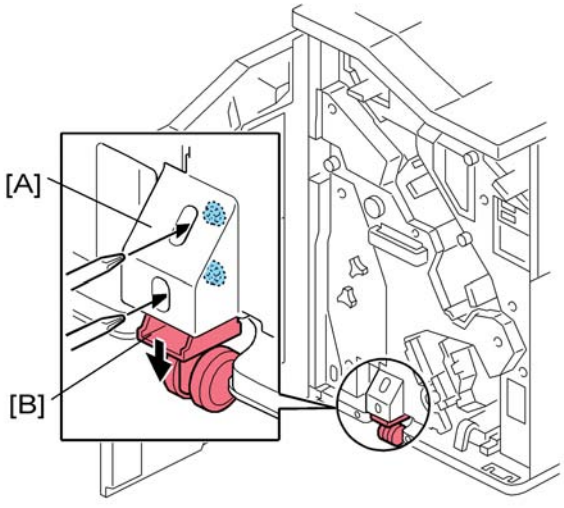
1. Remove tapes:
   [A] Left
   [B] Rear
   [C] Front



2. Open the front door [A].
3. Remove:

[B] Tapes, retainers inside

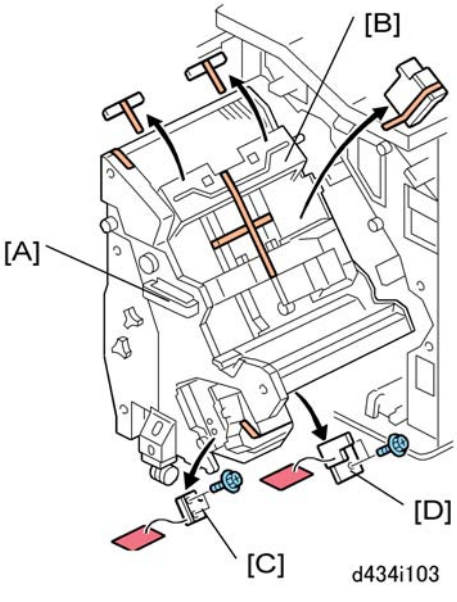
[C] Tag, wire, shipping plate (x2)



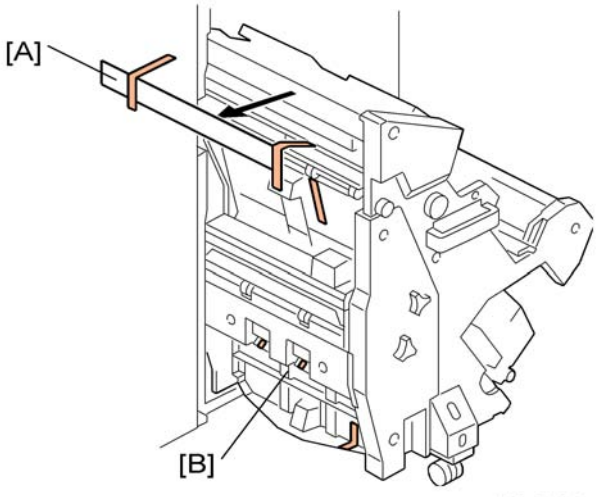
4. Loosen the screws of the caster cover [A] (x2).
5. Push the caster [B] down until it touches the floor.
6. With the caster touching the floor, tighten the caster cover screws.

CAUTION

- This prevents the unit from tipping over when you pull out the staple unit.



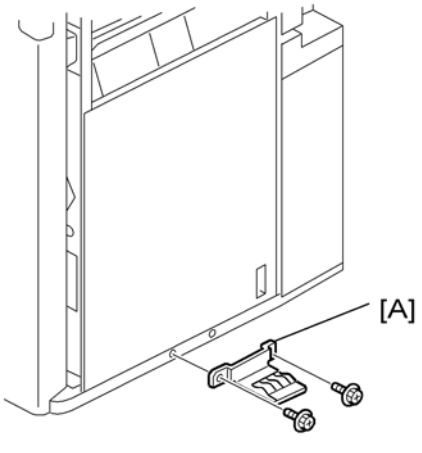
7. Grip handle [A] and slowly pull the staple unit out until it stops.
8. Remove:
   [B] All tapes, retainers
   [C] Tag, wire, shipping plate (x2)
   [D] Tag, wire, shipping plate (x2)



d434i104

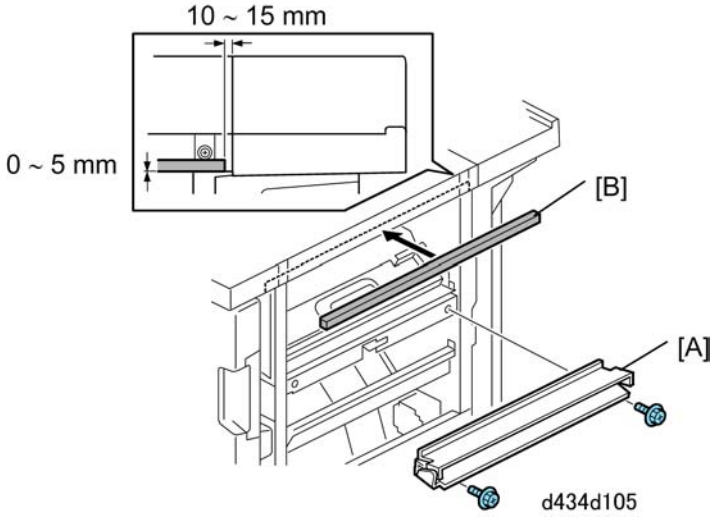
9. Remove:
   [A] Tapes, retainer
   [B] Tapes

Ground Plate, Sponge Strip



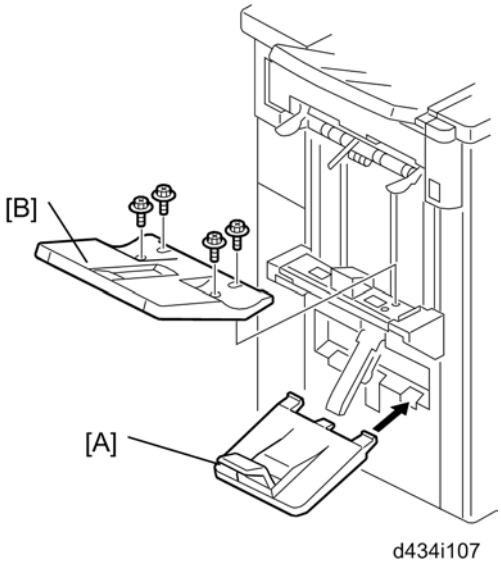
d434i106

1. Attach the ground plate [A] to the bottom right edge of the unit (x2).



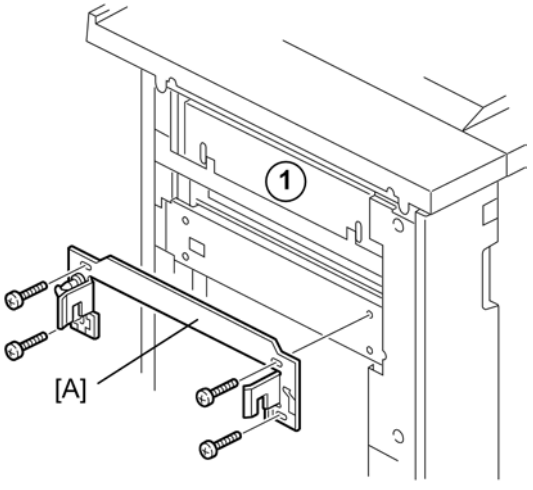
2. Attach paper guide [A] (x2).
3. Peel the tape from the sponge strip [B] and attach the strip to the top right edge of the unit.

Booklet Tray, Shift Tray



1. Attach the booklet tray [A] to the notch in the left cover (no screws).
2. Attach the shift tray [B] to the left side of the unit (x4 M3x8).

Docking

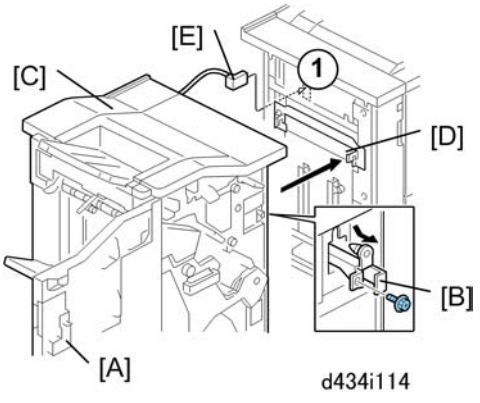


b830i110

Note

- In the illustration above, (1) is the Decurl Unit (D457) attached to the side of the main machine.

1. Fasten the joint bracket [A] to the upstream unit (x4).



d434i114

Note

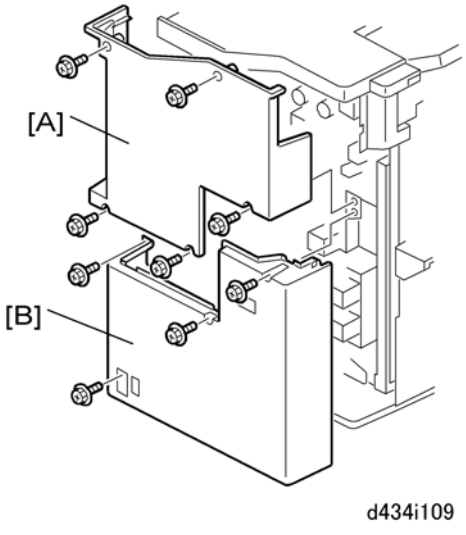
- In the illustration above, (1) is the Decurl Unit (D457) attached to the side of the main machine.

2. Open the front door [A] of the unit.
3. At the front right corner, remove the screw of the lock bar [B] (x1 M3x6). **Keep this screw.**
4. Pull the lock bar toward you until it stops.
5. Slowly push the unit [C] against the left side of the upstream unit so that the lock bar is directly and squarely under the arms of the joint bracket [D].

6. Push the lock bar in completely so that it slides up into the notches in the arms on both ends of the joint bracket.
7. Fasten the lock bar by re-attaching the screw removed in **Step 2**. (x1)
8. Attach the I/F cable [E] to the upstream unit.

Note

- Do this procedure only if the upstream unit is the Cover Interposer Tray or the Decurler unit.

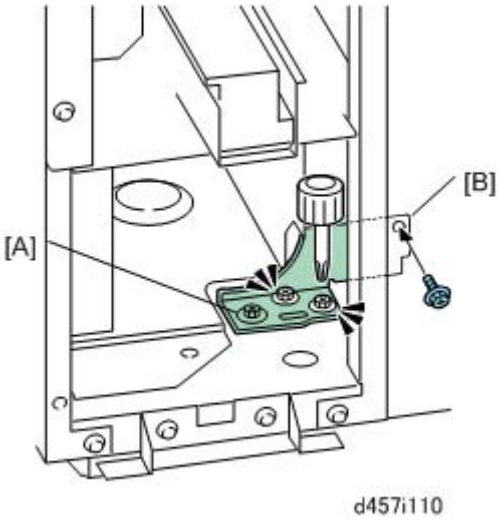


d434i109

9. Remove:

   [A] Rear upper cover (x5)

   [B] Rear lower cover (x4)



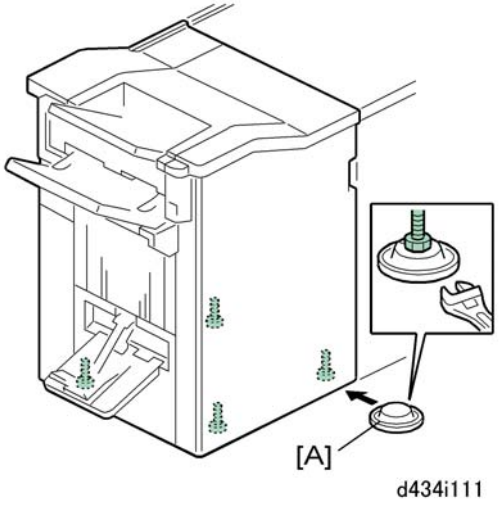
d457i110

10. Remove the rear cover of the upstream unit.

11. Use a short screwdriver to loosen bracket [A] (x3).
12. Fasten the bracket to the upstream unit at [B] (x1).
13. Tighten the screws (x3).
14. Re-attach the rear covers.

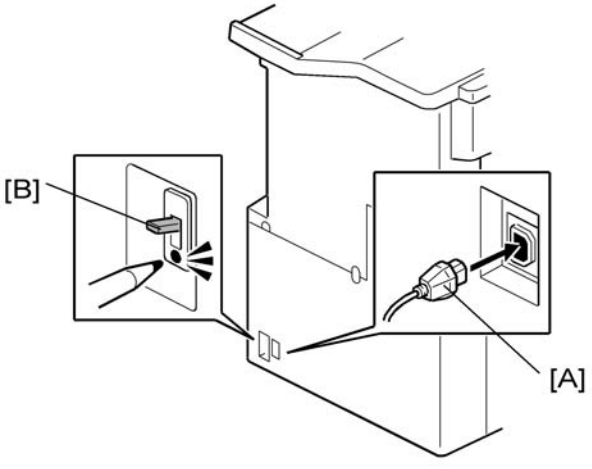
2

Height Adjustment



1. Set the leveling shoes [A] (p.207).
2. Adjust the height of the unit and make sure that it is level. .

Power Cord, Breaker Switch Test



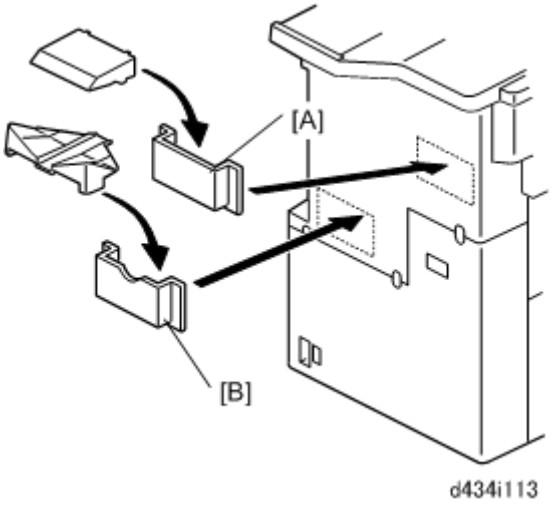
1. Insert the socket of the power cord [A] into the power connection point.

Important

- **In case of using this unit in China, do not use the power cord in the accessories of the Booklet Finisher SR5020 (D434). Ask your supervisor and use a power cord specified for China's usage.**

2. Connect the power supply cord plug into a power outlet.
3. Test the breaker switch [B] (p.207).

Auxiliary Trays



1. Attach to the rear cover:

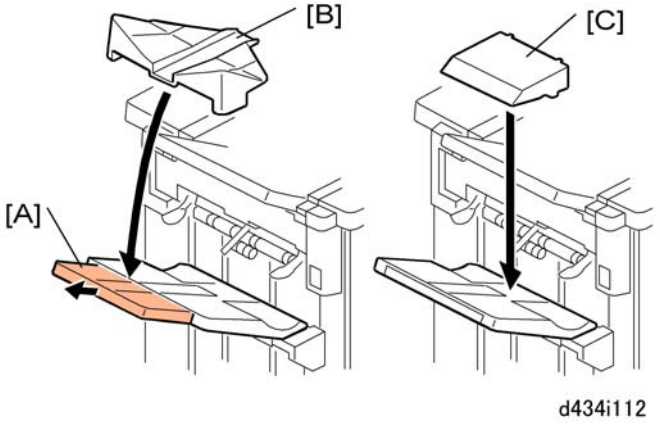
[A] Z-fold auxiliary tray holder, and tray

[B] Glossy paper auxiliary tray holder, and tray

Note

- These tray holders can be installed on the front door if the auxiliary trays will be used frequently.

2. Instruct the operator about when to use these auxiliary trays, as explained below.



- Before feeding glossy paper, pull out the extension [A] of the shift tray and mount the glossy paper auxiliary tray [B].
- Before feeding Z-folded paper from the Multi Folding Unit (D454), set the Z-fold auxiliary tray [C] on the shift tray.

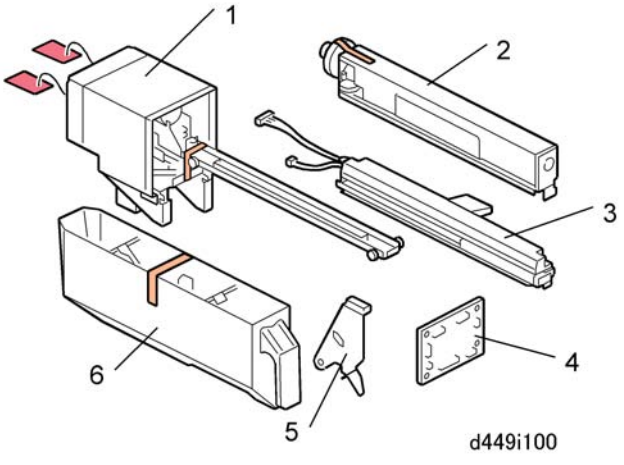
Check for Skew and Correct Side-to-Side Registration

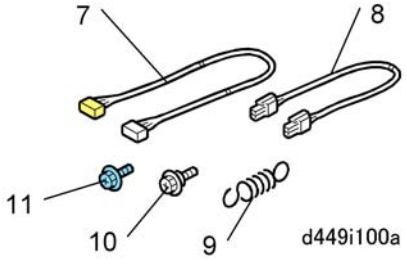
1. Load some A3/DLT paper in Tray 2 of the main machine.
2. Make several prints that will exit to the shift tray.
3. Watch each sheet as it exits the machine to check for the presence of skew, and check that the side-to-side registration is correct. (p.207).

Punch Unit PU5020 NA, EU, SC (D449-17, -27, -28)

Accessories

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





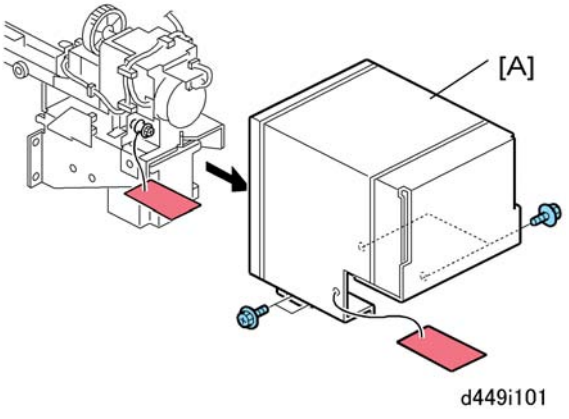
No.	Description	Q'ty
1.	Punch Drive Unit	1
2.	Punch Unit	1
3.	Punch Registration Unit	1
4.	Punch Control Board	1
5.	Sensor Arm and Sensor	1
6.	Punch-out Hopper	1
7.	Harness: Long	1
8.	Harness: Board Relay	1
9.	Spring	1
10.	Step Screw	1
11.	Screws M3x6	9

Installation

⚠CAUTION

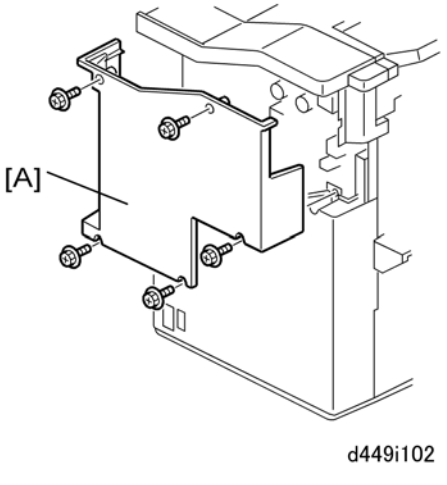
- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

Shipping Materials



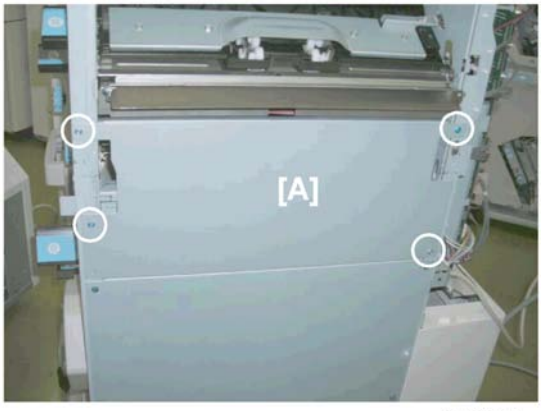
1. Remove motor protector plate [A] (x4).

Rear Cover



1. Remove upper rear cover [A] (x4).

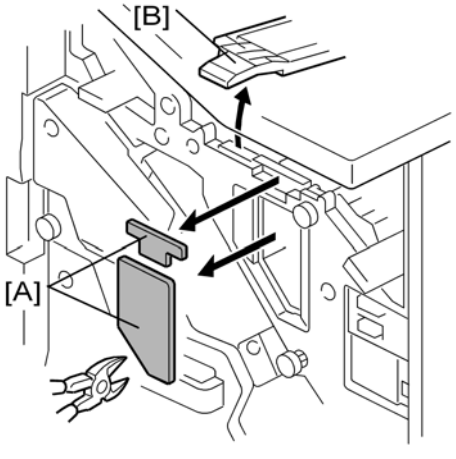
Right Upper Panel



d449i117

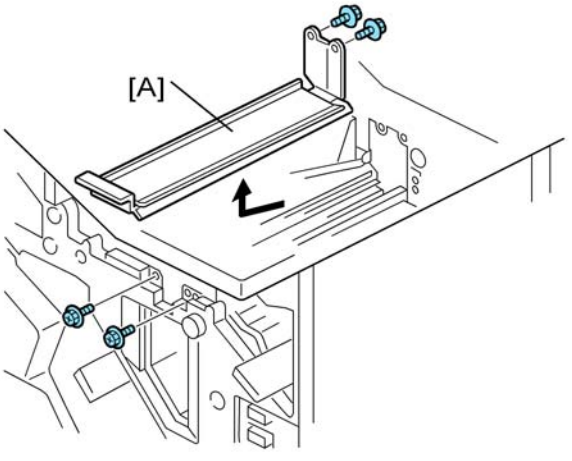
1. Remove the right upper panel [A] (x4).

Punch Registration Unit



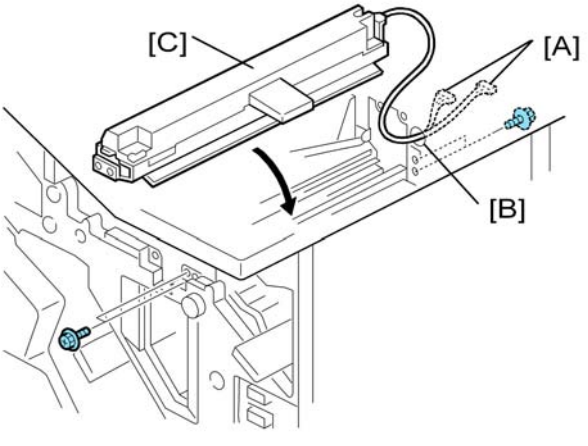
d449i103

1. Use a pair of nippers to remove knockouts [A].
2. Raise and open lever "RB3" [B].



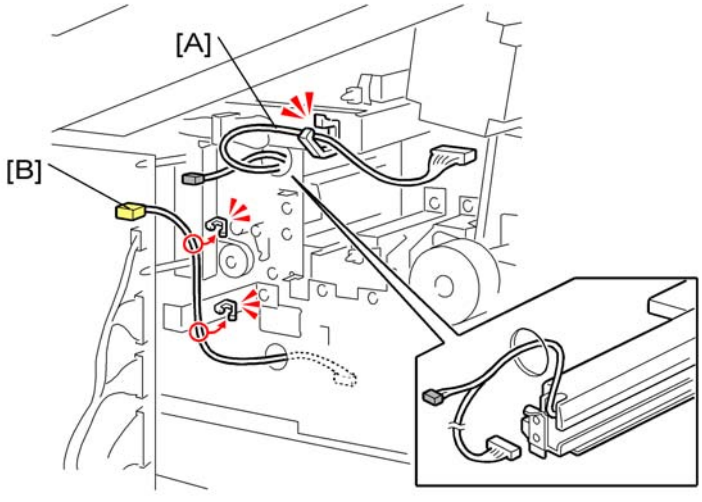
d449i104

3. Remove plate [A] and discard it (x4).



d449i105

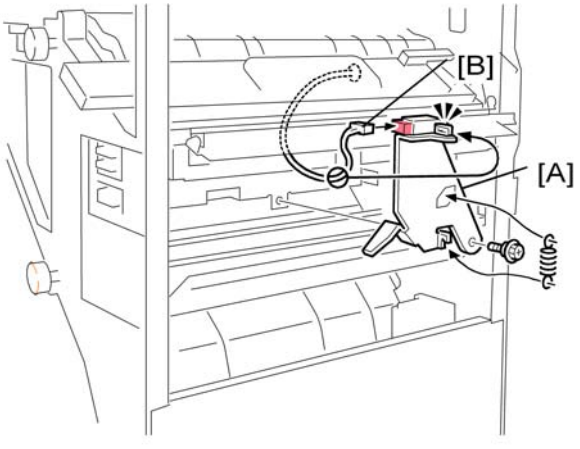
4. Insert the harness connectors [A] through the hole [B].
5. Make sure the harness connectors are through the hole completely and visible at the rear of the machine.
6. Set and fasten the punch registration unit [C] (x4, 2 screws each at front and back).



d449i106

7. Clamp harness [A] (x1).
8. Clamp harness [B] (x2).

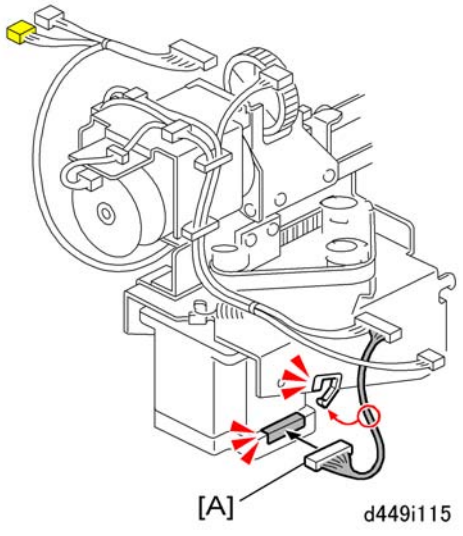
Sensor Arm



d449i107

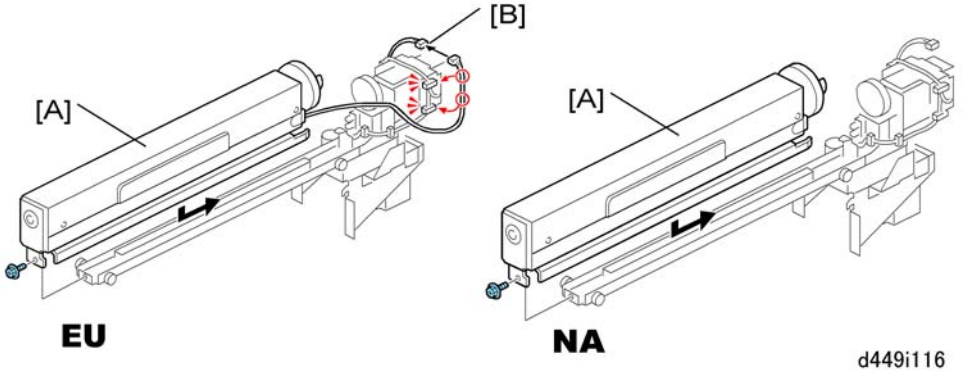
1. Attach sensor arm [A] (x1 Step Screw, Spring x1).
2. Make sure the sensor arm swings freely on the step screw and spring.
3. Attach harness [B] to the sensor on top of the arm.

Punch Drive Unit, Punch Unit

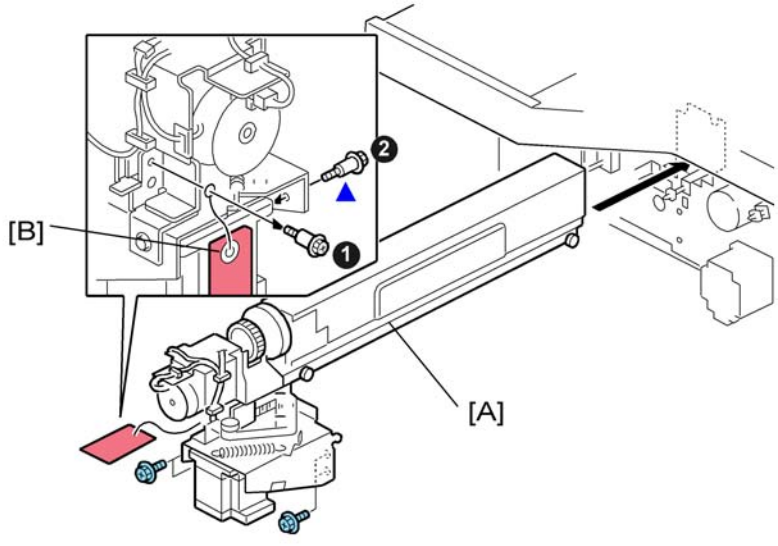


1. On the punch unit, connect harness [A] (x1, x1).

RTB 99
Modified



2. Attach the punch mechanism [A] to the rails of the punch unit (x1).
   - If you are installing the punch unit for Europe, connect the harness [B] (x1, x2).
   - The punch unit for North America has no punch switching motor, so this harness is not required.

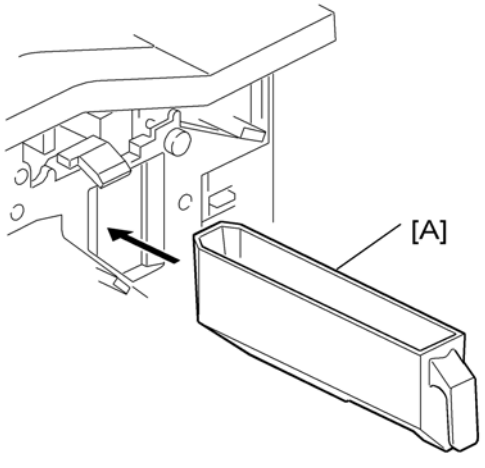


d449i108

3. At the front, insert the punch unit [A] into the finisher and fasten it (x4).
4. Remove the shoulder screw with red tag [B], and detach the tag and wire.
5. After removing the screw from hole (1), re-attach it at hole (2).

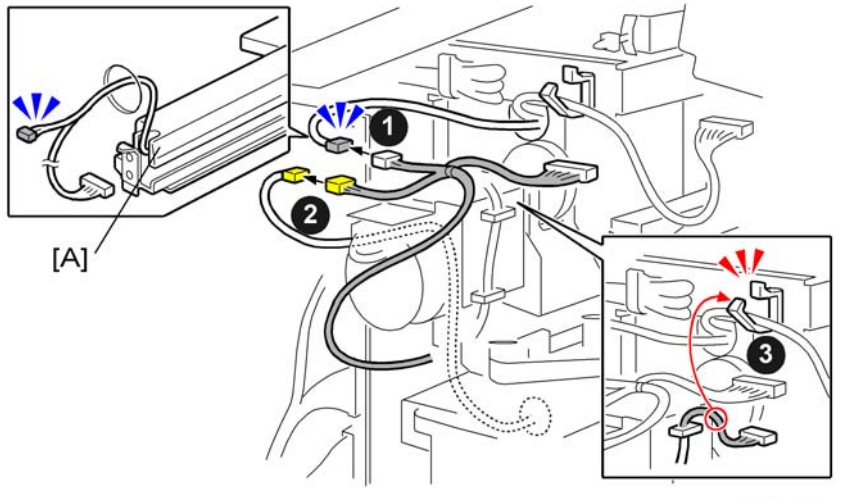
Important

- **This screw must remain attached to the punch unit.**
- **Before removing the punch unit from the finisher, the screw must be removed from hole (1) and re-attached at hole (2). This stabilizes the punch unit and prevents it from wobbling from side to side while it is being removed and handled after removal.**



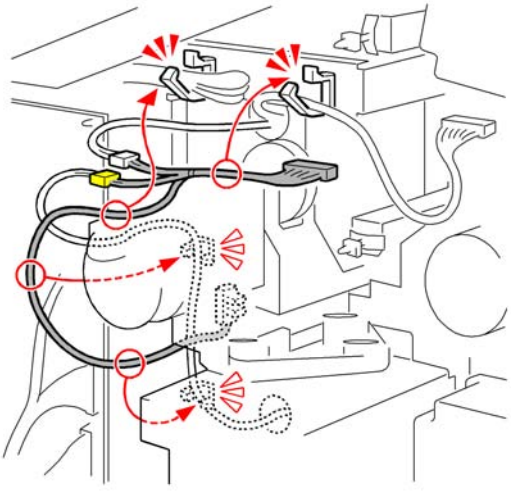
d449i109

6. At the front, slide the punch-out hopper [A] into the finisher.



d449i110

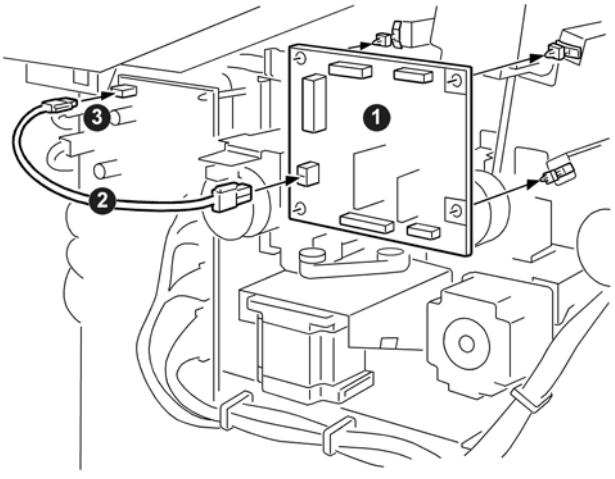
7. Route the harnesses from the CIS unit [A] through the hole.
8. Connect the harnesses at (1) and (2) (☞ x2).
9. If you are installing the punch unit for North America, fasten the extra connector (not used) at (3) (☞ x1).



d449i110a

10. Finish clamping the harnesses as shown above.

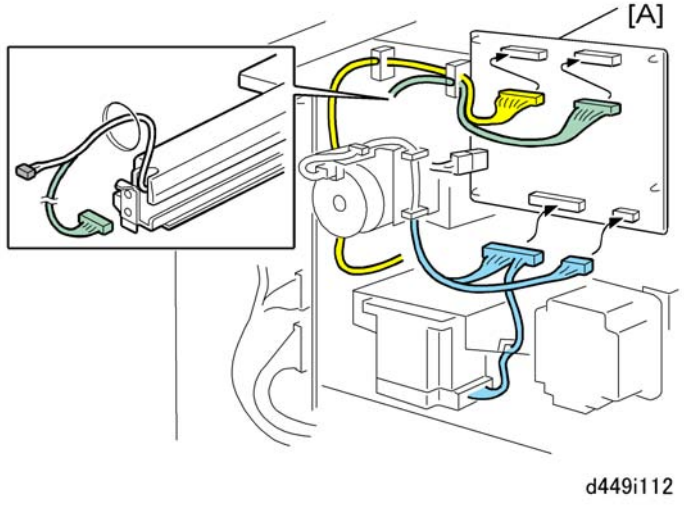
Punch Control Board



d449i111

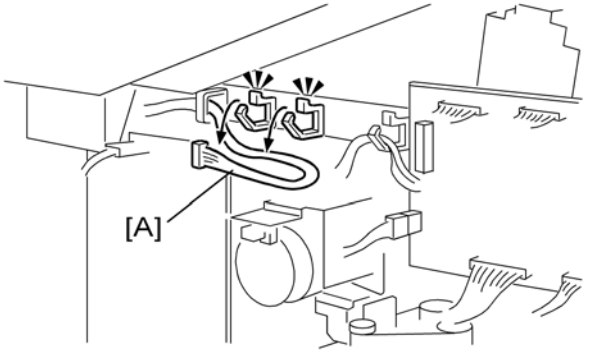
1. Install the punch control board (1) (Standoffs x4, no screws).
2. Connect the punch relay harness (2) to the punch control board and punch main control board (3).

Final Connection



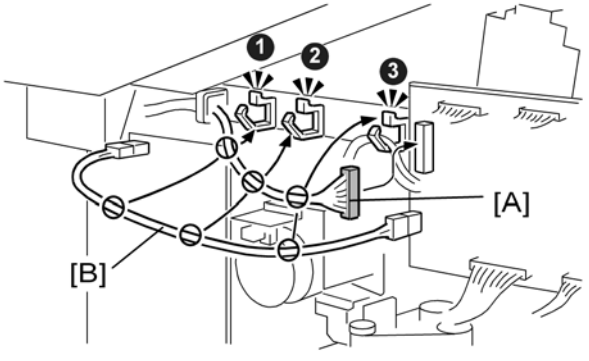
d449i112

1. Fasten the connectors to the punch unit PCB [A] (☞ x2).



449i113

2. Release harness [A] from the frame (x2).



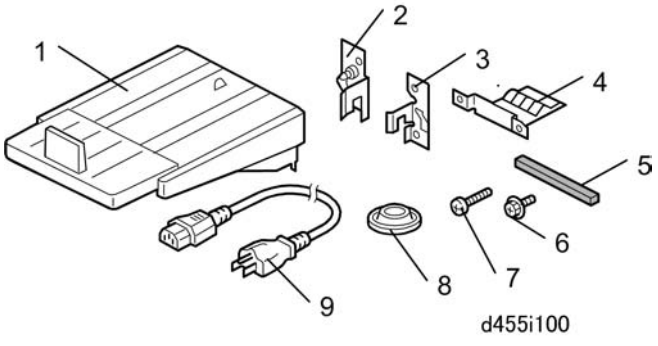
d449i114

3. Connect harness [A] to the punch control board (x1).
4. Gather harness [A] and the board relay harness [B] and clamp them (x3).

Trimmer Unit TR5020 (D455-17)

Accessories

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



No.	Description	Q'ty
1.	Output Tray*1	1
2.	Joint Bracket – Left (Marked "L")	1
3.	Joint Bracket – Right (Marked "R")	1
4.	Ground Plate	1
5.	Sponges	2
6.	Screws (M3x6 for Ground Plate)	2
7.	Screws (M4x10 for Joint Bracket)	4
8.	Leveling Shoes	4
9.	Power Cord	1

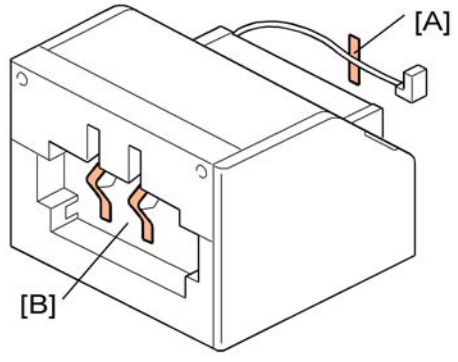
*1: Screws (x2) for the output tray are attached to the left side of the unit.

Installation

⚠CAUTION

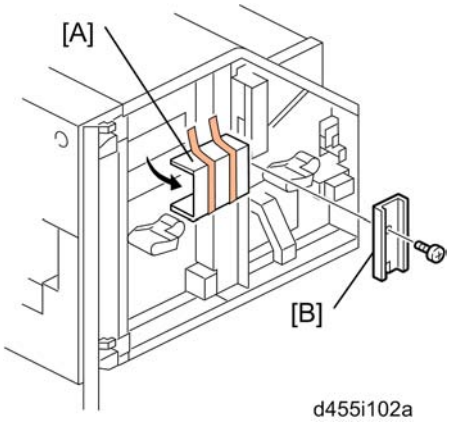
- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

Tapes, Stopper Plate



d455i101

1. Remove the tape on the right side to free the I/F cable [A].
2. Remove the tape from the left side [B].



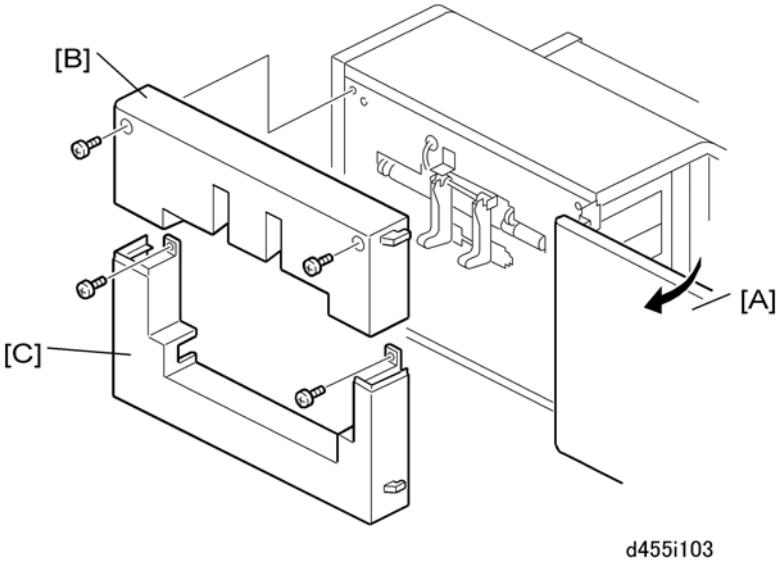
d455i102a

3. Open the front door and remove the retainer [A].
4. Remove the stopper plate [B] (x1).

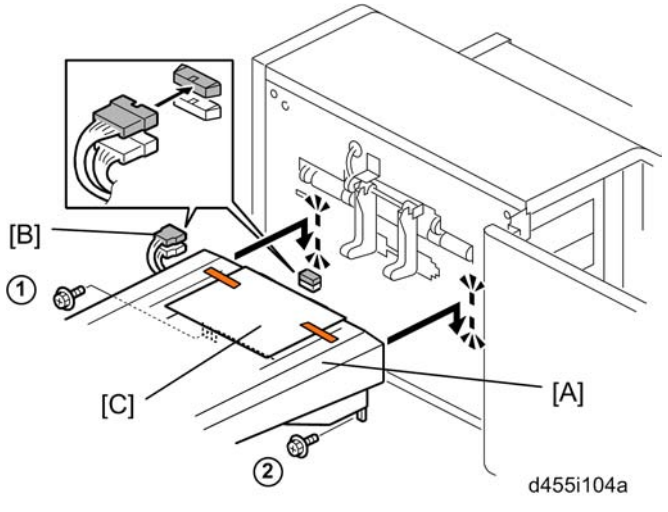
Note

- Keep the stopper plate. It should be re-installed before transporting the unit to a new location.

Output Tray



1. Make sure that the front door [A] is open.
2. Remove:
   [B] Left upper cover(x2)
   [C] Left lower cover (x2)

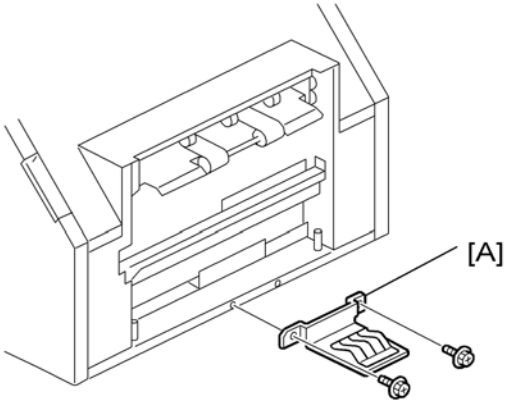


3. Remove the screws (1) and (2) from the left side.
4. Use the removed screws to attach the output tray [A].
5. Connect the output tray at [B].
6. Remove the sheet [C] of paper.

- Do not remove this sheet [C] of paper before connecting the output tray to the trimmer unit.

7. Reattach the left lower cover and left upper cover.

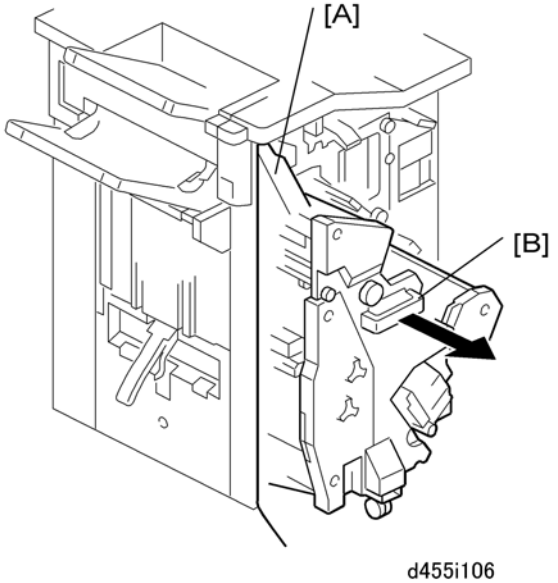
Ground Plate



d455i105

1. Attach the ground plate [A] to the right bottom edge (x2 M3x6).

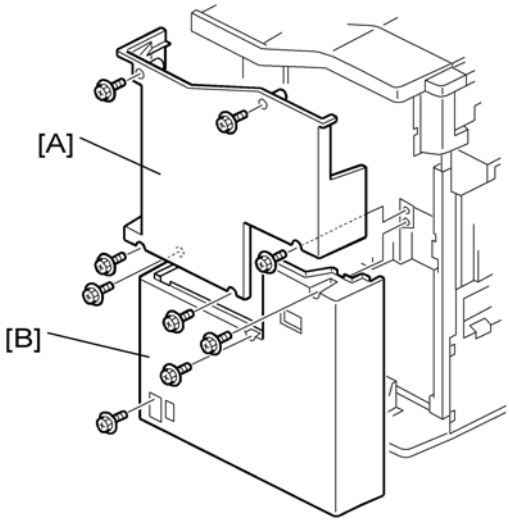
Preparing the Booklet Finisher (D434) for Docking



d455i106

1. Open the front door [A] of the finisher.

2. Pull out the staple unit [B].

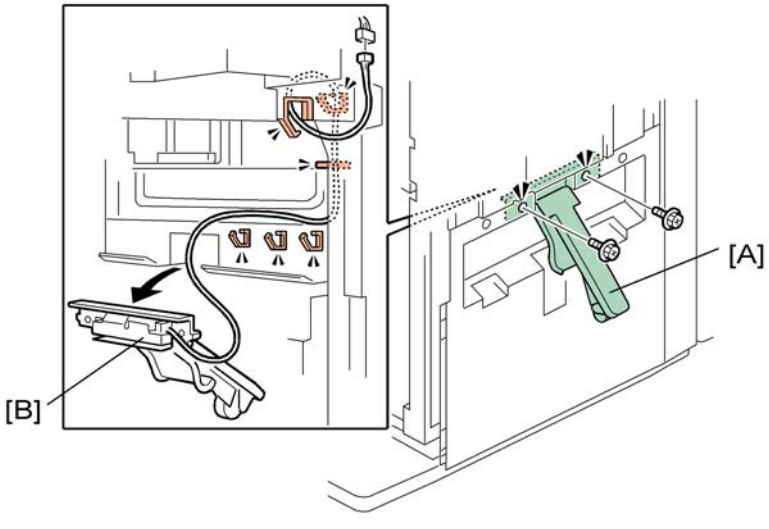


d455i107

3. At the rear of the finisher, remove:

   [A] Rear upper cover (x5)

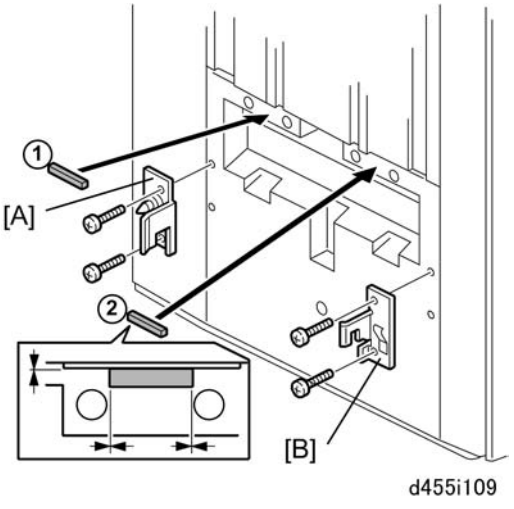
   [B] Rear lower cover (x4)



d455i108

4. Unfasten the booklet tray sensor actuator arm [A] (x2).
5. Disconnect the actuator arm [B] and remove it (x5, x1).
6. Store the actuator arm in a safe location for future use.
7. Reinstall the rear upper and lower cover.

Docking

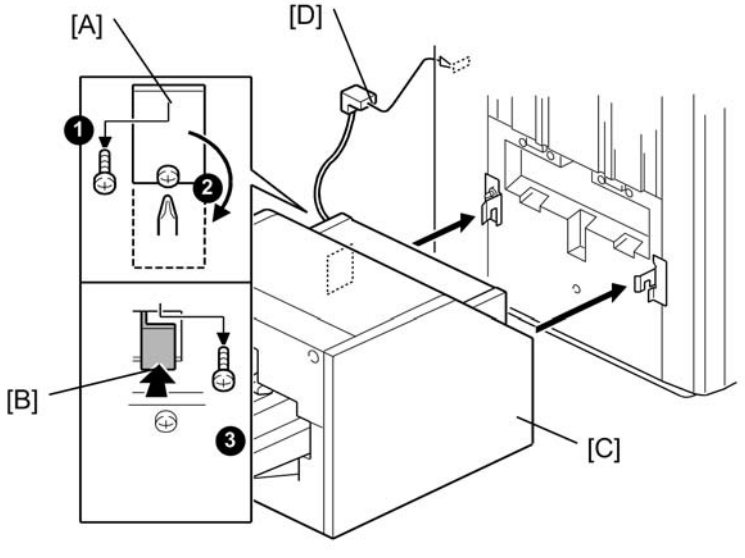


1. Attach:

   [A] Left joint bracket, marked "**L**" (x2, M4x10)

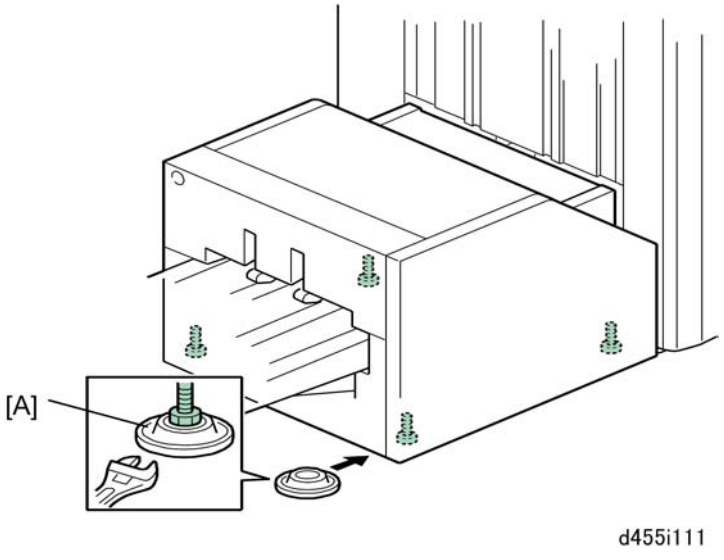
   [B] Right joint bracket, marked "**R**" (x2, M4x10)

2. Peel the tape from the back of the sponges and attach sponge (1) and (2).



3. At the rear, remove screw (1) from plate [A].
4. Loosen screw (2) and lower the plate so you can see the lock bar [B].
5. Remove lock bar screw (3) (x1 M3x6). **Keep this screw.**

6. Push the lock bar [B] until it is unlocked.
7. Slowly push the unit [C] against the left side of the finisher so that the lock bar is directly and squarely under the arms of the joint brackets.
8. At the rear, pull lock bar [B] toward you so that it slides up into the notches in the arms of the joint brackets.
9. Fasten the lock bar by re-attaching the screw removed in **Step 5**. (x1).
10. Connect the unit I/F cable [D] to the finisher.
11. Connect the plug of the power cord to the power source.

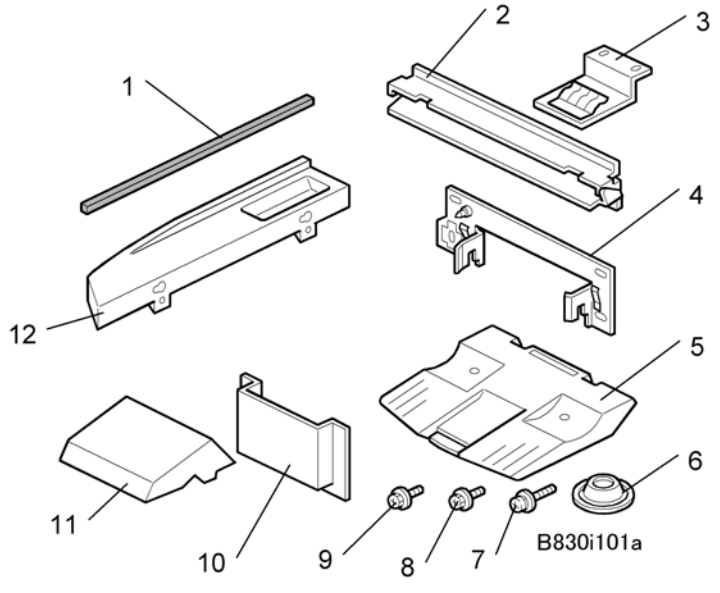


12. Set a leveling shoe [A] under each corner of the unit.
13. At each corner, turn the nut to lower the bolt onto each shoe.
14. Use a level to check each side of the unit.
15. Turn each nut to adjust the height of each corner until each side is level.

Finisher SR5000 (B830)

Accessories

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



No.	Description	Q'ty
1.	Sponge Strip	1
2.	Entrance Guide Plate	1
3.	Ground Plate	1
4.	Joint Bracket	1
5.	Shift Tray	1
6.	Leveling Shoes	4
7.	Tapping Screws – M4 x 12	4
8.	Tapping Screws – M3 x 6	8
9.	Tapping Screws – M4 x 8	2
10.	Support Plate Pocket	1

No.	Description	Q'ty
11.	Support Plate	1
12.	Side Tray	1
-	Support Plate for Proof Tray	1

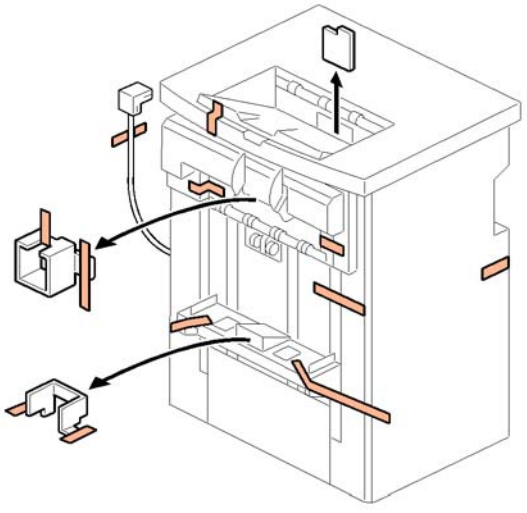
Installation

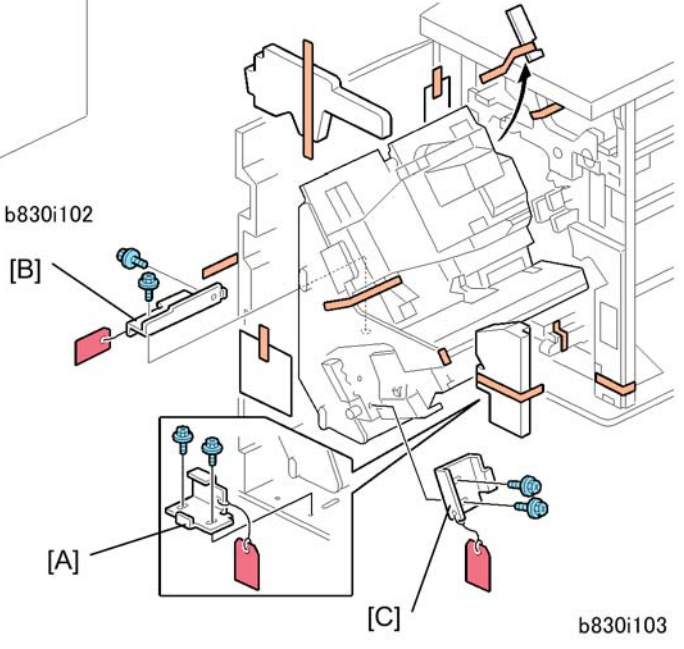
⚠CAUTION

- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

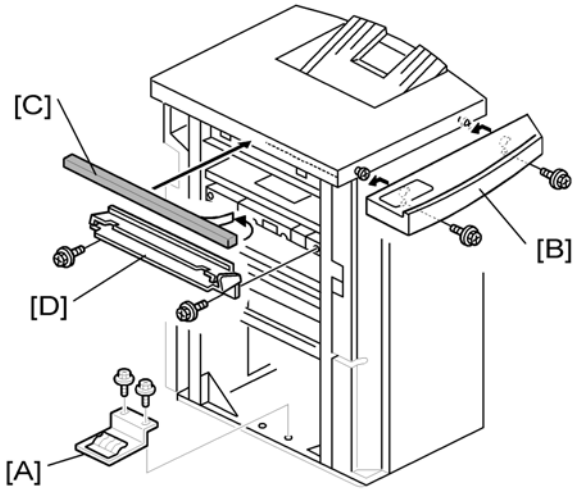
2

Preparing the Finisher





1. Unpack the finisher and remove all tapes and shipping retainers.
2. Open the front door and remove the shipping retainers.
3. Remove the brackets, tags, and wires in this order: [A]➔[B]➔[C] (x 2 each).



b830i105

4. Install the ground plate [A] (x 2) (M3 x 6).

Note

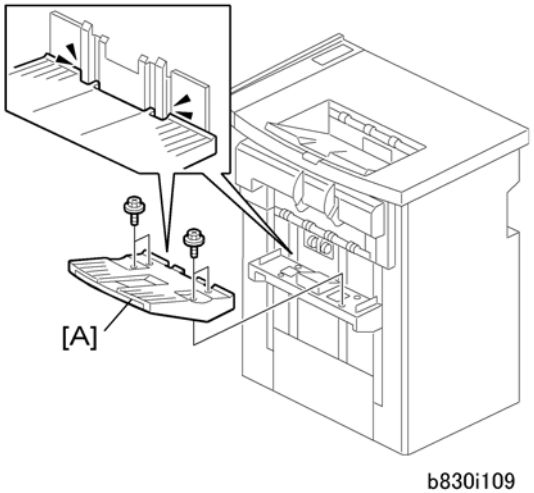
- Set the ground plate so that there is no gap between the plate and the bottom frame of the finisher (as shown).

5. Install the table extension [B] (x 2) (M4 x 8).

Note

- The edge of the table extension should be aligned with the edge of the finisher.

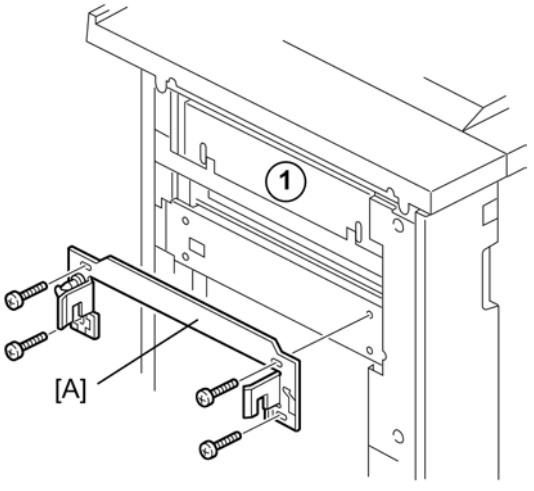
6. Attach the cushion [C] to the right side of the upper cover.
7. Install the entrance guide plate [D] (x 2) (M3 x 6).



b830i109

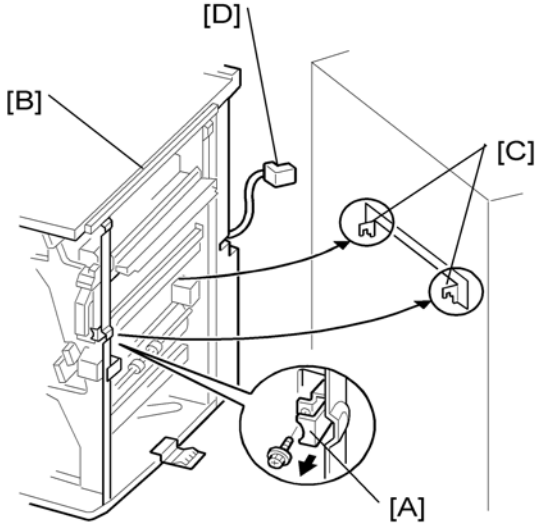
8. Insert the shift tray [A] into the grooves and fasten it (x 4) (M3 x 6).

Docking



b830i111

1. Fasten the joint bracket [A] to the upstream peripheral unit ((1) is the decurl unit).



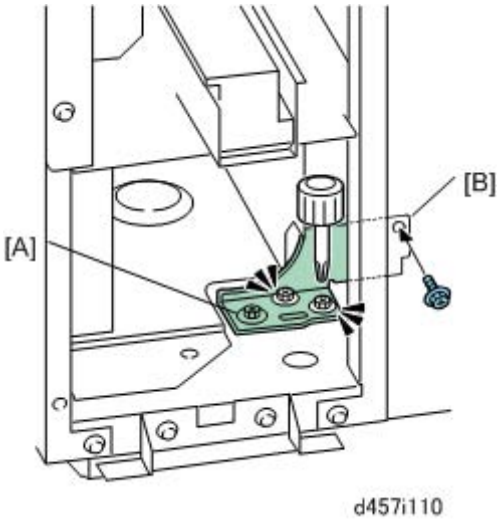
b830i202

2. Open the front door of the unit.
3. At the front right corner, remove the screw of the lock bar [A] (x1 M3x6). **Keep this screw.**
4. Pull the lock bar toward you until it stops.
5. Slowly push the unit [B] against the left side of the upstream unit so that the lock bar is directly and squarely under the arms of the joint bracket [C].
6. Check that the top edges of the finisher are parallel with edges of the upstream unit.

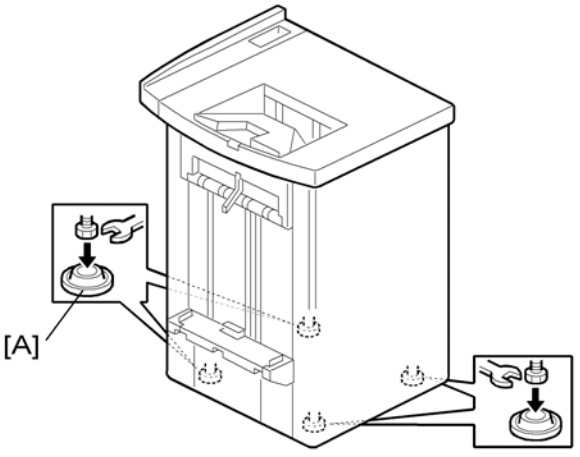
7. Push the lock bar in completely so that it slides up into the notches in the arms on both ends of the joint bracket.
8. Fasten the lock bar by re-attaching the screw removed in **Step 3**. (x1)
9. Connect the finisher I/F cable [D] to the upstream unit.

Note

- Do this procedure only if the upstream unit is the Cover Interposer Tray or the Decurler unit.



10. Remove the rear cover of the finisher.
11. Remove the rear cover of the upstream unit.
12. Use a short screwdriver to loosen bracket [A] (x2).
13. Fasten the bracket to the upstream unit at [B] (x1).
14. Tighten the screws (x3).
15. Re-attach the rear covers.



16. Set the leveling shoes [A] (p.207).
17. Adjust the height of the unit and make sure that it is level (p.207).

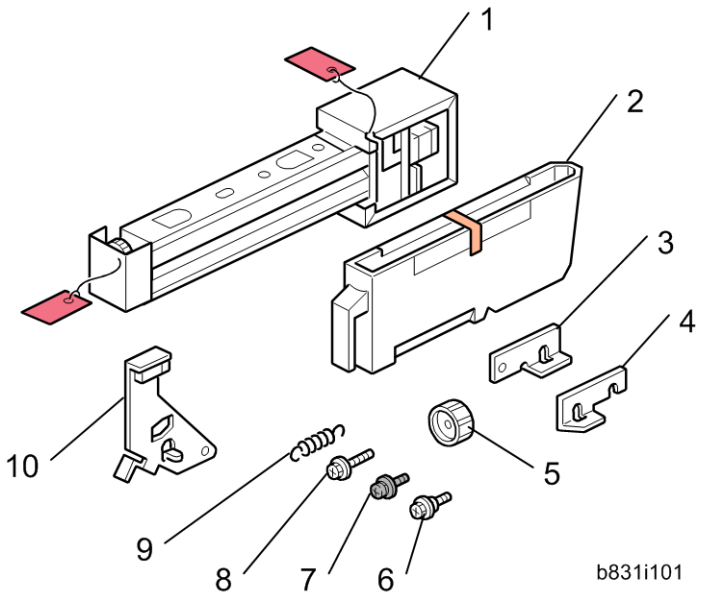
Check for Skew and Correct Side-to-Side Registration

1. Load some A3/DLT paper in Tray 2 of the main machine.
2. Make several prints that will exit to the shift tray.
3. Watch each sheet as it exits the machine to check for the presence of skew, and check that the side-to-side registration is correct. (p.207).

Punch Unit PU5000 NA, EU, SC (B831-01, -02, -03)

Accessories

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



No.	Description	Q'ty
1.	Punch Unit	1
2.	Punch-out Hopper	1
3.	Spacer (1 mm)	2
4.	Spacer (2 mm)	1
5.	Knob	1
6.	Step Screw	1
7.	Screw (M4 x 6) Black	1
8.	Screw (M3 x 10)	2
9.	Spring	1
10.	Sensor Arm and Sensor	1

Installation

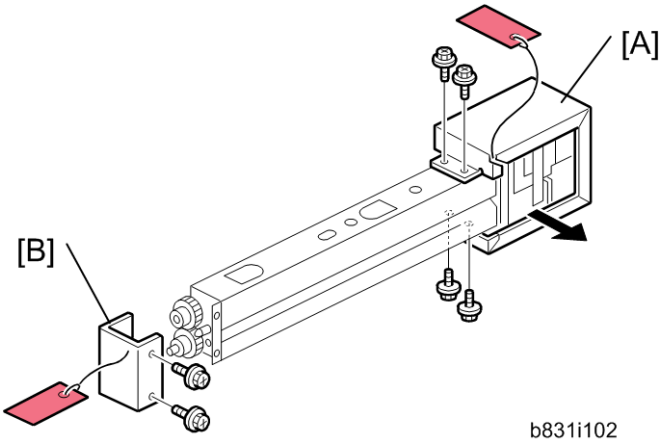
⚠CAUTION

- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

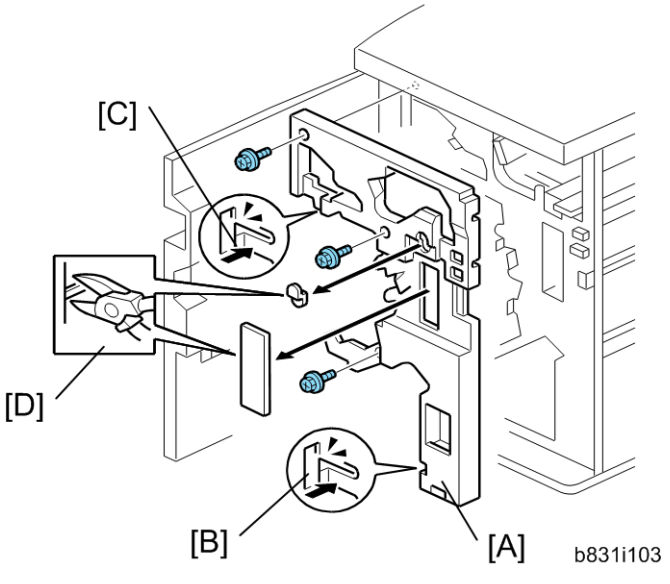
2

Important

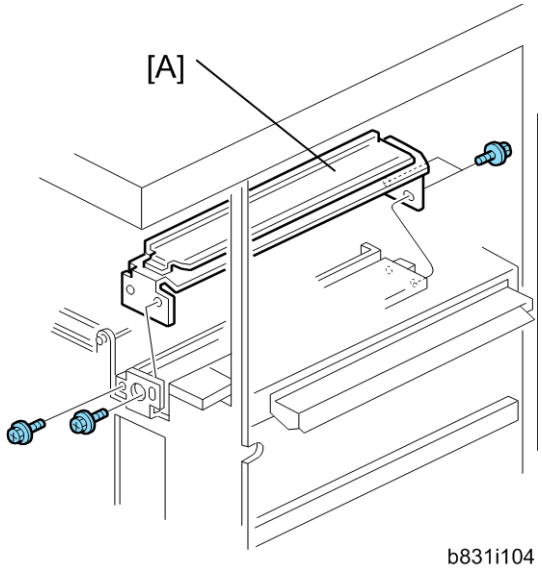
- **This punch unit cannot be used with the M004 main machine (135 ppm).**



1. If the finisher is connected to the machine, disconnect it.
2. Open the front door and remove the rear cover (x 2).
3. Unpack the punch unit and remove the motor protector plate [A] (x 4).
4. Remove the cam lock plate [B] (x 2).

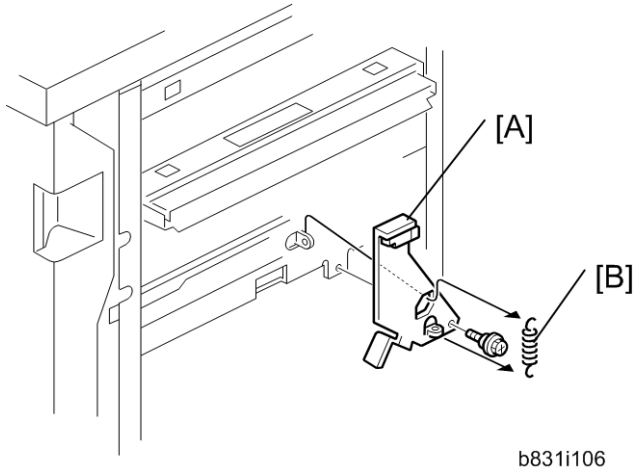


5. Remove the inner cover [A] (x 3).
6. Behind the inner cover at [B] and [C], press the lock tab to the right to release the inner cover from the frame.
7. Remove the plastic knockouts [D].



b831i104

8. Remove the paper guide [A] (x 4).



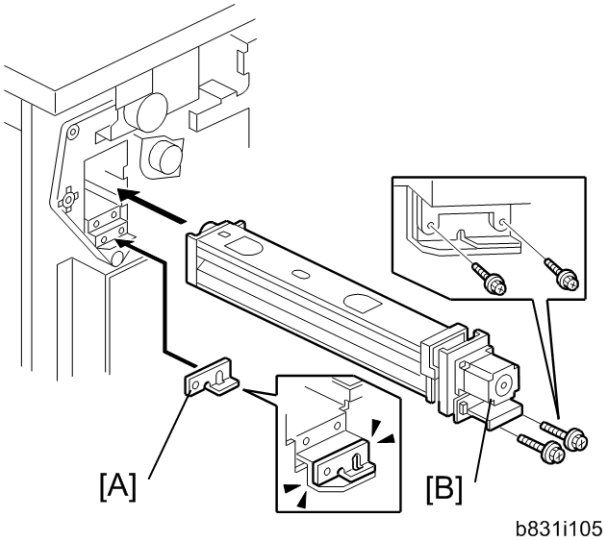
b831i106

9. Install the sensor arm [A] (x 1, small step screw M3 x 4).

Note

- Make sure that the sensor arm swings freely on the step screw.

10. Attach the spring [B].

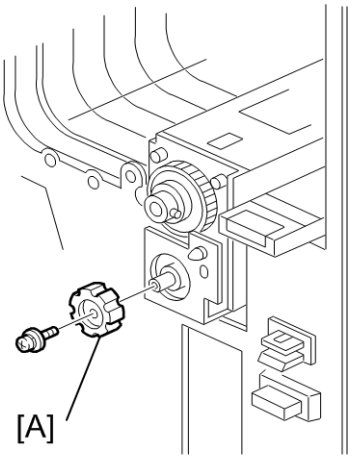


b831i105

11. Position the 2 mm spacer [A] and attach the punch unit [B] (x 2, M3 x 10).
12. Use one of the screws removed from the motor protector plate to fasten the remaining two spacers to the frame as shown.

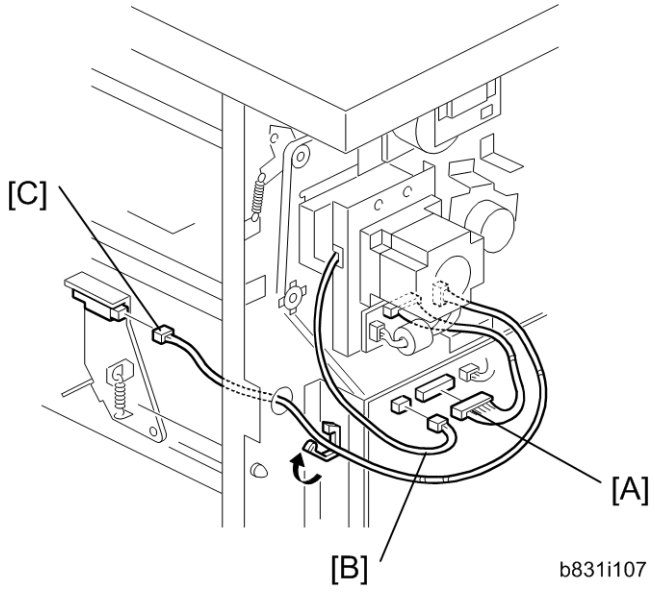
Note

- These extra spacers can be used to adjust the position of the punch holes (front to rear, across the page).



b831i108

13. At the front, fasten the punch unit knob [A] (x 1).

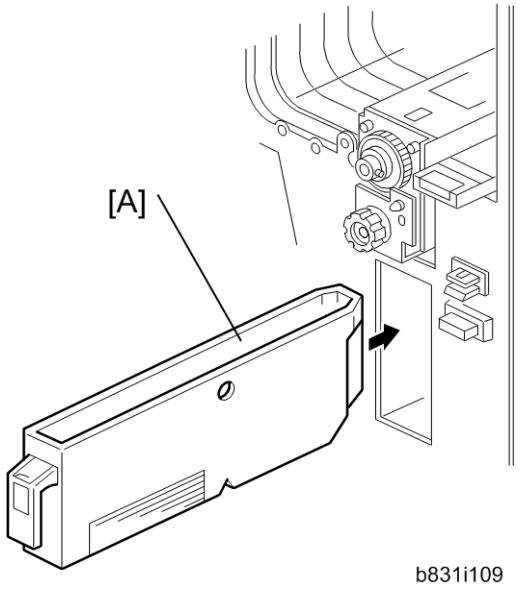


b831i107

14. Connect the PCB harness connector [A] to **CN135** of the finisher PCB and to **CN600** of the punch unit PCB.
15. Connect the harness [B] to **CN136** of the finisher PCB.
16. Connect the single end of the hopper full sensor connector cable [C] to the hopper full sensor on the arm (x 1, x 2).

Note

- No special DIP switch settings are required for this punch unit. A signal from the punch identifies itself by sending a signal to the main machine.



b831i109

17. Slide the punch-out hopper [A] into the finisher.
18. Re-attach the inner cover and rear cover.
19. Close the front door and re-connect the finisher to the machine.
20. **Only for M004 (135 ppm) model,** the following settings must be done to enable the punch unit:
    - Change the setting value of the SP6-980-001 ("Punch Enable Setting for 135 cpm model) from "0 (OFF)" to "1 (ON)".
    - Select "Slower" or "Slow" in the "Adjust Paper Feed Speed" with "User Tools".

Key Counter

Accessories

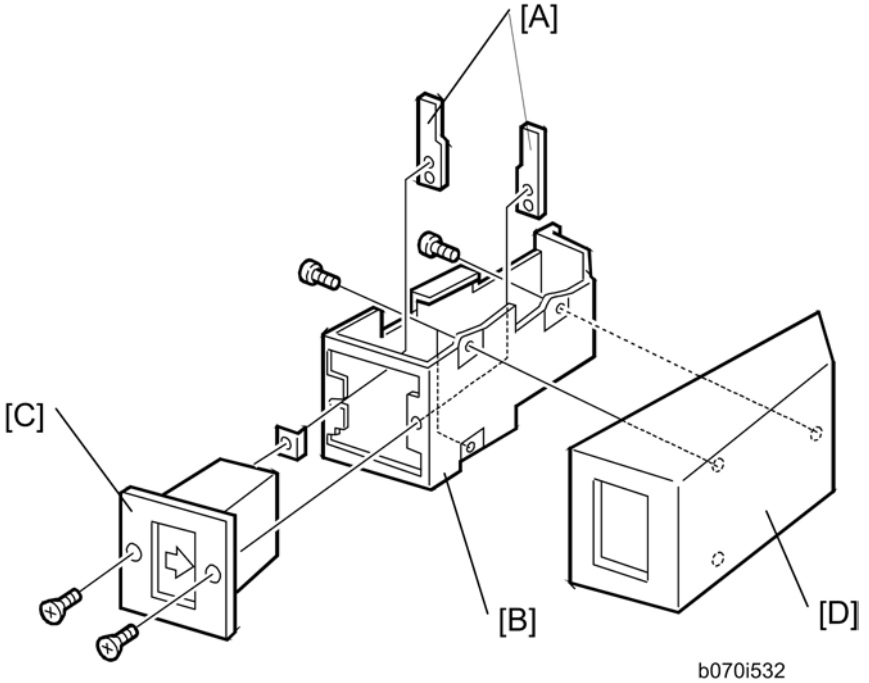
No.	Description	Q'ty
1.	Key Counter Cover	1
2.	Key Counter Plates	2
3.	Key Counter Bracket	1
4.	Machine Screw M3 x 6	1
5.	Shoulder Screw M3 x 4	1
6.	Tapping Screws M4 x 8	3
7.	Machine Screws M3 x 20	2
8.	External Screw M3 x 20	1
9.	Machine Screw (Flathead) M4 x 16	1
10.	Extension Cable (for LCIT Installation)	1
11.	Extension Cable Clamps (for LCIT Installation)	6

Installation

⚠CAUTION

- Make sure that the main machine is switched off and that its power cord is disconnected before doing the following procedure.

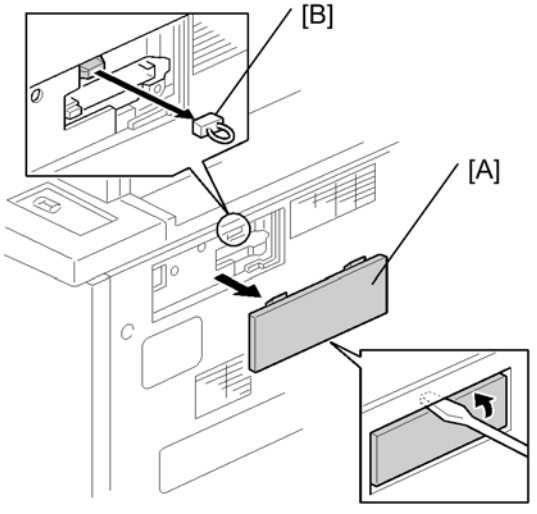
Assembling



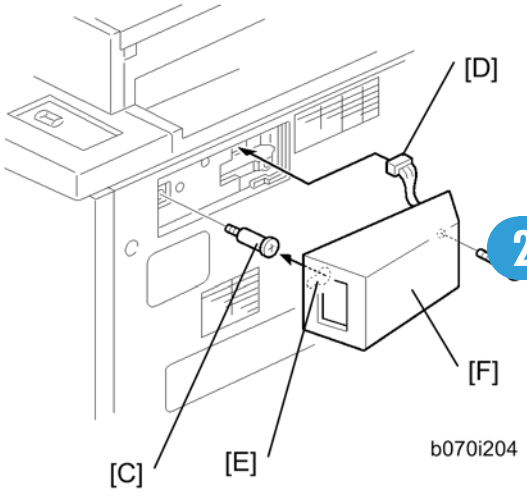
1. While holding the key counter plates [A] inside the key counter bracket [B], insert the key counter holder [C]
2. Fasten the key counter holder [C] through the bracket plate to the counter plates [A] (x 2).
3. Fasten the cover [D] to the key counter bracket [B] (x 2).

Installing

1. Attach the key counter to the main machine if the LCIT is not installed.



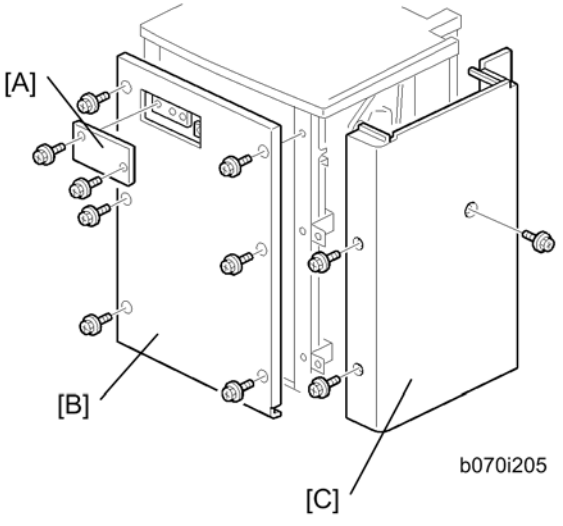
b070i203

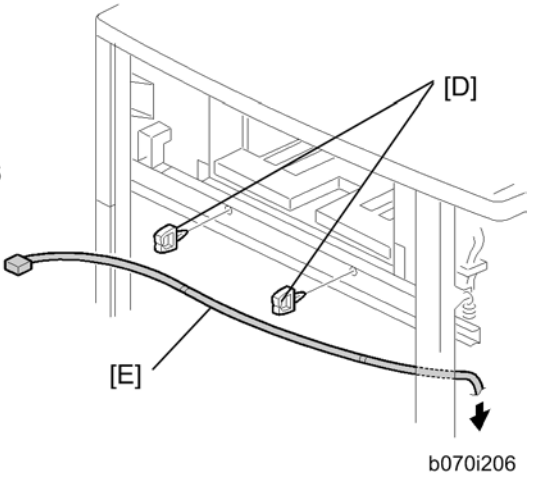


b070i204

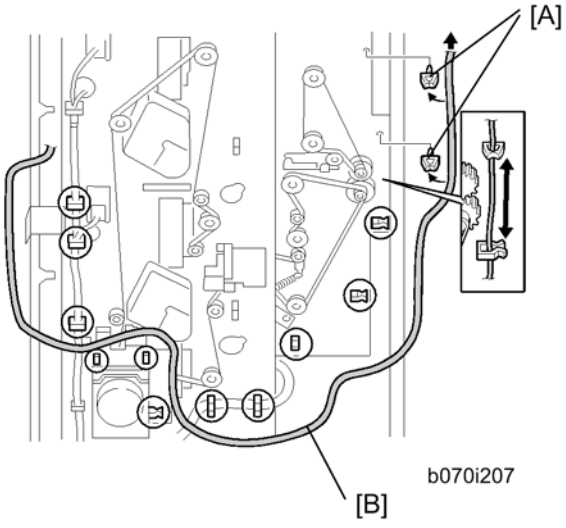
2. On the right side of the main machine, remove the small cover [A].
3. Remove the jumper connector [B].
4. Fasten the shoulder screw [C] to the side of the machine.
5. Connect the key counter assembly [D].
6. Fit the keyhole of the key counter bracket [E] over the head of the shoulder screw, then slide it back.
7. Fasten the key counter assembly [F] to the main machine (x 1).
8. Do the User Tool and SP mode settings described at the end of this section.

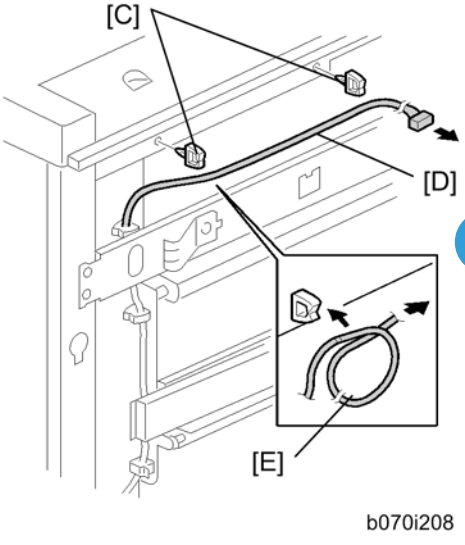
Attaching the Key Counter to the LCIT



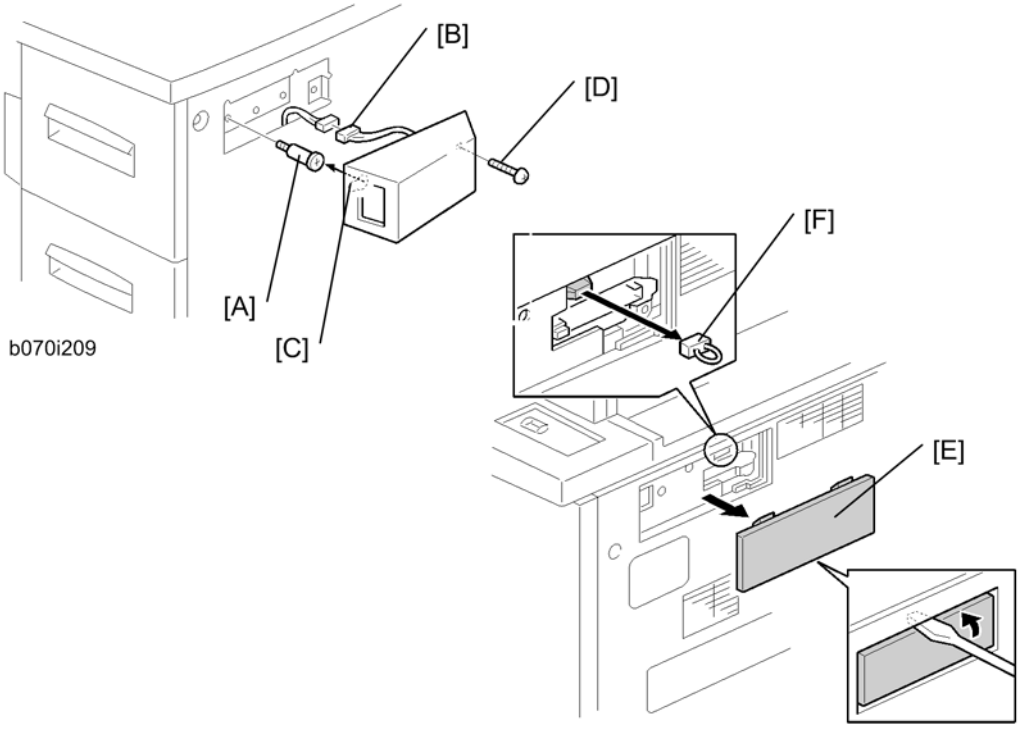


1. On the LCIT right cover, remove the cover [A] (x 2).
2. Remove the LCIT right cover [B] (x 6).
3. Remove the LCIT rear cover [C] (x 3).
4. On the right side of the LCIT, attach 2 clamps [D].
5. Attach the extension cable [E] to the 2 clamps.

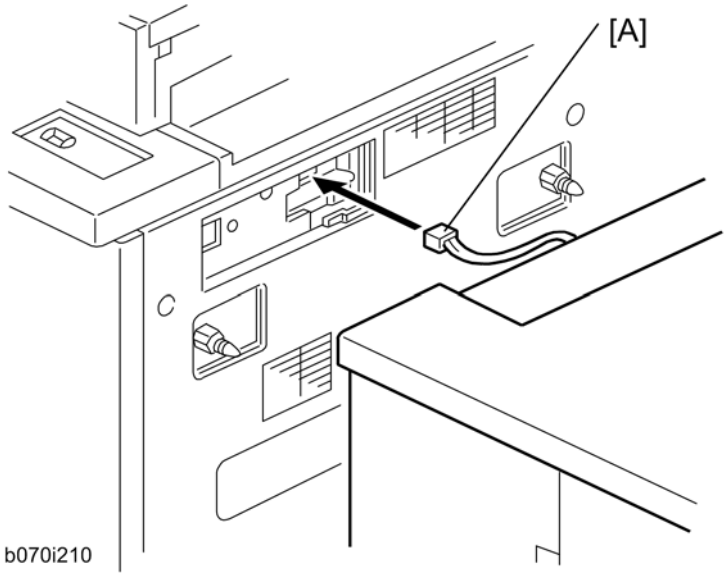




6. On the rear side of the LCIT, attach 2 clamps [A].
7. Route the cable [B] as shown.
8. On the left side of the LCIT, attach 2 clamps [C].
9. Route the cable [D] as shown.
10. If the cable from the right cover is too long, loop it [E] to make it shorter.



11. Re-attach the right LCIT cover.
12. Fasten the shoulder screw [A] to the side of the LCIT.
13. Connect the key counter assembly [B].
14. Fit the keyhole of the key counter bracket [C] over the head of the shoulder screw, then slide it back.
15. Fasten the key counter assembly [D] to the LCIT (x 1).
16. On the right side of the main machine, remove the small cover [E].
17. Remove the jumper connector [F].



18. Connect the extension cable [A] from the LCIT to the main machine.
19. Dock the LCIT to the main machine.

User Tool and SP Mode Settings

1. Instruct the key operator to enable the key counter with the User Tools setting:

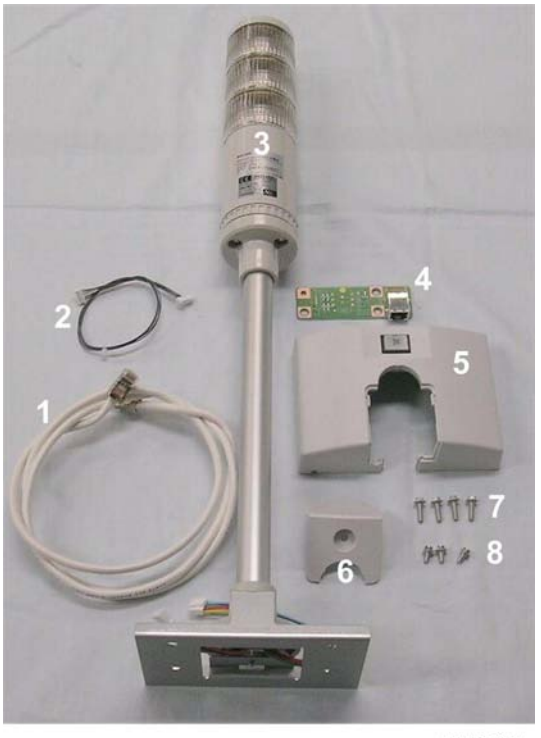
   User Tools> System Settings> Administrator Tools> Key Counter Management> ON

   Then select and enable the items for the counter.
2. Enter the SP mode
   - Confirm that the setting for SP5121 is "0" (Default: Paper Feed Count). This sets the counter for paper feed ("1" sets for paper exit).
   - Confirm that the setting for SP5113 is "0".

Attention Light AL5000

Accessories

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



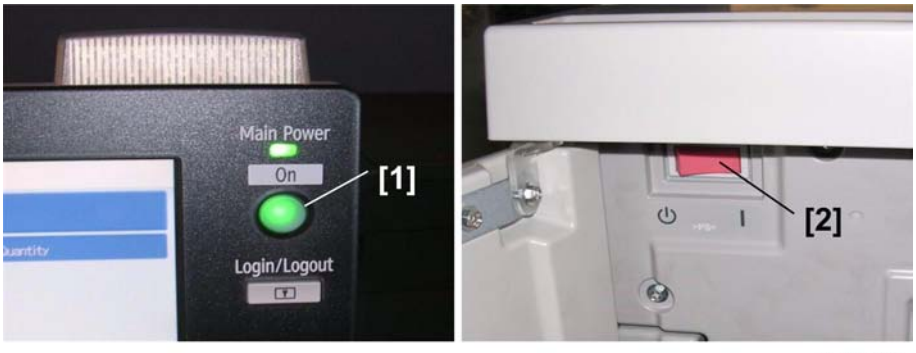
d458i001

	Item	Qty
1.	Connection Cable	1
2.	Relay Harness	1
3.	Attention Light	1
4.	Relay Board	1
5.	Base Cover: Front	1
6.	Base Cover: Rear	1
7.	Screws (M4 x 14)	4

	Item	Qty
8.	Screws (M4 x 8)	3

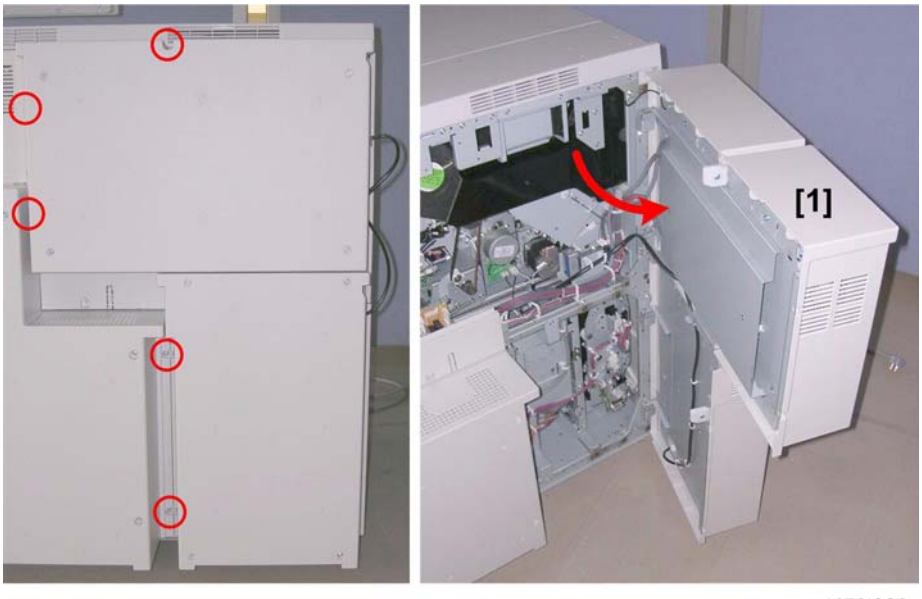
Installation

Preparation



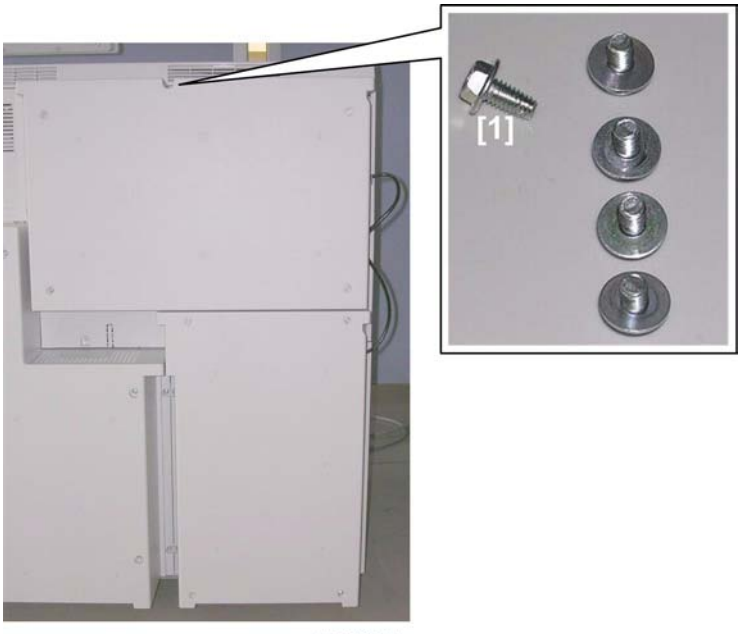
d458i002

1. Switch off the operation power switch [1] and main power switch [2].
2. Unplug the power cord of the main machine from the power source.



d458i003

3. Open the controller box door [1] (x 5).

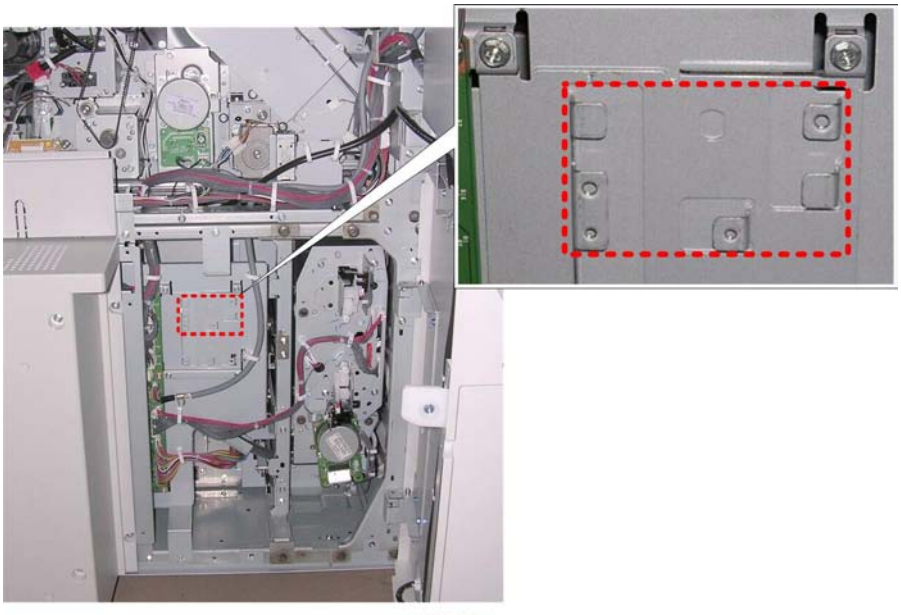


d458i004

Important

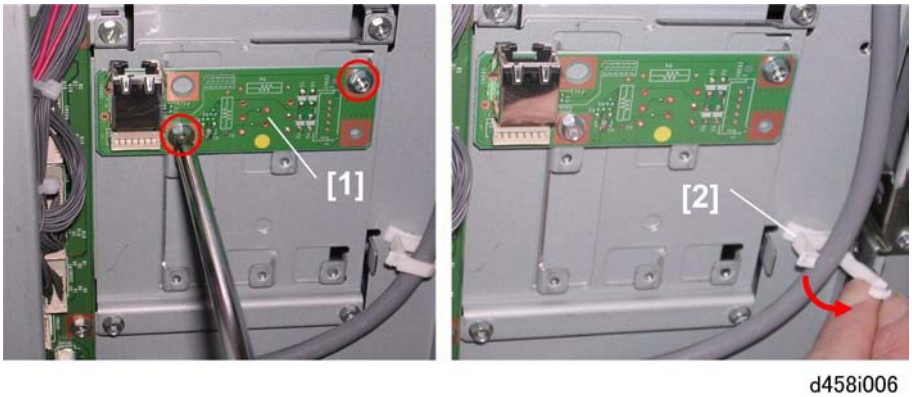
- The screw [1] removed from the center of the top edge of the controller box door has no washer. Be sure to re-attach this screw at the same location. (The other screws with the washers are identical.)

Relay Board



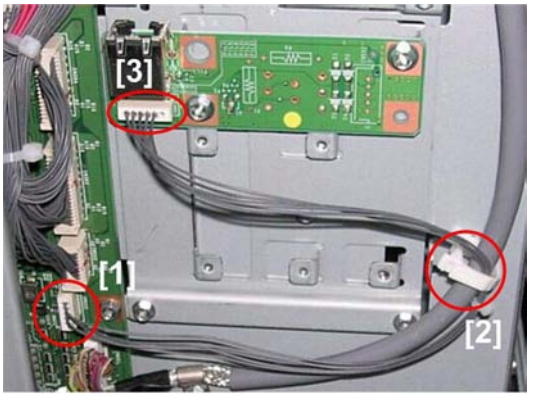
d458i005

1. The illustration above shows where the relay board will be attached.



d458i006

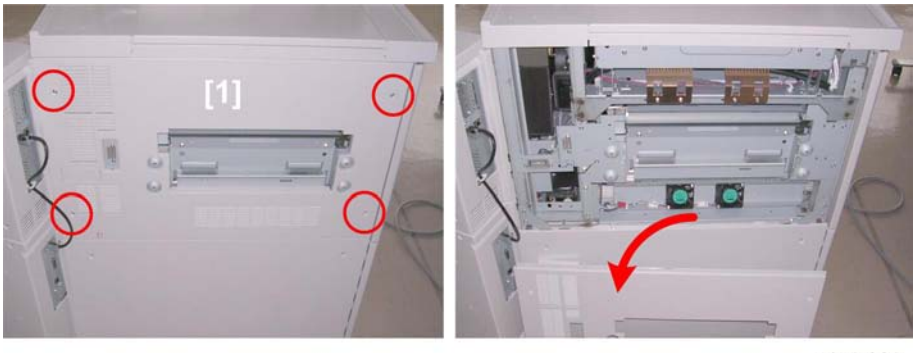
2. Attach the relay board [1] to the supports near the right edge of the IOB (x2 M4x8).
3. Open the harness clamp [2] (x1).



d458i007

4. Connect the smaller connector [1] of the relay harness to the IOB at **CN322** (x1).
5. Clamp the relay harness at [2] (x1).
6. Connect the larger connector [3] of the relay harness to the relay board (x1).

Connection Cable

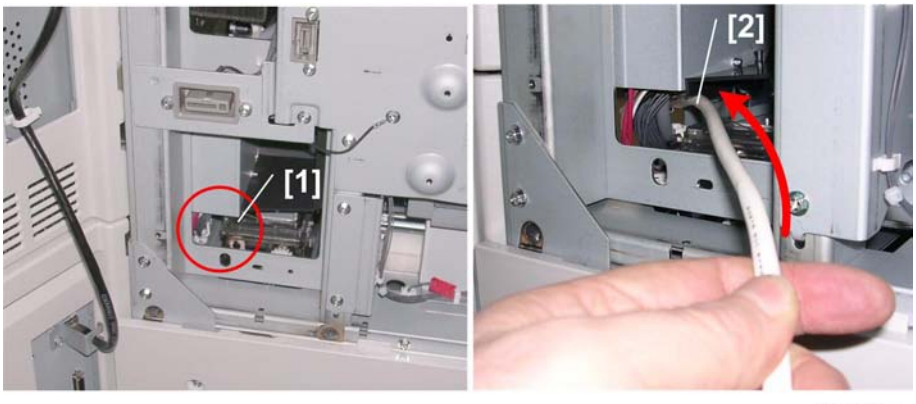


d458i008

1. Remove the left upper cover [1] (x4).

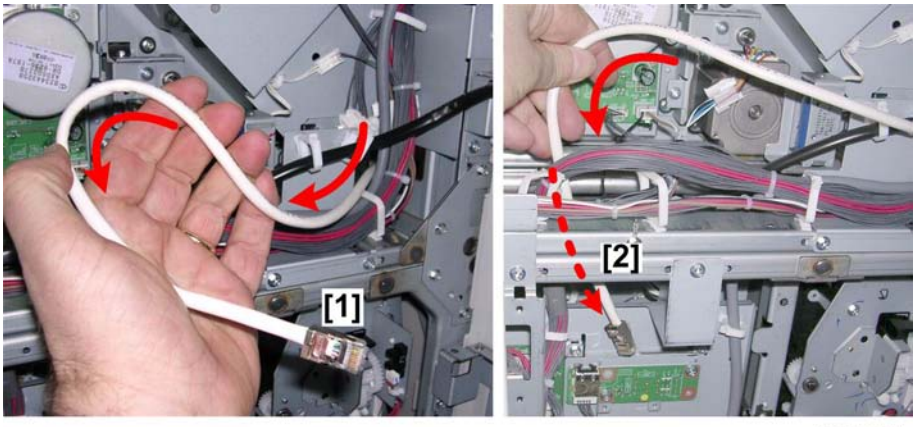
d458i009

2. Use a pair of nippers to remove the knockout [1].
3. Use a small knife to trim away the plastic burrs from the opening.



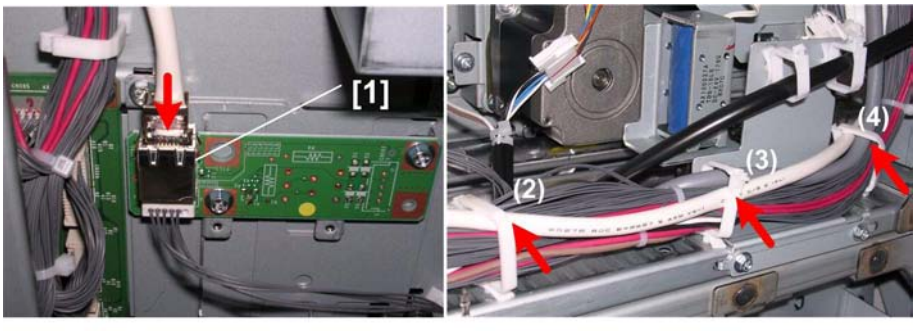
d458i010

4. The connection cable is inserted at [1] near the hinge of the controller box door.
5. Insert one end of the cable [2] through the opening. (You can insert either end; the connectors on both ends of the cable are identical.)



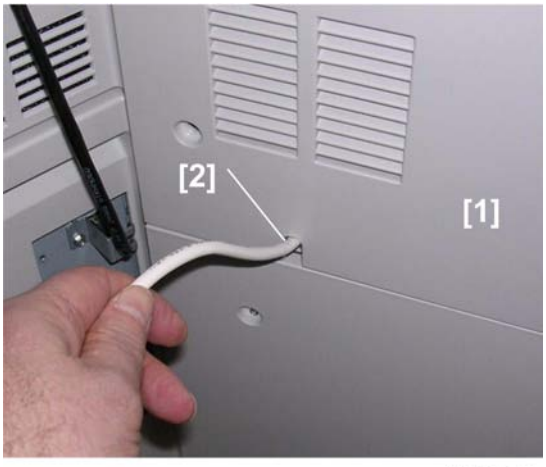
d458i011

6. On the other side of the control box door behind the machine, pull the other end of the cable [1] through the frame.
7. Pass the cable [2] behind the horizontal stay as far as the relay board.



d458i012

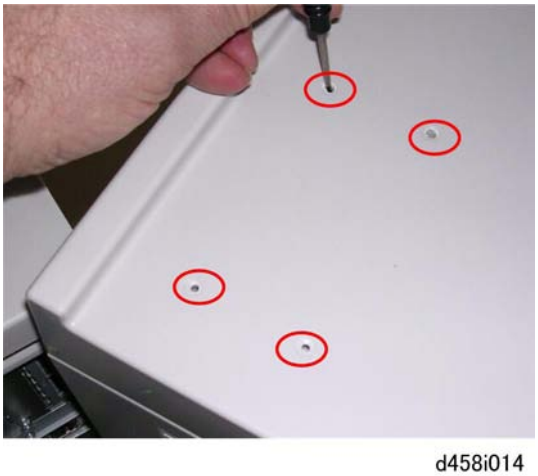
8. Connect the connection cable [1] to the relay board (x1).
9. On top of the horizontal stay, open and close the clamps around the connection cable at (2), (3), (4) (x3).



d458i013

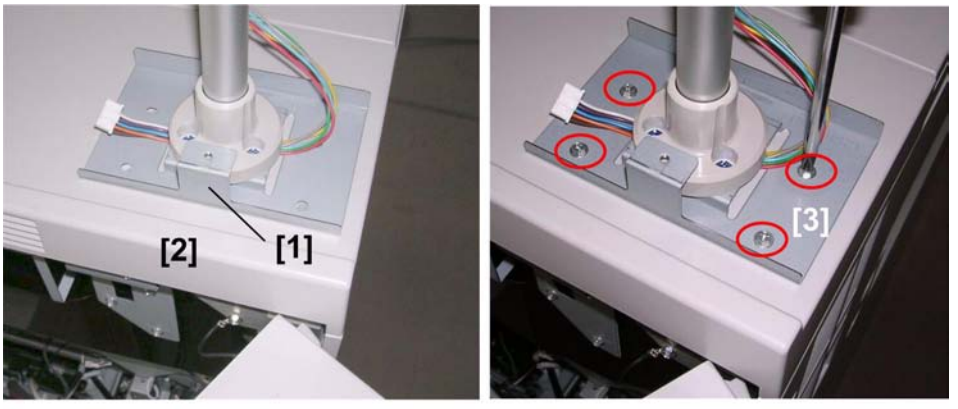
10. Re-attach the left upper cover [1] (x4).
11. Make sure the cable passes through the "U"-shaped opening [2] where the knockout was removed from the cover.

Attention Light



d458i014

1. There are four partially punched holes on the top of the left rear corner of the machine.
2. Use a punch or tip of a sharp tool to make these holes larger.
3. Be sure to remove any plastic inside the holes.



d458i015

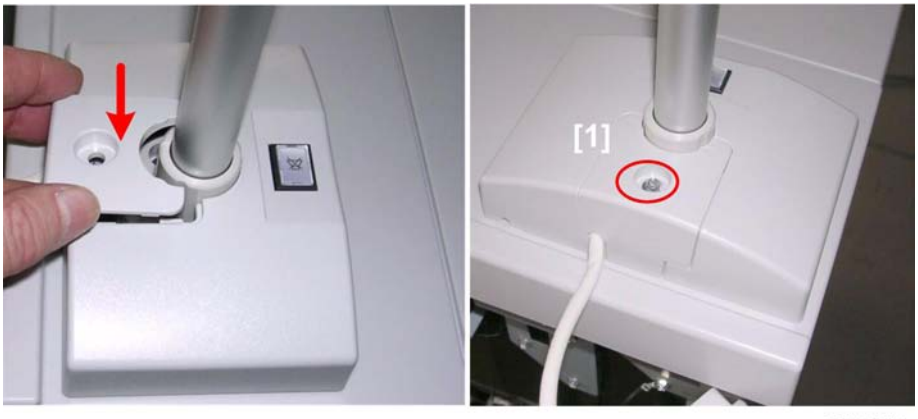
4. Set the base of the light on the left rear corner of the machine with the plate [1] facing the rear edge [2] of the machine.
5. Align the holes of the base plate with the holes below and use the long screws to fasten the base plate [3] to the top of the machine (x4 M4x14).

d458i016

6. Set the connection harness [1] as shown above and connect it to the PCB [2] on the underside of the front base cover.
7. Connect the longer connection harness to the PCB [3]. (The shorter harness is not used.)

d458i017

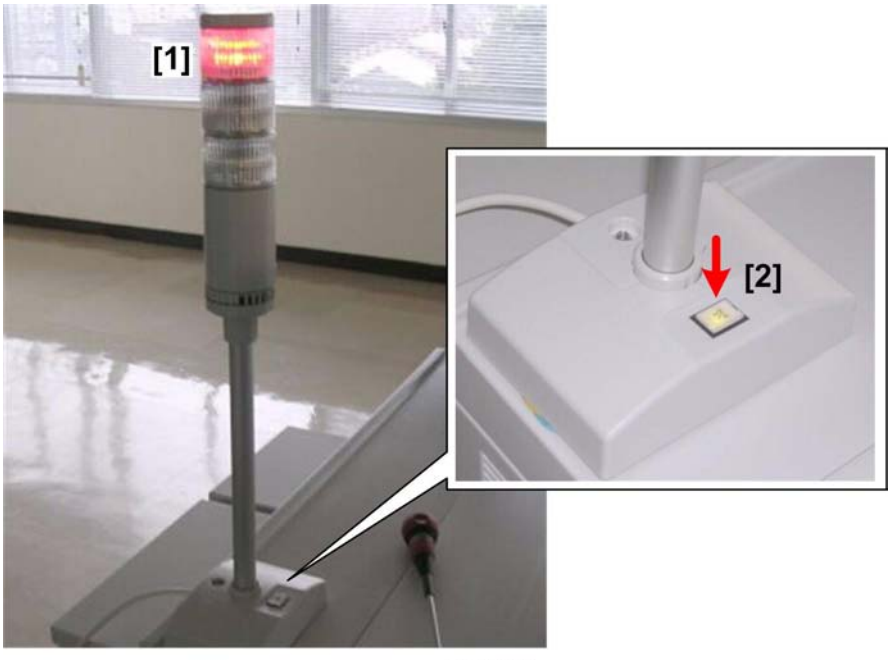
8. Set the front base cover [1] on top of the machine, around the base of the light.
9. Position the connection cable as shown.



d458i018

10. Set and fasten the rear base cover [1] (x1 M4x8).

Test the Installation



d458i019

1. Connect the machine to its power source and turn the main power switch on.
2. Open a front door.
3. Confirm that the attention light [1] goes on.
4. Press the LED switch [2]. The machine should emit a steady beep at regular intervals. This is an additional error alert.
5. Press the LED switch again to switch it off.
6. Close the front door.

   This completes the installation.

Note

- You can also check the operation of attention light with SP5804-207, -208 (Output Check: Status Lamp Green, Output Check: Status Lamp Red.

Common Adjustments

Height and Level Adjustment

Before you begin:

- The main machine should be installed first and adjusted to level within less than 5 mm front-to-back, and side-to-side.
- Due to the length of the paper path with all optional peripheral units installed, it is extremely important that every unit be level.
- The height and level of each peripheral unit must be adjusted at installation.
- The height and level of each unit must be adjusted before testing for the presence of skew and checking that side-to-side registration is correct.

Setting the Leveling Shoes

Important

- **Do this procedure near each caster where an adjustable bolt is provided.**
- **The number of leveling shoes will differ, depending on which unit you are leveling.**

d059i821

1. Turn the **lower** nut to lower the bolt.

   Note

   - The upper bold is spot-welded to the frame and does not move.
2. Set a leveling shoe below the bolt.

d059i822

3. Continue to turn the lower nut until it stops against the shoe.
4. Set a level on the front, rear, and side edges to determine if the unit is level.
5. Adjust the height at each corner until the unit is level.

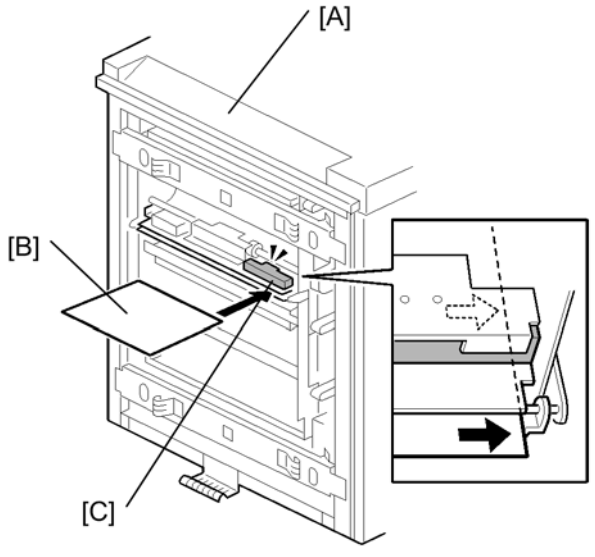
LCIT Adjustments

The CIS (Contact Image Sensor) above the paper path of the LCIT must be calibrated at installation. This must be done for the LCIT (D452 or D453) at installation.

Note

- The two CIS assemblies inside the main machine are calibrated at the factory. This is not possible for the LCIT because the LCIT and main machine are not together at the factory.

1. Turn off the main power switch.
2. Disconnect the LCIT from the mainframe.

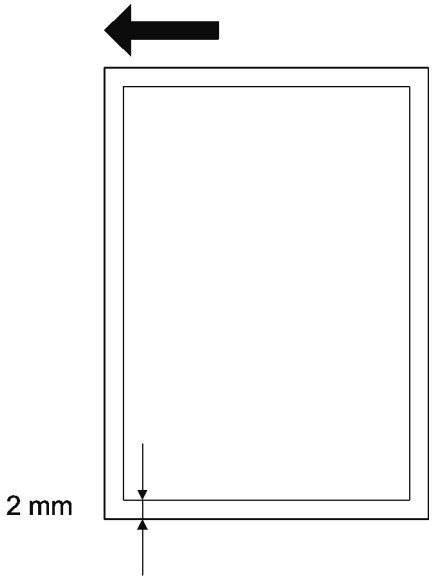


b834i125

3. With the LCIT [A] separated from the mainframe, reconnect the LCIT cable to the mainframe.
4. Turn on the main power switch.
5. Insert one sheet of plain white paper [B] in the paper path.
6. Make sure that the paper covers the entire area below the image position sensor (CIS) [C].
7. Enter the SP mode and do SP1910 -2 (CIS Image Position Adjustment: LED Strength - LCIT). This calibrates the amount of light to be emitted from the CIS.
8. Do SP1909 -2 (CIS Image Position Adjustment: PWM After Adjustment - LCIT).
    - If the displayed value is between 10 (Ah) and 40 (28h), the CIS is calibrated successfully. (The display is in hexadecimal code.)
    - If the value is outside this range, do SP 1910 -2 and 1909 -2 again. If the value does not come between 20 and 40, the CIS may be defective.
9. Exit the SP mode and turn off the main power switch.
10. Remove the paper from the machine.
11. Reattach the LCIT to the side of the main machine.
12. Turn on the main power switch.
13. Push [User Tools]> [Adjust Settings for Operators].
14. Do [0111] 4 to 7 for Trays 4, 5, 6, 7 and set the value for each tray to "Off".
15. Enter the SP mode menu.
16. Adjust the image positions in the main scan direction.
    - Do SP2902 -3, select Pattern 27, then print the trimming pattern.

- Do SP1002 and adjust the image position in the main scan direction for Trays 4, 5, 6, and 7.
- Print the trimming pattern from each tray of the LCIT and from the bypass tray (if installed).
- To do this, touch "Copy Window" in the SP display, select a tray, then push [Start].
- The distance of the test pattern line from the paper edge for each tray must be 2 mm. If it is not 2 mm, adjust with SP1002-4 to -7, depending on which tray is not within the specified 2 mm.

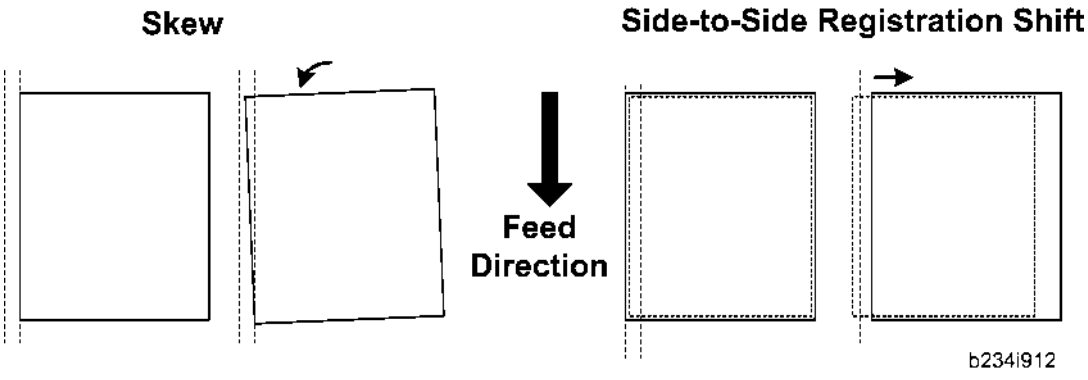
17. Print the trimming pattern (Pattern 27) one more time from Tray 4.
18. Do SP1912 -2 (CIS Image Position Adjustment: Normal Paper). This sets the CIS for operation with normal paper.
19. Exit the SP mode.
20. Push [User Tools]> [Adjust Settings for Operators].
21. Do [0111] 4 to 7 again and reset the values for Trays 4, 5, 6, and 7 to "On".



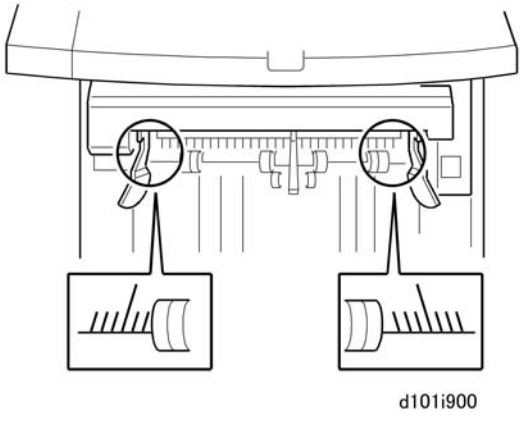
Skew and Side-to-Side Registration

Overview

The paper feed path is extremely long when many peripheral units are installed. In such a long path, the cumulative effect of paper skew or deviation in side-to-side registration may require adjustment.



- Skew occurs when the trailing edge of the paper rotates away from the direction of paper feed.
- If side-to-side registration occurs, the sheet remains straight but shifts left or right away from center.

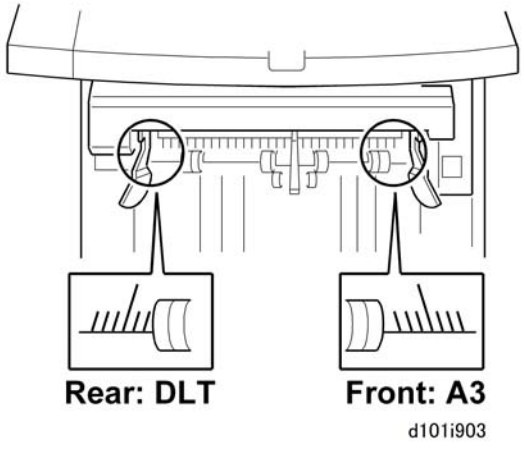


Skew and side-to-side registration are checked with graduated scales (shown above) where paper exits the units. The scales are provided so that you can visually check and measure the amount of skew or deviation in side-to-side registration.

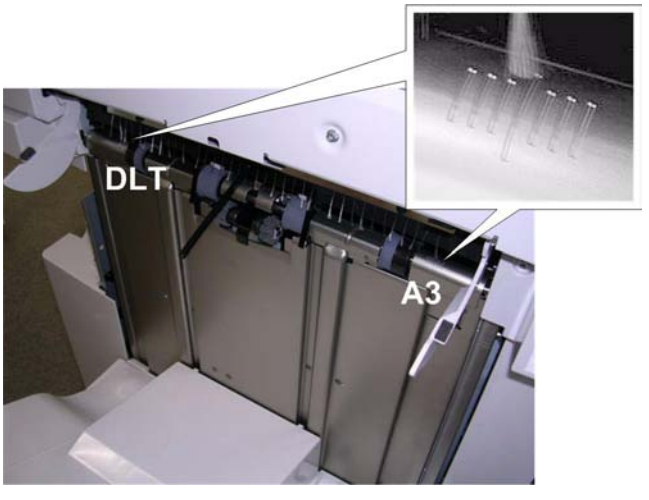
A scale for detecting skew and checking side-to-side registration ("S-to-S") is provided on the following peripheral units.

Name	Skew	S-to-S	Comment
LCIT (D452)	X	O	Side-to-side registration only; CIS adjustment

LCIT (D453)	X	O	Correction for both skew and side-to-side registration are possible.
Cover Interposer (B835)	O	O	
Multi Folding Unit (D454)	O	O	
High Capacity Stacker (D447)	O	O	
Booklet Finisher (D434)	O	O	
Finisher (B830)			



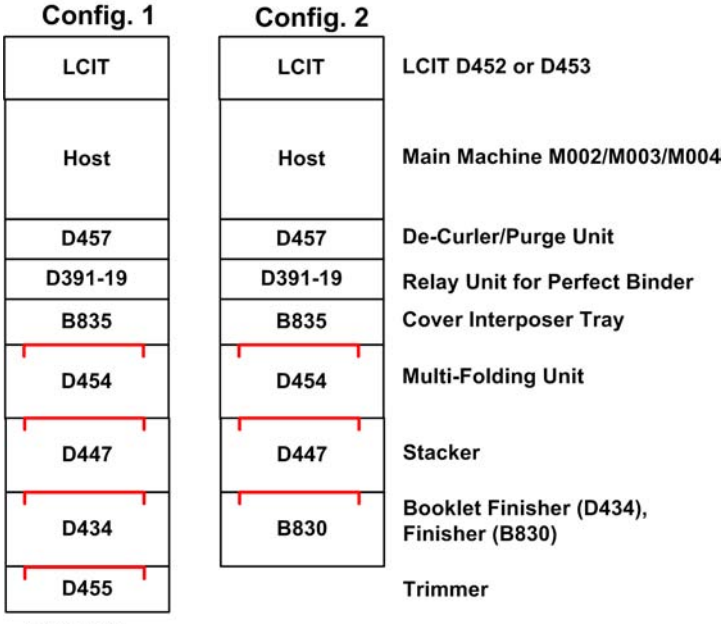
Use either the rear scale or front scale, depending on the type of paper used in your area. The illustrations below show where the scale for each peripheral unit is located:



The illustration above shows the scale on the left side of the Booklet Finisher tray. The same scale is at approximately the same position (paper exit) for the following units:

- Multi Folding Unit (D454): Proof Tray
- High Capacity Stacker (D447): Proof Tray
- Booklet Finisher (D434): Shift Tray Exit

In the illustration below, the red lines indicate the joint brackets where adjustments are done to eliminate skew and to correct side-to-side registration.



m002i806

Here are some general rules for testing and adjusting for paper skew or a shift in side-to-side registration.

1. After installation of each peripheral device, do some test prints and check for the presence of skew, and check that side-to-side registration is correct.
    - LCIT (D452)
    - LCIT (D453)
    - Multi Folding Unit (D454)
    - High Capacity Stacker (D447)
    - Booklet Finisher (D434)
    - Finisher SR5000 (B830)
2. If you detect a problem with skew or side-to-side registration, do the adjustment on the joint bracket attached to the peripheral unit **upstream of the unit where the problem occurred**.
3. There is no adjustable joint bracket upstream of the following peripheral units. No adjustment is possible upstream of these units:
    - Decurl Unit (D457)
    - Cover Interposer (B835)

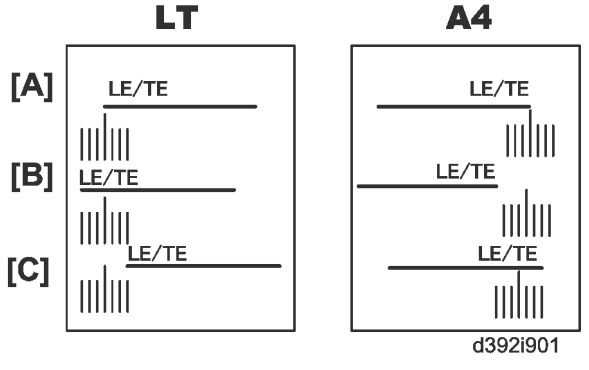
- Trimmer Unit TR5020 (D455-17)

4. Side-to-side registration is corrected by shifting the upstream joint bracket left or right.
5. Skew is eliminated by inserting spacers (shims) under the rear or front end of the joint bracket. These spacers are provided with the peripheral units, attached by screws to the units at the factory.

2 Checking Side-to-Side Registration

Do this procedure to confirm that the paper is centered in the paper path.

1. Make sure that the I/F cable of the unit is connected to the upstream unit.
2. Disconnect the unit to the left of the unit to be tested.
3. Execute a run by feeding paper from Tray 2 of the host machine.
4. When each sheet exits, check the position of the paper on the scale to see if the paper is centered.
   - Read the rear scale for DLT-size paper
   - Read the front scale for A3-size paper.
   - The scale lines are spaced 2 mm apart.
5. The paper must not deviate more than ±2 mm on the scale.



[A]	Leading/trailing edges centered. No adjustment necessary.
[B]	Leading/trailing edges offset to the rear by more than 2 mm. Adjustment required.
[C]	Leading/trailing edges offset to the front by more than 2 mm. Adjustment required.

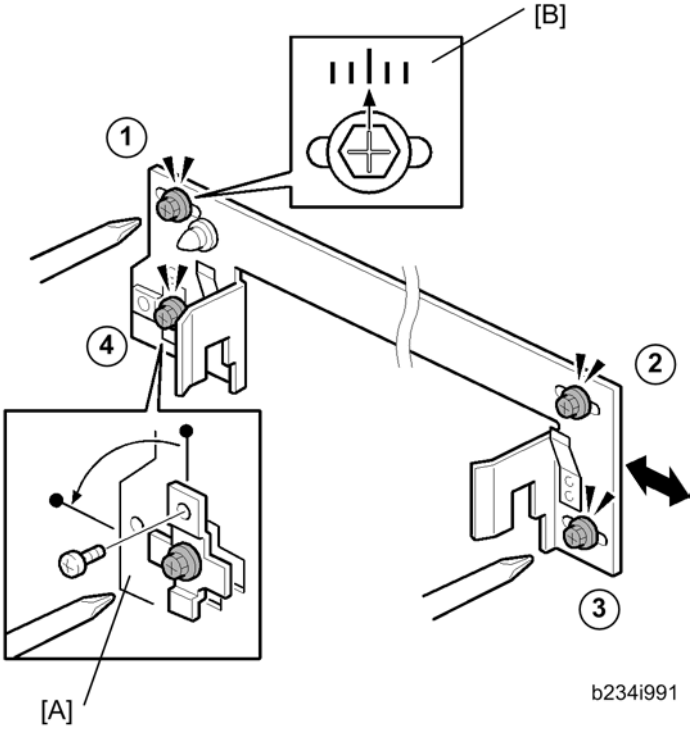
If the edge of the paper is on the scale at the center [A], no adjustment is required.

-or-

If the edge of the paper is ±2 mm off the center line on the scale, adjustment is required. Do the procedure in the next section.

Correcting Side-to-Side Registration

1. Disconnect the peripheral unit from the upstream unit.



2. On the joint bracket attached to the upstream unit, loosen screws (1), (2), (3), and (4).
3. Remove bracket [A] (x1), rotate it 90 degrees, and re-fasten the screw. Changing the position of this bracket aligns the oval cut-out horizontally and frees the joint bracket so it can slide from side to side.
4. Look at the scale [B].
5. Slide the bracket to the left or right and tighten the screw.
6. If the deviation from center was toward the front, slide the bracket to the rear and tighten the screw (1).

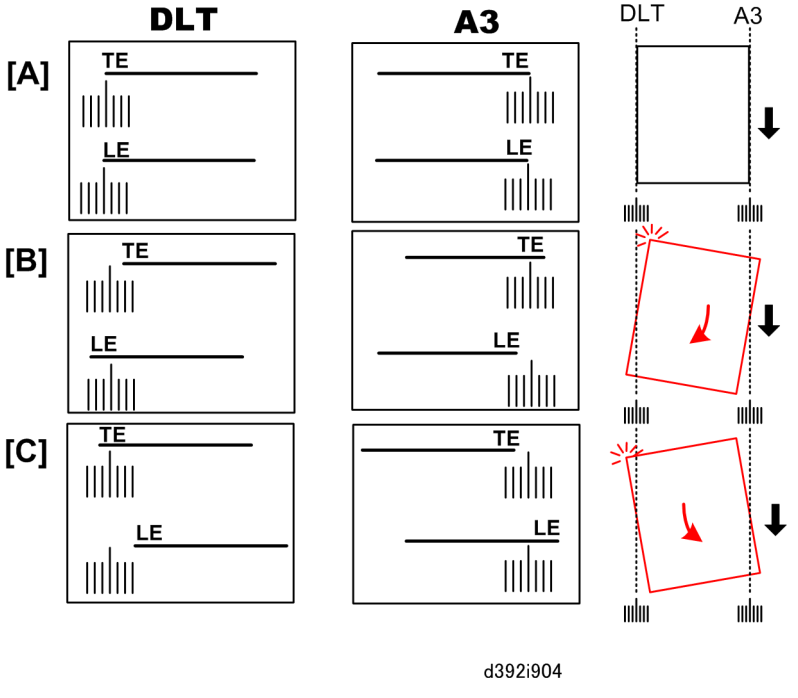
   -or-

   If the deviation from center was toward the rear, side the bracket to the front and tighten the screw (1).
7. Tighten screws (2), (3), (4).
8. Do another test run, so that you can check the results of the adjustment.

Detecting Paper Skew

Do this check to detect the presence of skew in the paper path.

1. Make sure that the I/F cable of the unit is connected to the upstream unit.
2. If a peripheral unit is connected on the left side, disconnect it and pull it away.
3. Execute a straight-through run.
4. Check the scale where each sheet exits.
    - The rear scale is for DLT-size paper.
    - The front scale [2] is for A3-size paper.
    - Be sure to read the correct scale for the paper size in use.



d392i904

[A]	Centered. No adjustment necessary.
[B]	Trailing edge skew to the front, total skew more than ±2 mm. Adjustment required.
[C]	Trailing edge skew to the rear, total skew more than ±2 mm. Adjustment required.

Correcting Skew

1. Disconnect the peripheral unit from the upstream unit.
2. Locate and remove the spacers from the peripheral unit where the problem occurred.

Locating and Removing Spacers

The photos below show where you can find the spacers for each unit.

Multi Folding Unit (D454)

d454i111

High Capacity Stacker (D447)

d059i817

1. Open the front door.
2. Remove the right lock hasp [A] (x2).
3. Remove right front cover [B] (x2).

4. Remove the spacers (x1).

Booklet Finisher (D434)

d059i818

1. Open the front door (x1).
2. Remove the spacers (x1).

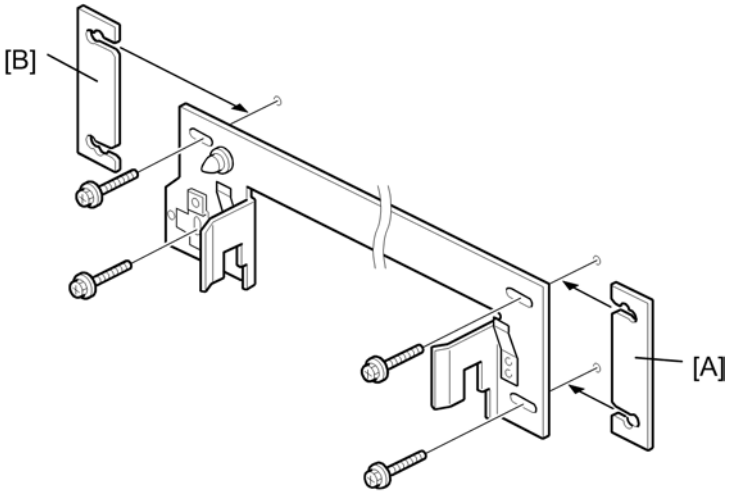
Finisher SR5000 (B830)

d059i819

1. Look at the right side (x1).

2. Remove the spacers (x1).

Inserting Spacers



1. Loosen the screws (x4) of the joint bracket attached to the peripheral upstream of the unit where the problem occurred.
2. Insert a spacer and tighten the screws.

   If the trailing edge of the paper is **skewing toward the front** of the machine, insert a spacer [A] under the **rear end of the bracket** and tighten the screws.

   -or-

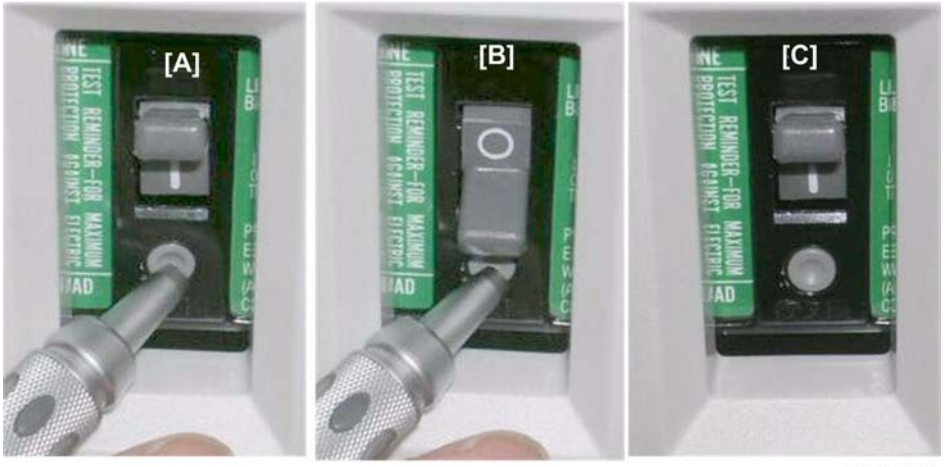
   If the trailing edge is **skewing toward the rear** of the machine, insert a spacer [B] under the **front end of the bracket** and tighten the screws.
3. Do another run to check the adjustment. If skew is still present, insert another spacer.
   - Each spacer is 2 mm thick.
   - Only two spacers are provided, so the maximum adjustment is 4 mm (using two spacers).

Breaker Switch Testing

1. Plug the power cord of the main machine or peripheral unit to be tested into its power source.

   Important

   - **Do not turn on the main machine or the peripheral to be tested.**
   - **The main machine and the peripheral to be tested must be off.**



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2. Use the tip of a small screwdriver or pen to push the breaker test button [A].
   - The breaker switch should flip to the "O" position [B]. This indicates that the breaker switch is operating normally.
   - If the breaker switch does not flip to the "O" position, the switch must be replaced.
3. Return the switch to the "|" position [C] for normal operation.

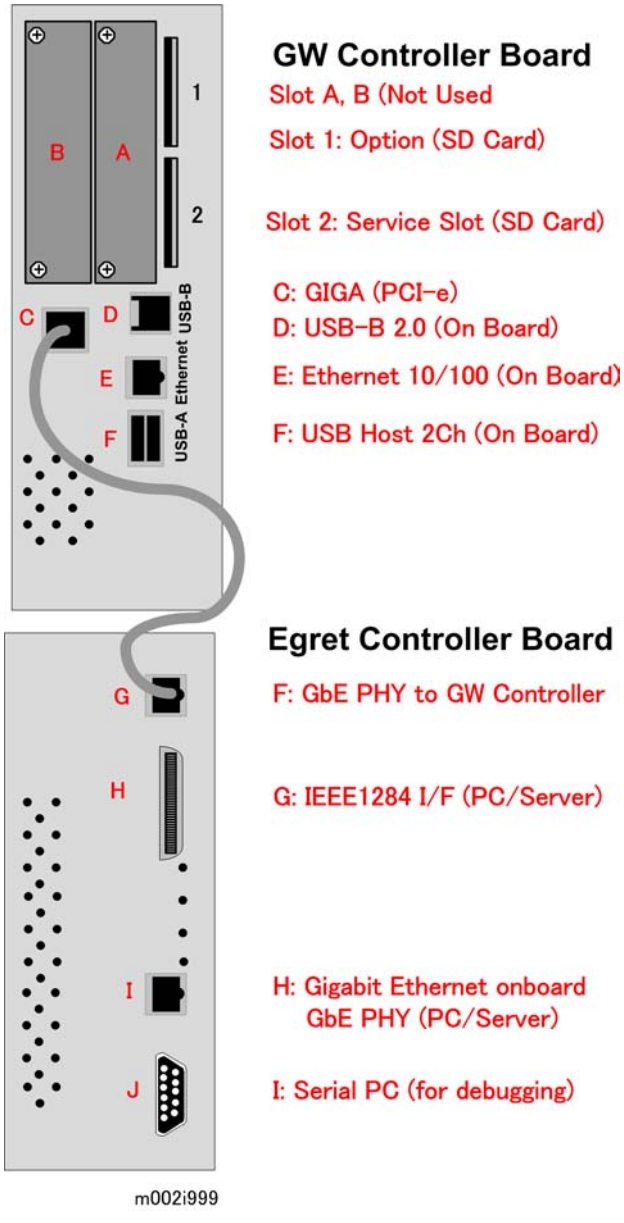
Important

- **The main machine will not turn on if the breaker switch is not returned to the "|" position.**
- **All breaker switches must be checked at installation, and once a year.**

Controller Options

Overview

The general layout of the slots on both controller boards is described below. The GW controller board and Egret controller board comprise the DC controller.



Controller Option Slot/Card Assignment

Slot	Used For
1	Slot 1 for SD card for option. • Data Overwrite Security Unit Type H (D377-06)
2	Slot 2 for SD card. Service Slot. For machine firmware update by the technician and two options: • VM Card Type J (D463-01) • IPDS Unit Type 1357EX (451-12) **Note:** There is only SD card slot available for these applications. If more than one application is to be used, the applications must be merged onto one SD card with SP5873-1.
A	Not used.
B	Not used.
C	Connection point on the GW controller for the cable from the Egret controller below.
D	USB-2 (on board)
E	Ethernet 10/100 onboard (PC/Server)
F	USB-A Host 2-Channel onboard
G	Connection point on the Egret controller for the cable from the GW controller above.
H	IEEE1284 Interface on board for PC or server
I	Gigabit Ethernet on board (GbE PHY) for PC or server.
J	Serial connection point for PC (debugging)

Merging Applications on One SD Card

Overview

The machine has two SD card slots:

- Slot 1 is used for application programs
- Slot 2 is used for servicing (firmware updates)

Only one SD card slot is available for SD card applications. If the customer wants to use more than one application, the applications must be copied onto the same SD card.

- Authentication is transferred with the application program to the target SD card.

- Do not use an SD card if it was used with a computer before this time. Correct operation is not guaranteed if this type of SD card is used.
- The SD card is the only evidence that the customer is licensed to use the application program. Also, the technician may occasionally need to check the SD card and its data. For these reasons, store the unused SD cards in the front cover of the main machine.
- A licensing agreement prohibits copying of the PostScript SD card. However, you can copy any application from another SD card to the PS3 SD card.
- After an SD card has been used to move other applications onto that card, that SD card cannot be used for a different function.
- Before uploading to an SD card, always make sure that the write-protect switch is OFF. (It is very easy to accidentally turn on the write-protect switch when inserting or removing an SD card.)

Merging Applications

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

1. Turn off the main machine.
2. Remove the SD card slot cover (x1).
3. Put the Source SD card in Slot 2 (service slot). This card contains the application that you want to copy.
4. Make sure that the target SD write-protect switch is OFF.
5. Put the Target SD card in Slot 1. The application on the card in Slot 1 will be copied to this card.
6. Open the front door.
7. Turn the main machine on.
8. Go into the SP mode and select SP5873 -1.
9. Touch "Execute".
10. Follow the instructions on the display and touch "Execute" to start copying.
11. When the display tells you copying is completed, touch "Exit".
12. Turn the main machine off.
13. Remove the Source SD card from Slot 2. Keep the target SD card in Slot 1.
14. Turn the main machine on.
15. Go into the User Tools mode and make sure that all the applications on the SD card in Slot 1 are enabled:

    [User Tools]> System Settings> Administrator Tools> Firmware Version
16. Turn the main machine off again, then:
    - Reattach the SD card slot cover.
    - Attach the rear cover of the machine.

- Store the SD cards that were copied.

Important

- **After an SD card has been copied, it cannot be used. However, it must be stored in the machine to serve as proof of purchase by the customer.**
- **The original card can also be used to perform an undo procedure (SP 5873 -2). Before you store an SD card, label it carefully so it can be identified easily if you need to do the undo procedure (see below).**

Undo Exec

1. Turn the main switch off.
2. Put the SD card holding the merged applications in SD Card Slot 2.
3. Put the original destination SD card (the one removed from storage) into Slot 1.

   Note

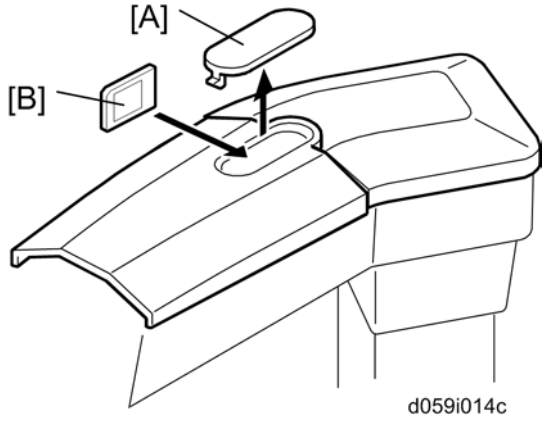
   - The SD card in Slot 1 must be the original SD card of the application you want to move from Slot 2 to Slot 1. You cannot use a blank SD card in Slot 1.
4. Turn the main switch on.
5. Go into the SP mode and do SP5873-2 (Undo Exec)
6. Follow the messages on the operation panel to complete the procedure.
7. Turn the main switch off.
8. Remove the SD cards from the slots.
9. Turn the main switch on.

Common Procedures For Controller Options

Storing SD Application Cards on Site

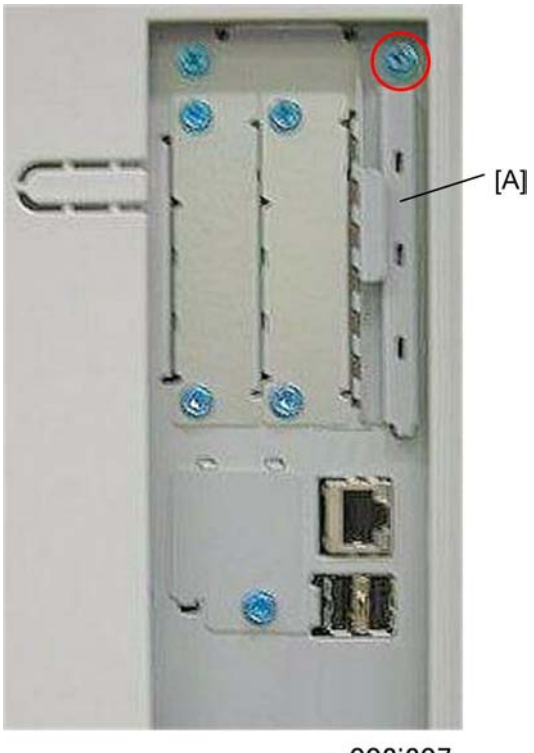
SD cards that have been copied must be stored at the work site for two reasons:

- To allow the SD card to be restored with SP5873-2 (Undo Exec) if the need arises.
- To serve as proof of purchase by the customer.



1. Remove the cap [A] on the arm cover (hooks).
2. Set the copied SD card [B] in the compartment.
3. Reattach the cap [A].

Removing SC Card Slot Cover



1. The SD card slot cover is held in place by one screw (x1)

Data Overwrite Security Unit Type H (D377-06)

Accessories

No.	Description	Q'ty
1.	Data Overwrite Security SD Card	1
2.	Operating Instructions CD-ROM	1
3.	Comments Sheet (17 languages)	2

Before You Begin...

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

   Important

   - **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"> "Administrator Authentication Management"> "Admin. Authentication"> "On"

   If this setting is "Off", tell the customer that this setting must be "On" before you can do the installation procedure.
4. Confirm that "Administrator Tools" is selected and enabled:

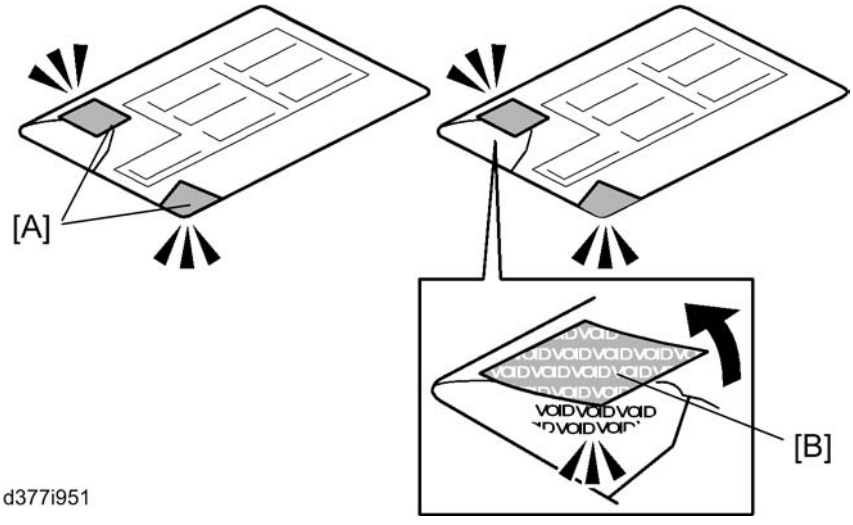
   [User Tools]> "System Settings"> "Administrator Tools"> "Administrator Authentication Management"> "Available Settings

   Note

   - "Available Settings" is not displayed until Step 2 is done.

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

Seal Check and Removal



d377i951

⚠CAUTION

- Turn off the main power switch and disconnect the power supply cord.

1. Check the two box seals [A] on the corners of the box.
   - Make sure that the seals are attached at both corners.
   - The surfaces of the tapes must be blank. If you see "VOID" on the tapes, do not install the components in the box. Contact your sales division.
2. If the surfaces of the tapes do not show "VOID", remove them from the corners of the box.
3. After you remove each seal, the "VOID" marks [B] become visible. This prevents them from being reattached to the box.

Installation

Important

- **The DOS SD card must be inserted in SD card Slot 1.**

1. If the machine is on, turn off the main power switch.
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. Insert the SD card into SD card Slot 1.
7. Reconnect the network cable.

8. Turn the main power switch on.
9. Do **SP5878-001** and push [EXECUTE].
10. Go out of the SP mode.
11. Turn the operation switch off, then turn the main power switch off.
12. Do **SP5990-5** to print an SMC report.
13. 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"

Diagnostic Report:	"ROM No. / Firmware Version" [a]	"Loading Program" [b]
DataOverwriteSecurity Unit	HDD Format Option: **D3775902A / 1.01x**	**GW4a_zoffyx: D3775902A / 1.01x**

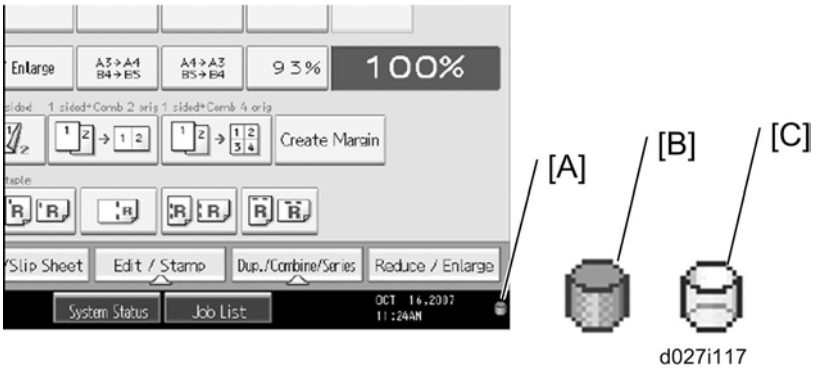
Important

- **The same two numbers must be listed in both sections of the SMC report**

If the numbers are not identical, this means the option was not installed correctly.

- Confirm that the label on the box of the DOS option says "H".
- Do the Data Overwrite Security unit installation again.

14. Turn "Auto Erase Memory Setting" on:
    [User Tools]> "System Settings"> "Administrator Tools"> "Auto Erase Memory Setting"> "On"
15. Exit User Tools.
16. Check the display and make sure that the overwrite erase icon [A] is displayed.



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17. Make a Sample Copy.
18. Check the overwrite erase icon.

- The icon [2]: This icon is lit when there is temporary data to be overwritten, and blinks during overwriting.
- The icon [3]: This icon is lit when there is no temporary data to be overwritten.

VM Card Type J (M354-15)

Accessories

No.	Description	Q'ty
1.	VM Card	1
2.	Decal	1

Installation

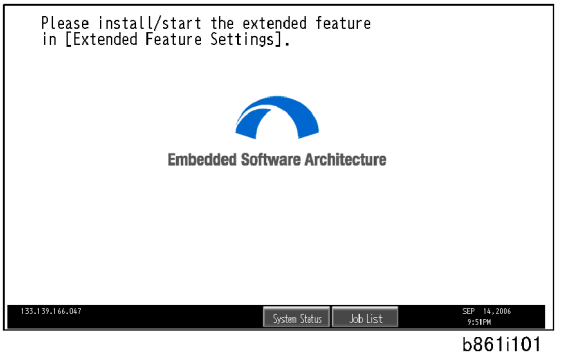
1. Switch the machine off.
2. Remove the SD card slot cover.
3. Insert the SD card into Slot 2.

   Note

   - Pushing in the SD Card releases it for removal.
   - Make sure the SD Card is inserted and locked in place.
   - If it is partially out of the slot, push it in gently until it locks in place.
4. Switch the machine on. The installation will start automatically.

   Note

   - The installation will take 5 to 10 minutes.
5. Replace the sixth key-slot cover with the "Other function" key.
6. Wait five minutes, and then press the "Other function" key. You will hear two beeps.
   - If the screen does not change, this means the installation is not finished yet. Wait a few more minutes and then press the "Other function" key again.
   - When the installation is finished, the following screen will appear:



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7. Set the heap size and stack size for the application.
8. Install the application using the installation procedure provided with the application.

IPDS Unit Type 1357 EX (M360)

Accessories

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

No.	Description	Q'ty
1	SD Card	1

The IPDS Unit SD card is inserted in Slot 2 (Service Slot).

See RTB 15 for the installation procedure.

3. Preventive Maintenance

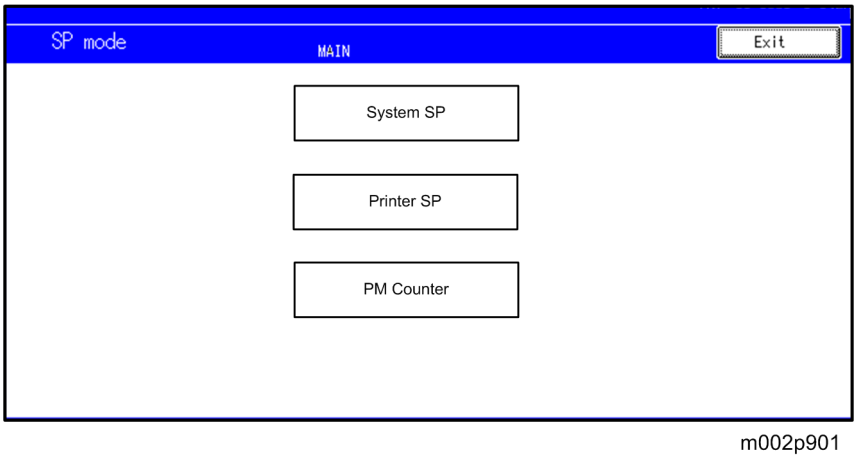
PM Parts

PM Counter

The PM Counter main menu and submenu allows you to review the PM counts for both units and individual components.

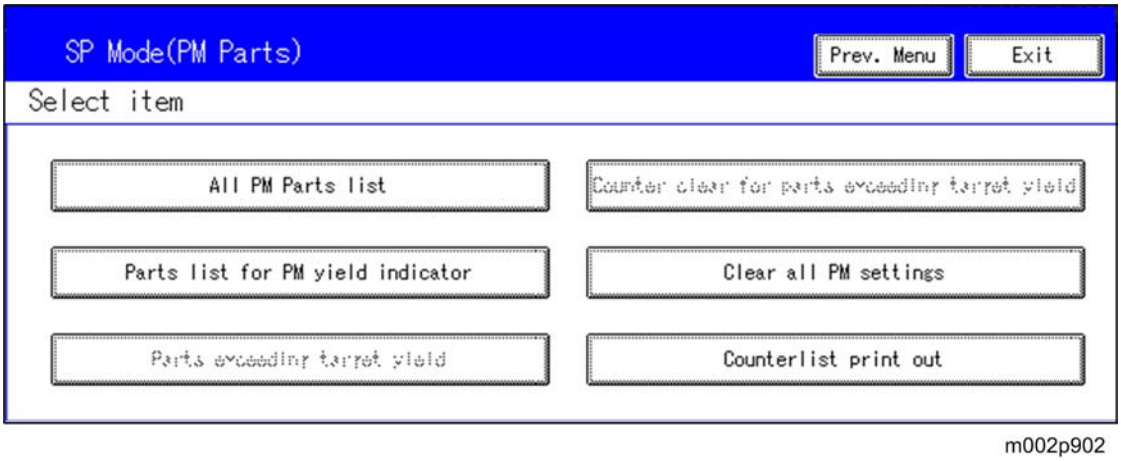
Displaying the PM Counter

1. Enter the SP mode.



m002p901

2. Touch [PM Counter].



m002p902

All PM Parts List. Displays all PM items (all PM items, not only PM units). Lists all PM items regardless of PM yield indicator settings.

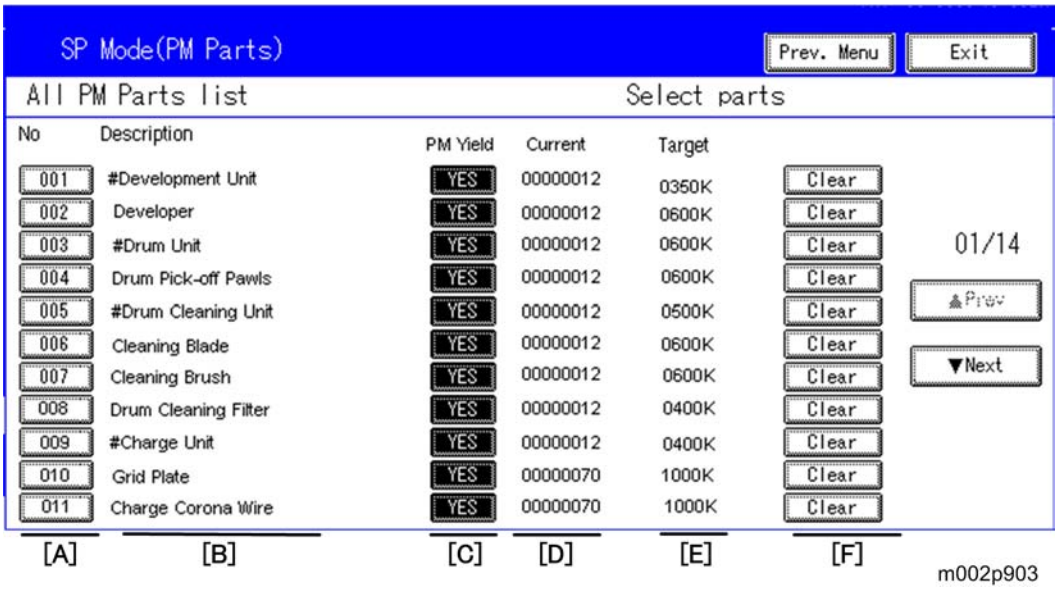
Parts list for PM yield indicator. Displays on the items with their PM yield indicator settings set to "Yes".

Clear all PM settings. Resets all PM counter settings to "0" at the same time. PM items can be reset one by one with the [Clear] button.

Counter list print out. Prints the PM counter on paper.

All PM Parts list: Main Menu

The "All PM Parts list" displays all PM units and individual items.



[A]: Number buttons. Pressing a number button opens a submenu.

[B]: Descriptions. The # mark denotes a "unit" (not individual item).

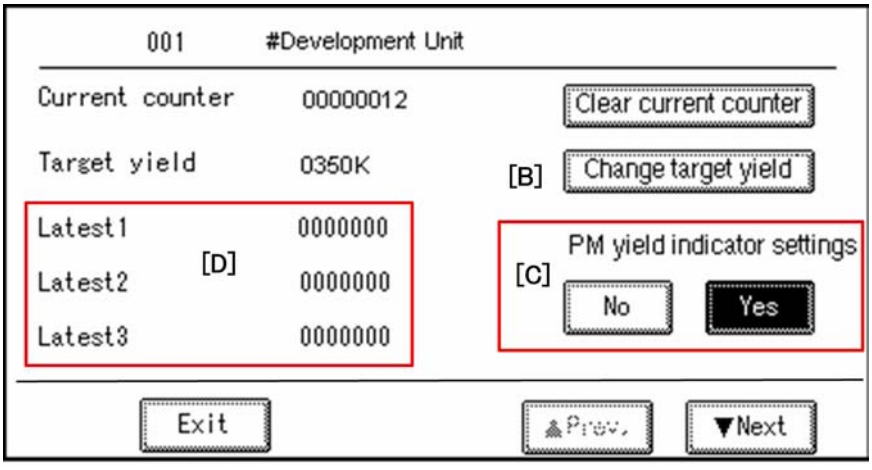
[C]: PM yield buttons. Function is the same as the "PM yield indicator settings" button.

[D]: Current PM counter value.

[E]: Target PM interval. This can be changed by pressing a number button [A].

[F]: PM counter clear button. Function is the same as the [Clear current counter] button.

Press any number button to open the submenu for a part. In the example below, the number button [001] #Development Unit was pressed.



m002p904

[A]: Clear current counter. Press to reset the selected PM counter (in this example 001 #Development Unit) to "0". You can also clear the settings by pressing the [Clear] button on the right side of the PM Counter Main Menu ([F] in the previous section).

[B]: Change target yield. Press the change the target PM yield. To change the setting:

- Press [Change target yield]
- Enter the number for the new target with the 10-key pad.
- Press [#] on the operation panel.

[C]: PM yield indicator settings. [Yes] is the default. Press [No] to remove the current item from the "Parts list for PM yield indicator".

- When set to "Yes", items marked with the # mark (# = a unit) will not have their individual items displayed automatically in the "Parts list for PM yield indicator list".
- When set to "No", items marked with the # mark (# = a unit) only the individual components will appear in the list (the units will not appear).

[D]: PM counter history. This is a summary of the most recent counts

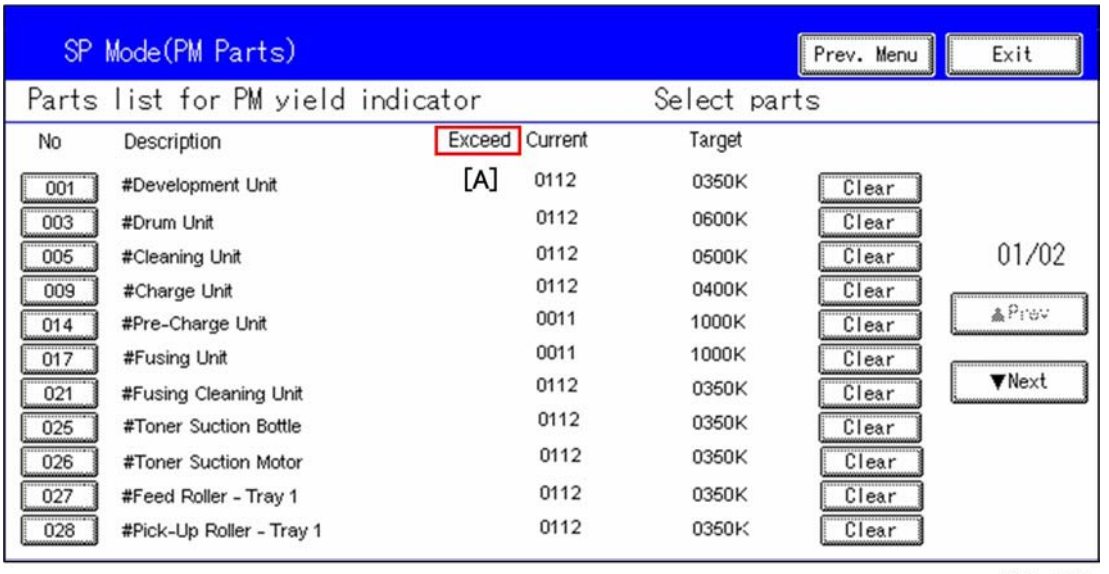
- Latest 1. The latest PM count since the unit (or part) was replaced.
- Latest 2. The previous PM count since the unit (or part) was replaced.
- Latest 3. The previous but one PM count since the unit (or part) was replaced.

To clear a counter:

1. Press [Clear] on the display.
2. When the message prompts you to confirm that you want to clear the number, touch [EXECUTE] (or [CANCEL] to cancel).

Parts list for PM Yield Indicator

This list shows the PM Parts Main Menu with only items set to "Yes" displayed.



m002p905

On this screen:

- Only the parts selected in the "All PM parts list" screen are displayed. Normally, the PM parts counters should be checked on this screen.
- If the current counter exceeds the target yield, there is a * mark in the "Exceed" column.
- Each counter can also be cleared on this screen. To clear all counters on this screen at once, see 'Counter Clear for Parts Exceeding Target Yield' on the next page.

Parts Exceeding Target Yield

Only the parts whose counters are exceeding the target yield are displayed. If none of the PM counters is exceeding the target yield, this item cannot be selected from the parts replacement menu.

Counter Clear for Parts Exceeding Target Yield

Clears all the counters which are exceeding the target yield.

To clear:

1. Touch [Counter Clear for Part Exceeding Target Yield].
2. When the message prompts you to confirm that you want to clear the number, touch [EXECUTE] (or [CANCEL] to cancel).

Clear All PM Settings

Clears all the PM counters and returns all the settings (PM parts list and target yield) to the defaults.

To clear:

1. Press [Clear All PM Settings].
2. When the message prompts you to confirm that you want to clear the number, touch [EXECUTE] (or [CANCEL] to cancel).

Counter List Print Out

Prints a list of all the PM part counters.

1. Touch [Counter List Print Out].
2. When the message prompts to confirm that you want to print, touch [EXECUTE] (or [CANCEL] to cancel).

   The list prints after you touch [EXECUTE].

PM Tables: Main Machine, Decurl Unit

The amounts mentioned (K=1,000) as the PM interval indicate the number of prints unless stated otherwise. These numbers are based on the PM counter.

Symbol Key for PM Tables

I: Inspect. Clean, replace, or lubricate as needed.

A: Adjust

C: Cleaning required.

R: Replacement required.

L: Lubrication required.

Exp: Expected service life.

⚠WARNING

- Turn off the main power switch and unplug the machine before performing any procedure in this section. Laser beams can seriously damage the eyes.

Main Machine PM Parts

OPTICS	500K	1000K	3000K	Note
Toner shield glass	C			Optics cloth.

DEVELOPMENT	500K	Exp	Note
Side seals (x2)	C		Blower brush, dry cloth
Development roller	C		Cleaning required when developer is replaced. Use a dry cloth. *1
Development doctor blade	C		Cleaning required when developer is replaced. Insert the paper dust cleaner behind the blade to rub away the paper dust.
Entrance seal	C		Blower brush or dry cloth
Toner hopper (outside)	I		
Gears (all)	I		Blower brush

DEVELOPMENT	500K	Exp	Note
Developer	R		SP2801 (TD Sensor Initial Setting). Before execution, be sure to enter the Lot No. for the new developer.
Toner collection bottle		650K *1	Discard the waste toner when a near end or end alert is displayed.
Toner suction bottle		About 3000 K *1	Replace when near end or end alert is displayed.
Toner suction motor		About 2500 K *1	Replace when near end or end alert is displayed.

*1: K count assumes printing on A4 LEF with 6% test chart.

AROUND THE DRUM	500K	550K	1100K	Exp	
Side seals		I			Blower brush, dry cloth
Ground plate screw	I				Conductivity check. Alcohol or water
Drum dust filter		C			Blower brush
Toner filter		R			
Cleaning unit		I			Blower brush, dry cloth
Cleaning brush seal		I			
Cleaning entrance seal		C			
Cleaning brush		R			☛ Replacement and Adjustment – Around the Drum – Cleaning Brush.
Main cleaning blade		R			
Cleaning unit filters		R			Two filters
Pre-transfer lamp		C			Dry cloth
ID sensor		C			

AROUND THE DRUM	500K	550K	1100K	Exp	
Drum potential sensor		C			Blower brush
Quenching lamp shield glass		C			Blower brush, dry cloth
Corona wire casing	C				Dry cloth
Grid plate (charge)	R				
Charge corona wire	R				
Corona wire cleaner (charge)	R				
Wire cushion (charge)	R				
Pre-charge corona wire	R				
Pre-charge grid plate	R				
Drum pick-off pawls			R		
Transfer unit entrance stay		C			
Transfer belt			R		
Transfer belt bias brush			C		Blower brush
Transfer belt and bias roller cleaning blades			R		Replace at the same time as the transfer belt
Rear casing guide			C		Dry cloth
Exit bias plate			C		Blower brush when transfer belt is replaced.
Belt drive roller			C		Alcohol, when transfer belt is replaced.
Belt roller			C		
Transfer bias roller			C		Alcohol, when transfer belt is replaced. Apply conductive grease to electrical contacts.

AROUND THE DRUM	500K	550K	1100K	Exp	
Cleaning bias roller			C		Cleaning when Transfer belt cleaning blade is replaced
Ozone filter				15000 K	
Carrier catcher		I			Dry cloth

FUSING UNIT		500K	700K	750K	
Pressure roller, cleaning roller bearings		I			Inspect only *1
Fusing lamps (x3)		I			Inspect only
Pressure roller cleaning roller		C			Dry cloth (water or alcohol can also be used if necessary)
Fusing entrance guide plate (lower)		C			Water or alcohol
Fusing cleaning fabric	NA			R	☛ Replacement and Adjustment – Fusing Unit – Fusing Cleaning Unit
	EU/ASIA	R			
Fabric pressure roller	NA			R	
	EU/ASIA	R			
Supply roller stopper	NA			R	
	EU/ASIA	R			
Hot roller			R		
Hot roller strippers			R		Dry cloth Cleaning required when fusing cleaning fabric is replaced. Should be replaced with hot roller.
Hot roller ball bearings			I		Inspect only

FUSING UNIT		500K	700K	750K	
Hot roller bushings			I		When replacing hot roller, lubricate with Barrierta 55L or S552R on the bushings.
Hot roller gears		C/L			Lubricate with Grease Barrierta – JFE5 5/2 (A2579300)
Pressure roller				R	Lubricate with Barrierta 55L or S552R on the bushings.
Pressure roller ball bearings				I	
Pressure roller bushings				I	Inspect only
Pressure roller strippers		I			Dry cloth
Fusing exit roller		I			Water, alcohol
Fusing exit guide plates (upper, lower)		I			Dry cloth wrapped around a metal scale
Cooling entrance guide plate		I			
Exit Roller		C			Dry cloth
Vertical Relay Roller-Duplex		C			
Vertical Relay Roller		C			
Horizontal Exit Roller		C			
Transport Roller Driven :Horizontal Guide plate		C			
Transport Roller-Driven :Entrance Guide		C			
Transport Roller-Driven :Guide Plate-Exit		C			
Cooling Transport Belt		C			

FUSING UNIT		500K	700K	750K	
Discharge Brush :Cooling Transport Belt		I			Blower Brush
Discharge Brush :Entrance		I			
Discharge Brush :Exit Guide Plate		I			
Job Time Sensor		I			Blower Brush
Exit Sensor		I			
Drive Shaft		C			Dry Cloth
Cooling pipe		C			
Exit Motor		C			Grease Barrierta-JFE 5 5/2

PAPER FEED	500K	1000K	Note
Paper feed rollers x3		R	Replace together.
Pick-up rollers x3		R	
Separation rollers x3		R	
Grip rollers	C		Damp cloth
Relay rollers	C		Damp cloth
Paper feed guide plate	I		Damp cloth
Upper and lower registration rollers	C		Damp cloth
Registration sensor	C		Blower brush
Relay sensor	C		Blower brush
Paper dust remover	C		Remove paper dust.
Paper feed sensors	C		Blower brush

DUPLEX UNIT	500K	Note
Transport rollers	C	Damp cloth
Feed rollers	C	
Reverse transport roller	C	
Reverse feed roller	C	
Inverter feed rollers	C	
Inverter transport rollers	C	
Entrance sensor	C	Blower brush
Anti-static brush	I	
Duplex inverter sensor	C	Blower brush, inspect feeler movement.
Duplex transport sensor	C	Blower brush
Horizontal transport feed roller (resin roller)	C	Damp cloth

GW CONTROLLER	500K	
Controller filter	C	Blower brush

Egret CONTROLLER	500K	
Controller filter	C	Blower brush

PSU	500K	
PSU filter	C	Blower brush

Exterior	500K	
Heat pipe cooling fan suction duct	C	Blower brush

OTHERS	1 Year	
Breaker switches	I	Test the operation of the two breaker switches (main body, z-folder) once every year.

Decurl Unit DU5000 (D457-17)

The Decurl Unit must be installed with the main machine. It is not an option.

Part	500K	Note
Transport guide plate	IC	Clean with damp (alcohol or water) cloth
De-curler rollers (drive, idle roller	IC	
Transport rollers (drive, idle roller)	IC	
Purge tray paper sensors (x3)	IC	

PM Tables: Options

1. LCIT RT5030 (D452-17)

The PM interval is for the number of sheets that have been fed.

Part	500K	1000K	Note
Transport guide plate	IC		Clean with damp, clean cloth
Grip rollers (drive, idle rollers)	IC		
Paper feed rollers x3	IC	R	
Pick-up rollers x3	IC	R	
Separation rollers x3	IC	R	
CIS	IC	IC	

Part	1000K	3000K	5000K	Notes
Pickup Solenoids		IR		4th, 5th, 6th Tray
Separation Solenoids		IR		4th, 5th, 6th Tray
Lift Motors	IR			4th, 5th Tray
Lift Motor			IR	6th Tray

1. Inspect the solenoids and motors.
2. Display the PM Counters for these solenoids and motors.
3. Replace if "Target" has been exceeded.

2. LCIT RT5040 (D453-17)

The PM interval is for the number of sheets that have been fed.

Part	500K	1000K	Note
Transport guide plate	IC		Clean with damp, clean cloth
Grip rollers (drive, idle rollers)	IC		
Transport rollers	IC		
Pick-up rollers (4th, 5th, 6th tray)	IC	IR	
Paper feed roller (4th, 5th, 6th tray)	IC	IR	
Separation rollers (4th, 5th, 6th tray)	IC	IR	
CIS	IC	IC	

1. At 1000K, display the PM Counts for the pick-up, feed, and separation rollers.
2. Replace if "Target" has been exceeded.

3. Multi-Bypass Tray (B833)

The PM interval is for the number of sheets that have been fed.

Part	500K	1000K	Note
Transport guide plate	IC		
Grip rollers (drive, idle rollers)	IC		
Pick-up roller	IC	IR	
Paper feed roller	IC	IR	
Separation roller	IC	IR	

1. At 1000K, display the PM Counts for the pick-up, feed, and separation rollers.
2. Replace if "Target" has been exceeded.

4. Cover Interposer Tray CI5000 (B835)

The PM interval is for the number of sheets that have been fed.

Part	60K	As Needed	Note
Drive rollers		C	Dry cloth
Idle rollers		C	
Feed belt	R		
Separation roller	R		
Pick-up roller	R		
Sensors		C	Blower brush.
Drive gears		I	Lubricate with very small amount of G501.

5. Multi-Folding Unit FD5000 (D454)

Part	PM Visit	Notes
Rollers (drive, idle rollers)	IC	Alcohol, clean cloth
Anti-static brush	IC	
Shafts	IC	Lubricate with silicone oil if noisy.
Sensors	IC	Blower brush
Positioning roller	IC	Inspect for scratches or nicks
Fold rollers (1st, 2nd, 3rd)	IC	Alcohol, clean cloth
Crease rollers (drive, idle roller)	IC	

6. High Capacity Stacker SK5010 (D447)

Part	500K	PM Visit	
Rollers (drive, idle rollers)	IC	IC	Alcohol, clean cloth
Anti-static brush	IC	IC	
Shafts	IC	IC	Lubricate with silicone oil if noisy.

Part	500K	PM Visit	
Sensors	IC	IC	Blower brush
Sub jogger fences	IC	IC	Alcohol, clean cloth
Main jogger fences	IC	IC	
LE stopper	IC	IC	

7. Booklet Finisher SR5020 (D434)

Main

Part	5000K	25000K	
Rollers (drive, idle)	IC		Alcohol, clean cloth
Discharge brush	IC		
Shafts	IC		Lubricate with silicone oil if noisy
Sensors	IC		Blower brush
Jogger fences	IC		Tighten screws
Staple trimmings hopper	IC		Empty hopper
Alignment brush roller		IR	See below
Positioning roller		IR	
Drag roller (sponge)*1		IR	

1. At 25000K, display the PM Counts for the alignment brush roller, positioning roller, and drag sponge roller.
2. Replace if "Target" has been exceeded.

Punch Unit

Part	20000K	
Punch unit	IC	• Display PM Count for punch unit. • Replace if "Target" has been exceeded.

Staplers

Part	50000K	200000K	
Corner stapler	IR		• Display PM Count. • Replace if "Target" exceeded.
Booklet Staplers (x2)		IR	

8. Trimmer Unit TR5020 (D455)

Part	PM Visit	
Rollers (drive, idle rollers)	IC	Water, clean cloth
Belts	IC	
Discharge brush	IC	Cloth, blower brush
Roller shafts		Lubricate with silicone oil if noisy
Sensors	IC	Blower brush
Paper trimmings hopper	IC	Empty, make sure the operator knows how to empty the hopper
Trimming Blade	R	Replace the blade after 400K. SP7989 (Trim Count) displays the total count.

9. Finisher SR5000 (B830)

	500K	2500 K	3000 K	Exp	Note
Driver rollers	I				Alcohol, dry cloth

	500K	2500 K	3000 K	Exp	Note
Idle rollers	I				Alcohol, dry cloth
Discharge brush	I				Alcohol, dry cloth
Alignment brush roller		R			
Bushings					Lubricate with Silicone or Launa oil if noisy.
Sensors	I				Blower brush.
Jogger fences	I				Make sure screws are tight.
Staple unit				500K Staple Sheets	
Positioning roller		R			
Shift positioning roller			R		

Punch Unit PU5000 B831

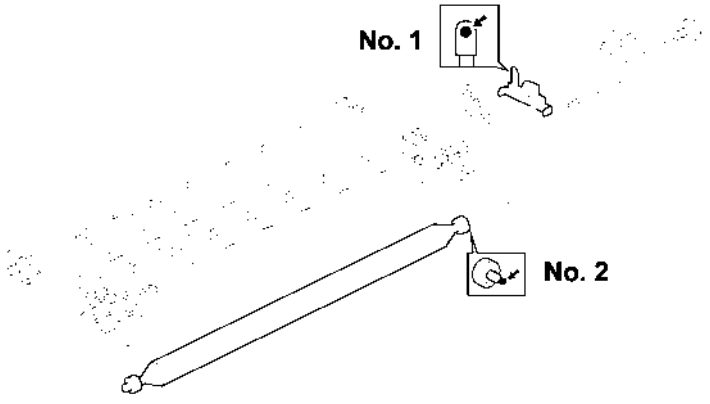
	Exp
Punch unit B531	1 million punches

Lubrication Points

Types of Grease

a	Grease – KS660 – SHIN-ETSU
b	Grease Barrierta – JFE 5 5/2

Transfer

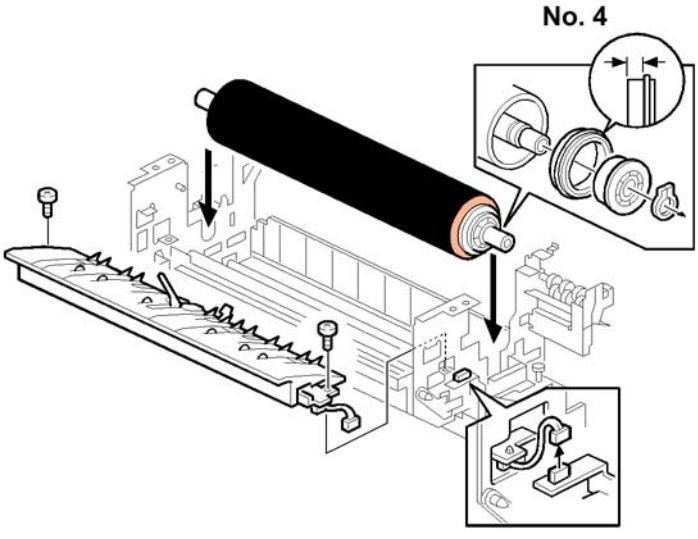


b234p901

No.	Lubrication Point	Type of Grease
1	Upper part of the bias roller terminal	a
2	Rear end of the bias roller	a

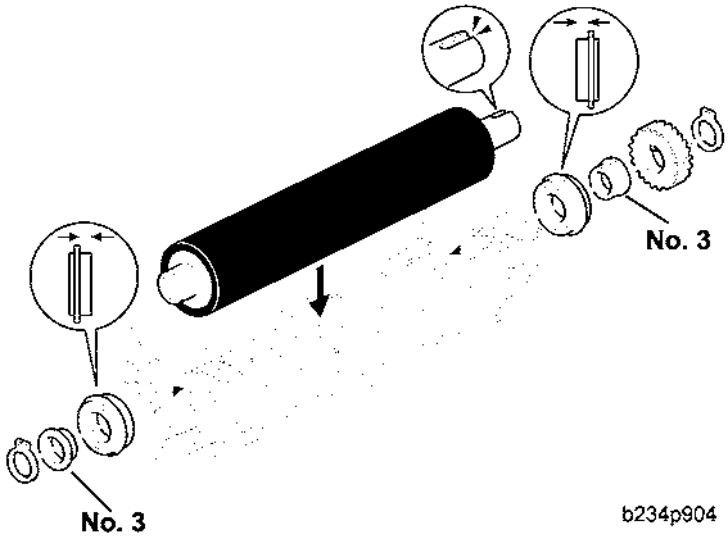
Fusing

No.	Lubrication Point	Type of Grease
3	Outer, inner surfaces of bushings	b
4	Inner surface of both ends of the pressure roller where it contacts the ball bearing	b
5	Fusing unit drive gears	b

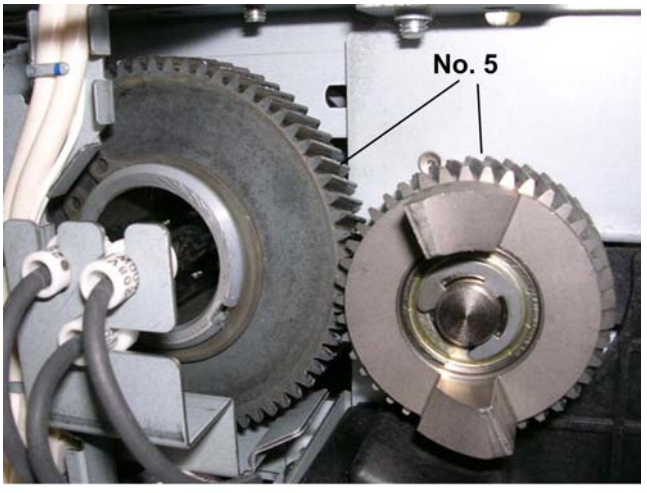


b234p902

b234p903



b234p904



b234p906

4. Replacement and Adjustment

General Cautions

Never turn either power switch off while the machine is operating. Doing so might cause damage to units such as the transfer belt, drum, and development unit when they are pulled out of or put back into the main machine.

Drum

An organic photoconductor (OPC) drum is more sensitive to light and ammonia gas than a selenium drum. Follow the cautions below when handling an OPC drum.

1. Never expose the drum to direct sunlight.
2. Never expose the drum to direct light of more than 1,000 Lux for more than a minute.
3. Never touch the drum surface with bare hands. When the drum surface is touched with a finger or becomes dirty, wipe it with a dry cloth or clean it with wet cotton. Wipe with a dry cloth after cleaning with wet cotton.
4. Never use alcohol to clean the drum; alcohol dissolves the drum surface.
5. Store the drum in a cool, dry place away from heat.
6. Take care not to scratch the drum, because the drum layer is thin and is easily damaged.
7. Never expose the drum to corrosive gases such as ammonia gas.
8. Always keep the drum in the protective sheet when keeping the drum unit, or the drum itself, out of the main machine. This avoids exposing it to bright light or direct sunlight, and will protect it from light fatigue.
9. Dispose of used drums in accordance with local regulations.
10. When installing a new drum, execute SP2962 (Auto Process Control Execution).

Drum Unit

1. Before pulling out the drum unit, place a sheet of paper under the drum unit to catch any spilt toner.
2. Make sure that the drum unit is set in position and the drum stay is secured with a screw before the main switch is turned on. If the drum unit is loose, poor contact of the drum connectors may cause electrical noise, resulting in unexpected malfunctions (RAM data change is the worst case).
3. To prevent drum scratches, remove the development unit before removing the drum unit.

Transfer Belt Unit

1. Never touch the transfer belt surface with bare hands.
2. Take care not to scratch the transfer belt, because the surface is easily damaged.
3. Before installing the new transfer belt, clean all the rollers and the inner part of the transfer belt with a dry cloth to prevent the belt from slipping.

Laser Unit

1. Do not loosen the screws that secure the LD drive board to the laser diode casing. This will put the LD unit out of adjustment.
2. Do not adjust the variable resistors on the LD unit, because they are adjusted in the factory.
3. The polygon mirror and F-theta lenses are very sensitive to dust. Do not open the optical housing unit.
4. Do not touch the glass surface of the polygon mirror motor unit with bare hands.
5. After replacing the LD unit, do the laser beam pitch adjustment. Otherwise, an SC condition will be generated.

Charge Corona

1. Clean the corona wires with a dry cloth. Never use sandpaper or solvent.
2. Clean the charge corona casing with water first to remove NOx based compounds. Then clean it with alcohol if any toner still remains on the casing.
3. Clean the end block with a blower brush first to remove toner and paper dust. Then clean with alcohol if any toner still remains.
4. Do not touch the corona wires with bare hands. Oil stains from fingers may cause uneven image density on prints.
5. Make sure that the wires are correctly between the cleaner pads and that there is no foreign material (iron filings, etc.) on the casing.
6. When installing new corona wires, do not bend or scratch the wire surface. Doing so may cause uneven charge. Also be sure that the corona wires are correctly positioned in the end blocks.
7. Clean the grid plate with a blower brush (not with a dry cloth).
8. Do not touch the charge grid plate with bare hands. Also, do not bend the charge grid plate or make any dent in it. Doing so may cause uneven charge.

Development

1. Be careful not to nick or scratch the development roller.
2. Place the development unit on a sheet of paper after removing it from the main machine.
3. Never disassemble the development roller assembly. The position of the doctor plate is set with special tools and instruments at the factory to ensure the proper gap between the doctor blade and the development roller.
4. Clean the drive gears after removing used developer.
5. Dispose of used developer in accordance with local regulations.
6. Never load types of developer and toner into the development unit other than specified for this model. Doing so will cause poor print quality and toner scattering.
7. Immediately after installing new developer, the TD sensor initial setting procedure should be performed with SP2801 (TD Sensor Initialization) to avoid damage to the main machine. Do not perform the TD sensor initial setting with used developer. Do not make any prints before doing the TD sensor initial setting.
8. When using a vacuum cleaner to clean the development unit casing, always ground the casing with your fingers to avoid damaging the toner density sensor with static electricity.
9. After replacing the TD sensor, replace the developer and execute 1) SP2801 (TD Sensor Initial Setting) and 2) SP2962 (Auto Process Control Execution).

Cleaning

1. When servicing the drum cleaning section, be careful not to damage the edges of the drum cleaning blade and 2nd cleaning blade.
2. Do not touch the cleaning blade with bare hands.
3. Before disassembling the cleaning section, place a sheet of paper under it to catch any toner falling from it.

Fusing Unit

1. After installing the fusing thermistor, make sure that it is in contact with the hot roller and that it is movable.
2. Be careful not to damage the edges of the hot roller strippers or their tension springs.
3. Do not touch the fusing lamp and rollers with bare hands.
4. Make sure that the fusing lamp is positioned correctly and that it does not touch the inner surface of the hot roller.

Paper Feed

1. Do not touch the surface of the pick-up, feed, and separation rollers.
2. To avoid paper misfeeds, the side fences and end fence of the paper tray must be positioned correctly to align with the actual paper size.

Used Toner

1. We recommend checking the amount of used toner at every EM.
2. Dispose of used toner in accordance with local regulations. Never throw toner into an open flame, because toner dust may ignite.

Special Tools and Lubricants

Special Tools

Part No.	Description
A2929500	Test Chart – S5S (10 pcs./set)
A0299387	Digital Multimeter – FLUKE 87
B6455010	SD (Secure Digital) Card – 64 MB
G0219350	Loop Back Connector

Lubricants

Part No.	Description
A2579300	Grease Barrierta – JFE 5 5/2
52039502	Silicon Grease G-501

Common Procedures

⚠CAUTION

- Turn off the main power switch and unplug the machine before attempting any procedure in this section.

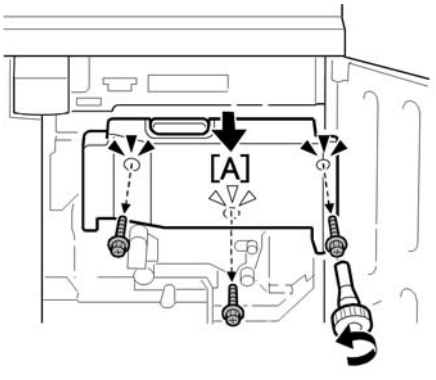
Development Unit Drawer

Pulling the Drawer Out

4

Note

- These illustrations show removal with the hex driver provided to the customer, but the screws can be removed with any Phillips head (+) screwdriver.

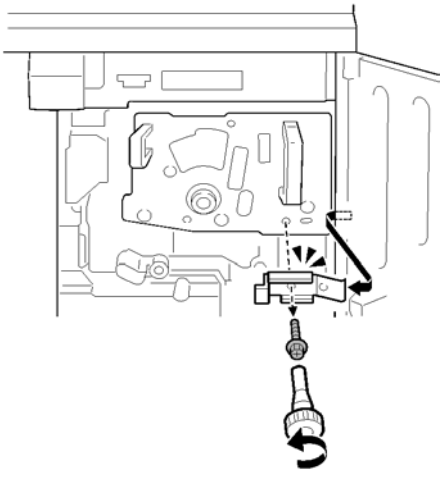


b234r903

1. Open the right front door.
2. Remove the black screws (x 3).
3. Remove inner cover [A].

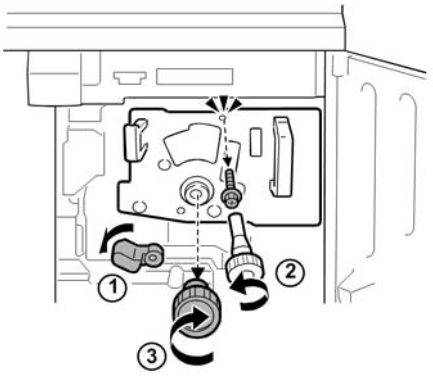
Important

- **This cover functions as a duct in the ventilation path of the machine. It must always be reinstalled.**



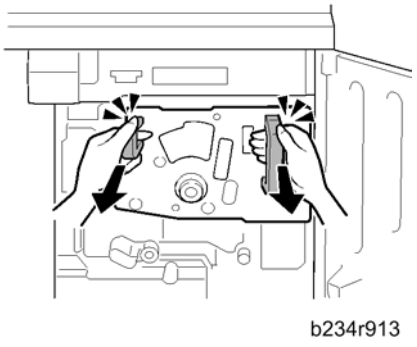
b234i110e

4. Remove the ground plate (x 1).



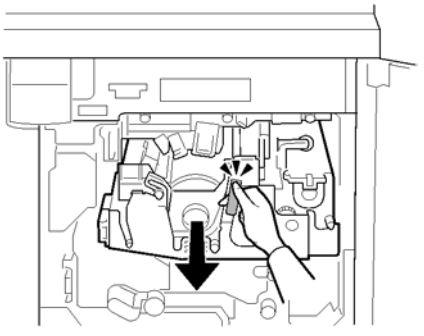
b234r904

5. Gently lower Lever C1 (1).
6. Remove the black screw (2) (x 1).
7. Rotate the black knob (3) clockwise and remove it.



b234r913

8. Pull the purple handles toward you and remove the faceplate.



b234r914

9. Pull the purple handle toward you until the drawer stops.

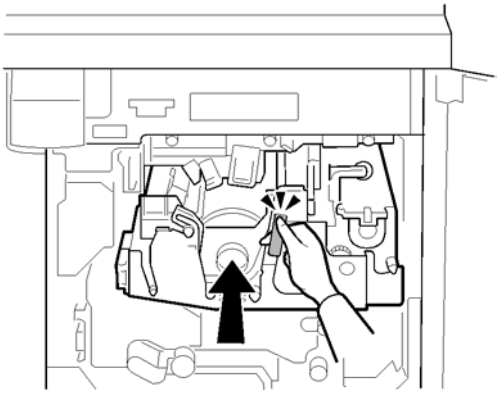
Note

- The development unit will shift slightly to the right when you pull the drawer out.

Important

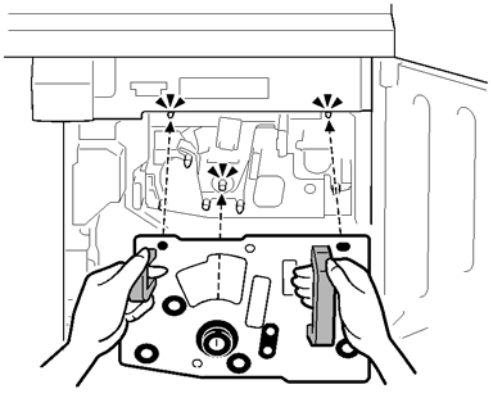
- **Use a sheet of clean paper to cover the slit in the PCU where the drum is visible. This protects the photo-sensitive surface of the drum from overhead light and direct sunlight.**

Closing the Drawer



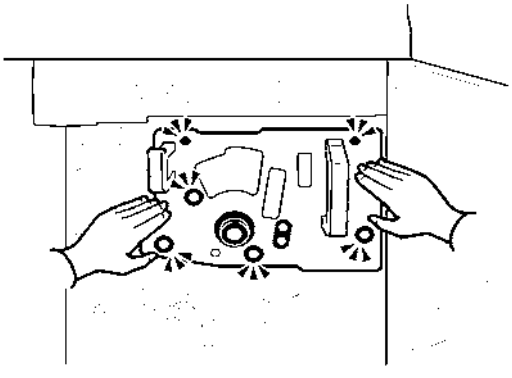
b234r915

1. Gently and firmly push the purple handle into the machine until the drawer stops and locks.



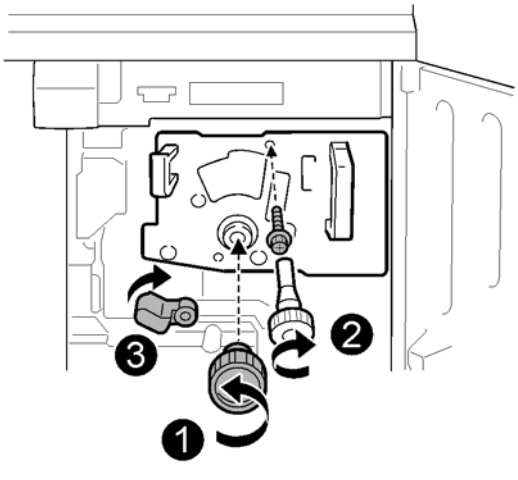
b234r916

2. Mount the faceplate holes over the pegs.



b234r917

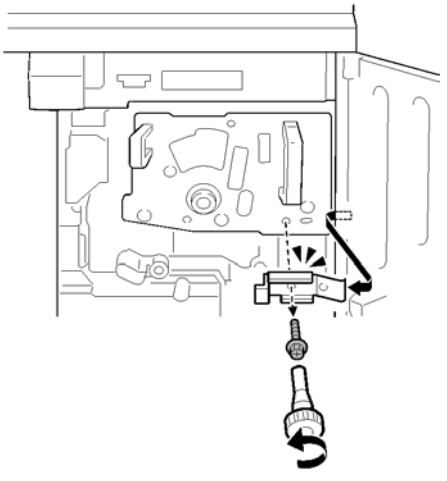
3. Push in on each corner and edge of the faceplate to make sure that it is locked and mounted correctly.



b234r918

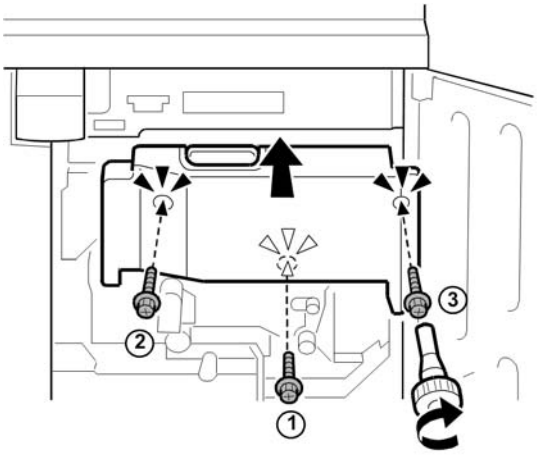
4. In this order:

- Attach knob (1)
- Fasten screw (2)
- Gently rotate lever C1 (3) up.



b234i110e

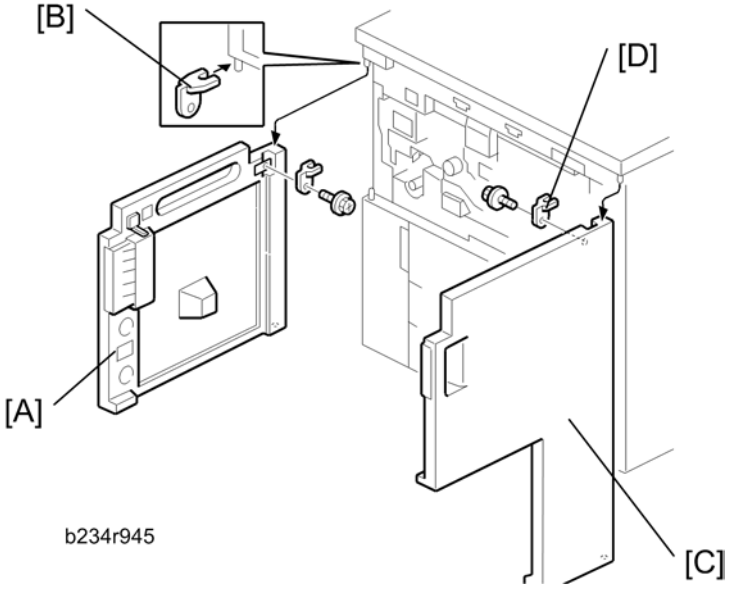
5. Reattach the ground plate (x 1).



b234r920

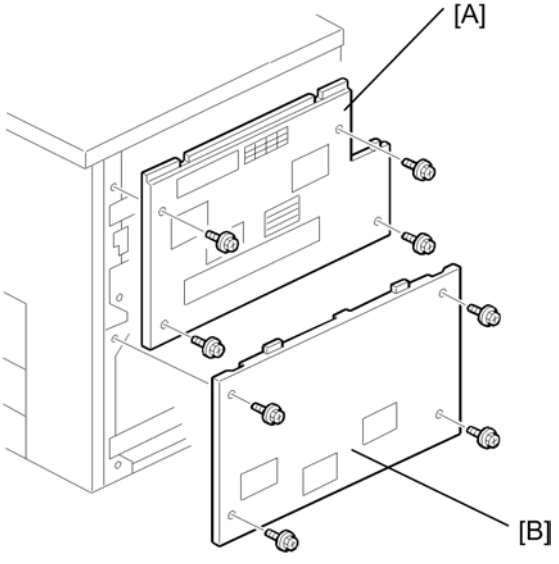
6. Mount the inner cover.
   - Attach screw (1) first but do not tighten.
   - Attach the other screws (2), (3)
   - Tighten all the screws.
7. Close the right front door.

Front Doors



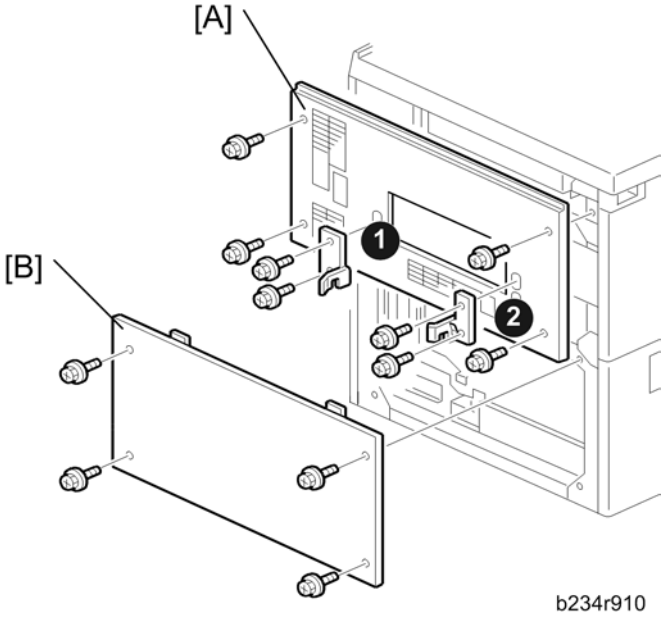
1. Open the left door [A].
2. Bracket [B] (x 1).
3. Lift up the left door and remove it.
4. Open the right door [C].
5. Bracket [D] (x 1).
6. Lift up the right door and remove it.

Right Covers



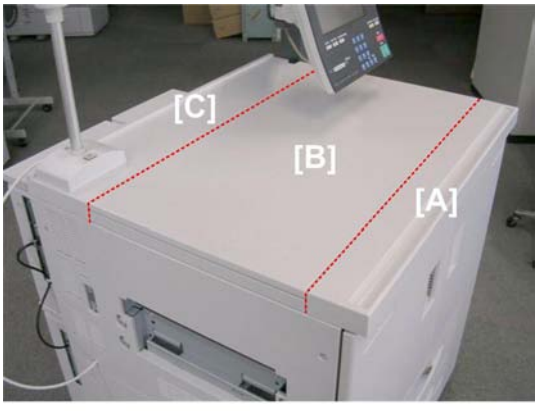
1. Right upper cover [A] (x 4).
2. Right lower cover [B] (x 4).

Left Covers



1. Disconnect the decurl unit.
2. If the optional finisher was installed:
   - Remove joint bracket (1) (x 2).
   - Remove joint bracket (2) (x 2).
3. Left upper cover [A] (x 4)
4. Left lower cover [B] (x 4).

Top Covers



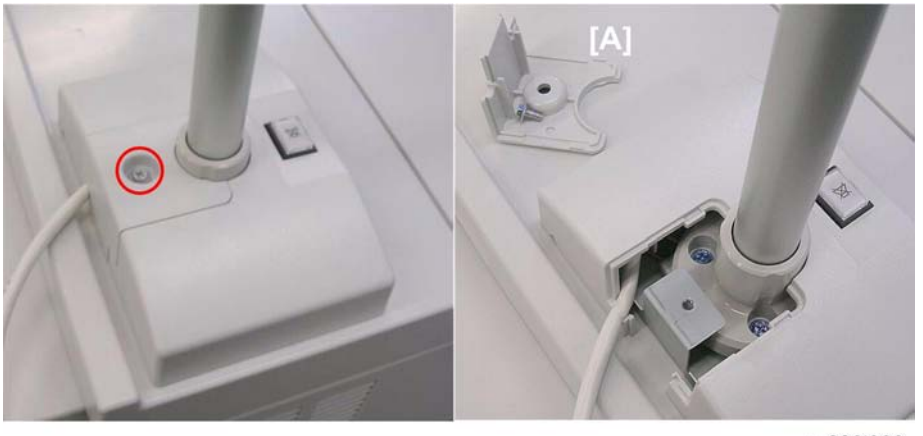
m002i935

1. There are three top covers:

   [A] Top front cover

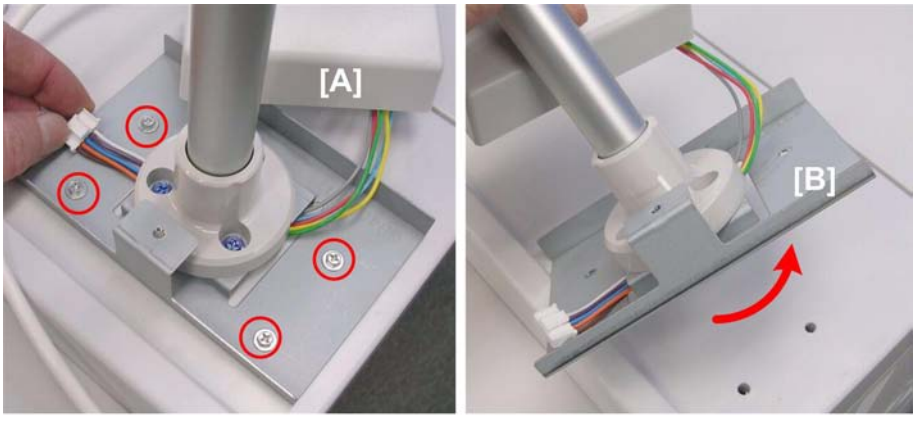
   [B] Top middle cover

   [C] Top rear cover



m002i936

2. If the attention light is installed, it must be removed.
3. Remove the lamp rear cover [A] (x1).

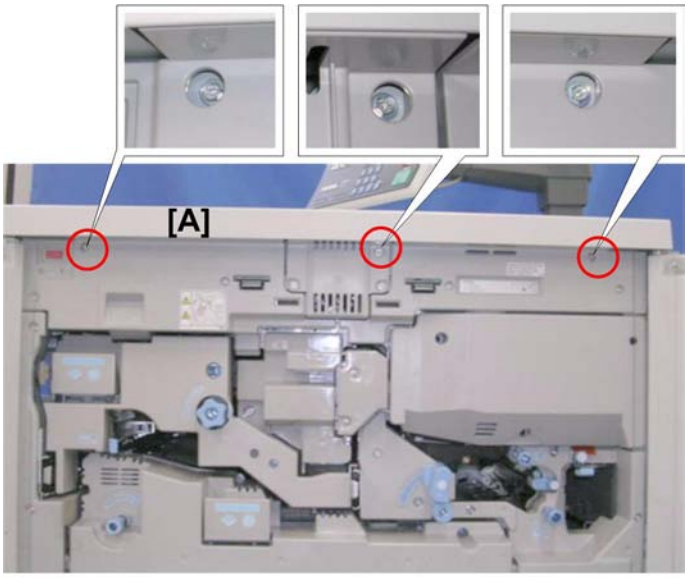


m002i937

4. Lift off the lamp front cover [A]. Do not disconnect the lamp connectors.
5. Disconnect the lamp base [B] (x4).
6. Lift the lamp off the machine and set it on the floor.

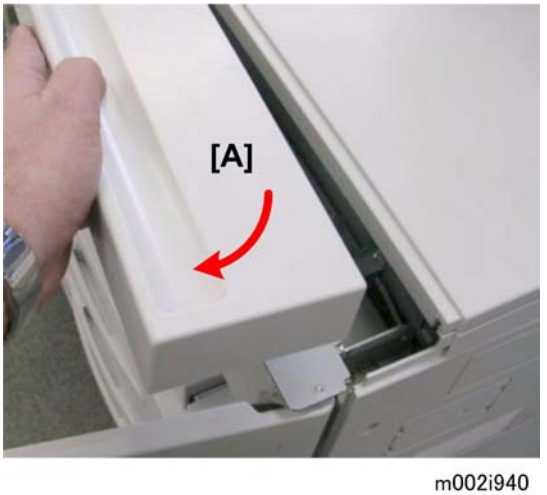
m002i938

7. Open both front doors.



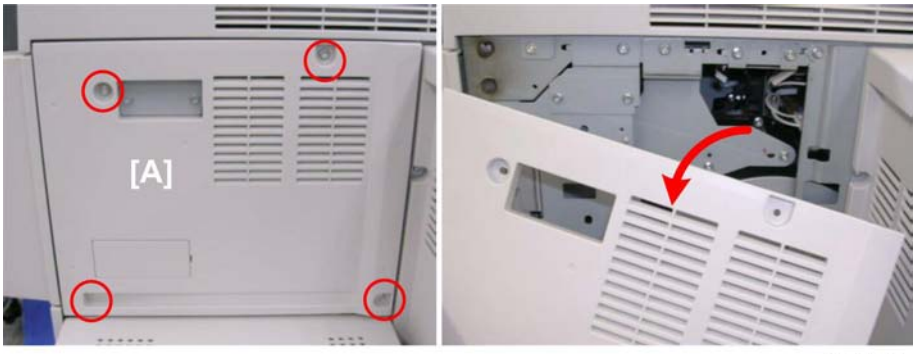
m002i939

8. Remove the screws of the top front cover [A] (x4).



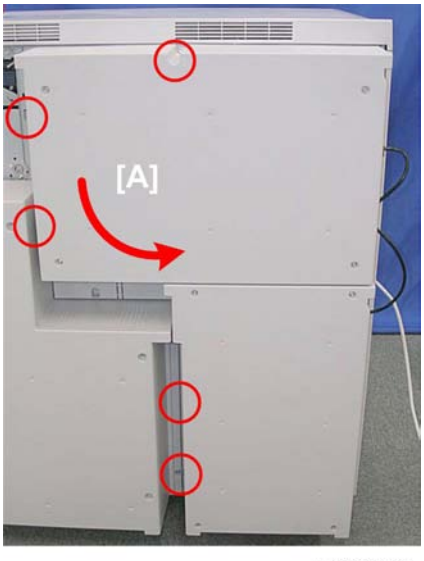
m002i940

9. Remove the top front cover [A].



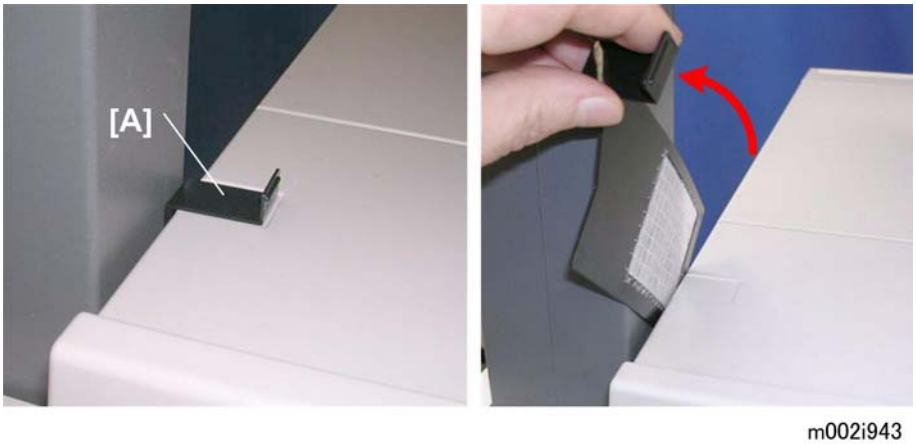
m002i941

10. Remove the machine rear upper cover [A] (x4).



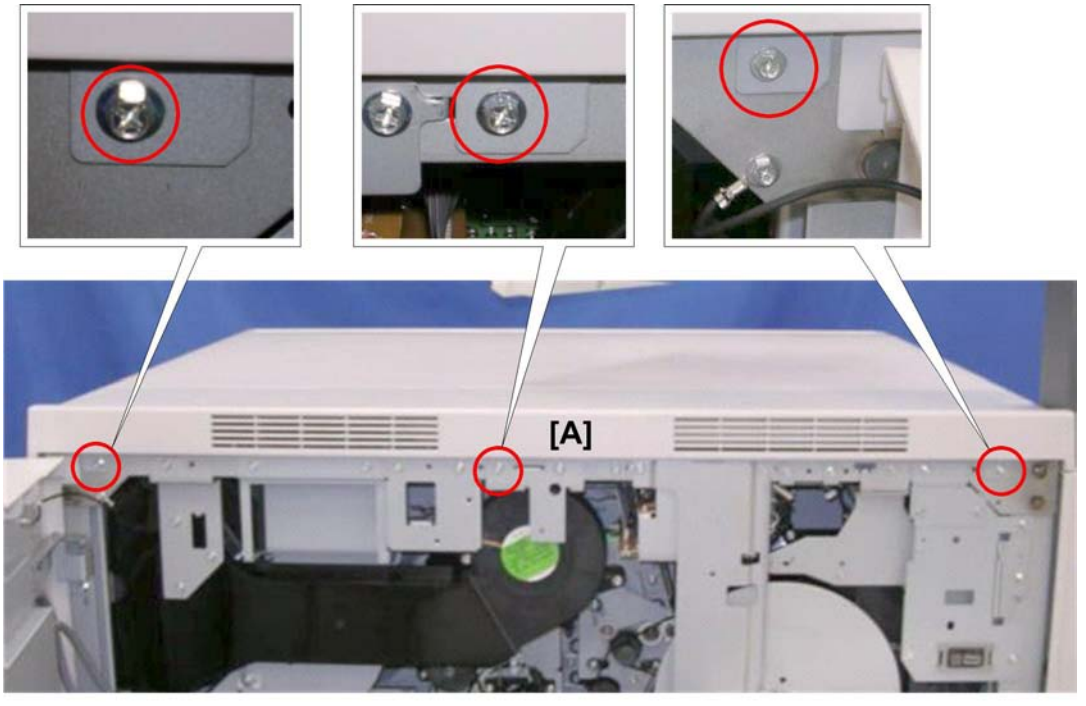
m002i942

11. Open the controller box [A] (x5).



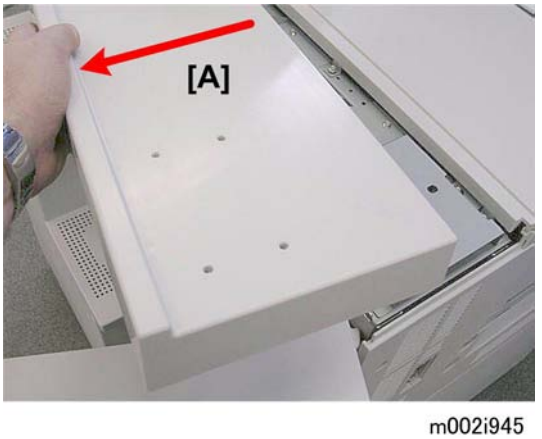
m002i943

12. Remove drum dust filter [A].



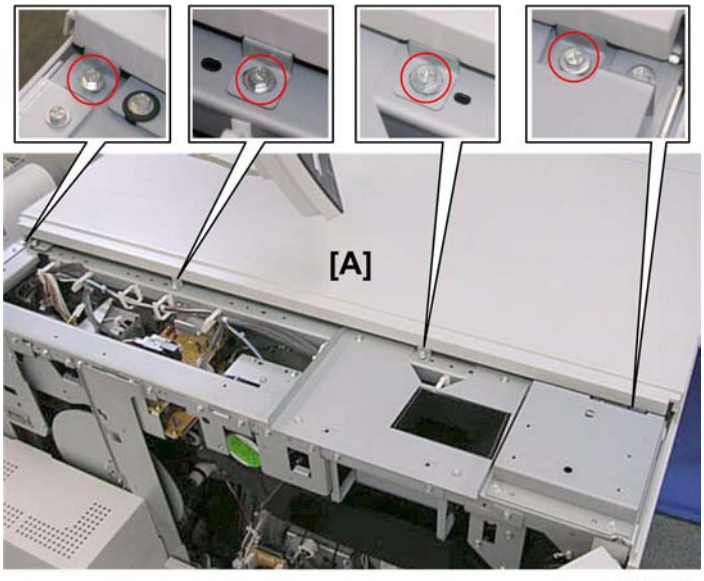
m002i944

13. Remove the screws of the top rear cover [A] (x3).



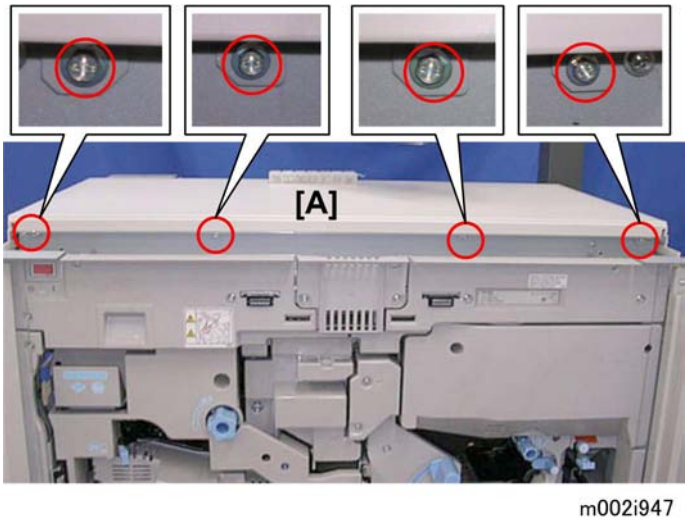
m002i945

14. Remove the top rear cover [A].



m002i946

15. At the rear, remove the screws of the top middle cover [A] (x4).



m002i947

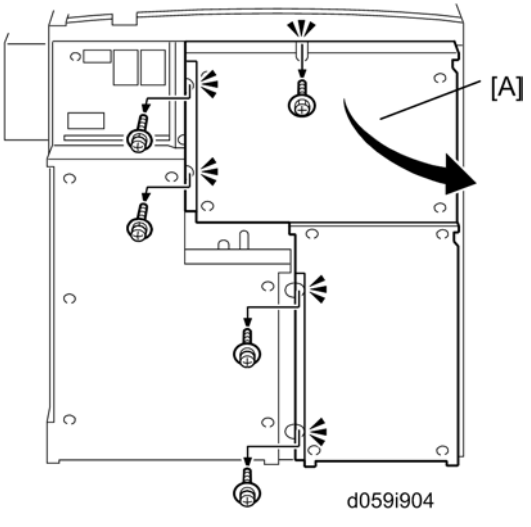
16. At the front, remove the screws of the top middle cover [A] (x4).

m002i948

17. Remove the top middle cover [A]

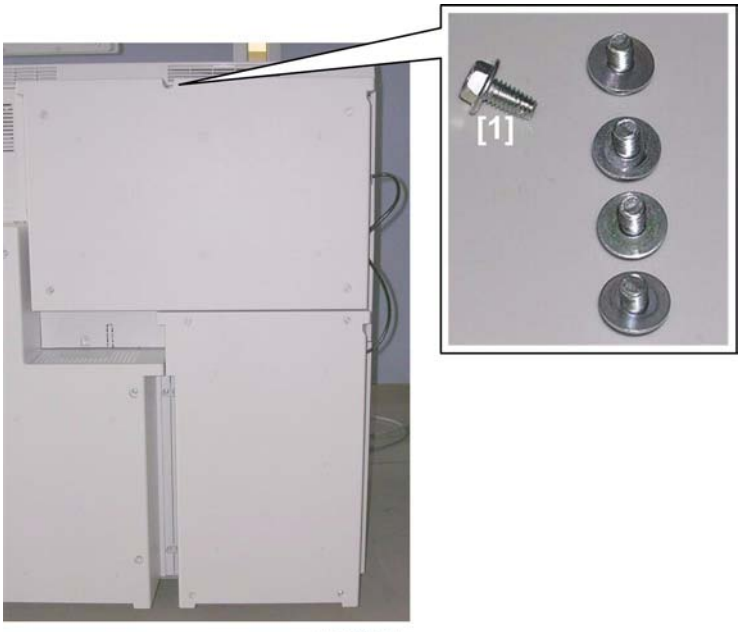
Controller Box

Opening the Controller Box



d059i904

1. Remove the screws (x 5).
2. Swing open the controller box [A] in the direction of the arrow.

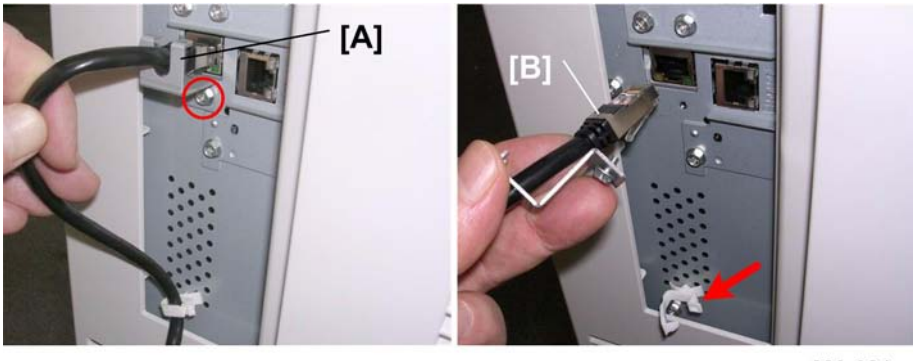


d458i004

Important

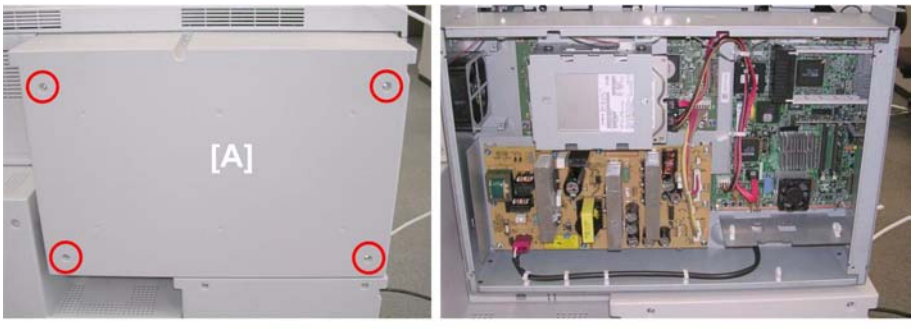
- The screw [1] removed from the center of the top edge of the controller box door has no washer. Be sure to re-attach this screw at the same location. (The other screws with the washers are identical.)

Removing the Controller Box Upper Cover



m002r904a

1. On the side of the upper controller box cover, remove clamp [A] (x1).
2. Disconnect cable [B] (x1, x1).
3. If there are any other cables connected to the upper controller board, disconnect them now.



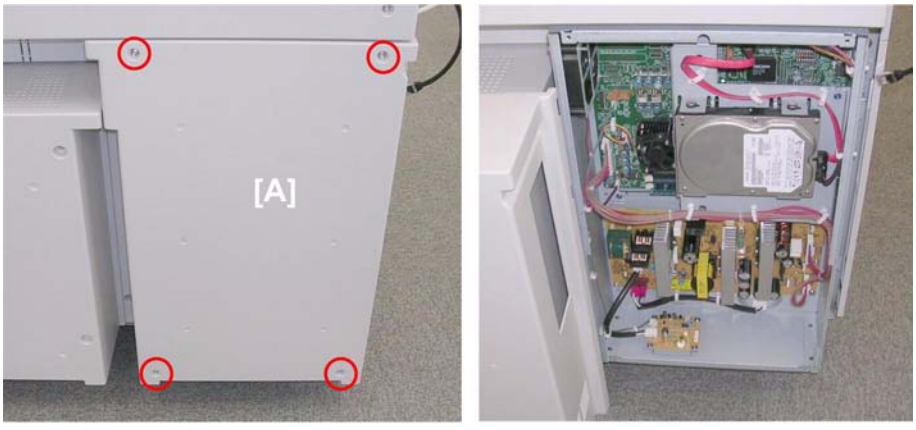
m002r904b

4. Remove controller box upper cover [A] (x4).

Removing the Controller Box Lower Cover

m002r904c

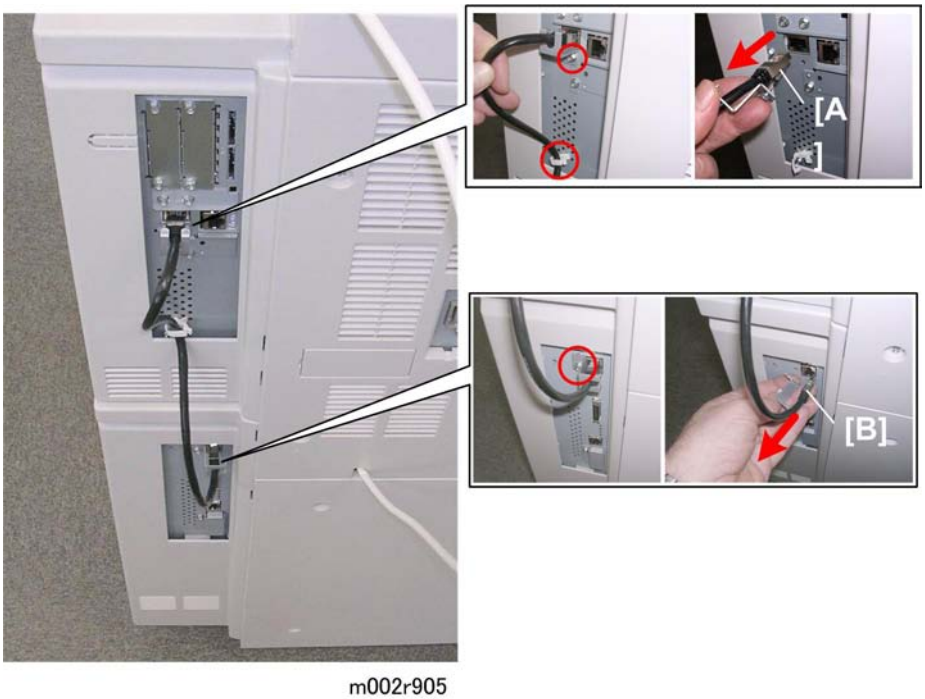
1. On the side of the controller box lower cover, remove clamp [A] (x1).
2. Disconnect cable [B] (x1).
3. If there are any other cables connected to the lower controller board, disconnect them now.



m002r904d

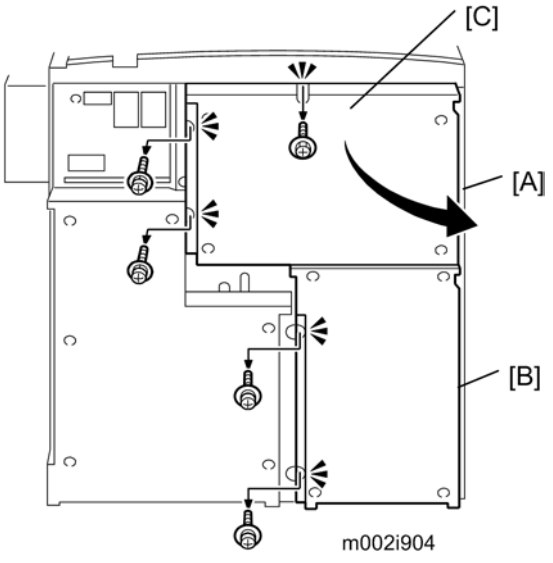
4. Remove the controller box lower cover [A] (x4).

Removing the Controller Box

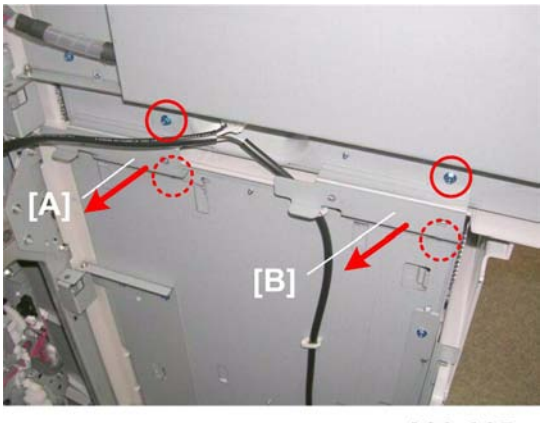


m002r905

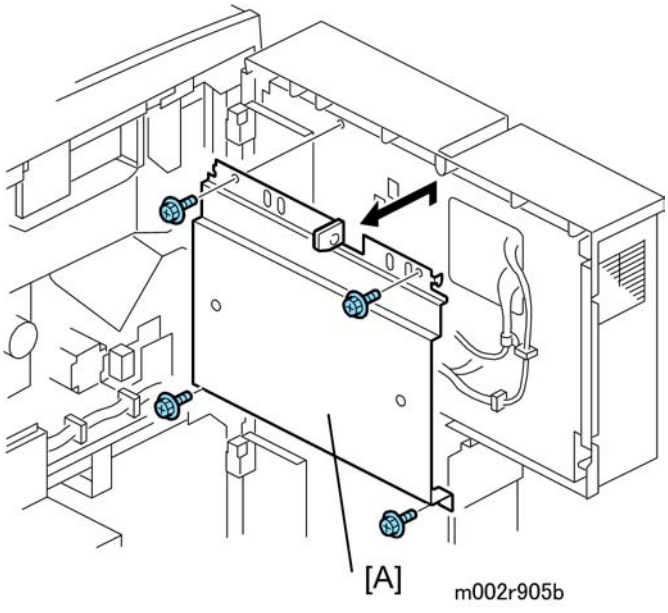
1. Disconnect the upper controller box cable [A] and lock plate (x1, x1).
2. Disconnect the lower controller box cable [B] and lock plate (x1).
3. If there are any other cables connected to either controller box, disconnect them now.



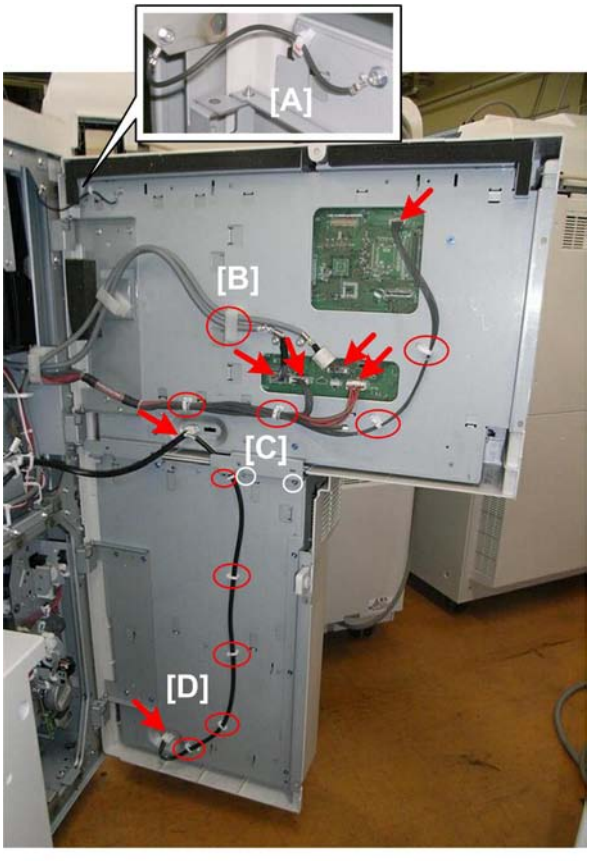
4. Make sure that all cables have been disconnected from the upper controller box [A] and lower controller box [B].
5. Open the controller box [C] (x 5).



6. Remove lock plate [A] (x2).
7. Remove plate [B] (x2).

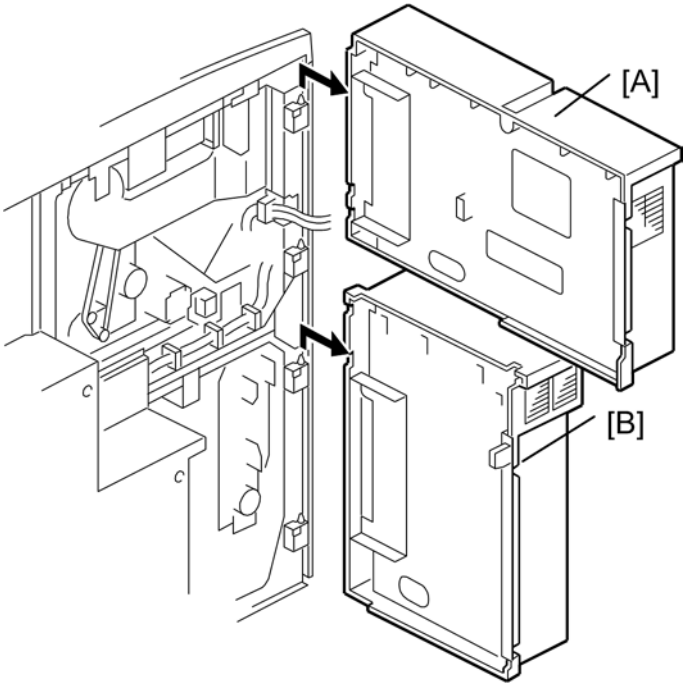


8. Remove harness cover [A] (x4).



m002r905c

9. Disconnect ground wire [A] (x1, x1).
10. Disconnect upper controller box [B] (x6, x6)
11. Remove lock plate [C] (x2).
12. Disconnect lower controller box [D] (x5, x1)

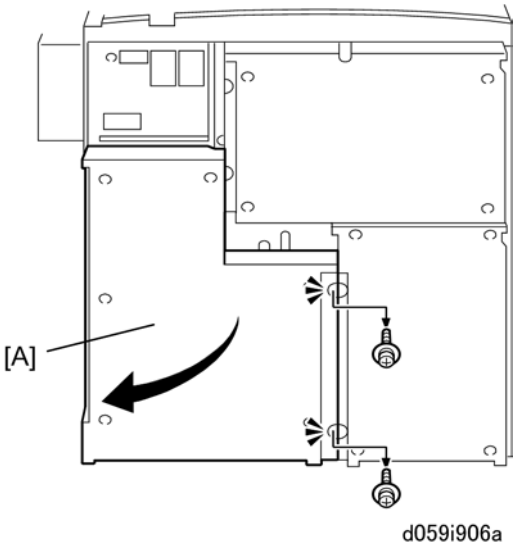


m002r905d

13. Lift off and remove:
    [A] Upper controller box
    [B] Lower controller box

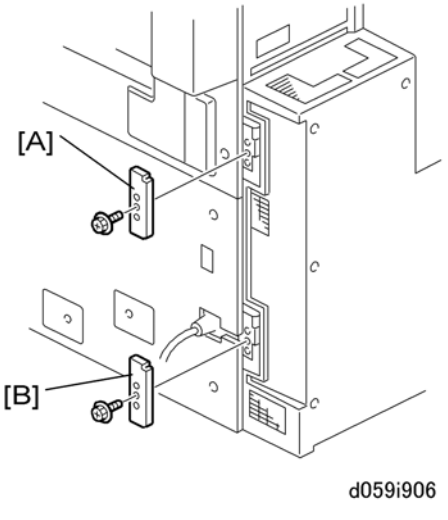
PSU Box

Opening the PSU Box



1. Remove the screws (x2)
2. Swing open the PSU box [A] in the direction of the arrow.

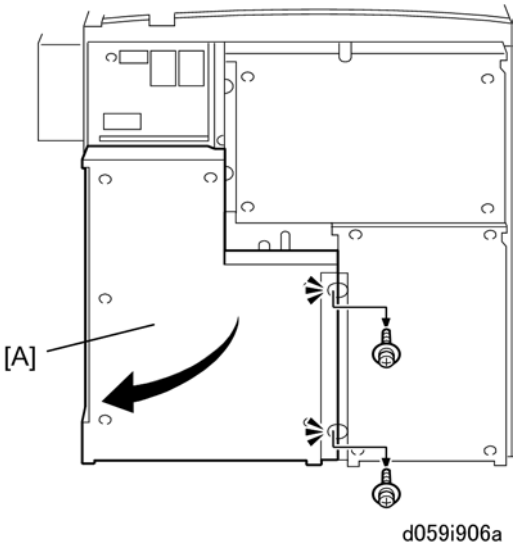
Removing the PSU Box



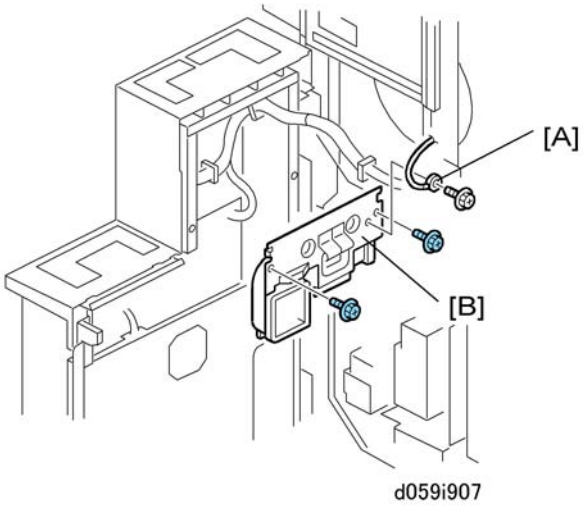
1. Remove:

[A] Upper hinge cover (x1)

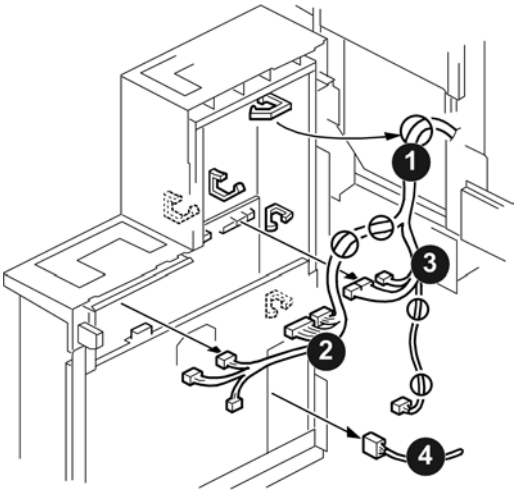
[B] Lower hinge cover (x1)



2. Open the PSU box [A] (x2)

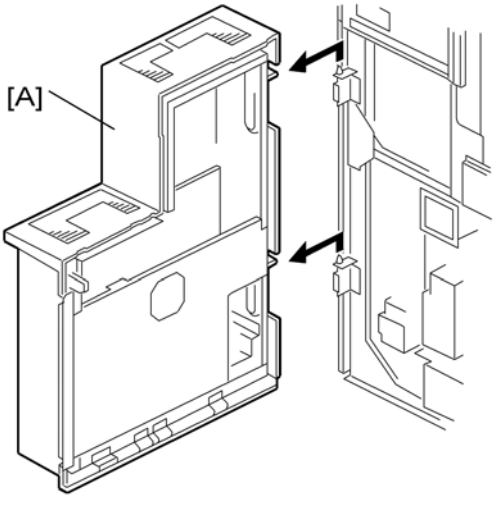


3. Disconnect ground wire [A] (x 1).
4. Remove duct [B] (x 2)



m002i908

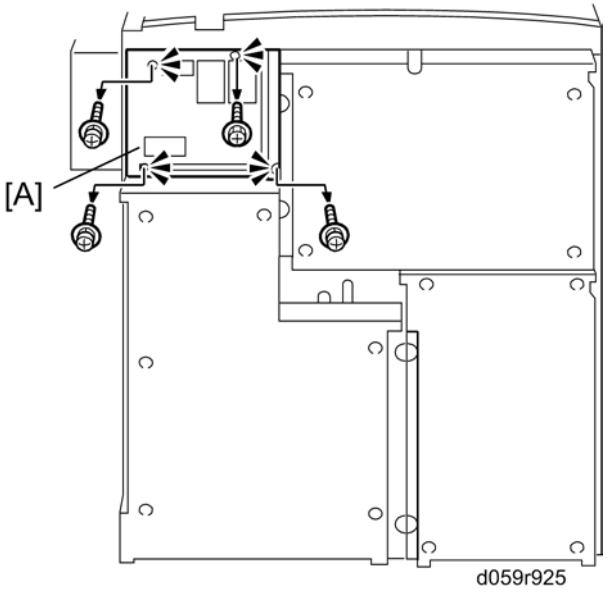
5. Disconnect the four harnesses (x8, x 10).



d059i908a

6. Lift the PSU box [A] off its hinges.

Rear Upper Cover



1. Rear upper cover [A] (x4)

Laser Unit

Important

- This laser unit employs 8 laser beams produced by two Class III LDA with a wavelength of 788 nm and intensity of 15 mW. Direct exposure to the eyes could cause permanent blindness.
- Before doing any replacement or adjustment of the laser unit, press the main power switch to power the machine off then unplug the machine from the power source. Allow the machine to cool for a few minutes. The polygon motor continues to rotate for approximately one to three minutes.
- Never power on the machine with any of these components removed: 1) LD unit, 2) polygon motor cover, 3) synchronization detect sensor.

Caution Decals

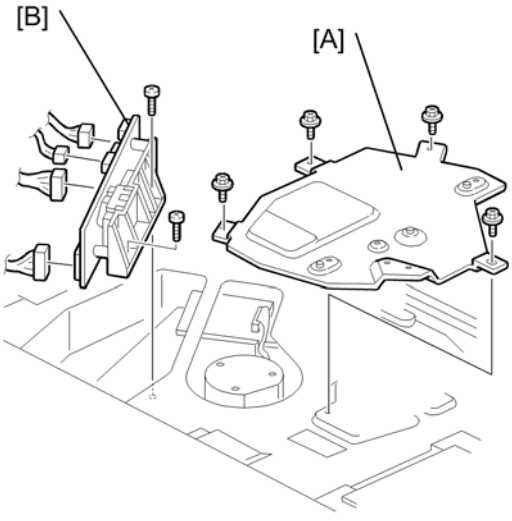
Two caution decals are attached to the laser unit.

m002r935

LD Unit

⚠WARNING

- Turn off the main power switch and unplug the machine before attempting this procedure. Laser beams can seriously damage the eyes.



m002r102

Note

- To avoid damaging the board with static electricity, never touch the printed circuit board.

1. Turn off the main power switch and unplug the machine.
2. Remove the three top covers (p.266)
3. Remove LD cover [A] (x 4).
4. Remove LD unit [B] (x 2, x 4).
    - Four spacers, each of a different colour, are placed under the LD unit in the factory in order to do a fine positioning adjustment on the LD unit position.
    - Before you remove the LD unit, take a careful note of where these spacers are. When replacing the LD unit, these spacers must be in exactly the same position.
    - Be sure to remove the mylar from the underside of the old LD unit and attach it to the new one.
5. After installing the LD unit, execute SP2115 001 to 009 to input the pitch settings for the main scan beams.
    - The correct settings for these SP codes are printed on a decal attached to the mounting bracket [C] of the LD unit.

```
<LD Unit Lot No.>
SP2115 001/SP2115 002/SP2115 003/SP2115 004/SP2115 005/SP2115 006
SP2115 007/
```

m002r909

The 7 numbers printed on the label correspond to the correct settings of the SP codes shown in the diagram above.

Here is an example

-10/-2/+10/-100/+0/+100/-10

To enter these numbers, you would execute:

SP2115 001	**[*] 1 0 [#]**
SP2115 002	**[*] 2 [#]**
SP2115 003	**1 0 [#]**
SP2115 004	**[*] 1 0 0 [#]**
SP2115 005	**0 [#]**
SP2115 006	**1 0 0 [#]**
SP2115 007	**[*] 1 0 [#]**

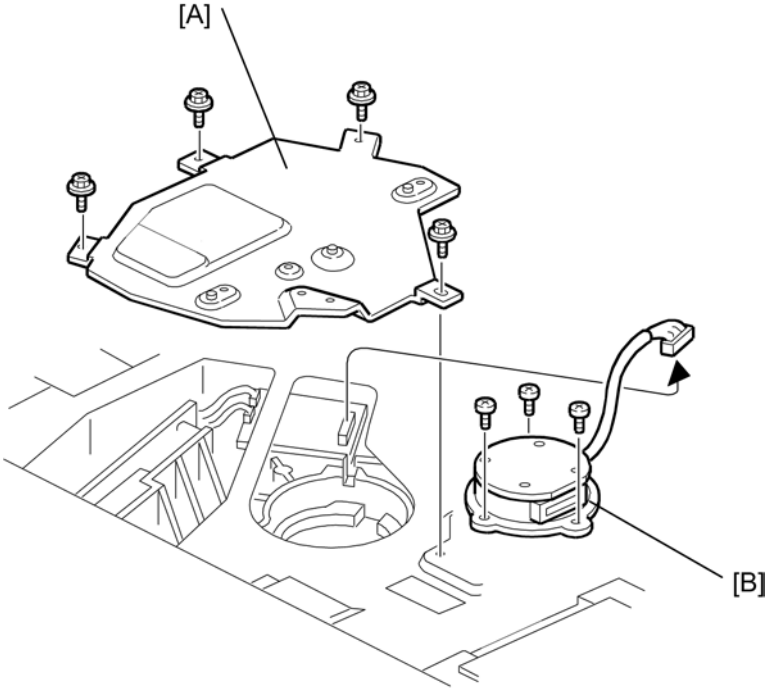
- Press [*] to enter the minus sign.
- Press [#] after each entry.
- A key press is not required for the plus sign.

⚠CAUTION

- This example is for instructional purposes only. When you do this adjustment, you must enter the numbers printed on the label attached to the LD unit.

6. Do SP2962 (Auto Process Control Execution).
7. Make some test prints and check that the magnification is correct. If not correct, please do the image adjustments. (☛ p.437 "Printed Image Adjustment")

Polygon Mirror Motor



m002r101

Note

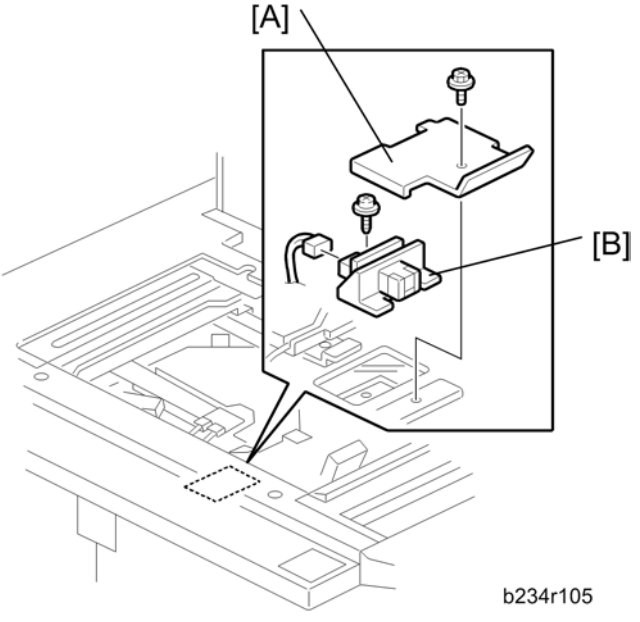
- To avoid damaging the polygon motor, switch the machine off and wait 3 minutes to allow the motor to stop rotating before removing it.

1. Turn off the main power switch and unplug the machine.
2. Remove the three top covers (p.266)
3. Remove LD cover [A] (x 4).
4. Remove Polygon mirror motor [B] (x 3, x 1).

   Note

   - When reinstalling, make sure that the polygon mirror opening faces the right.
   - Never touch the glass surface of the polygon mirror motor with bare hands.
5. After reassembly, do the image adjustments. (p.437 "Printed Image Adjustment")

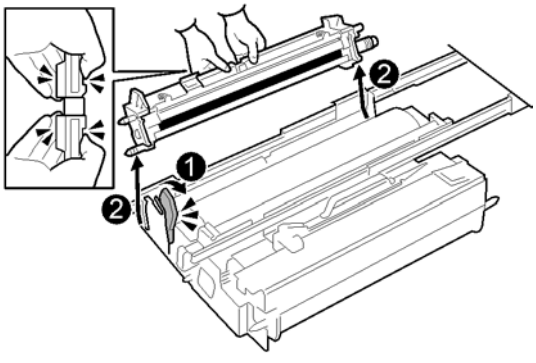
Laser Synchronization Detector



1. Turn off the main power switch and unplug the machine.
2. Remove the three top covers (p.266)
3. Detector cover [A] (x 1).
4. Laser synchronization detector [B] (x 1, x 1).

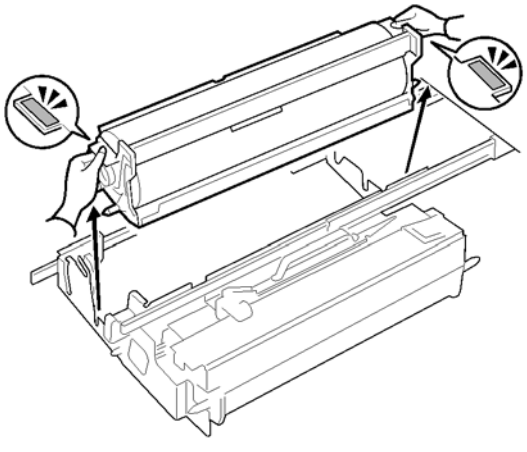
Around The Drum

Cleaning Unit, PCU, Drum



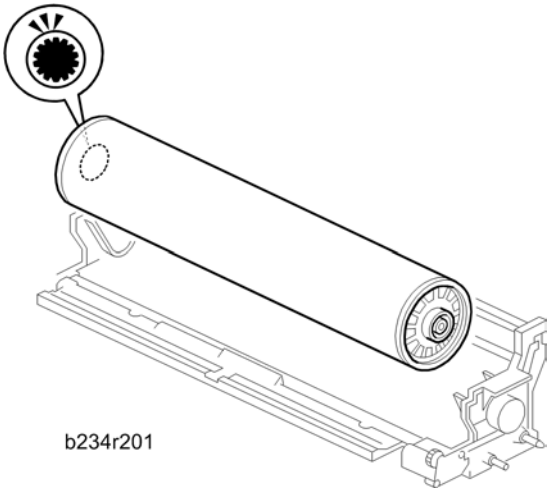
b234r948

1. Pull out the development unit drawer.
2. Remove the cleaning unit.
    - Raise the purple lever (1) and pull the cleaning unit to the left (2) until it disengages the lever
    - Lift the unit out of the drawer
    - Grasp the cleaning unit by its handles as shown and lift it straight up.



b234r949

3. Lift the PCU by its purple handles and remove it.



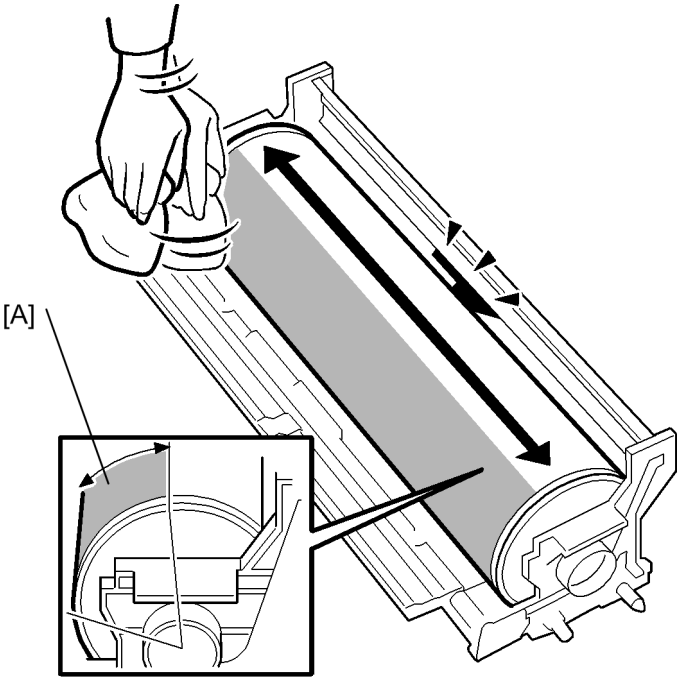
b234r201

4. Remove the drum.
5. Cover the drum with a sheet of clean paper to protect its photosensitive surface.

Important

- **If you leave the drum exposed to direct sunlight or strong overhead light, this can cause its photosensitive surface to deteriorate and shorten its service life.**

Re-installing the Drum



b234r977

Important

- **Apply a sufficient amount of setting powder to the drum as far as the edges.**
- **You need to only apply the powder where the drum will be exposed to the cleaning blades.**
- **Use clean toner if drum setting powder is not available.**
- **Never touch the surface of the drum with bare hands.**

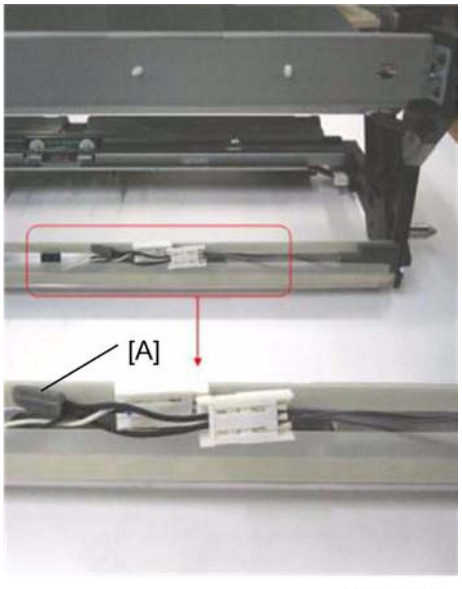
1. Set the drum in the PCU.
2. Cover the area of the drum [A] that will be under the cleaning blades with drum setting powder as shown above.
3. Do SP3905 (OPC drum initial setting) and SP2962 (Auto process control execution) for the new drum.

PTL (Pre-Transfer Lamp)

1. Remove the cleaning unit, PCU, and drum (p.289)

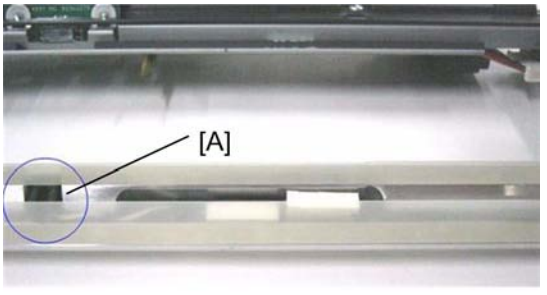
Note

- Wrap a protective sheet or a few sheets of paper around the drum to protect it from light.



d059r904a

2. Remove the screws from both ends of the PTL holder (x2).
3. Disconnect the PTL connector [A] and separate it from the thermistor connectors.



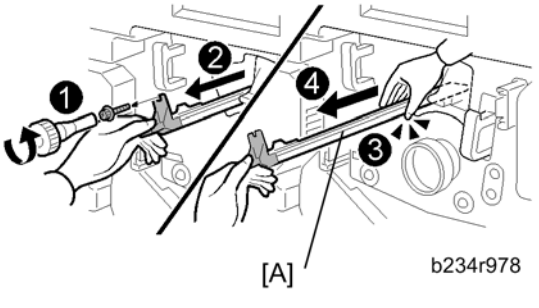
d059r904b

4. Push the harnesses [A] down through the gap between the stay and mylar.

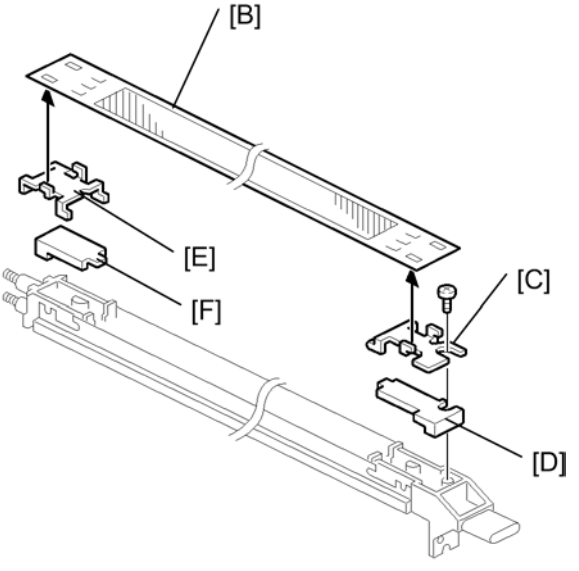
d059r904c

5. Remove the PTL.

Pre-Charge Unit



b234r978



b234r211

- Remove the inner cover.

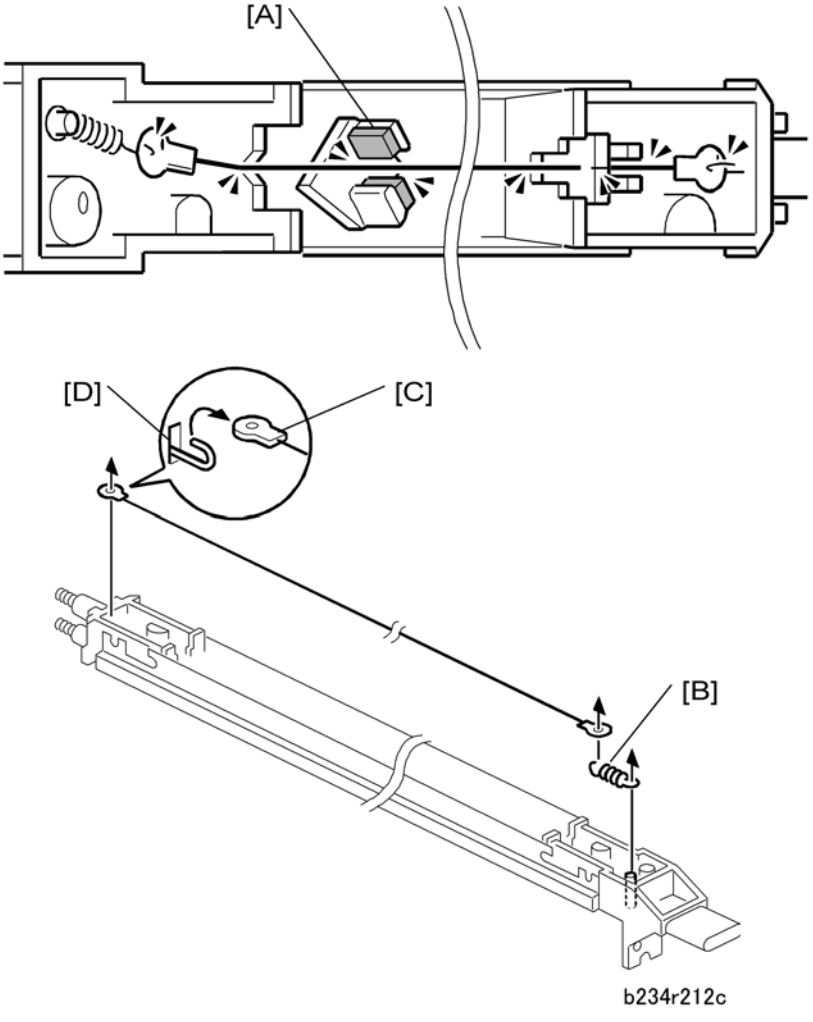
1. Pre-charge unit [A] (x 1)

2. Grid [B] (x 1 M4 x 6).

Important

- **Hold the grid carefully at both ends.**
- **Do not touch the wire mesh and avoid bending it.**

3. Front lock plate [C] (Pawls x2)
4. Front cover [D].
5. Rear lock plate [E] (Pawls x2).
6. Rear cover [F].



7. Move the wire cleaner [A] to the home position.
8. Spring [B].

9. Corona wire [C] from the hook of the rear spring [D].

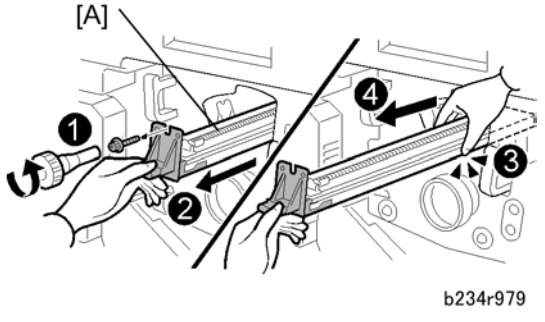
Important

- **Always hold the wire by the eyelets on both ends.**
- **Never touch any other part of the wire.**
- **Handle the wire carefully to avoid bending it.**

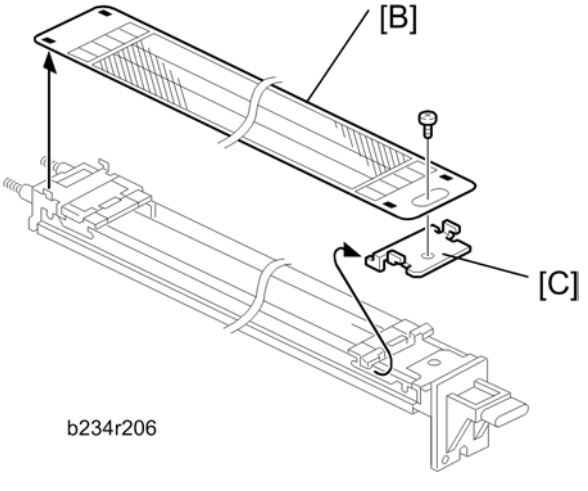
10. Do SP2962 after replacing the Pre-Charge Unit.

Charge Corona Unit

- Inner cover (p.258 "Pulling the Drawer Out")



1. Charge corona unit [A]

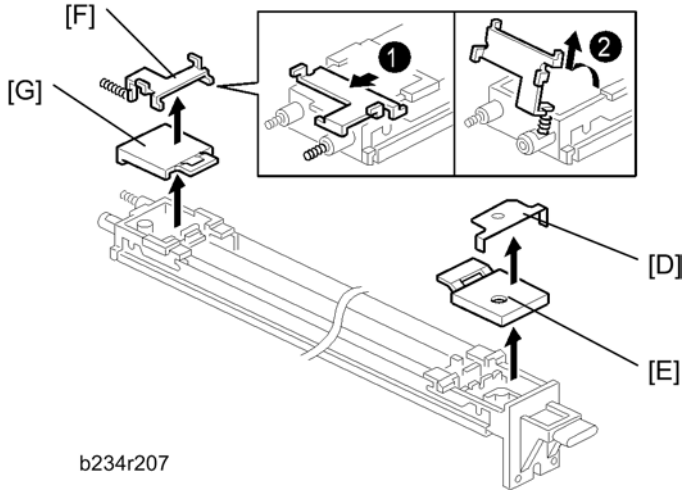


2. Grid [B] (x 1 M4 x 8)

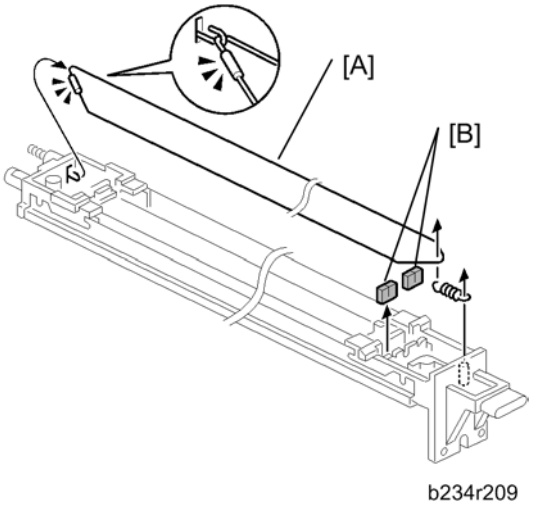
Important

- **Always handle the grid carefully by its edges.**
- **Never touch any part of the wire mesh. Handle it carefully to avoid bending it.**

3. Front lock plate [C] (Pawls x2)



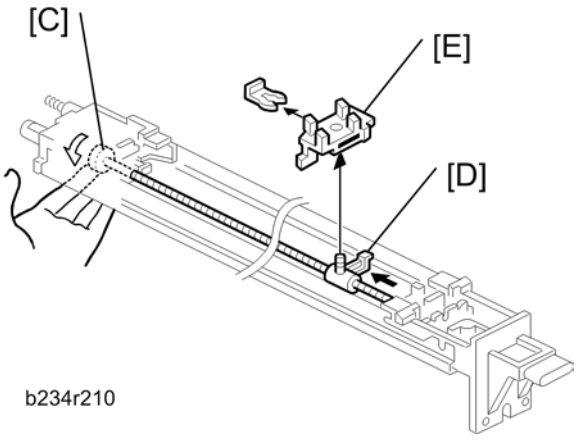
4. Terminal plate [D].
5. Front cover [E].
6. Slide off the rear lock plate, (1) to (2) above, (Pawls x4) and remove it with the spring [F].
7. Rear cover [G].



8. Corona wire [A] (Spring x1)
9. Two cushions [B].

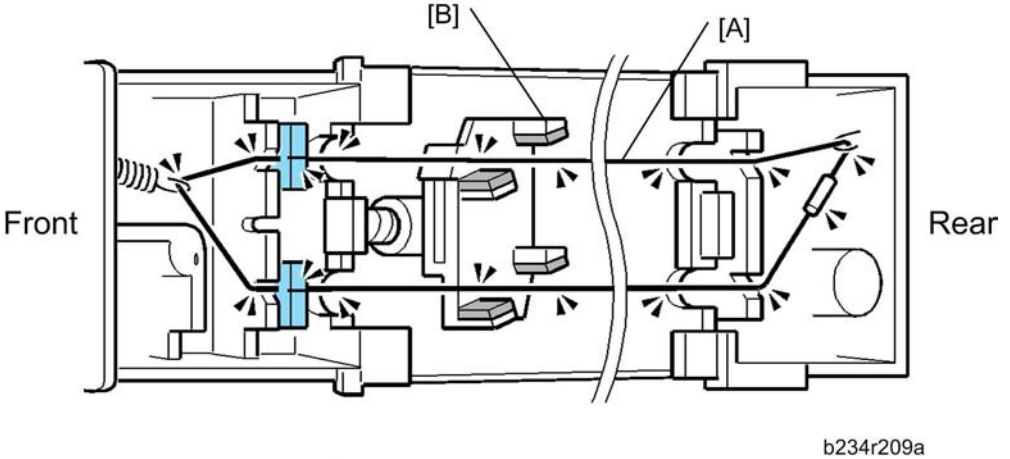
Important

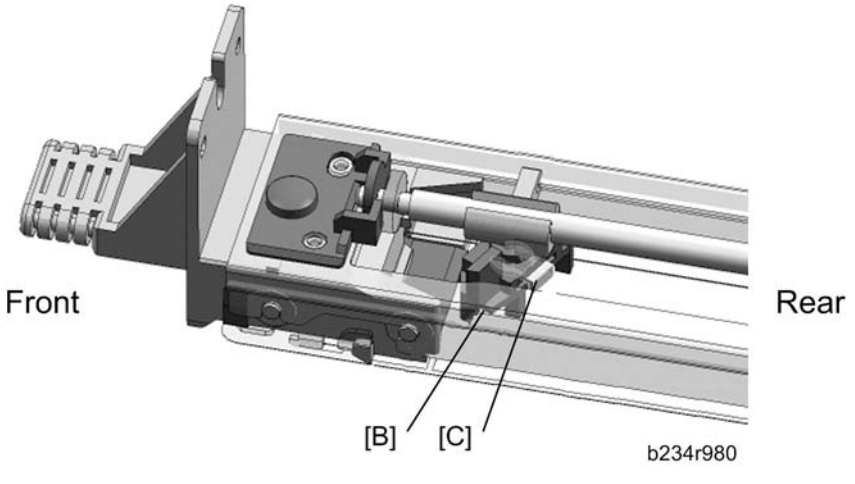
- Always hold the wire by its metal fitting and its opposite end.
- Never touch any other part of the wire.
- Handle the corona wire carefully to avoid bending it.



4

10. Turn the gear [C] to move the cleaner assembly [D] to a location where the cleaner is easy to access.
11. Cleaner pad [E] (x1).





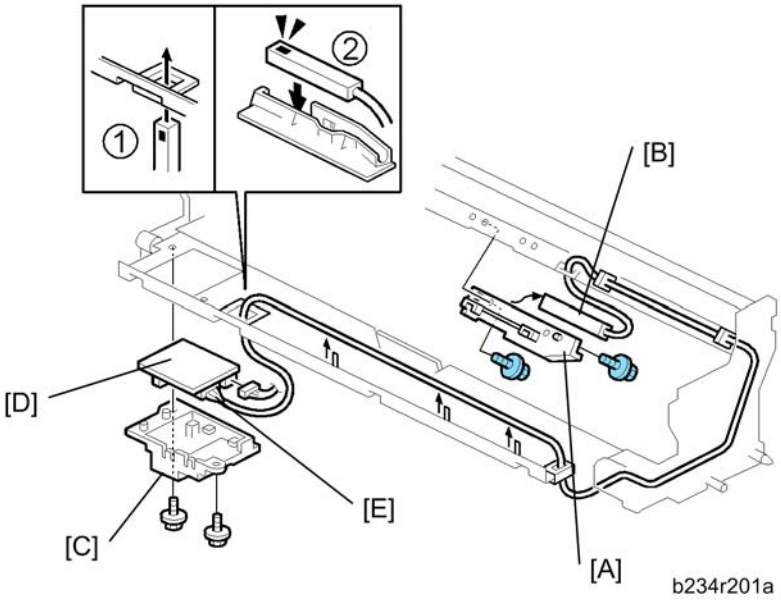
12. Re-assemble the charge corona unit.

Important

- **Make sure the corona wire [A] and cleaning pad [B] are positioned as shown.**
- **Make sure that the lip of the snap ring [C] faces down toward the grid wire.**

13. After installing new wires, reset SP codes SP2001 001 to 2001 006 (Corona Voltage and Current) to their defaults.
14. Execute SP2962 (Auto Process Control Execution).

Drum Potential Sensor



1. Remove the drum (p.289 "Cleaning Unit, PCU, Drum")
2. Remove:

- [A] Drum potential sensor cover (x2, Hook x1)
- [B] Drum potential sensor
- [C] Drum potential sensor unit (x5, x1)
- [D] Drum potential sensor PCB (x2, Hook x1)

Important

- **Do not attempt to disconnect the drum potential sensor harness [E] from the PCB.**

Reinstallation

Important

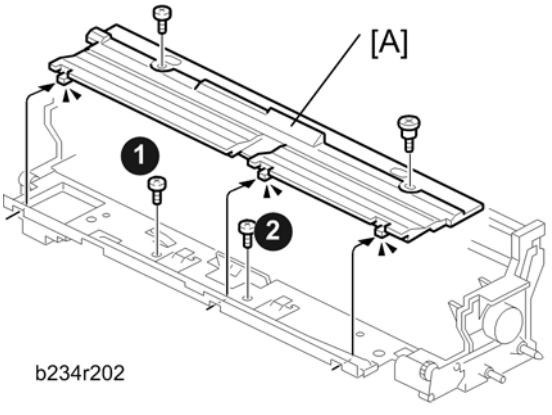
- **The drum potential sensor is fragile. Handle it carefully.**

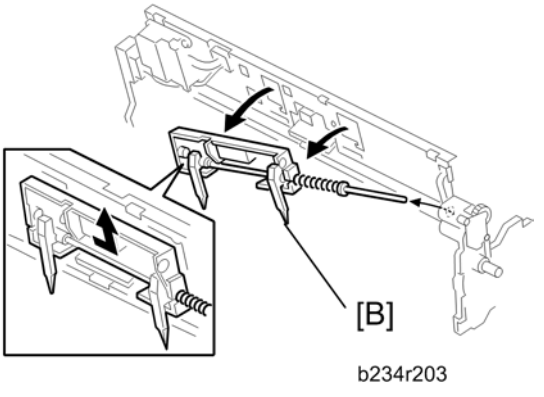
- First, insert the drum potential sensor and harness through the hole (1).
- Next, fasten the drum potential sensor to its cover (2).
- Execute SP2962 (Auto Process Control Execution).

Note

- After replacing the drum potential sensor, you must always execute SP2962.

Pick-Off Pawls



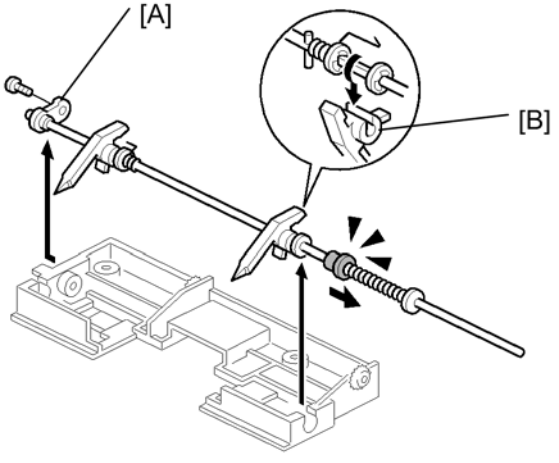


Remove:

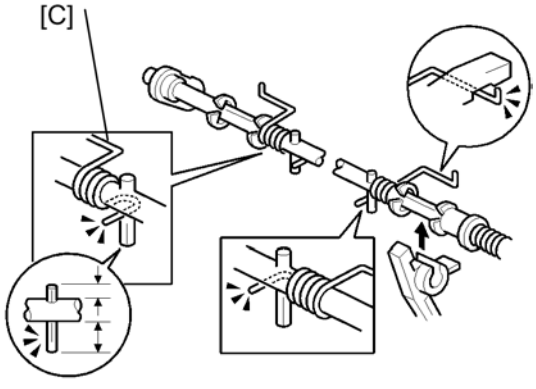
- Drum (p.289 "Cleaning Unit, PCU, Drum")

1. Cover [A] (x2)
2. Pick-off pawl unit screws (1), (2) (x2)
3. Pick-off pawl unit [B].

ID Sensor



b234r205

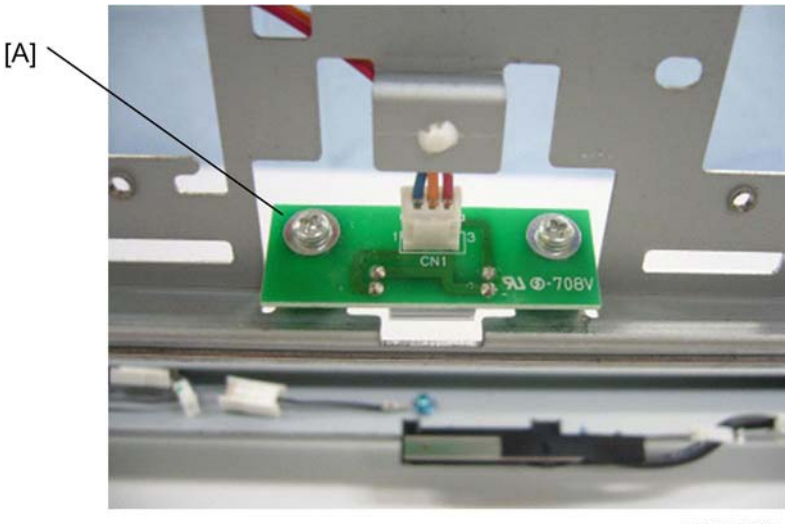


b234r204

1. Detach the front end of the shaft [A] (x1), then lift the shaft out of the grooves.
2. Rotate the pick-off pawl [B] 45 degrees, then remove it.
3. Install a new pick-off pawl by rotating it onto the shaft.
4. Do not forget to hook the tension springs [C].
5. Follow the same procedure to replace the other pick-off pawl.

Important

- **Do not allow the pawl springs to catch inside the pick-off pawl.**
- **After replacing the pick-off pawls, press down on each one to confirm that it moves freely.**



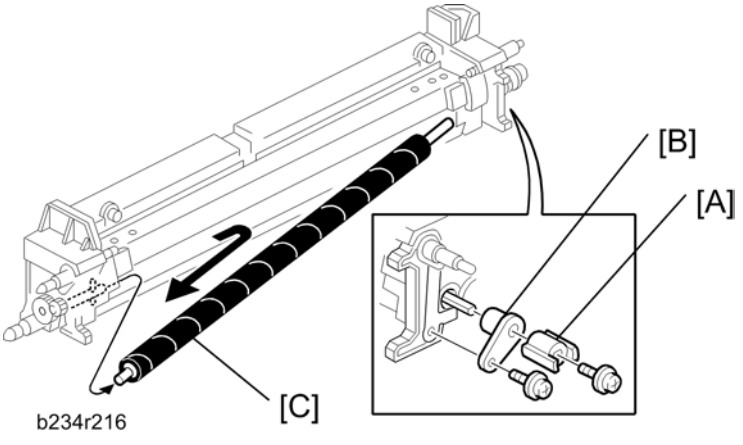
b234r906

6. Drum (p.289 "Cleaning Unit, PCU, Drum")
7. Cover (p.297 "Drum Potential Sensor")
8. Pick-off pawl unit [x2].
9. ID sensor [A] (x2, x1, x1)

Note

- After installing a new ID sensor, do SP3001 002 (ID Sensor Settings – ID Sensor Initialization).

Cleaning Brush



Remove

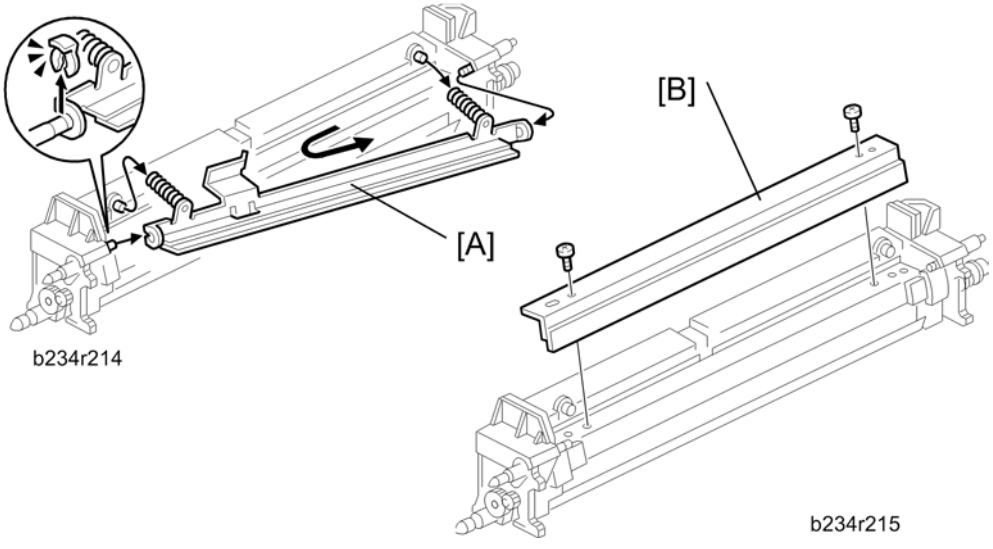
- Cleaning unit (p.289 "Cleaning Unit, PCU, Drum")

1. Coupling [A] (x1)
2. Bushing [B] (x1)
3. Pull the cleaning brush shaft to the rear to release the cleaning brush [C], then remove it.

Important

- **Never touch the soft surface of the cleaning brush.**
- **When installing the cleaning brush, avoid bending or damaging the entrance seal with the cleaning brush.**

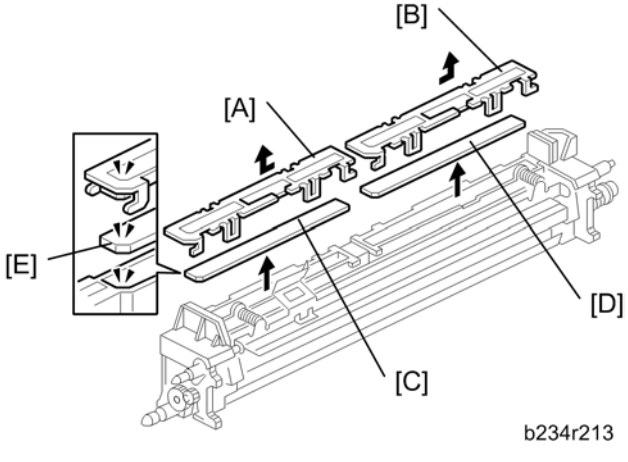
Cleaning Blades



- Remove the drum cleaning unit. (p.289 "Cleaning Unit, PCU, Drum")

1. 2nd cleaning blade [A] (x1).
2. Cleaning blade [B] (x2).

Cleaning Unit Filters



- Drum cleaning unit. (p.289 "Cleaning Unit, PCU, Drum")
- 2nd cleaning blade (x1) (p.301).

1. Front filter bracket [A] (Pawls x2)
2. Rear filter bracket [B] (Pawls x2)

3. Front filter [C]
4. Rear filter [D]

Important

- **When you install the new filters, confirm that the notched corners [E] of the filters fit tightly to the beveled corners of the plastic below.**

Toner Filter

b234r907

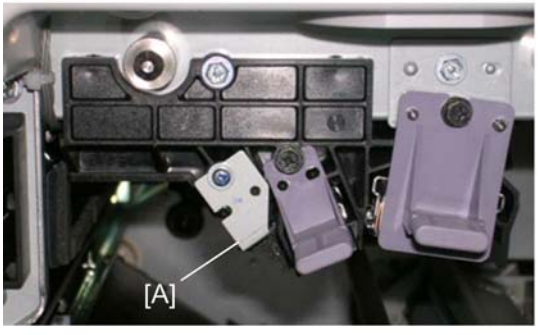
Remove:

- Remove the inner cover.

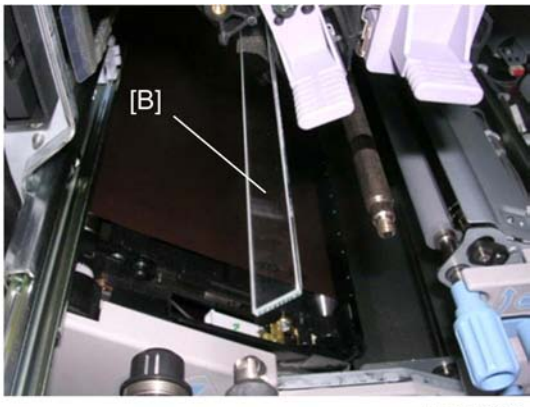
1. Drum filter [A].

Quenching Lamp Shield Glass

1. Pull the development unit drawer out.



b234r908

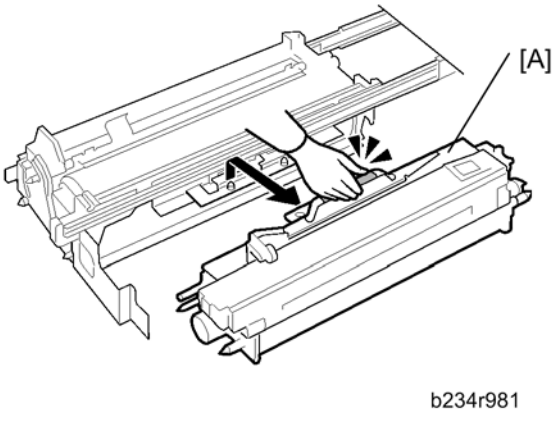


b234r909

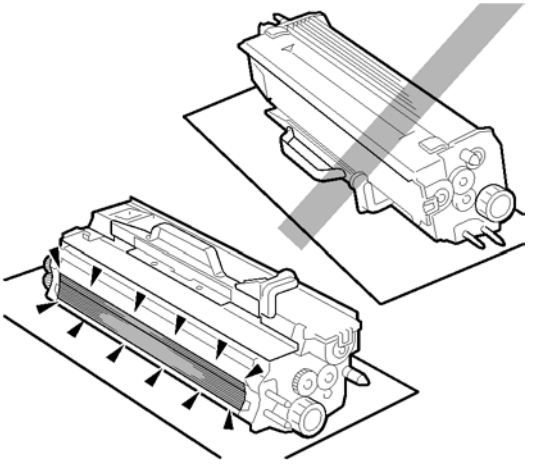
2. Stopper [A] (x1).
3. Quenching lamp shield glass [B].

Development and Toner Supply

Development Unit Removal



b234r981



b234r982

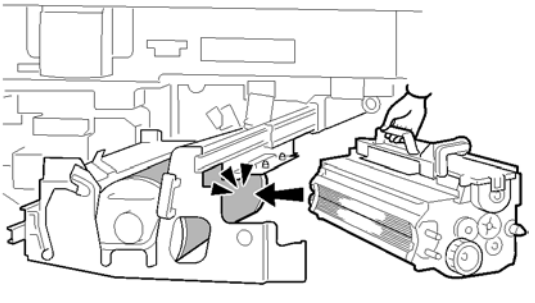
1. Pull out the development unit drawer.
2. Lift the development unit [A] by its purple handle and hold it level when you remove it.

Important

- **Hold the development unit level to prevent spillage.**

3. Place the development unit on some paper.

Re-installing the Development Unit



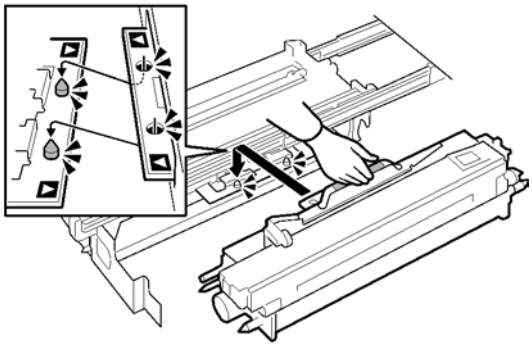
b234r983

Important

- **When you reinstall the development unit, handle it carefully.**
- **Never allow the corner of the development roller to hit the OPC drum or any other part of the frame of the development unit drawer.**

- **Scratches or other damage to either the drum or development roller will adversely affect the operation of the machine.**

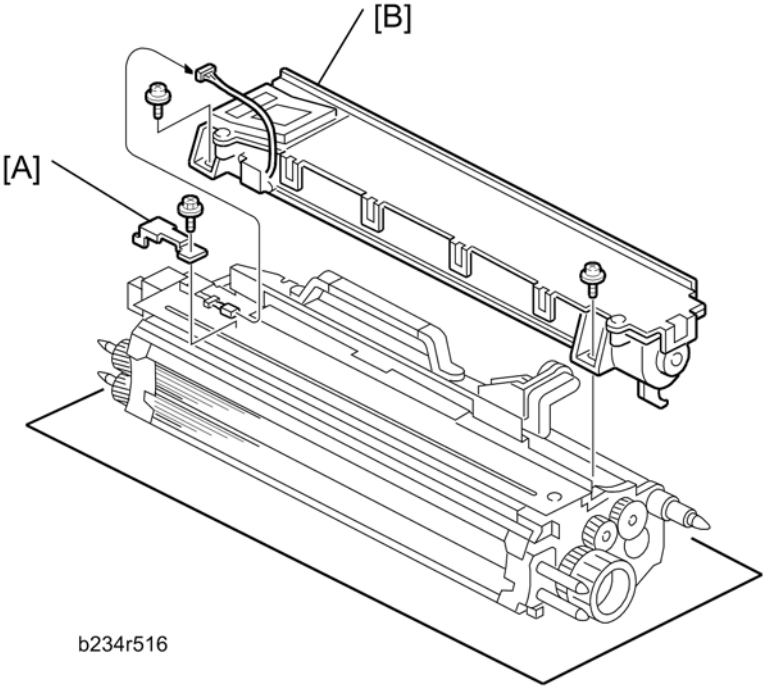
To reinstall the development unit



b234r984

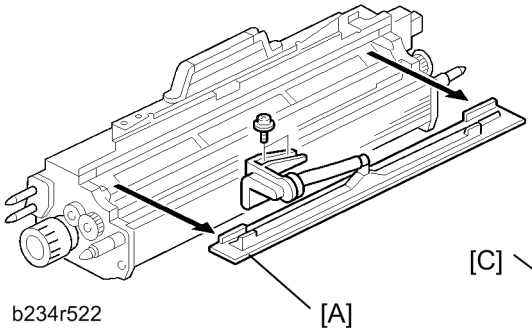
4. Align the triangular reference marks of the development unit and drawer frame.
5. Place the holes on the edge of the development unit over the pegs on the drawer frame.
6. Push the development unit drawer into the machine, reattach the faceplate and inner cover, then close the right front door.

Toner Hopper Removal

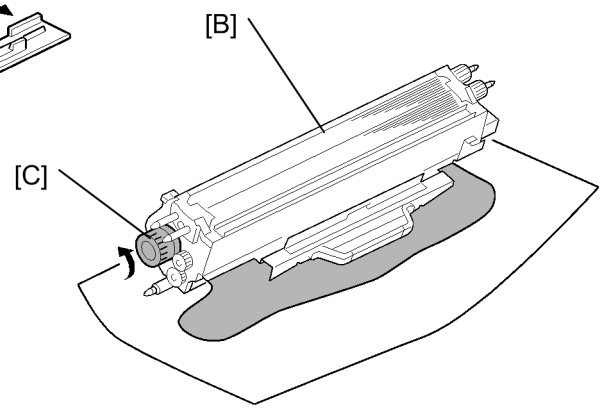


- Development unit (p.304)
- [A]: Bracket (x1)
- [B]: Toner hopper (x2, x1)

Developer Replacement



b234r522



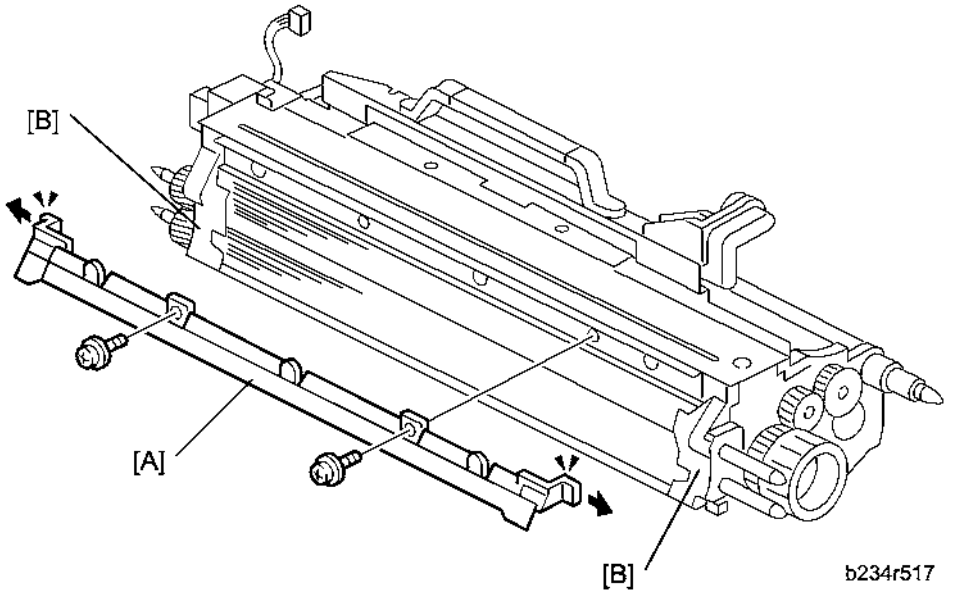
b234r523

- Development unit (p.304)
- Toner hopper (p.306)

1. Top cover [A] (x2)
2. Turn the development unit [B] upside down.
3. Rotate the knob [C] counter-clockwise to push out the developer.

Important

- **When you dispose of the developer, obey the local laws and regulations regarding the disposal of such items.**



4. Remove the entrance seal [A] (x2) and clean it.
5. Clean the side seals [B].

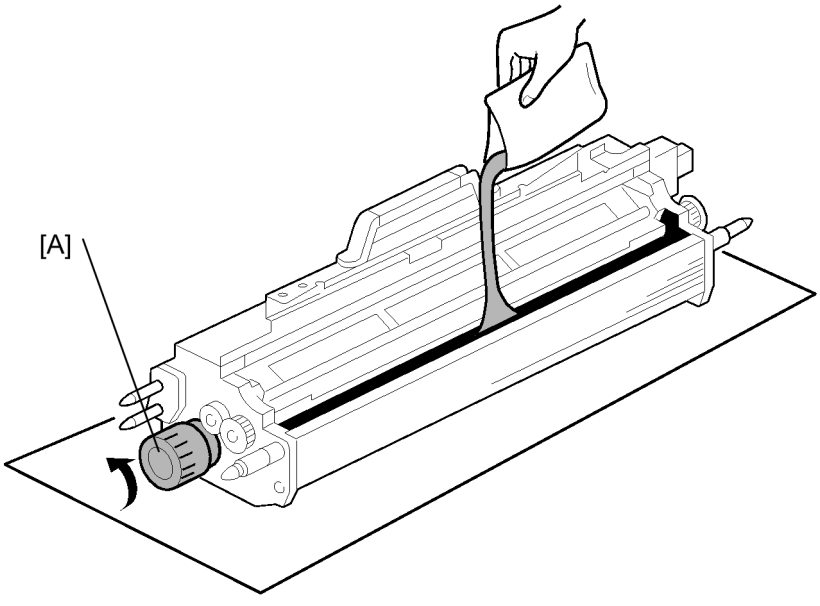
Important

- **Handle the side seal carefully to avoid twisting or bending it.**

6. Clean the development sleeves.
7. If you are installing a new development unit, go to the next step.

   -or-

   If you are only replacing the developer, clean the doctor blade before you pour in the developer (p.310 "Cleaning the Doctor Blade").



b234r521

8. While turning knob [A] pour in one pack of developer evenly across the width of the development unit.
9. Reinstall the top cover and toner hopper.

Initializing the Machine

Important

- **Follow this procedure carefully.**
- **Do not switch on the machine until you are instructed to do so.**
- **Carefully follow the instructions about opening and closing the front doors.**

1. Make sure that the machine is OFF.
2. Open the front doors.
3. Make sure that all tapes, clamps, and other shipping materials have been removed.
4. Connect the main power cord and turn on the machine.
5. Enter the SP mode.

   Important

   - **The front doors must be open before you turn the machine on and enter the SP mode.**
   - **If you switch on the machine with the front doors closed and do not enter the SP mode, auto processing control will automatically execute and start initialization for conditions around the drum, but initialized settings for the toner density and TD sensor will not be correct.**

6. Close the front doors.

Important

- **You must close the front doors now.**
- **If you fail to close the front doors, the following SP codes (executed in the following steps) will not execute: SP2801-001 (TD Sensor Initial Setting), SP2207-002 (Toner Supply: Toner Bank Setup), SP2962 (Auto Process Control Execution).**

7. Do SP2801-002.
   - Open the soft keyboard on the operation panel.
   - Enter the developer lot numbers and touch [OK]. (Lot numbers are embossed on the top edges of the developer packets.)

Important

- **If you do not enter the 7-digit lot numbers first, you will not be able to execute SP2801-001 (pressing [EXECUTE] will have no effect).**

8. Do SP2801-001.
   - Touch [EXECUTE] on the operation panel to initialize the TD sensor. Initialization requires about 1 minute after you press [EXECUTE].

Important

- **Do not switch off the machine or open the front doors until you are instructed to do so.**

9. Set the toner bottles.
   - Do not shake the toner bottles.
   - Set the lower toner bottle first then the upper bottle.
10. Do SP2207-002.
    - Touch [EXECUTE] on the operation panel.
    - If the SP execution ends within about 2 sec., or if the process is interrupted by an SC code alert, execute this SP again. The process should take about 5 min.
11. Do SP2962 and touch [EXECUTE]. This executes auto process control.
12. Clean the transport belt above the exposure glass.

Cleaning the Doctor Blade

The doctor blade must be cleaned:

- At every PM visit.
- When replacing developer.

This procedure may need to be done more often if the customer is using paper that contains a large amount of paper dust.

The dust tends to collect at the front and on the back side of the blade, causing the doctor gap to become narrower. Cleaning is required when:

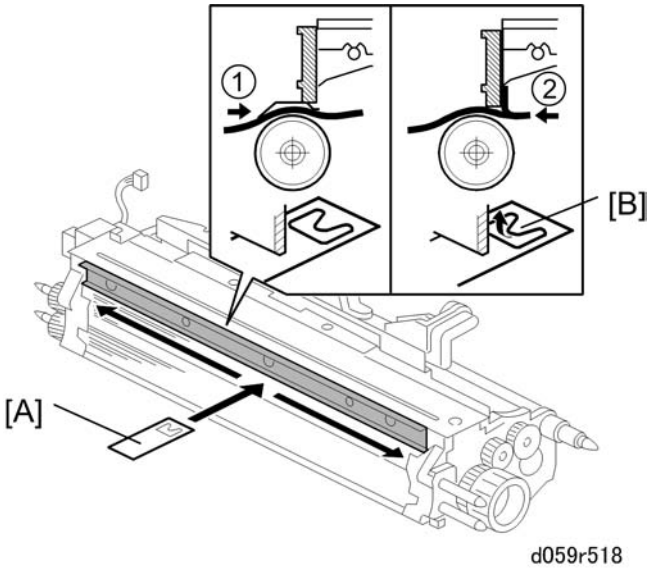
- There is toner scatter from both ends of the development unit.
- White lines appear on prints.
- Faint reproduction of the image appears around the edges of the paper.

To do this procedure, you need a special tool.

Part Number	Description
A2949560	Paper Dust Cleaner - 5pcs/set

Note

- The tool is made of flexible plastic and can be re-used. However, before you use it, make sure that it is perfectly flat.



Important

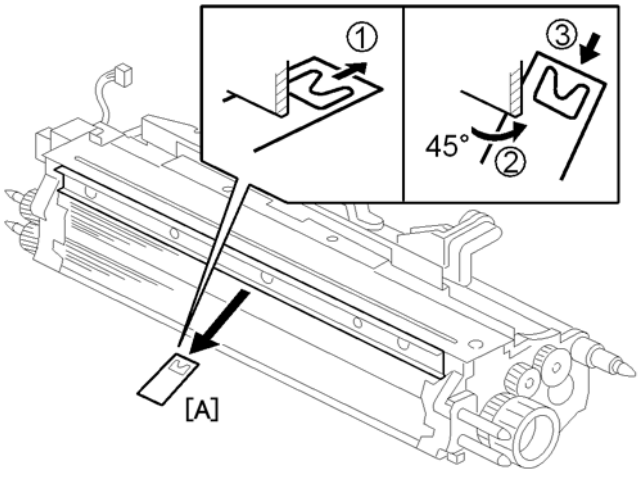
- **Always clean the doctor blade before refilling the development unit with new developer.**
- **The paper dust cleaner is made of soft, thin plastic.**
- **Always make sure that the dust cleaner is completely horizontal before you use it.**

1. Development unit (☞ p.304)
2. Toner hopper (☞ p.306)
3. Entrance seal (☞ p.307 "Developer Replacement")
4. Flatten the paper dust cleaner [A] before you use it.

5. Hold the paper dust cleaner perfectly level.
6. Insert the dust cleaner into the gap (1) until the flap [B] is not visible.
7. Gently pull the dust cleaner toward you slowly (2) until you feel slight resistance. Then the flap catches and flips up on the rear side of the doctor blade.

   Important

   - **If you pull with too much force, the flap will lose contact with the rear side of the blade or could break.**
8. Continue to pull gently on the dust cleaner so that it remains in contact with the back side of the blade. At the same time, slide the cleaning tool 5 times completely to the left and right. This removes paper dust from the back of the blade.



b234r519

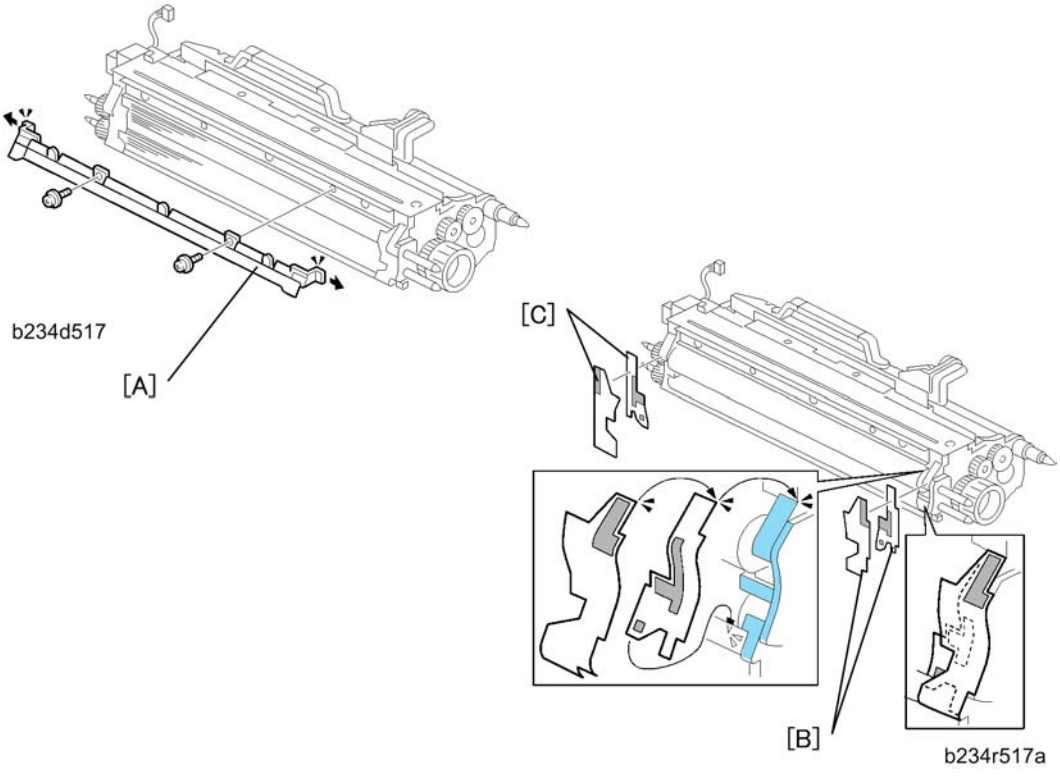
9. When you are ready to remove the dust cleaner [A]:
   - Push in the dust cleaner slightly about 10 mm (1/2") (1). This releases the flap from the back of the blade and allows it to lie flat.
   - Tilt the dust cleaner up to about a 45-degree angle (2), then slowly pull it out of the slit (3).
   - Turn the dust cleaner slightly to the left or right if you feel any resistance.
10. After removing the dust cleaner, rotate the development roller toward you about 10 mm (1/2").
11. Use a vacuum cleaner to remove toner dust or developer.

    Important

    - **Collect all of the paper dust and developer.**
    - **Never touch the front surface of the development roller.**
12. Repeat the cleaning steps 5 or 6 times.
13. Hold the development unit upside down, and shake it gently to remove any remaining paper dust or developer.

14. Clean the work area thoroughly with the vacuum cleaner.

Development Entrance, Front, Rear Side Seals



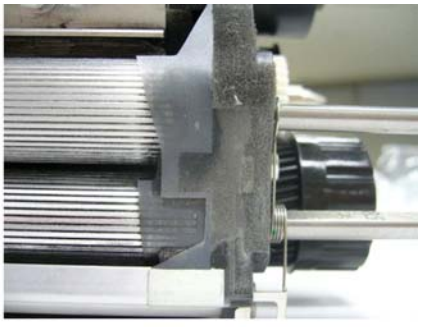
1. Remove the developer and keep it.
2. Replace the developer entrance seal [A] (☞ x 2, hooks x 2).
3. Replace the front side seals [B].
4. Replace the rear side seals [C].

Reassembly

- When re-assembling the development unit, make sure the edges of the new side seals align with the edges.

b234r911

Rear

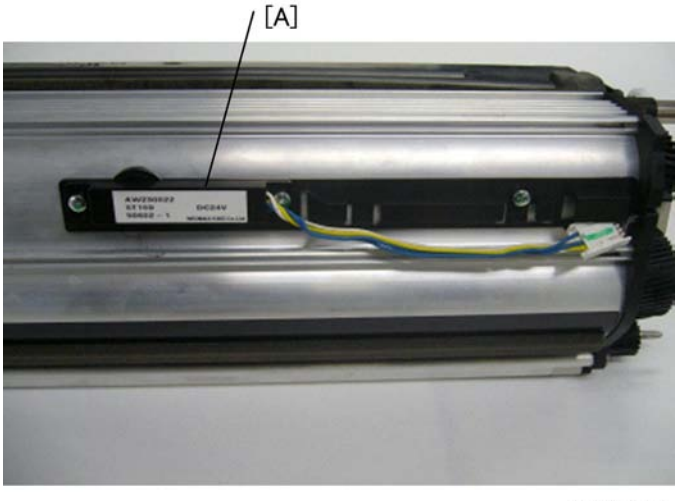


b234r910

Front

4

Toner Density Sensor



b234r912

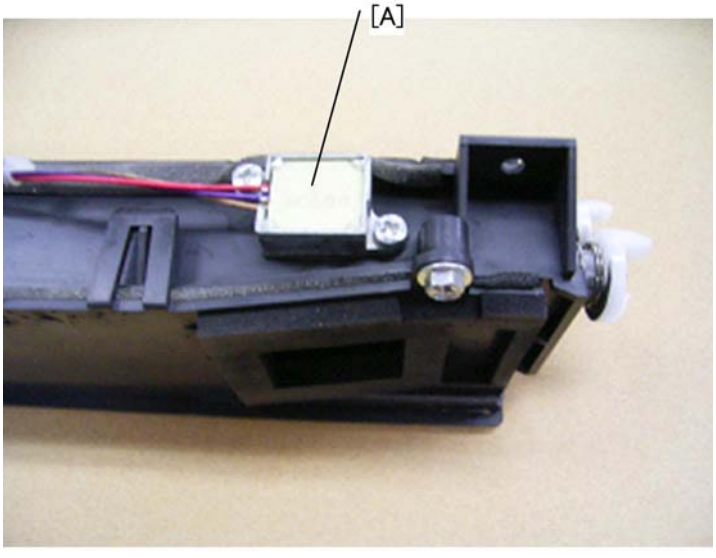
- Remove the developer (☛ p.307 "Developer Replacement").

1. Remove the TD sensor [A] (🔩 x 2, ✋ x1).
2. Thoroughly clean the development unit, so no carrier particles remain in the gap between the TD sensor and the development unit casing.
3. Install the new TD sensor (✋ x1, 🔩 x 2).
4. Install new developer and reassemble the development unit (☛ p.307 "Developer Replacement").
5. Use the keys on the screen to enter the Developer Lot No with SP2801-002, and "Execute" the TD initial setting with SP2801-001
6. Execute SP2962 (Auto Process Control Execution).

Note

- Do not make any prints until you have executed SP2801 002, 001(TD Sensor Initial Setting).

Toner Hopper Sensor



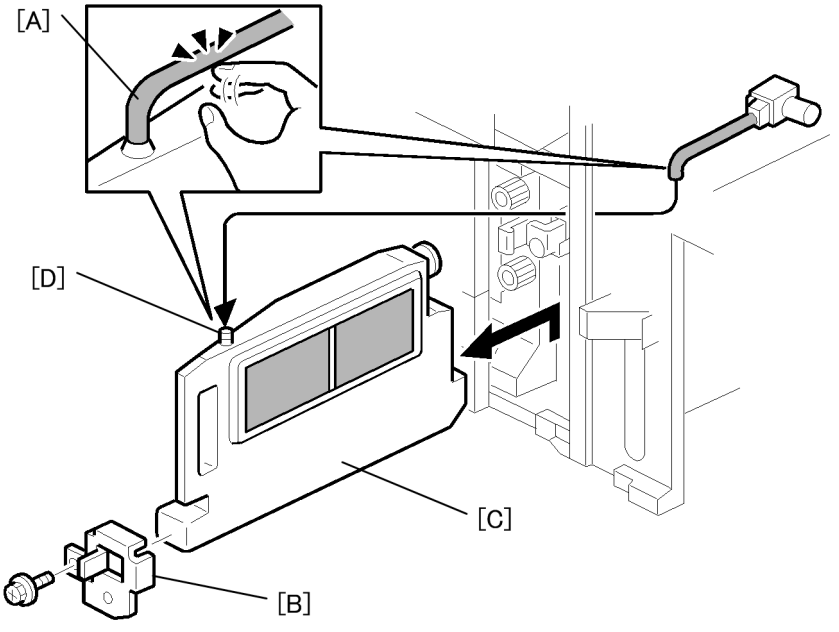
b234r913

1. Take out the toner hopper (p.306).
2. Toner hopper sensor [A] (x 2).

Note

- Keep the toner hopper level.
- Clean the mounting location of the toner hopper before installing it.

Toner Suction Bottle



b234r165

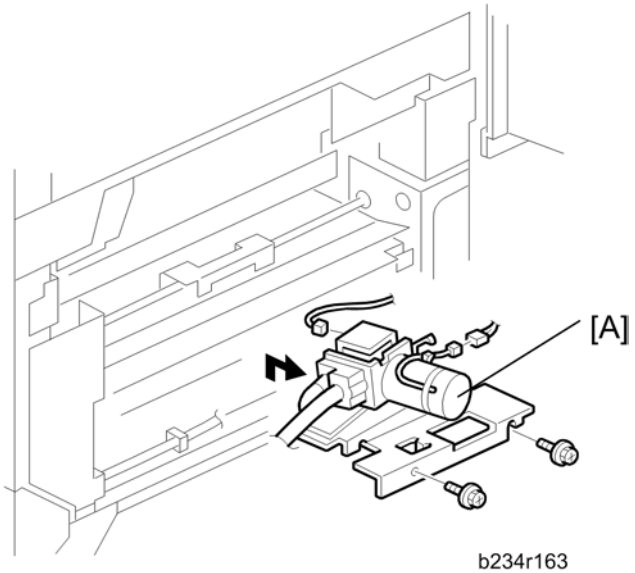
1. Remove the right upper cover.
2. Open the right front door.
3. Tap the hose [A] to clear toner from the opening of the hose.
4. Bracket [B] (☞ x 1).
5. Toner suction bottle [C] (hose x 1).

Note

- During transport and disposal of the used bottle, make sure that toner does not spill from top opening [D].

6. After replacing or emptying the toner suction bottle, do SP2972 and reset the hour count to "0".

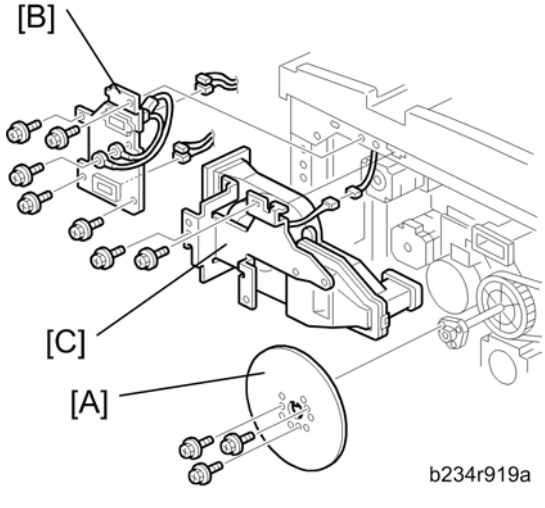
Toner Suction Motor



1. Right upper cover (x 4).
2. Toner suction motor unit [A] (x 2, hoses x 2, x 2)
3. After replacing the toner suction motor, do SP2973 and reset it to "0".

Development Motor Unit

- Open the PSU box (p.280)
- Rear upper cover (x1)

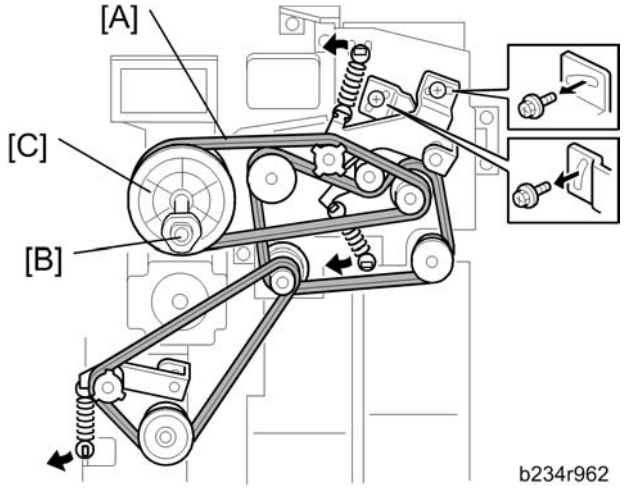


1. Remove:

   [A]: Flywheel (x3)

   [B]: Harness bracket (x5, x4)

   [C]: Left duct unit (x2, x1)

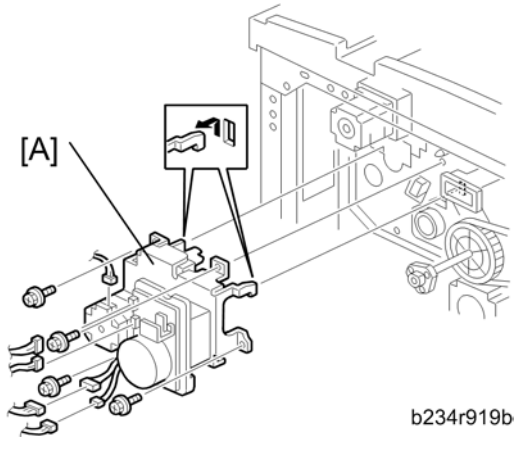


2. Remove:

   [A]: Timing belt (x1)

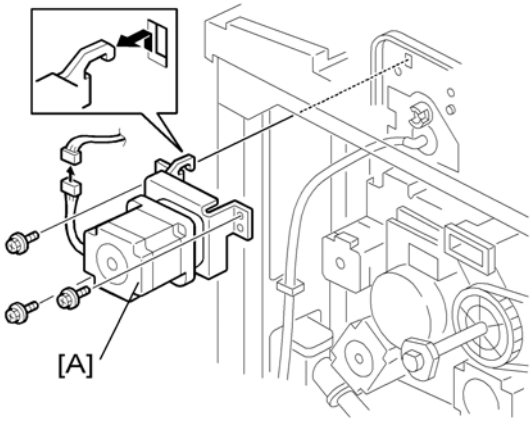
   [B]: Flywheel holder (x2)

   [C]: Drum pulley (x3)



3. Remove development motor unit [A] (x4, x5, x1)

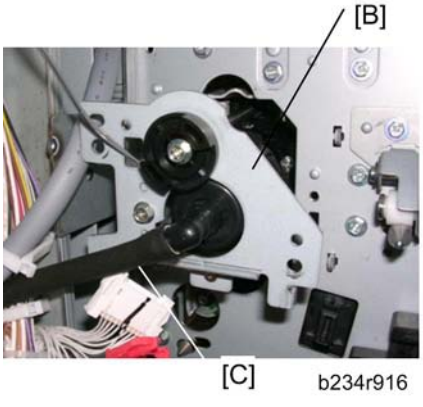
Toner Pump Motor, Toner Pump Motor Sensor



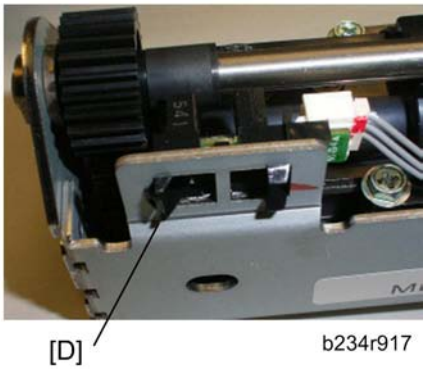
d234r958

- Development motor unit (p.317)

1. Remove toner pump motor unit [A] (x3, x1)



b234r916



b234r917

2. Remove:

[B]: Toner pump unit (x3, x1)

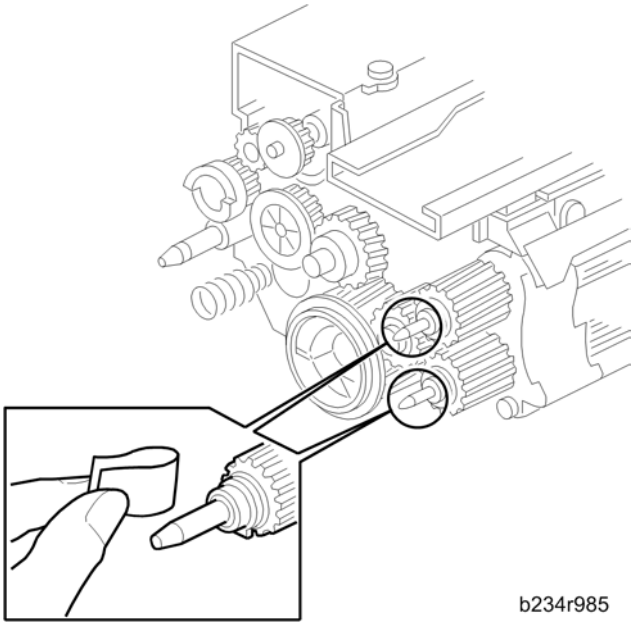
[C]: Disconnect the tube.

Note

- Keep end of the tube pointing upwards, so that toner does not come out.

[D]: Toner pump motor sensor (x1)

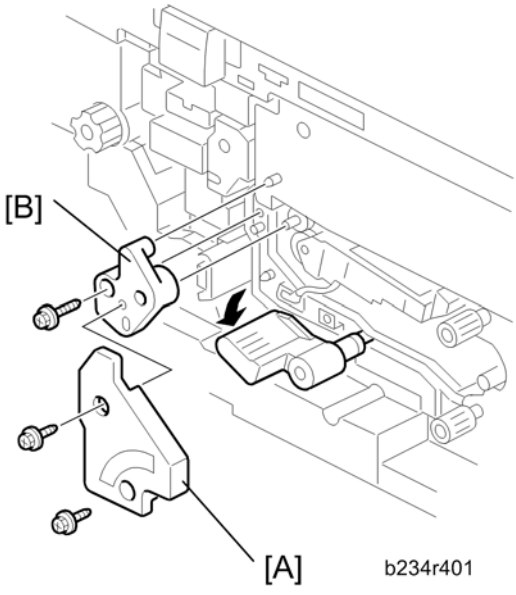
Development Roller Shaft Cleaning

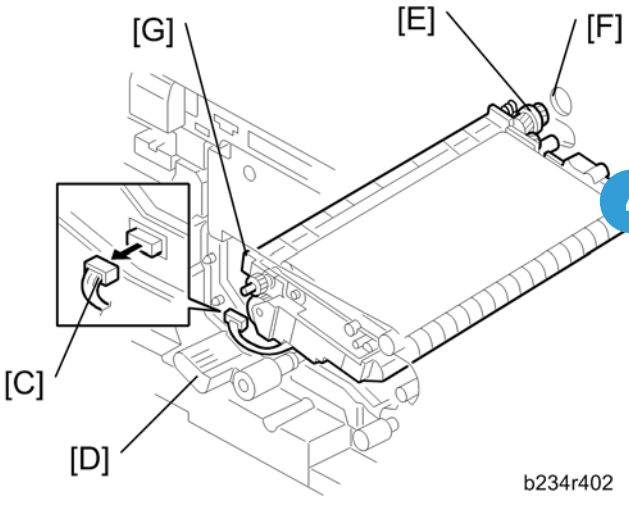


1. Remove the development unit.
2. Use Teflon tape to remove toner and developer from the development roller shafts.

Transfer Belt Unit

Transfer Belt Unit Removal





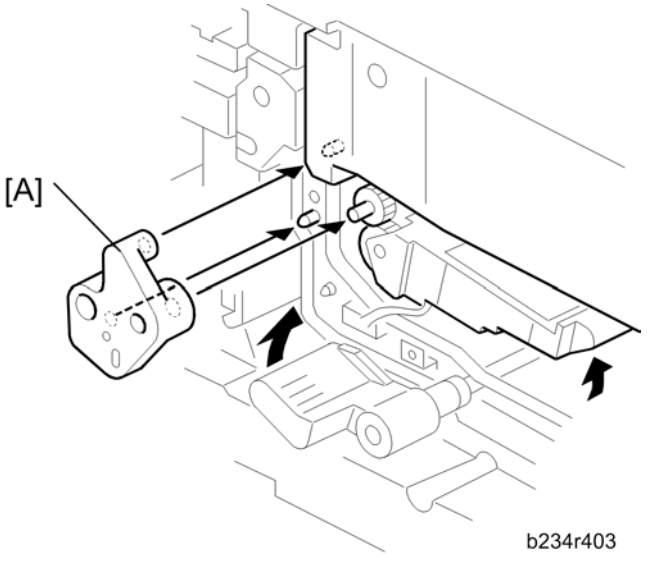
1. Turn off the main switch.
2. Remove the inner cover.
3. Remove the transfer belt unit cover [A] (x 2).
4. Remove the transfer belt unit holder [B] (x 1).
5. Connector [C] (x 1).
6. While turning the lever [D] counterclockwise, take out the transfer belt unit.

Note

- Never touch the transfer belt with bare hands.
- Work carefully to avoid scratching the drum with the transfer belt unit.

Reassembly:

1. Rotate the lever [D] fully counterclockwise, then install the transfer belt unit.
2. Insert the gear [E] into the opening [F] in the rear frame.
3. Place the slot [G] in the transfer belt unit on the rail.
4. Connect the connector [C] (x 1).



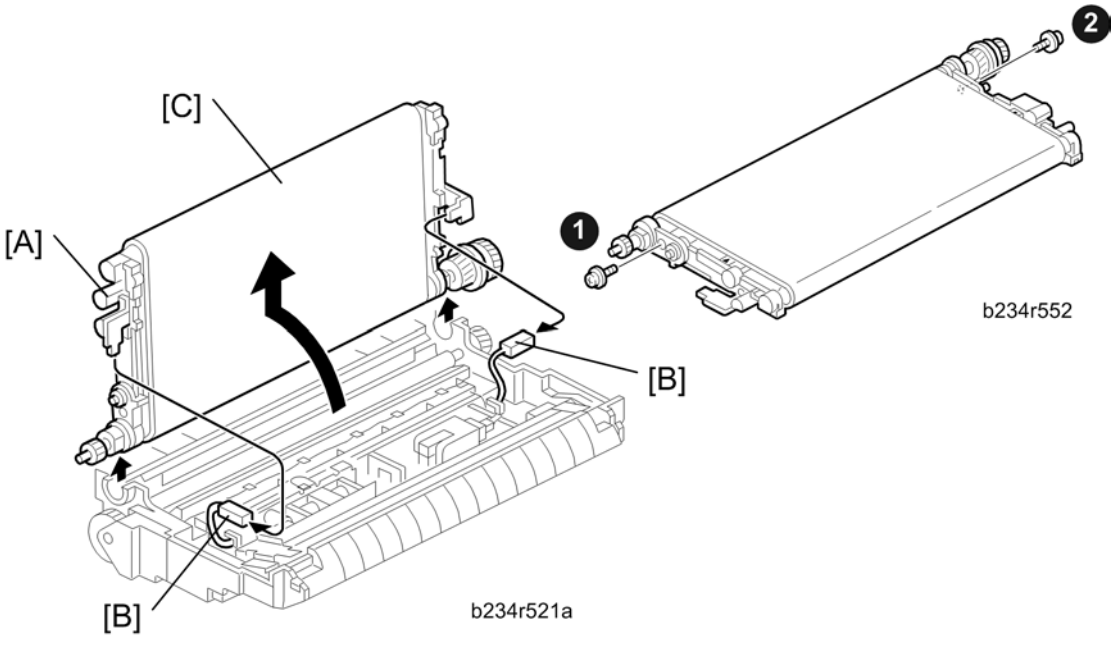
5. Attach the transfer belt unit holder [A] (x 1).

Note

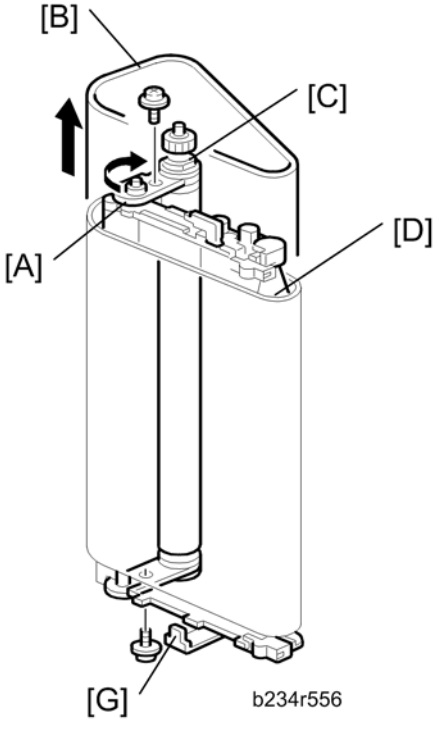
- Align the three holes with the three projections as shown with the arrows.

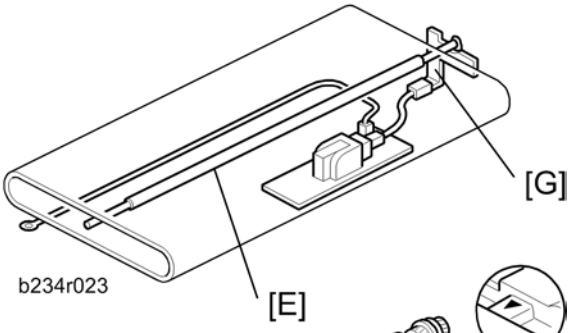
6. After installation, check the following points:
   - The transfer belt unit must move up and down smoothly.
   - The transfer belt unit must be behind the drum stay.

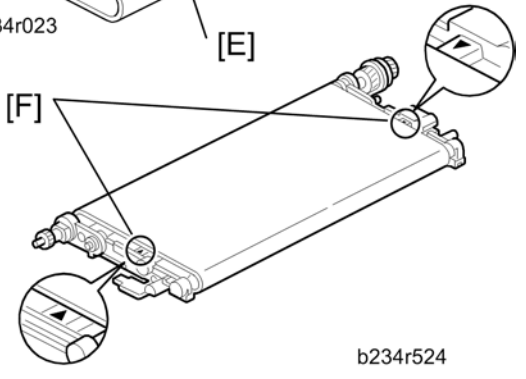
Transfer Belt



1. Remove the transfer belt unit. (☛ p.321)
2. Raise knob [A], then disconnect the connectors [B] (☞ x 2).
3. Turn the transfer belt upper unit [C] 90 degrees counterclockwise, then raise and remove it.
4. Remove the screws (1), (2) (☞ x 2).







5. Turn the belt drive roller holder [A] clockwise (front view) and remove the transfer belt [B].
6. Clean both sides of the transfer belt with a dry cloth.

Important

- **Do not use alcohol.**

Before Installing or Replacing the Transfer Belt

1. Clean the following items with alcohol:

   [C] Belt drive roller

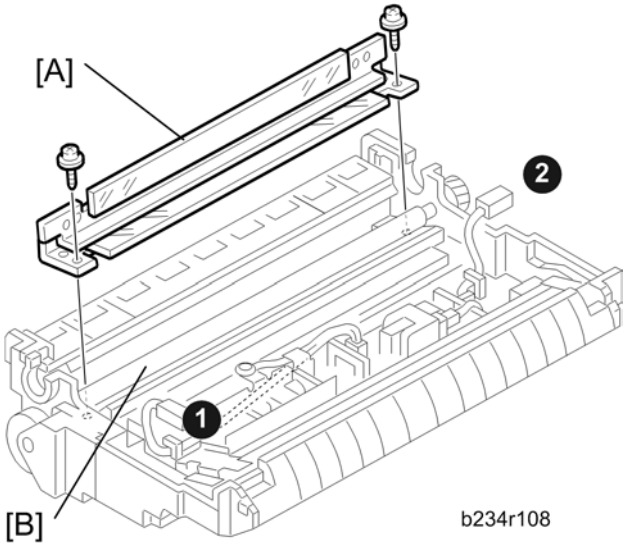
   [D] Belt roller

   [E] Bias roller

Installing the Transfer Belt

1. Position the transfer belt at the center of the belt roller [D] so both marks [F] are visible.
2. Position the transfer belt under the bias terminals [G].

Transfer Belt/Bias Roller Cleaning Blade



- Remove the transfer belt unit. (p.321)

1. Transfer belt /bias roller cleaning blade [A] (x 2).
2. Clean the cleaning bias roller [B].

Note

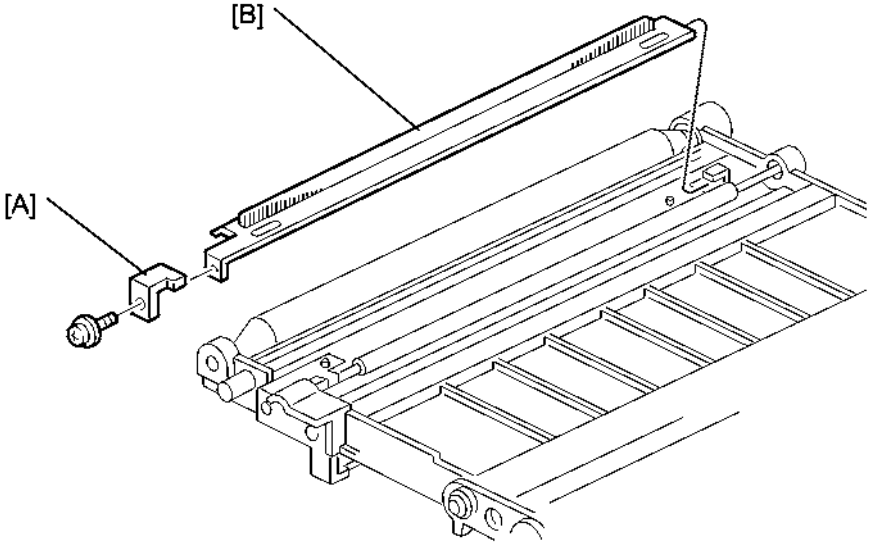
- Before vacuuming, remove the power pack connectors (1), (2) to protect the transfer power pack from static electricity.

3. Install the new cleaning blade.

Note

- Never touch the edge of the cleaning blade. If the setting powder on the blade edge is accidentally removed at some point, apply setting powder or toner at that point before installation.

Transfer Belt Bias Brush



- Remove the transfer belt. (p.323)

1. Remove:

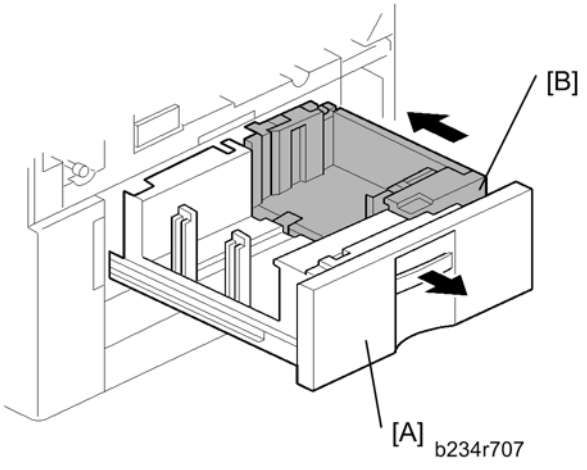
   [A] Stopper (x1)

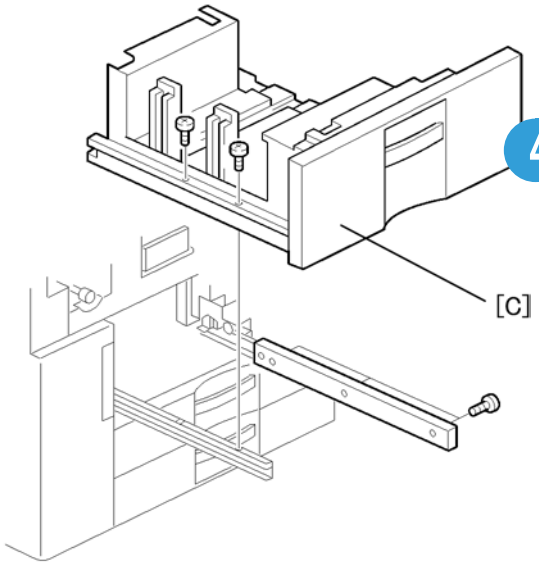
   [B] Transfer belt bias brush unit

Paper Feed

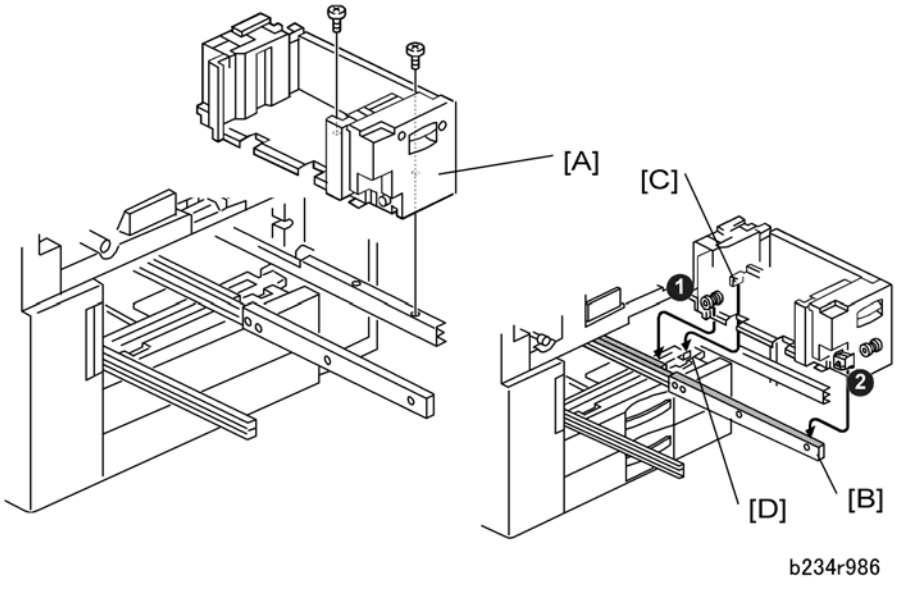
Paper Trays

Tandem Tray





1. Open the front doors.
2. Open the tandem feed tray [A] so the right tandem tray [B] fully separates from the left tray.
3. Push in the right tandem tray.
4. Left tandem tray [C] (x 5).

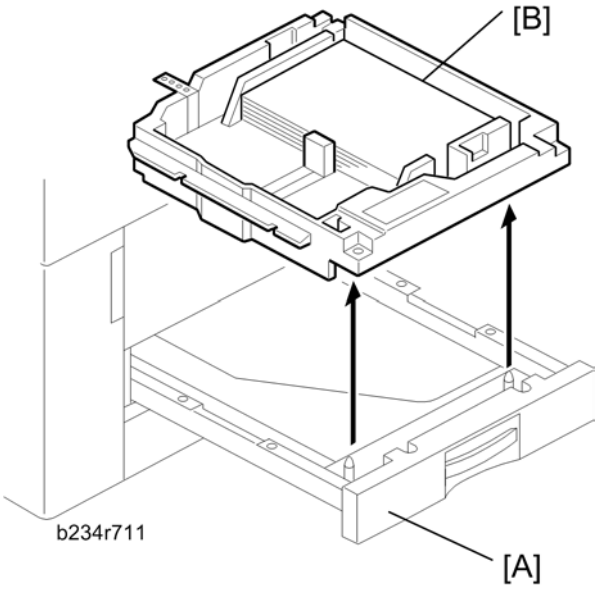


5. Right tandem tray [A] (x 2).

Note

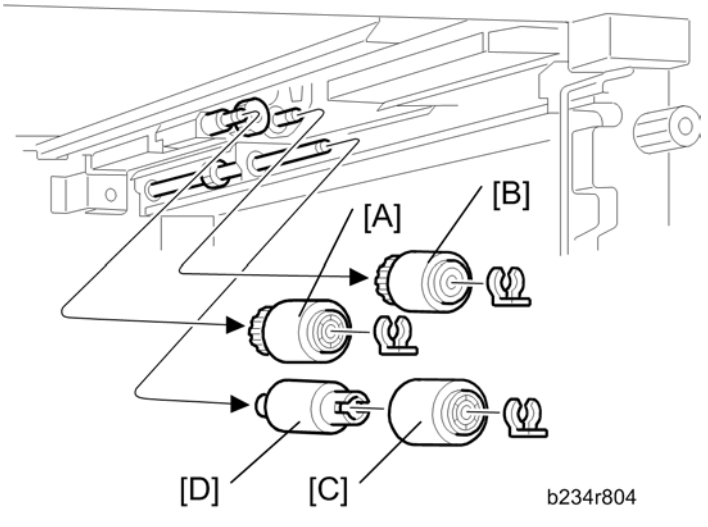
- When re-installing the right tandem tray, make sure that the wheels (1), (2) ride on the slide rail [B].
- When re-installing the right tandem tray, make sure that the tandem tray stopper [C] is set behind the stopper [D] on the main machine frame.
- Use M3 x 4 screws to secure the right tandem tray. Screws longer than 4 mm will prevent the right tandem tray from sliding out and in smoothly.

Universal Tray



1. Pull open tray 2 or tray 3 [A].
2. Lift the tray [B] out of the drawer.

Paper Feed Rollers



1. Turn off the main switch.
2. Remove the paper tray for the appropriate feed unit. (p.327 "Paper Trays")
3. Pick-up roller [A] (x 1).

4. Feed roller [B] (x 1).
5. Remove separation roller [C] from the torque limiter [D] (x 1).

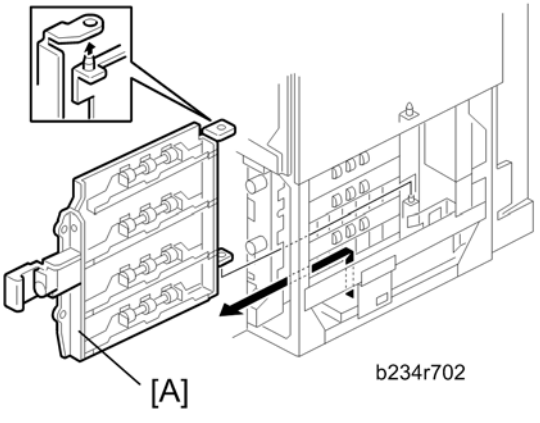
Important

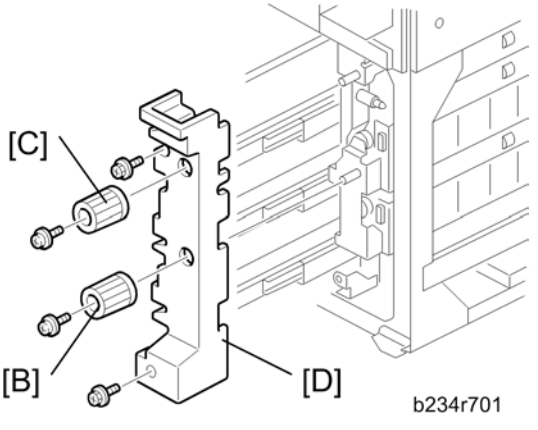
- **The feed rollers of the main machine and the LCT are not interchangeable because they turn in different directions.**
- **After replacing a feed roller in the main machine, always make sure that it turns counterclockwise in the direction of paper feed.**
- **Do not touch the surface of the rollers with your bare hands.**

6. Reset the PM count to zero for the new rollers (p.231 "PM Parts").

4

Paper Feed Units 1, 2, 3





Note

- This procedure uses the 1st feed unit as an example. The procedures for the 2nd and 3rd trays are the same.

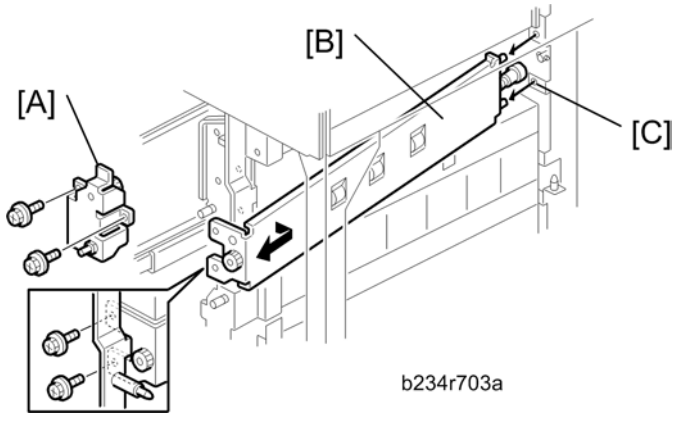
1. Turn off the main switch.
2. Remove right front door.
3. Remove right lower cover.

Note

- If the LCT is installed, disconnect it.

4. Toner collection bottle (p.389)
5. Lift the vertical transport guide [A] and remove it.
6. Remove knob [B] (x 1).
7. Remove knob [C] (x 1).

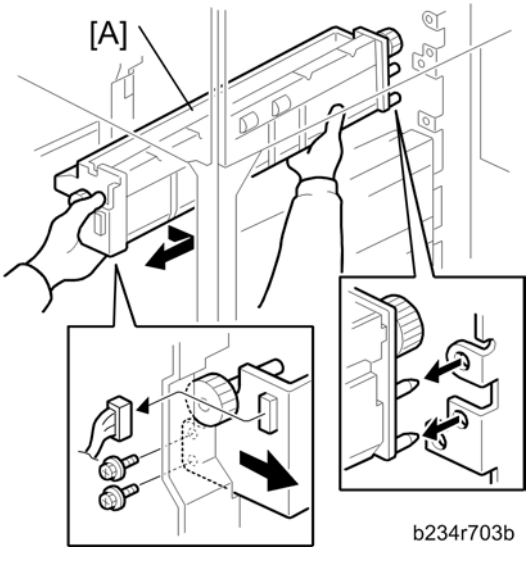
8. Pull out the three trays and remove the paper tray unit inner cover [D] (x 2).



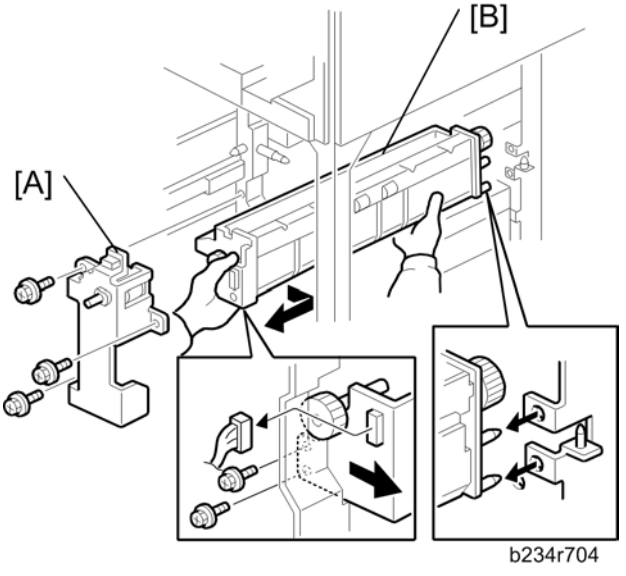
9. Upper gear bracket [A] (x 2)
10. Inner vertical transport guide [B] (x 2).

Note

- When re-installing the inner vertical transport guide, set the pin [C] of the inner vertical transport guide into the slot on the main body.

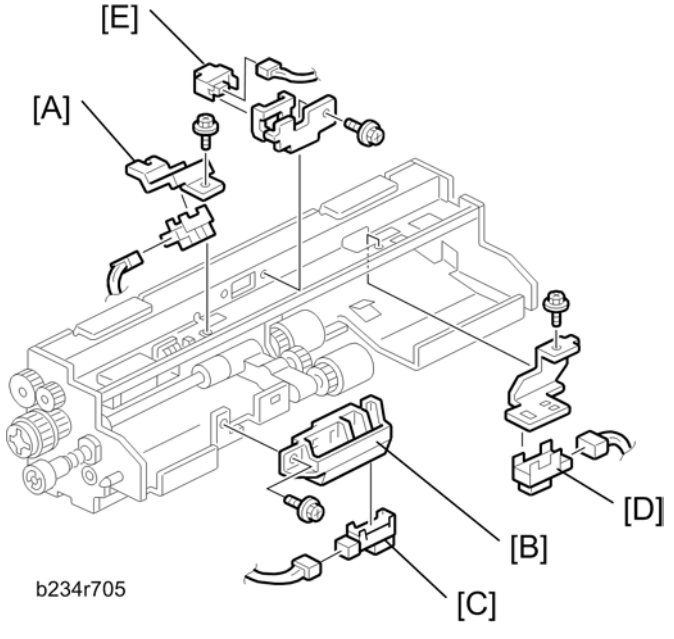


11. 1st paper feed unit [A] (x 2, x1).



12. Lower gear bracket [A] (x3, x1).
13. 2nd or 3rd paper feed unit [B] (x 2, x1).

Paper Feed, Paper End, Tray Lift Sensor



1. Remove the paper feed unit (p.330 "Paper Feed Units 1, 2, 3")
2. Remove:

[A]: Tray lift sensor (x 1, x 1).

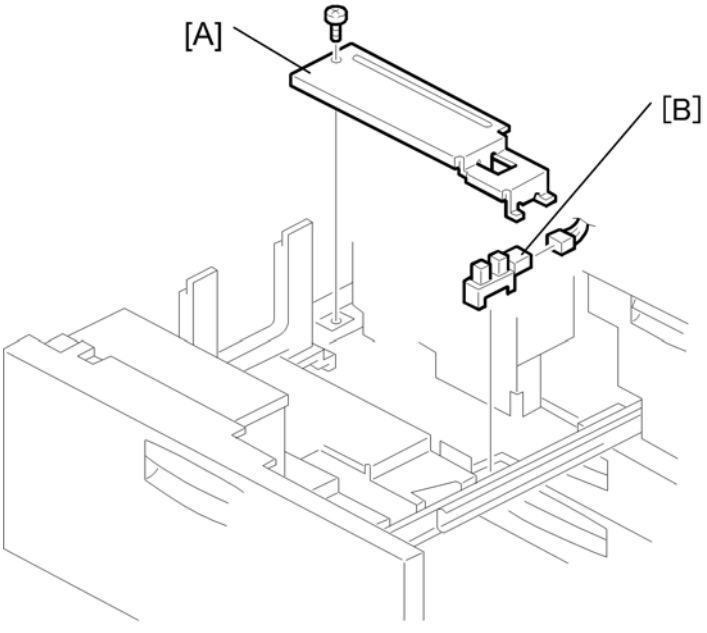
[B]: Paper end sensor assembly (x 1, x 1)

[C]: Paper end sensor

[D]: Paper feed sensor (x 1, x 1)

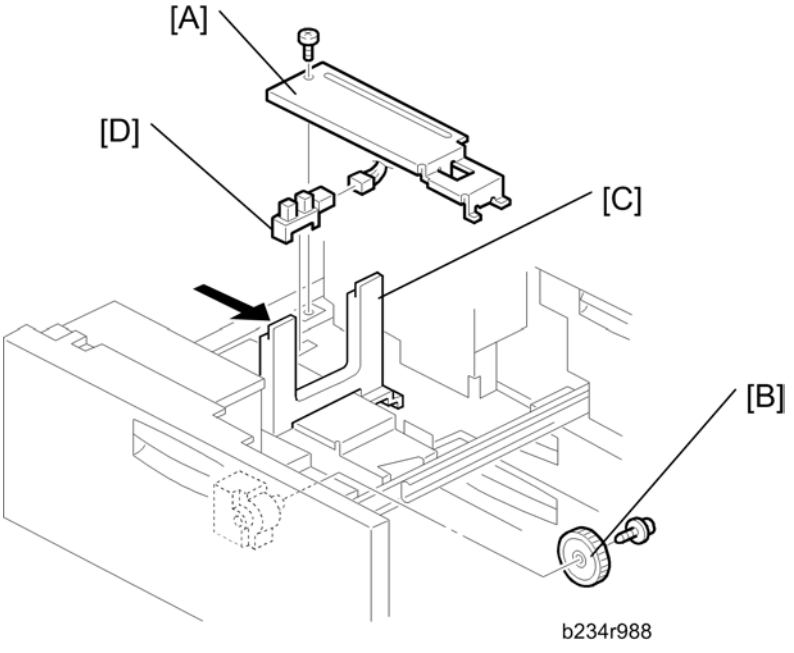
[E]: Vertical transport sensor (x 1, x 1)

Rear Fence Return Sensor



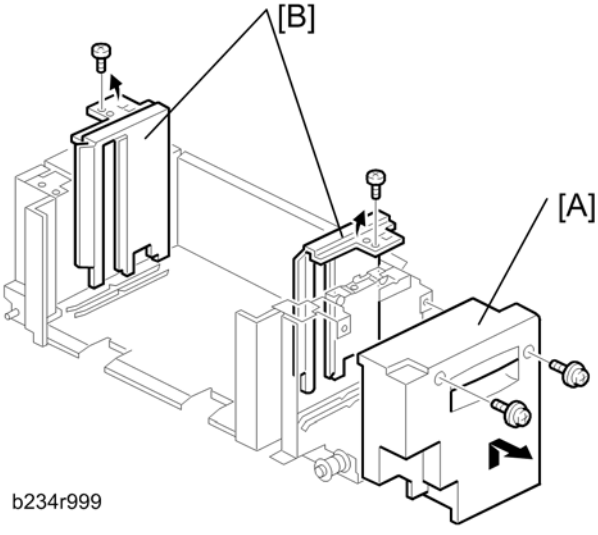
1. Turn off the main switch.
2. Pull out the left tandem tray.
3. Rear bottom plate [A] (x 1).
4. Rear fence return sensor [B] (x 1).

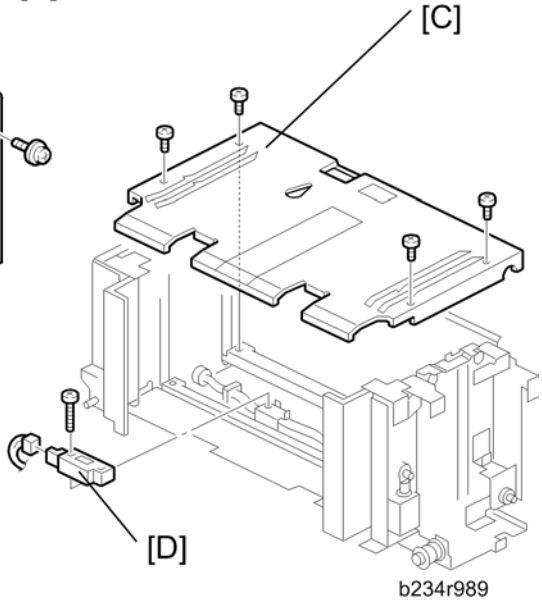
Rear Fence HP Sensor



1. Turn off the main switch.
2. Pull out the left tandem tray.
3. Rear bottom plate [A] (x 1).
4. Rear fence transport gear [B] (x 1).
5. Move the rear fence [C] to the right.
6. Rear fence HP sensor [D] (x 1).

1st Tray Right Paper Sensor





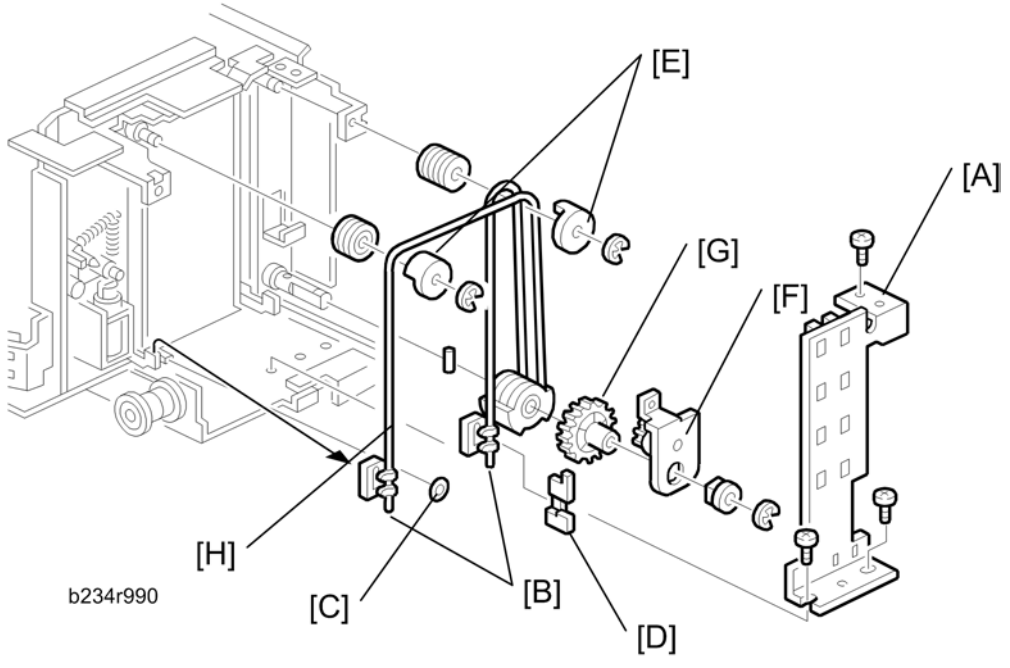
1. Turn off the main switch.
2. Right tandem tray. (p.327 "Paper Trays")
3. Tandem tray cover [A] (x 2).
4. Side fences [B] (x 1 each).

Note

- When re-installing the side fences, make sure that the position of the side fences is correct.
- A4: Outer, LT: Inner

5. Bottom plate [C] (x 4).
6. Right 1st tray paper sensor [D] (x 1, x 1).

Bottom Plate Lift Wire



Note

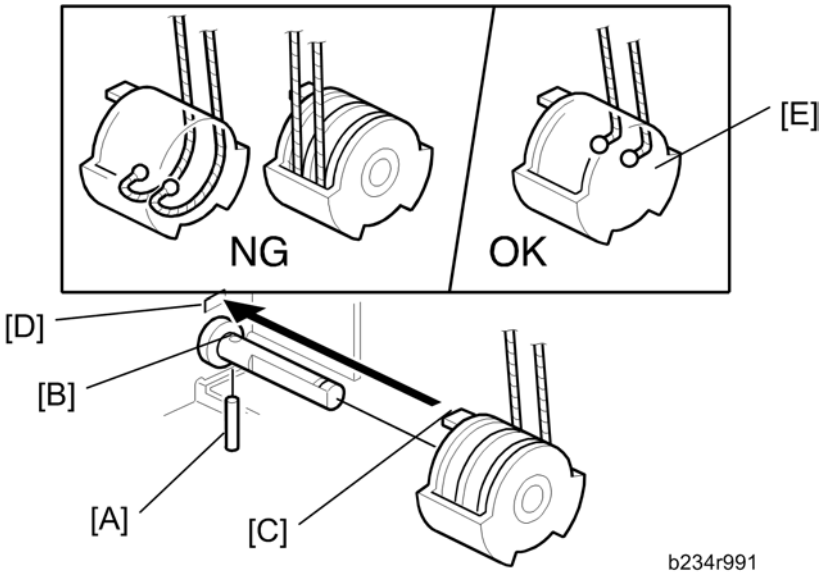
- Before replacing the rear bottom plate lift wire, remove the front bottom plate lift wire. The procedure for the two wires is the same.

Remove:

- Right tandem tray. (p.327 "Paper Trays")
- Tandem tray cover (x 2). (p.335 "1st Tray Right Paper Sensor")

1. Sensor bracket [A] (x 3) (Front Only).
2. Slightly lift the front bottom plate and unhook the wire stoppers [B], remove stopper [C] and actuator [D].
3. Wire covers [E] (x 1 each).
4. Bracket [F] (x 1, x 1, bushing x 1) (Front Only).
5. Gear [G] (Front Only).
6. Bottom plate lift wire [H].

Re-installation



When re-installing the bottom plate lift wire:

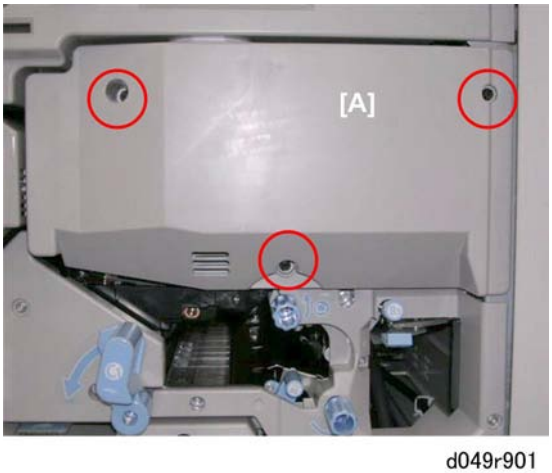
1. Set the positioning pin [A] in the hole [B].
2. Set the projection [C] in the hole [D].
3. Position the wire as shown [E].

Note

- Do not cross the wires.

Paper Dust Tray, Registration Sensor, Double-feed Sensors

1. Open the right front door.



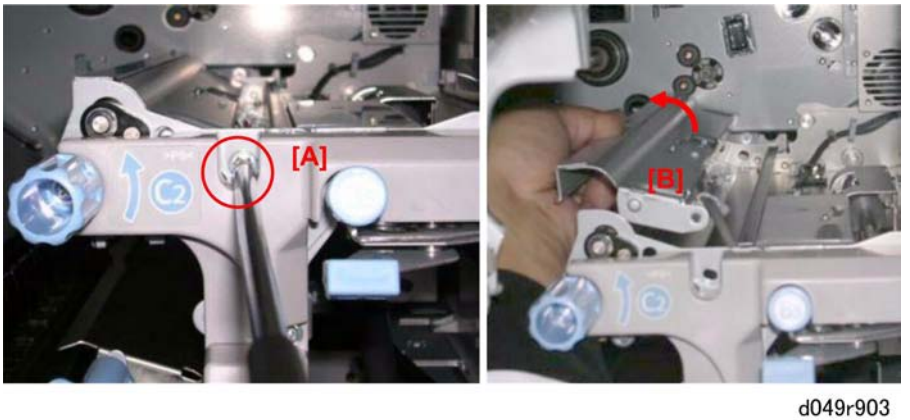
2. Remove cover [A] (x 3)
3. Open the development unit drawer and remove (p.289 "Cleaning Unit, PCU, Drum")
    - Cleaning unit
    - Development unit
    - PCU

d049r902

4. Remove:

    [A] Screw (x 1)

    [B] Lower double-feed sensor bracket



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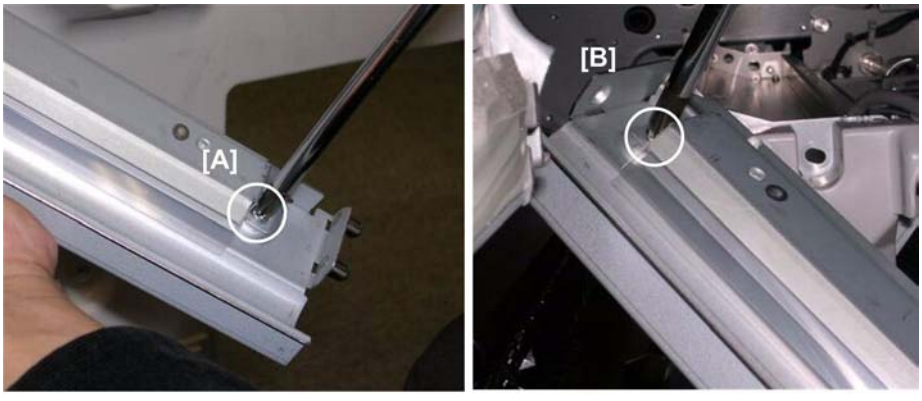
5. Remove:

    [A] Screw (x 1)

    [B] Upper double-feed sensor bracket



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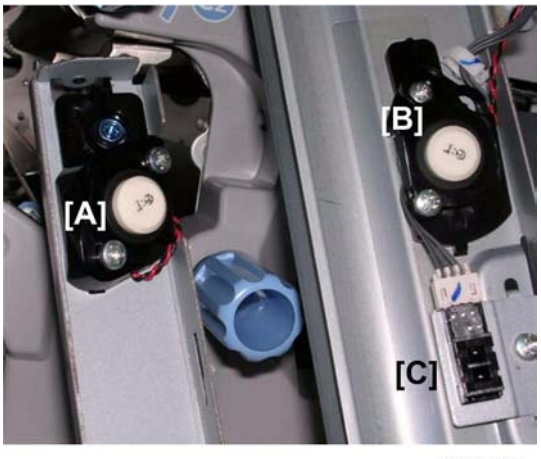
6. From the upper double-feed sensor bracket, remove the paper dust tray.

   [A] Front (☞ x 1)

   [B] Rear (☞ x 1)

7. Use a clean dry cloth to remove paper dust from the paper dust tray.



d049r905

8. Use a blower brush to clean:

   [A] Lower double-feed sensor

   [B] Upper double-feed sensor

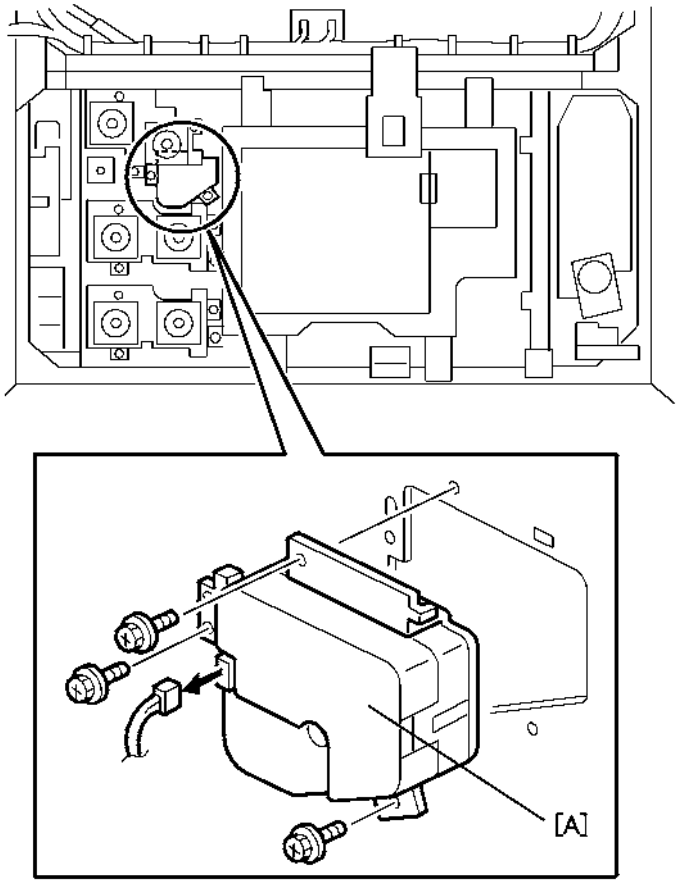
   [C] Registration sensor

   Important

   - **The lower double-feed sensor is the LED (emitter) of the sensor pair.**
   - **The upper double-feed sensor is the receptor of the sensor pair.**
   - **If you need to replace one or both sensors, replace them with the correct type.**

Lift Motors

1st Tray Lift Motor

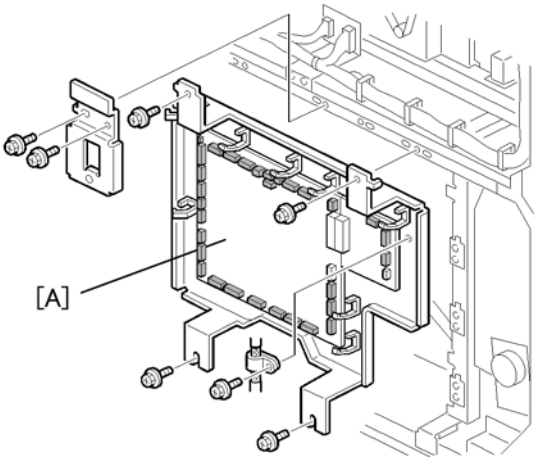


b234r593

- Remove AC drive unit (p.406 "AC Drive Board")

1. 1st feed motor unit (p.342 "Feed Motors")
2. 1st tray lift motor [A] (x3, x1)

2nd, 3rd Tray Lift Motors



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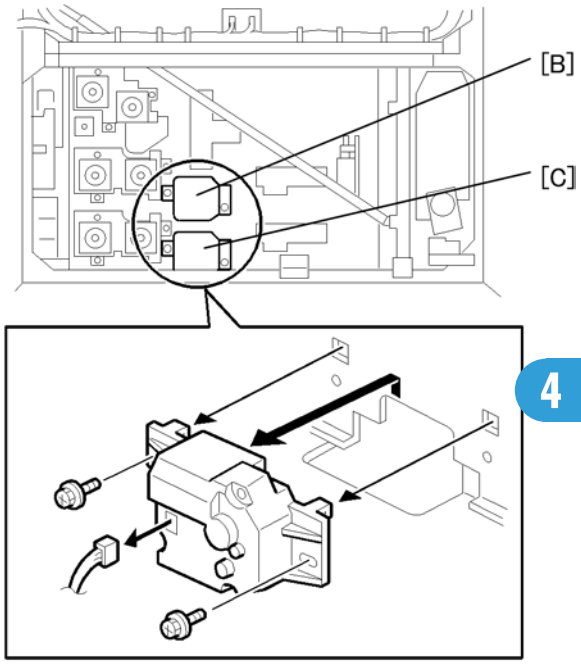
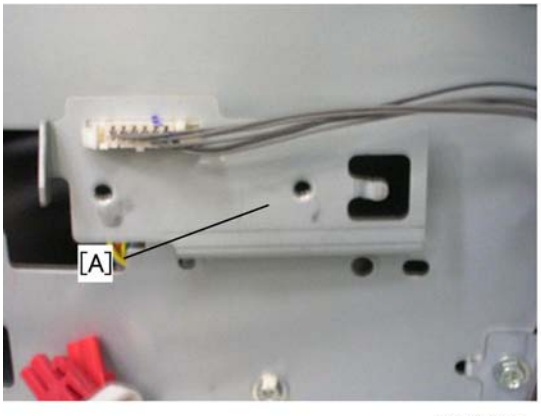


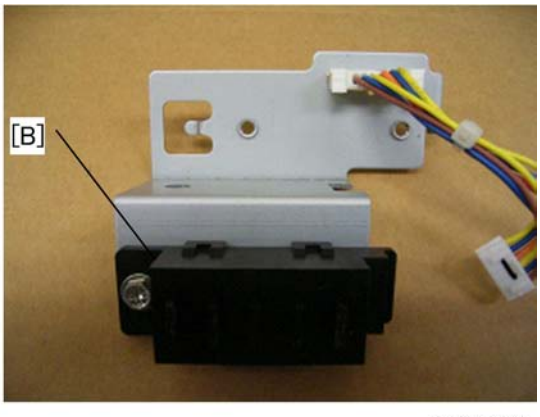
b234r956

1. Remove the IOB unit [A] (☛ p.400 "IOB")
2. 2nd tray lift motor [B] (✋ x 1, 🔩 x 2).
3. 3rd tray lift motor [C] (✋ x 1, 🔩 x 2).

2nd, 3rd Tray Size Switches



b234r923



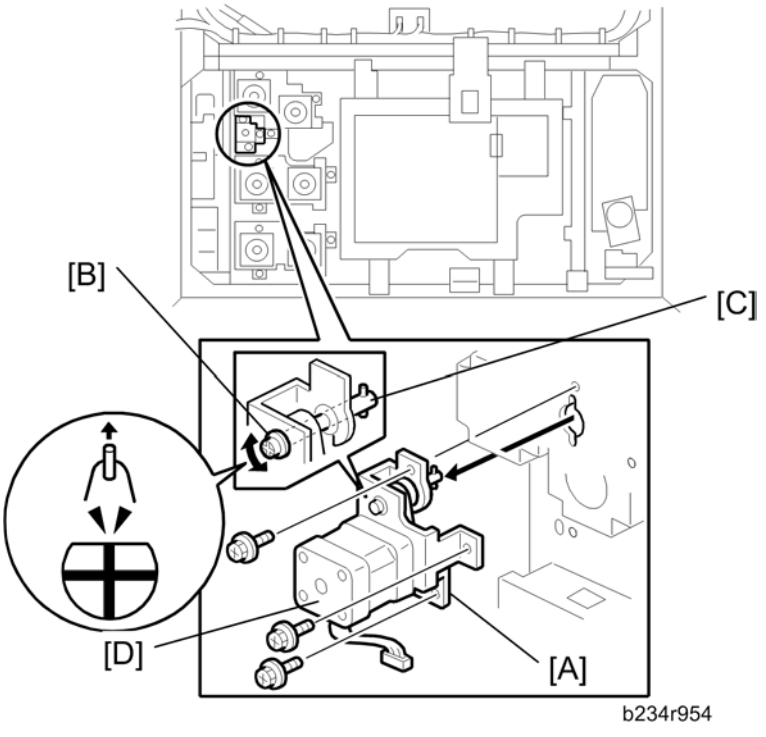
b234r924

- Take the IOB Unit out (☛ p.400 "IOB")

1. 2nd/3rd tray size switch bracket [A] (x2, x1)
2. 2nd/3rd tray size switch [B] (x1, x1)

Feed Motors

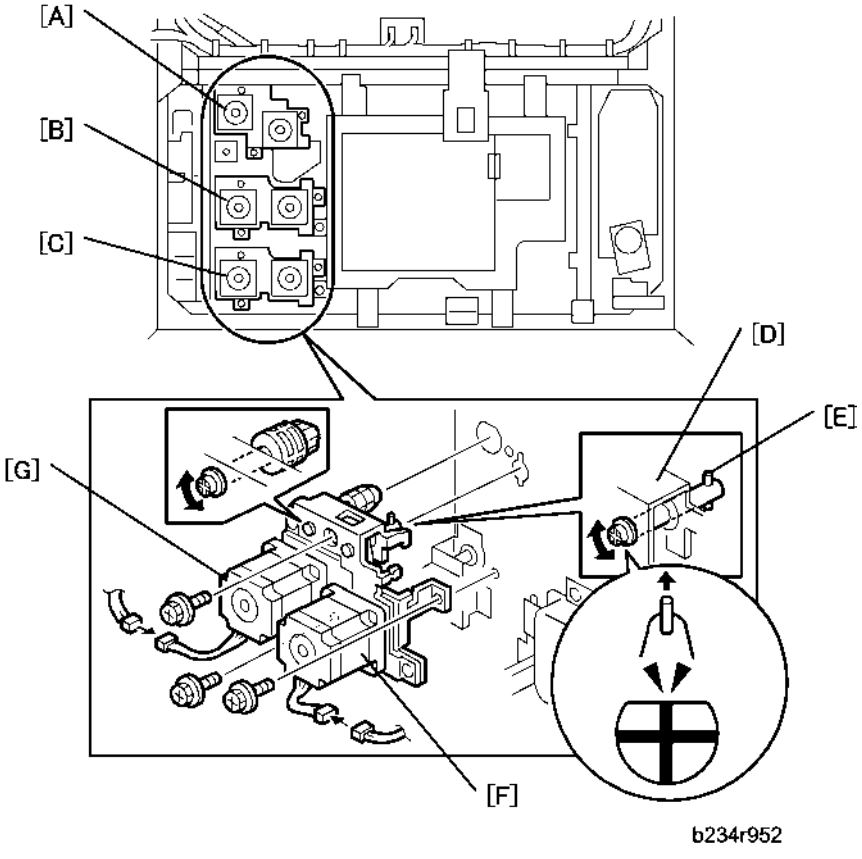
Vertical Relay Motor



- Remove the AC drive unit (x4, x9, x3) (p.406 "AC Drive Board")

1. Vertical relay motor unit [A] (x3 M4x6, x1)
2. Rotate the drive shaft [B] until the drive pin [C] is pointing up, then remove the motor unit.
3. Remove the vertical relay motor [D] (x2, Timing belt x1)

Feed Motor, Grip Motor



1. Remove the paper feed unit:

   [A]: 1st tray (x3, x2)

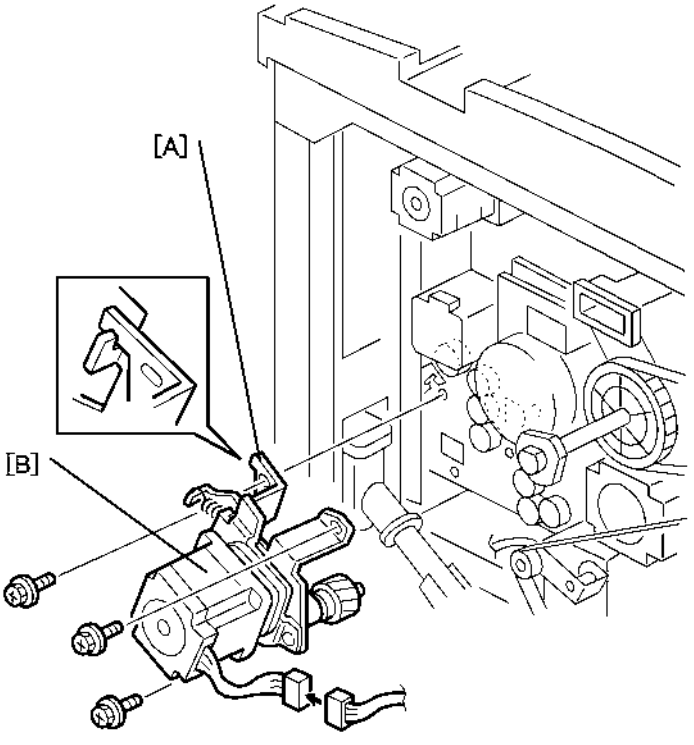
   [B]: 2nd tray (x3, x2)

   [C]: 3rd tray (x3, x2)

   Note

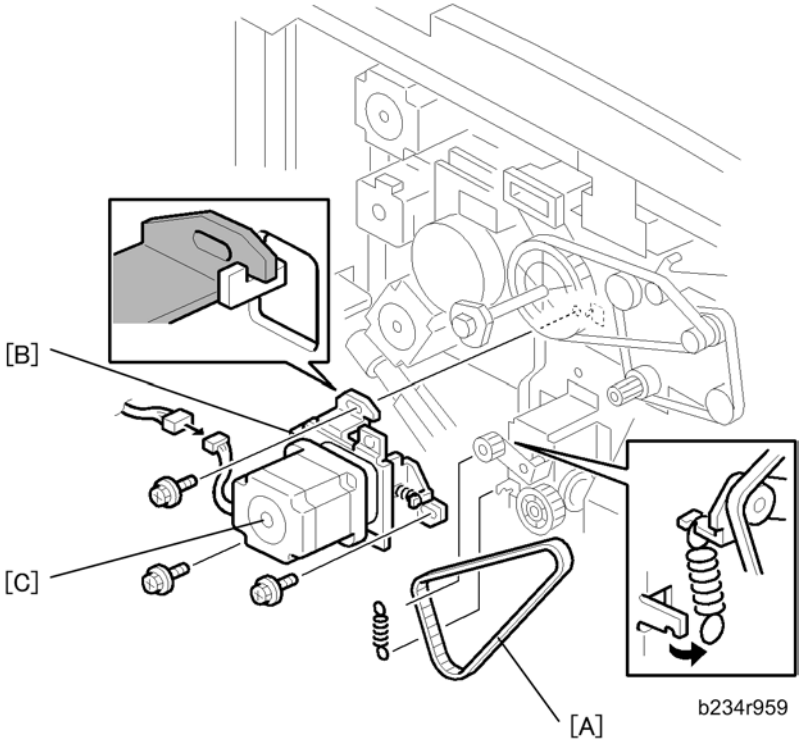
   - Rotate the drive shaft [D] until the drive pin [E] is pointing up, then remove the motor unit.
2. Feed motor [F] (x3, Spring x1, Timing belt x1)
3. Grip motor [G] (x3, Spring x1, Timing belt x1)

Upper Relay Motor



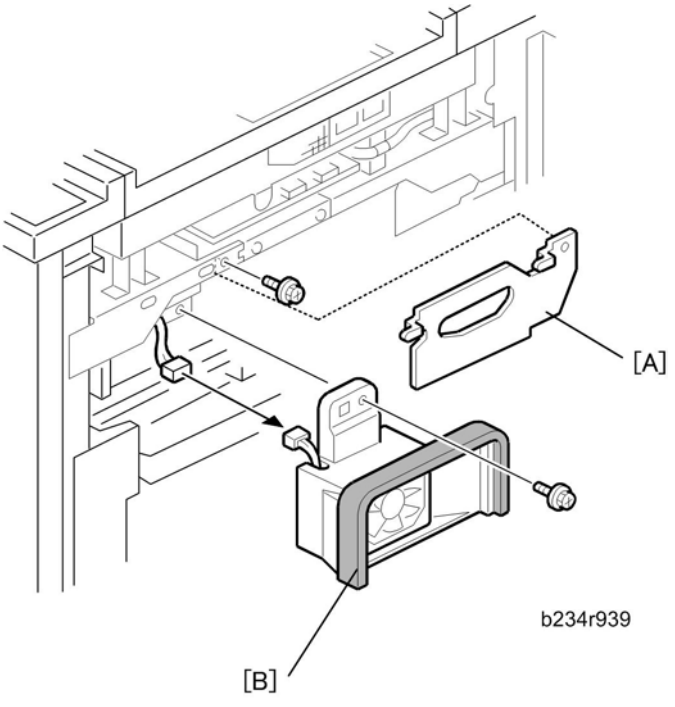
1. Open the PSU box (x 2). (p.280)
2. Remove the rear upper cover.
3. Flywheel (x 3).
4. Upper relay motor unit [A] (x 3, x 1).
5. Upper relay motor [B] (x3, Timing belt x1, Spring x1)

Registration Motor



1. Open the PSU box. (x 2). (p.280)
2. Remove the rear upper cover.
3. Flywheel (x 3).
4. Timing belt [A].
5. Registration motor unit [B] (Spring x1, x 3, x 1).
6. Registration motor [C] (x 3, timing belt x 1, spring x 1).

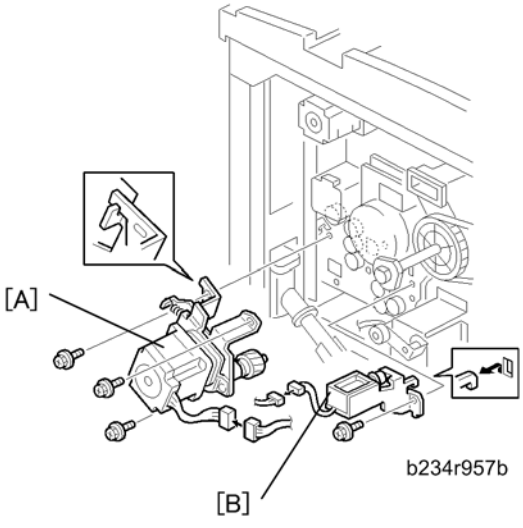
Development Fan Motor

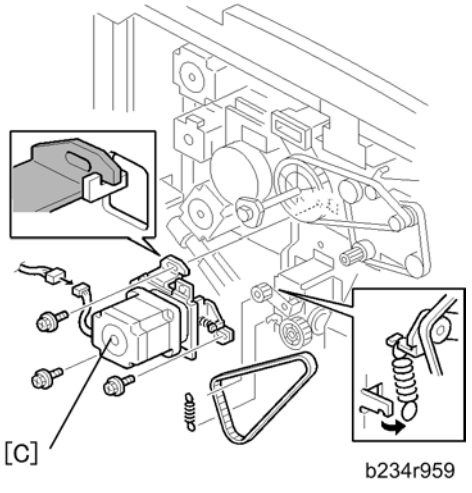


- Right upper cover (x4)

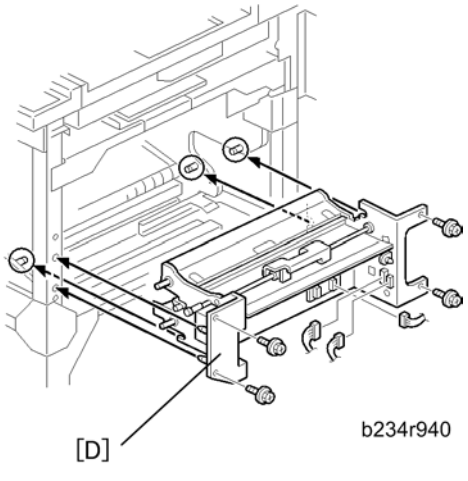
1. Tube cover [A].
2. Fan motor unit [B] (x 1, x1).
3. Fan motor (x 2)

Registration Unit



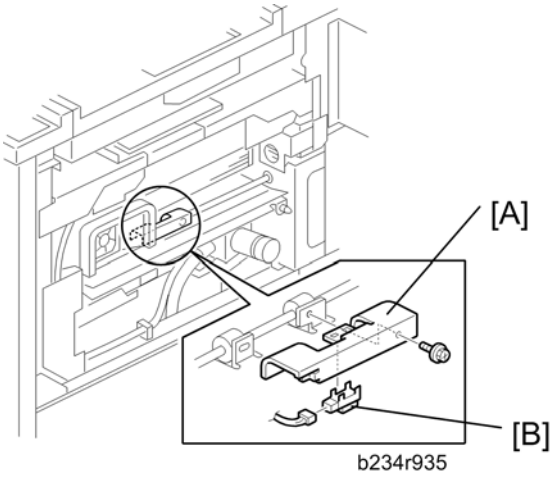


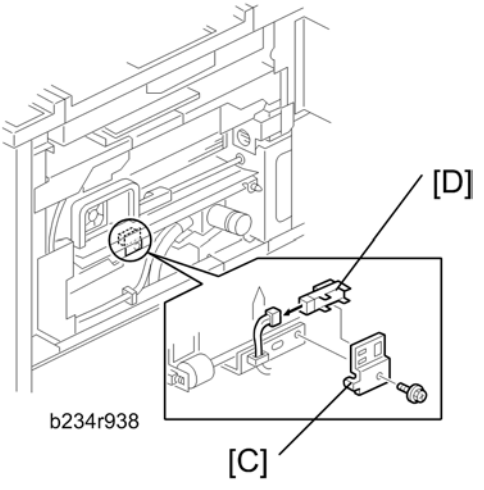
1. Remove:
   - Development fan motor (p.346)
   - Toner suction pump motor (p.306 "Toner Hopper Removal")
   - Upper relay motor [A] (p.344)
   - Guide plate solenoid [B] (x1, x1)
2. Registration motor [C] (p.345)



3. Registration unit [D] (x4, x3)

LCT Relay and Relay Sensors



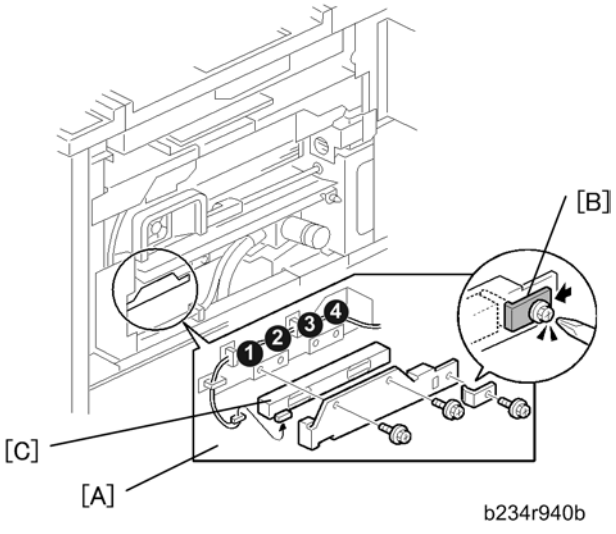


1. Remove right upper cover (x 4).
2. LCT relay sensor bracket [A] (x 1, x 1).
3. LCT relay sensor [B].
4. Upper relay sensor bracket [C] (x 1, x 1).
5. Upper relay sensor [D].

Image Position Sensors

Image position sensor unit (Tray)

- Remove right upper cover (x 4).



[A]: Image position sensor unit (Tray) (x2, x1)

[B]: Stopper (x1)

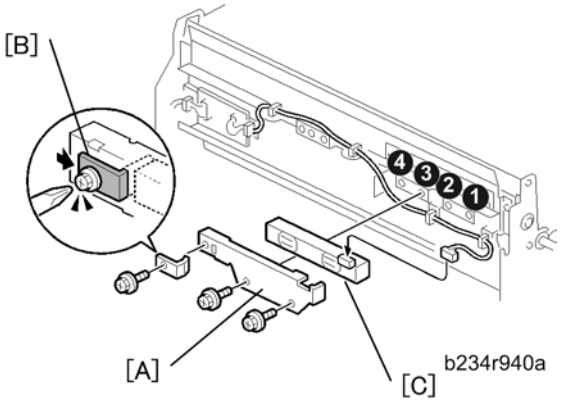
[C]: Image position sensor

Note

- The left screws (1), (3) are for paper widths of 140 – 330 mm.
- The right screws (2), (4) are for paper widths of less than 140 mm.

Image position sensor unit (Duplex)

- Registration unit (p.347)



1. Remove:

   [A]: Image position sensor unit (duplex) (x2, x1)

   [B]: Stopper (x1)

[C]: Image position sensor

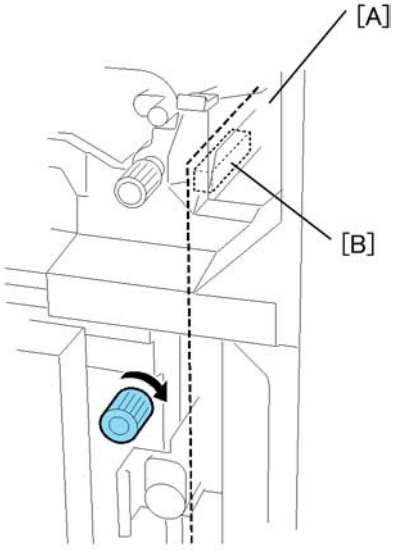
Note

- The left screws (2), (4) are for paper widths of 140 to 330 mm.
- The right screws (1), (3) are for paper widths of less than 140 mm.

2. After replacement, the CIS must be calibrated. (See below.)

CIS Image Position Adjustment: LED Strength

1. Turn off the main power switch.
2. Remove the right upper cover.
3. Turn on the main power switch.



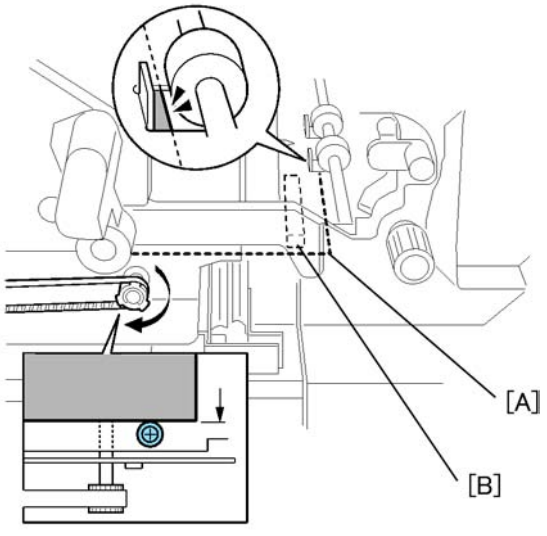
b234r976

4. Insert one sheet of plain white paper [A] in the paper path.
5. Make sure that the paper covers the entire area below the image position sensor (CIS) [B].
6. Enter SP mode and do SP1910 001 (CIS Image Position Adjustment: LED Strength). This calibrates the amount of light to be emitted from the CIS.
7. Do SP1909 (CIS Image Position Adjustment: PWM After Adjustment).
8. If the displayed value is between 10 (0Ah) and 40 (28h), the CIS was calibrated successfully. (The display is in hexadecimal code.)
9. If the value is outside this range, do SP1910 001, 1909 001 again. If the value does not come between 10 and 40, the CIS may be defective.
10. Exit SP mode.

11. Do the "CIS Image Position Adjustment: Normal Paper" (described below).

CIS in the Duplex Unit

1. Turn off the main power switch.
2. Remove the duplex inner cover. (p.383 "Duplex Unit Inner Cover")



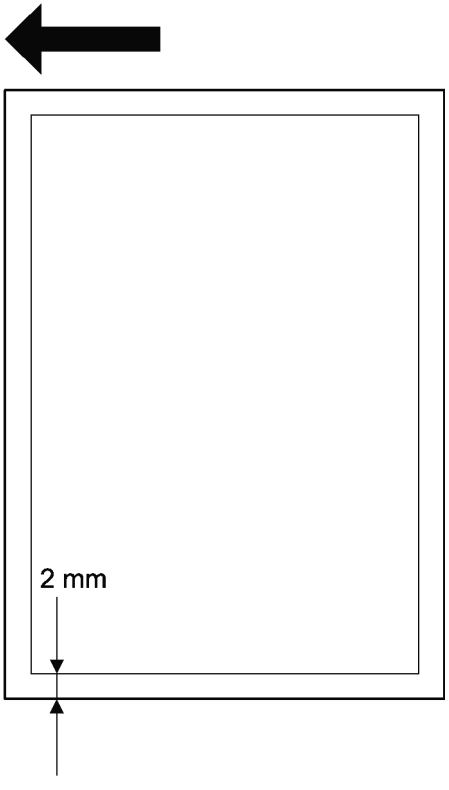
b234r975

3. Turn on the main power switch.
4. Insert one sheet of plain white paper [A] in the paper path.
5. Make sure that the paper covers the entire area below the image position sensor (CIS) [B].
6. Enter SP mode and do SP1910 003 (CIS Image Position Adjustment: LED Strength). This calibrates the amount of light to be emitted from the CIS.
7. Do SP1909 003 (CIS Image Position Adjustment: PWM After Adjustment).
    - If the displayed value is between 10 (0Ah) and 40 (28h), the CIS was calibrated successfully. (The display is in hexadecimal code.)
    - If the value is outside this range, do SP1910 003, 1909 003 again. If the value does not come between 10 and 40, the CIS may be defective.
8. Exit SP mode.
9. Do "CIS Image Position Adjustment: Normal Paper" (see the next section below).

CIS Image Position Adjustment: Normal Paper

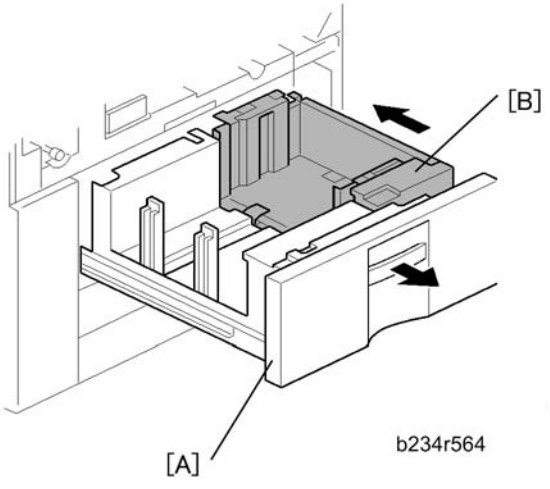
1. Push [User Tools]> [Adjust Settings for Operators].
2. Touch [0111].

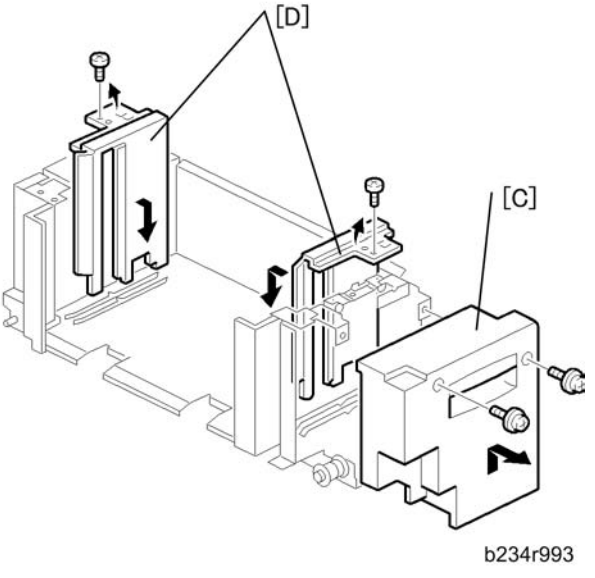
3. Set [01], [02], [03] for Trays 1, 2, 3 to "Off".
4. Adjust the image positions in the main scan direction (Tray 1, 2, 3).
    - Do SP2902 003, select Pattern 27, then print the trimming pattern with SP5990-005
    - Do SP1002 001, 002 and 003 and adjust the image position in the main scan direction for Trays 1, 2, 3.
    - Print the trimming pattern from each tray.
    - To do this, touch "APL Window" in the SP display, select a tray, then push [Start].
    - The distance of the test pattern line from the paper edge for each tray must be 2 mm. If it is not 2 mm, adjust with SP1002 001, 002 and 003, depending on which tray is not within the specified 2 mm.
5. Adjust the image positions in the main scan direction (Duplex).
    - Do SP2902 003, select Pattern 27, then print the trimming pattern with SP5990 005
    - Do SP1002 008 and adjust the image position in the main scan direction for duplex.
    - Print the trimming pattern for duplex from Tray 1.
    - To do this, touch "APL Window" in the SP display, select a tray, then push [Start].
    - The distance of the test pattern line from the paper edge for each tray must be 2 mm. If it is not 2 mm, adjust with SP1002 008, depending on which tray is not within the specified 2 mm.
6. Print the duplex print from Tray 1 one more time.
7. Do SP1912 001 and 003 (CIS Image Position Adjustment: Normal Paper). This sets the CIS for operation with standard paper.
8. Exit SP mode.
9. Push [User Tools]> [Adjustment Settings for Operators].
10. Do [0111] (CIS Image Position Adjustment: Across Feed Direction), and reset the values for [01], [02], [03] for Trays 1, 2, 3 to "On".



b234r992

Tandem Feed Tray Paper Size Change





Note

- This tray is set up for A4 or LT LEF at the factory. Only A4 or LT LEF paper can be used for tandem feed.

1. Open the front cover.
2. Pull out the tandem feed tray and remove the left [A] and right [B] tandem trays. (p.327 "Paper Trays")

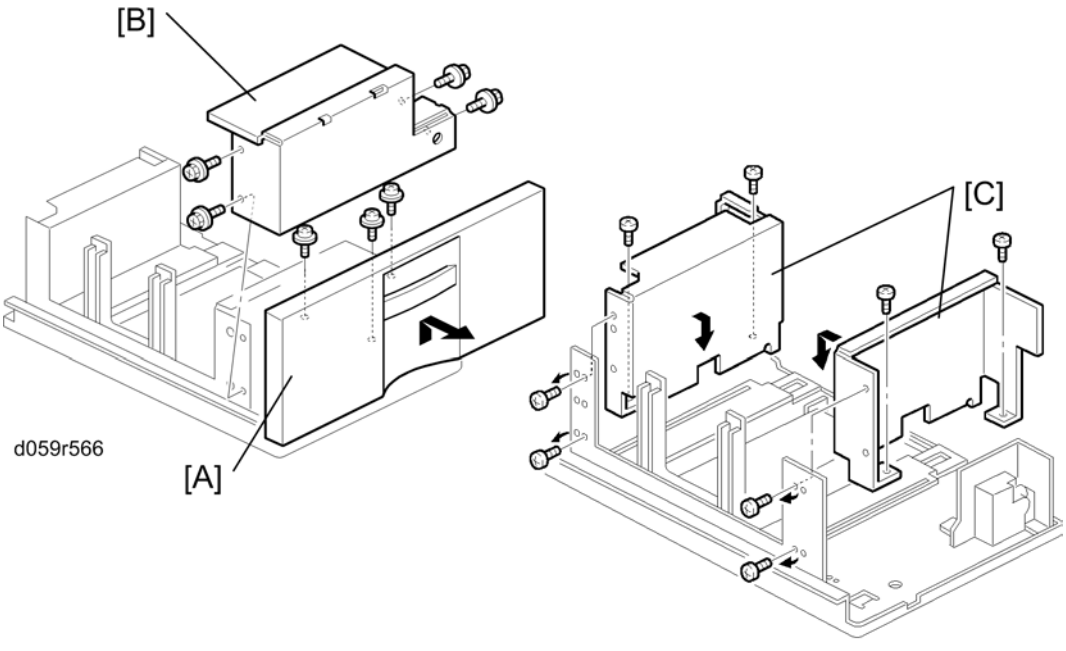
Setting the Paper Size for the Right Tandem Tray

1. Right tandem inner cover [C]. (x 2)
2. Re-position the side fences [D] (x 1 each).

   Note

   - Outer: A4, Inner: LT.
3. Re-install the right tandem inner cover [C].

Setting the Paper Size for the Left Tandem Tray

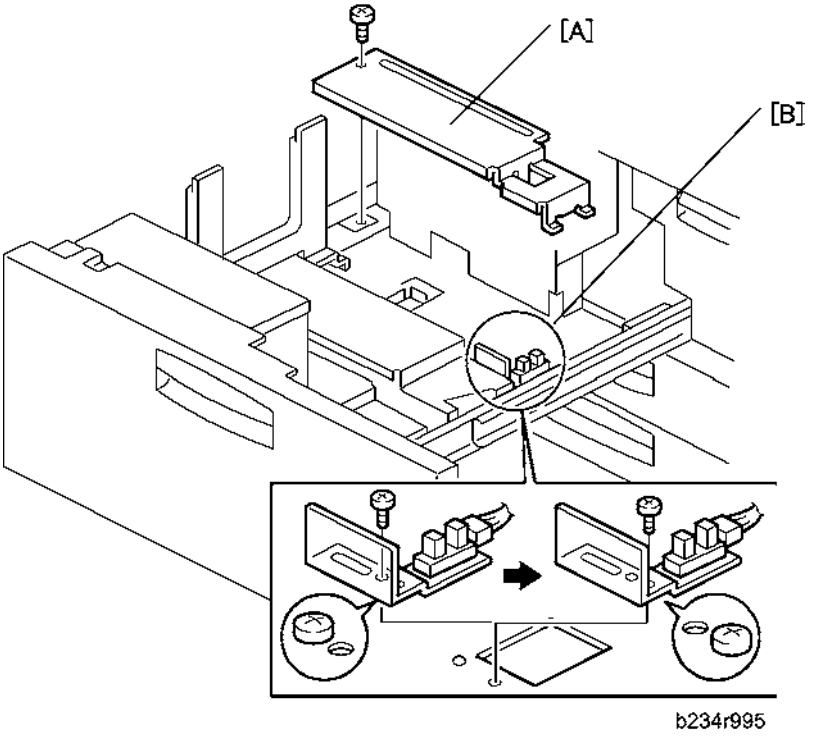


1. Tray cover [A] (x 3).
2. Motor cover [B] (x 4).
3. Re-position the side fences [C] (x 4 each).

Note

- Outer: A4, Inner: LT.

4. Re-install the motor cover and the tray cover.



5. Rear bottom plate [A] (x 1).
6. Re-position the return position sensor bracket [B] (x 1). To use the paper tray for A4 size, put the screw in the left hole.

Note

- For LT size, the screw should be placed on the right.

7. Re-install the rear bottom plate.
8. Change the paper size for the 1st Tray (Tandem Tray) with SP5019 002.

Tandem Tray Side Registration

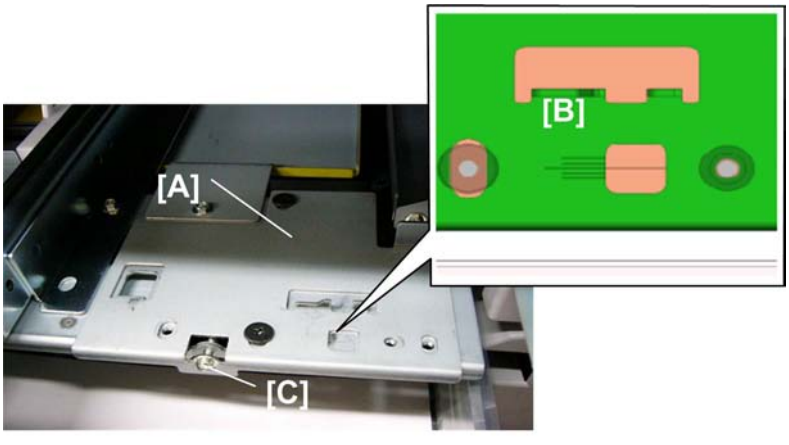
Normally the side registration of the image can be adjusted in the SP mode.

If the punch hole positions are not aligned from a particular feed station, however, you can manually adjust the side registration by changing the tray cover position for that tray, and then adjust the side registration of the image (p.348 "Image Position Sensors")

1. Remove the right tandem tray (p.327 "Tandem Tray"). (You do not need to remove the left tandem tray.)

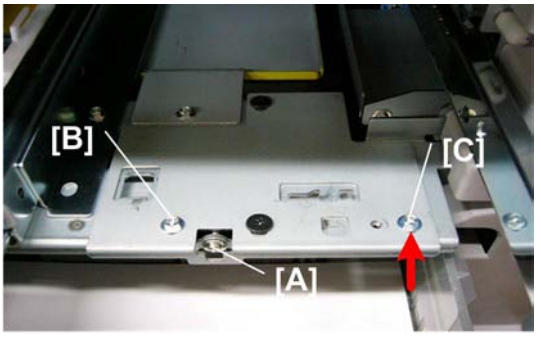
m002r318a

2. Use a stubby driver to remove the screws (x2)



m002r318c

3. Open Tray 2 slightly.
4. Slide the plate [A] to the front or rear and set it at the mark on the scale [B].
    - Removal of the two screws in the previous step allows only partial movement on the scale.
    - You may need to turn stopper screw [C] clockwise until it stops so the plate pointer has full range of movement on the scale.
5. Position the plate pointer on the scale [B].



m002r318e

6. Turn screw [A] counter-clockwise until it stops and holds the new plate position.
7. Re-attach the screws removed in Step 2..
    - Re-attach the left screw [B] at its original position.
    - Re-attach the right screw [C] through the oval hole (not the original round hole) and tighten it.

Fusing Unit

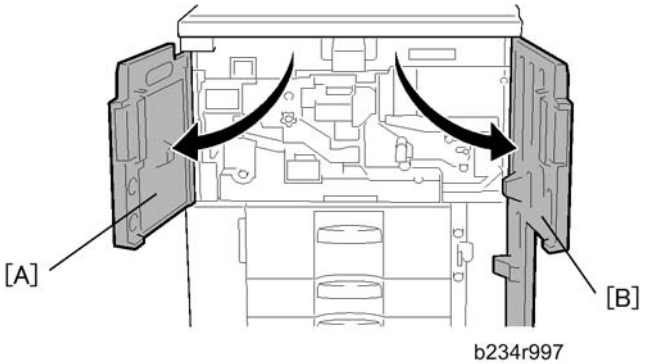
Removing the Fusing Unit

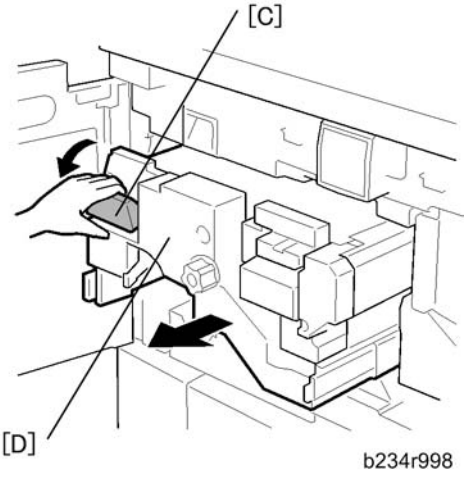
⚠CAUTION

- To prevent electrical shock, switch off the main power switch and disconnect the power cord from the power source.
- Disconnect all other cables (USB, network, etc.) if they are connected.
- The fusing unit becomes extremely hot during operation, so to prevent minor burns, switch the machine off and allow it to cool for at least 30 minutes before you remove the fusing unit.
- The fusing unit weighs approximately 14 kg (30.9 lb.) so handle it carefully when you remove it to avoid dropping it and causing damage or minor injuries.

Important

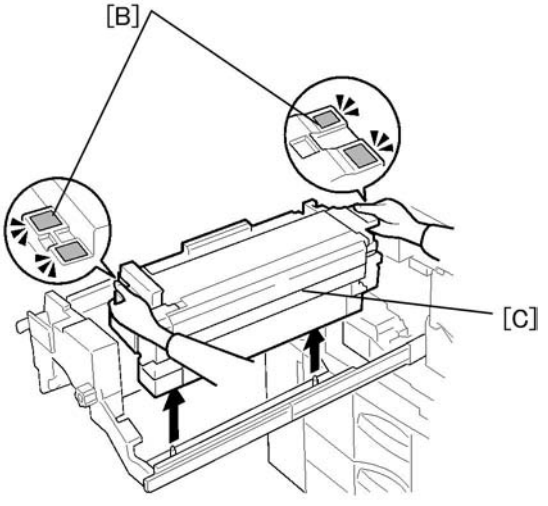
- **Confirm that the replacement fusing unit is the correct type for the machine.**
- **A fusing unit with a black top is for the M002 (90 ppm) or M003 (110 ppm).**
- **A fusing unit with a yellow top is for the M004 (135 ppm only).**
- **If you install the incorrect fusing unit for the machine, the machine will display a message and the machine will not operate until a correct fusing unit is installed.**





1. Open the left front door [A] and right front door [B].
2. Grasp handle D2 [C] of the fusing unit drawer [D] and pull out the drawer gently until it stops.

B234r925



b234r899

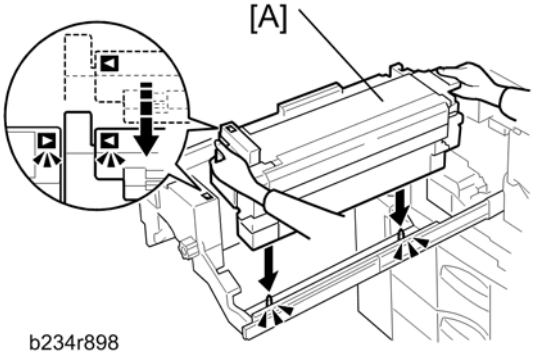
3. Raise lever D3 [A] until it stops.
4. Firmly grip the purple handles [B] of the fusing unit [C] with both hands, lift the fusing unit and remove it.

⚠CAUTION

- The fusing unit weighs approximately 14 kg (31 lb.). Handle it carefully when you lift it and set it down.

5. Set the fusing unit down on its bottom.

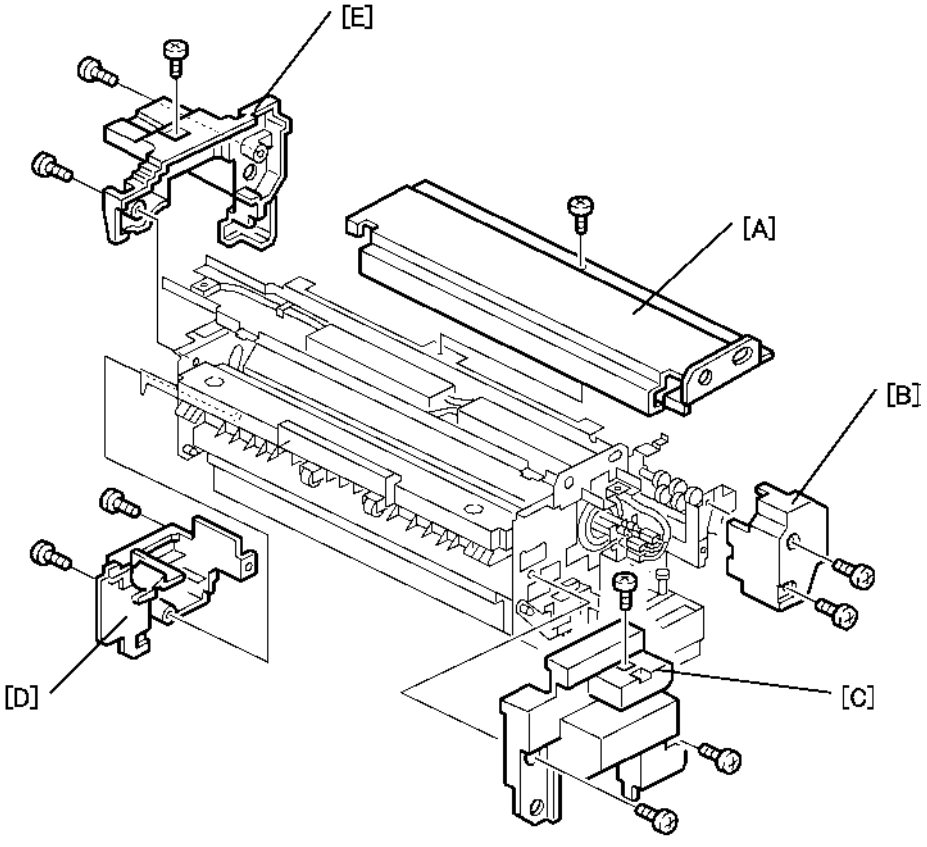
Reinstalling the Fusing Unit



b234r898

1. Raise lever D3.
2. Hold the new fusing unit [A] so the triangular reference marks are aligned as shown
3. Lower the new fusing unit onto the frame.
4. Make sure that holes of the fusing unit are properly mounted onto the pegs below.

Fusing Unit Covers



1. Remove:

   [A]: Top cover (x1)

   [B]: Fusing cleaning unit cover (fabric unit) (x2)

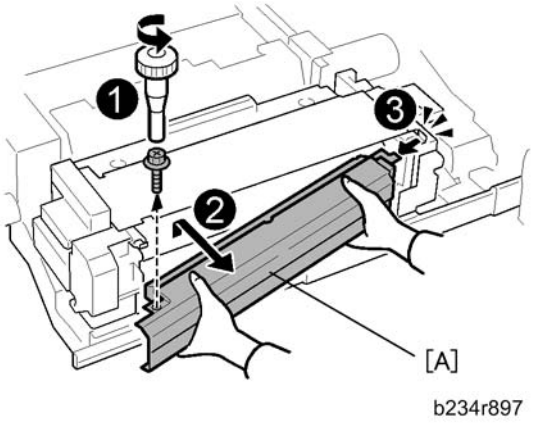
   [C]: Front cover (x3)

   [D]: Rear lower cover (x2)

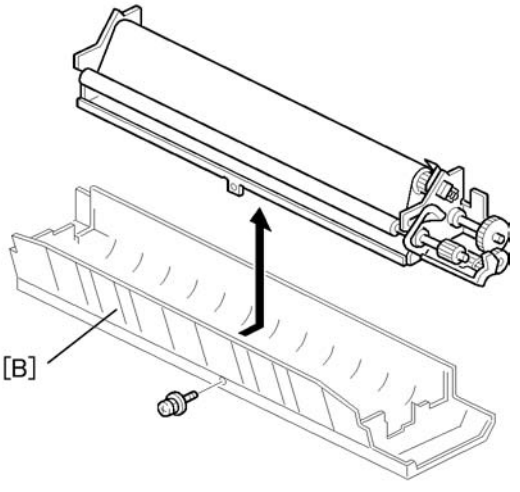
   [E]: Rear upper cover (x3)

Fusing Cleaning Unit

Disassembling the Fusing Cleaning Unit

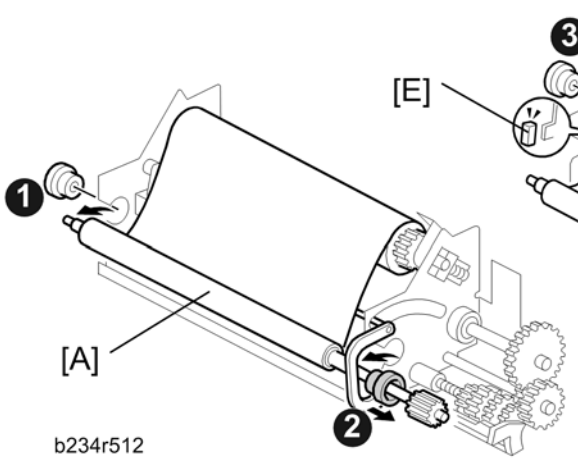


b234r897

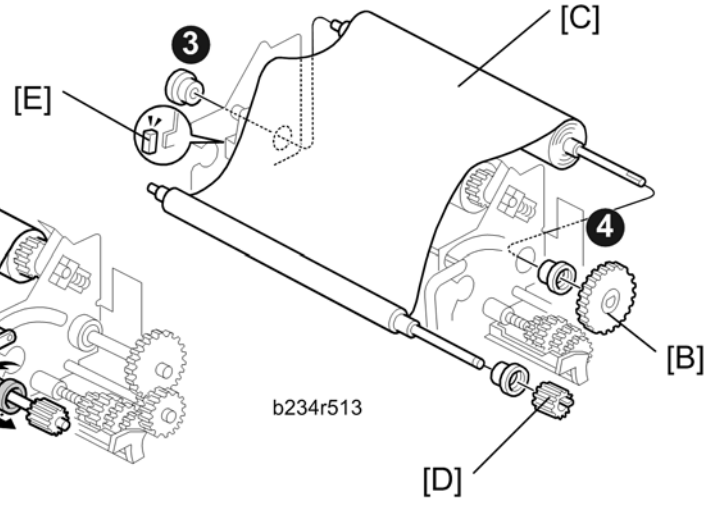


b234r511

1. Pull out the fusing unit drawer (p.359 "Removing the Fusing Unit")
2. Remove the fusing cleaning unit [A] (x1).
3. Fusing entrance guide [B] (x1).



b234r512

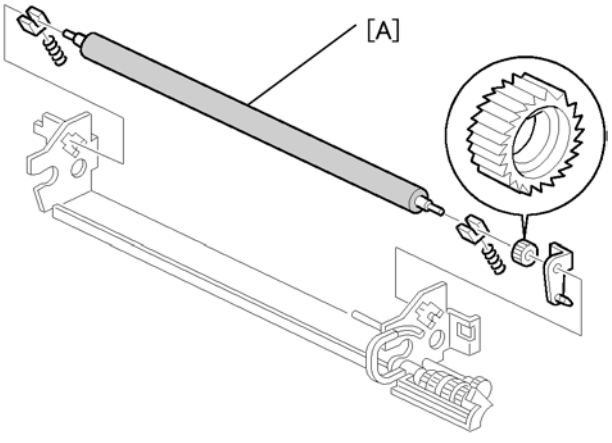


b234r513

4. Bearings (1), (2).
5. Fusing cleaning fabric supply roller [A].
6. Bushings (3), (4).

7. Gear Z50 [B].
8. Cleaning fabric take-up roller [C].
9. Gear Z23 [D] off the shaft to remove the gear.
10. Remove the stopper [E].

Fabric Pressure Roller

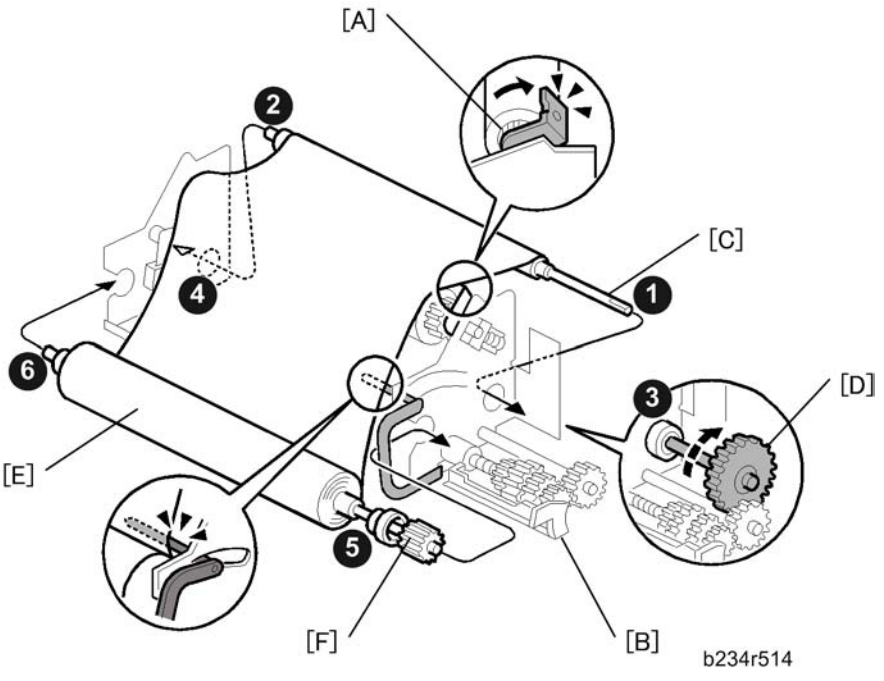


b234r896

1. Remove:

   [A]: Fabric pressure roller (Bushing x2, Spring x2)

Reassembling the Fusing Cleaning Unit



Checklist Before You Begin

- Gear [A] rotates only counter-clockwise?
- Is the plastic [B] straight and not bent?

1. Insert the take-up roller [C]. Insert the front (1) end then the rear end (2).

   Important

   - **Handle the rollers carefully to keep them clean.**
2. Set the bushings (3), (4) on the shaft of the take-up roller.
3. Attach Gear Z50 [D]. Its teeth must mesh with the teeth of the small gear below.
4. Mount the take-up roller shaft (with the bushings attached).
5. Mount the cleaning fabric supply roller [E] (apply some pressure to position it correctly).
6. Set the bearings (5), (6) on the shaft of the supply roller.
7. Gear Z23 [F]
   - Engage the key of the gear with its groove.
   - Attach it to the notch in the outer plate on the cleaning fabric supply side.
   - Turn the gear to take up the slack of the cleaning fabric.
8. Rotate Gear Z50 [D] clockwise 3 times.
9. Apply a small amount of grease (Barrierta S552R) to Gear Z50 [D].

Checklist

- Cleaning fabric is not riding up on the metal plate?
- Is the pressure lever down on the back of the fabric?
- Gear Z50 clicks normally when it is turned?
- No slack in the cleaning fabric between the supply and take-up rollers?

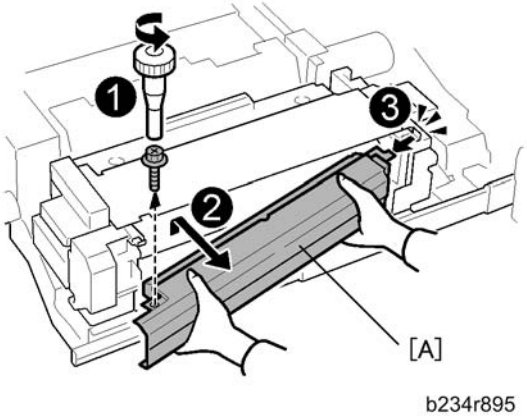
10. Place the frame unit above the fusing entrance guide plate, push it forward, then attach it (x1).

Important

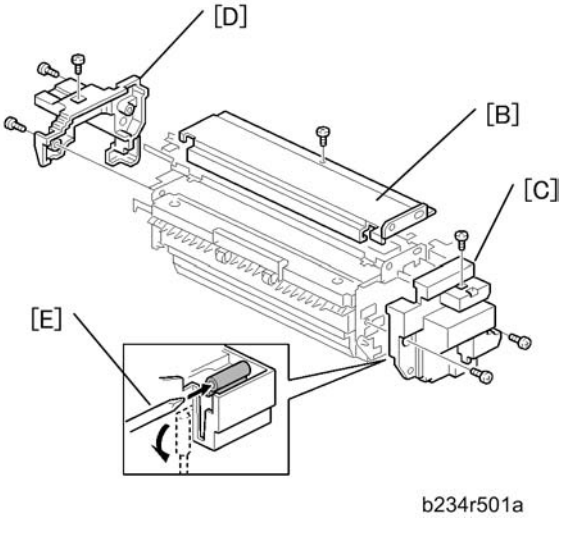
- **Attach the guide plate inside without allowing any of the 4 bearings or bushings to slip off.**

11. Make sure that the fusing entrance guide plate is installed without riding up on the pawls (x2) on the bottom of the plate.
12. If a new fabric is installed:
    - Execute SP1902 001 (Fabric Motor Control> Fabric Consumption), and set the value to 0. Switch the machine off/on after changing the setting.

Hot Roller Unit



b234r895



b234r501a

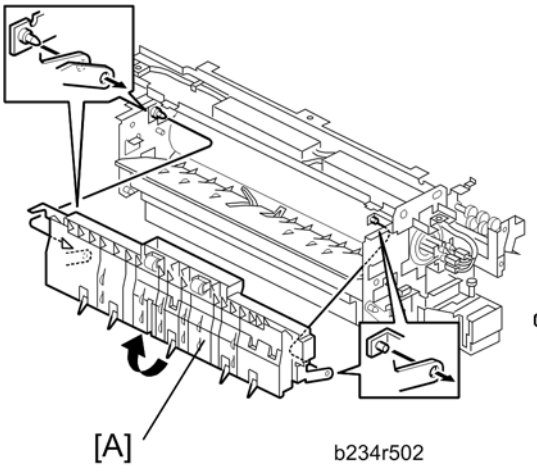
1. Remove the fusing cleaning unit [A] (x1). (p.361 "Fusing Unit Covers")
2. Top cover [B] (x1).

Important

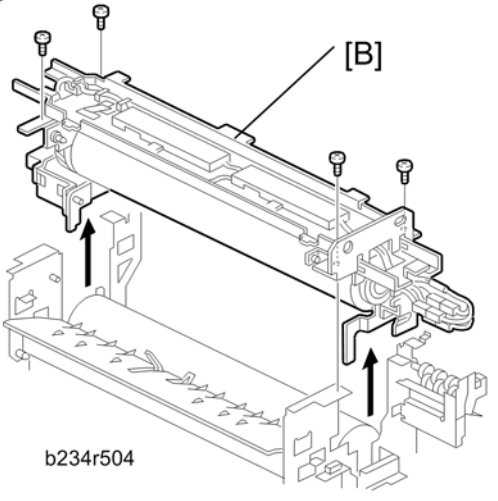
- **The top cover of the M002/M003 is Black, the cover of the M004 is Yellow.**

3. Front cover [C] (x3).
4. Rear upper cover [D] (x3).

5. Insert a screwdriver [E] and turn 90 degrees in the direction of the arrow to release the nip between the hot roller and the pressure roller.



b234r502

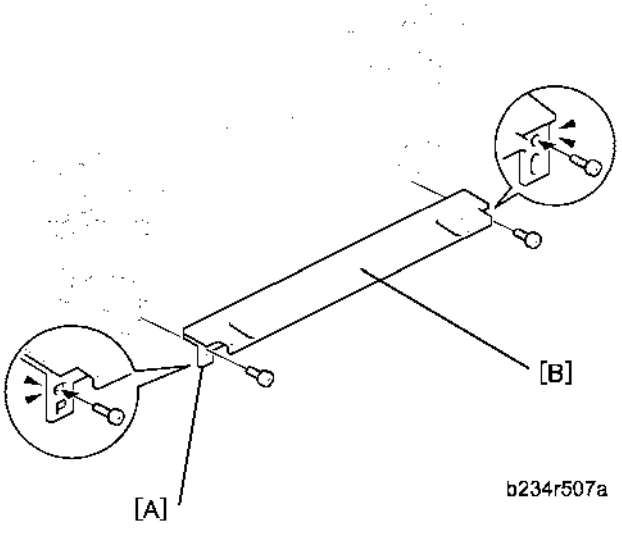


b234r504

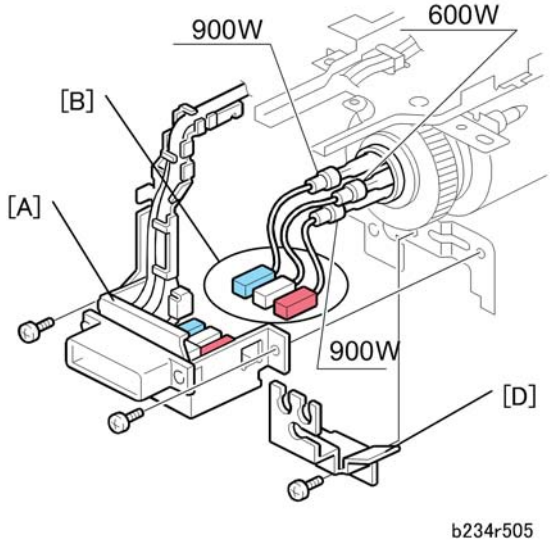
6. Turn the hot roller stripper unit [A] 90 degrees in the direction of the arrow, then slide it to the front and remove it.
7. Remove the metal clamp at the front.
8. Hot roller unit [B] (x4).

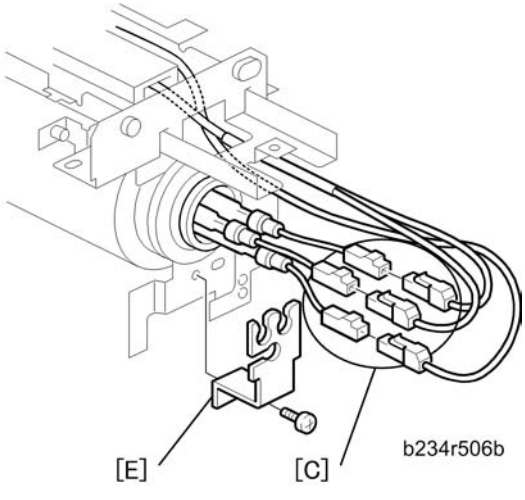
Hot Roller

Removing the Fusing Lamps



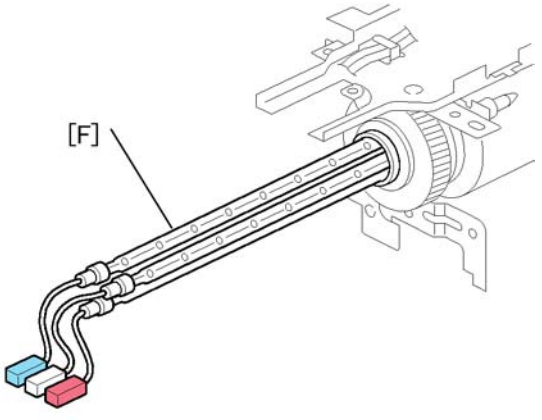
1. Hot roller unit (p.365)
2. Entrance plate [A] (x2).
3. Clean the front surface of the entrance guide plate [B] with a dry cloth.





4. Harness terminal bracket [A]. (x2)
5. Disconnect the rear fusing lamp cables [B]. (Red, White [(M004): Yellow], Blue x 1 each)

6. Disconnect the front fusing lamp cables [C]. (White x 3)
7. Front lamp holder [D]. (x4)
8. Rear lamp holder [E]. (x1)



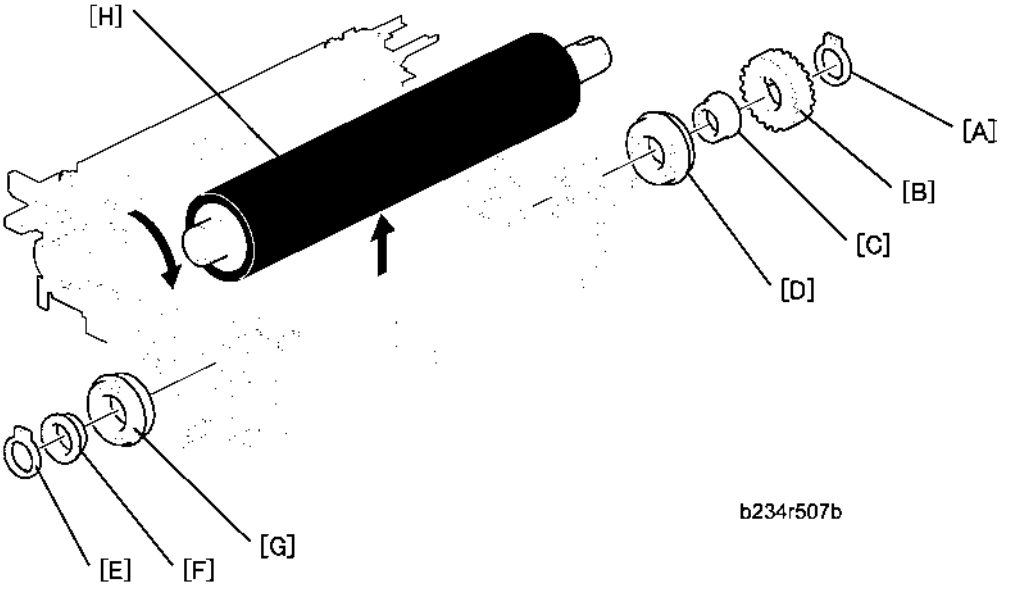
b234r505a

9. Fusing lamps [F], one at a time.

Important

- **Never touch the glass surface of a fusing lamp with bare fingers. Handle the lamps carefully to avoid breaking them.**

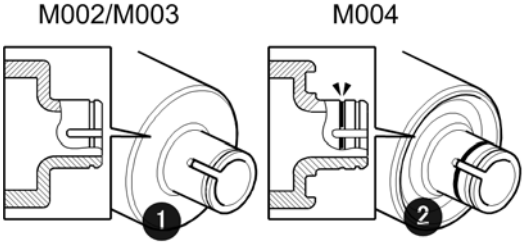
Disassembling the Hot Roller



b234r507b

1. Position the hot roller as shown.
2. Remove:
   [A]: C-ring
   [B]: Gear
   [C]: Bushing
   [D]: Bearing
3. Remove:
   [E]: C-ring
   [F]: Bushing
   [G]: Bearing
4. Remove the hot roller [H].

Reinstallation



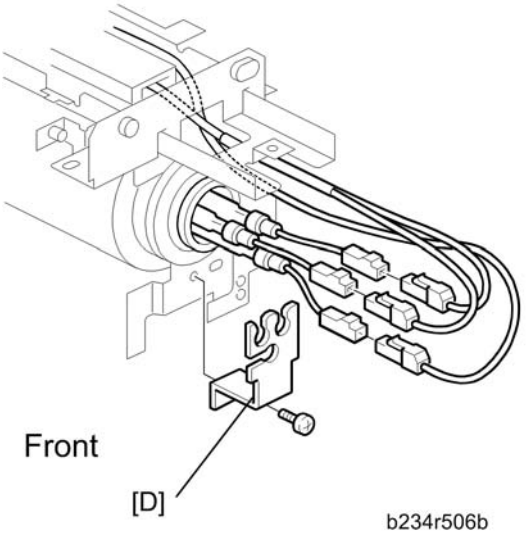
m002r507f

When you install the new hot roller, make sure that you install the correct type.

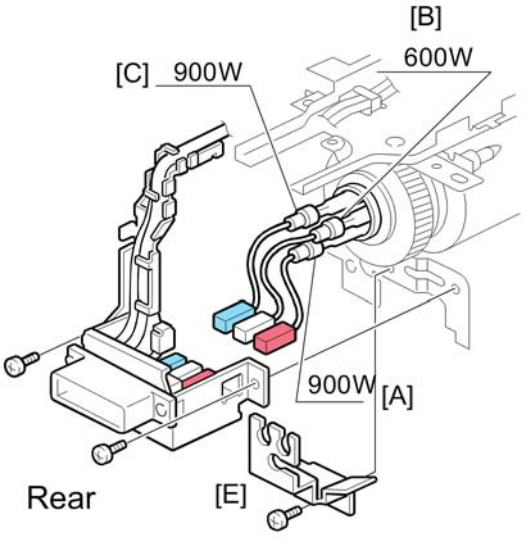
- The shape of the end (1) of the hot roller for the M002/M003 is different from the M004 (2).

Lubricate the outer and inner surfaces of bushings [C] and [F] with Barrierta JFE55/2.

Re-installing the Fusing Lamps



b234r506b



b234r505

1. Insert each fusing lamp [A], [B], [C] into the rear of the hot roller, then gently push the fusing lamps into the roller.

Important

- **Never touch the glass surface of a fusing lamp with bare fingers. Handle the lamps carefully to avoid breaking them.**

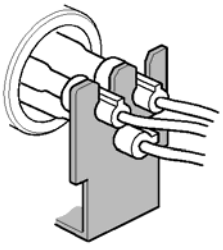
2. Lay the tip of each fusing lamp into any round hole in the front holder [D] and fasten the holder (x1).
3. Insert the tip of each fusing lamp into a round hole in the rear holder [E] and fasten the holder (x1).

Note

- Make sure the lamps are perfectly parallel inside the hot roller.

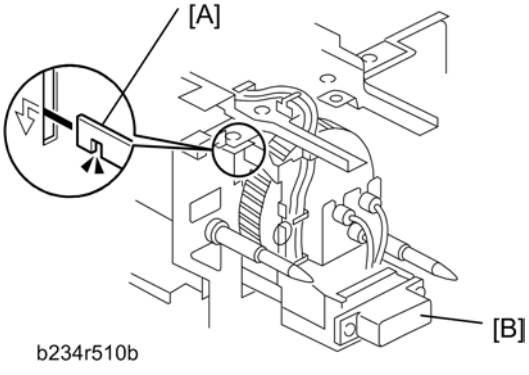
4. Attach the connectors. Refer to the table below.

M002/M003		M004	
Front	Rear	Front	Rear
White	Red	White	Red
White	White	White	Yellow
White	Blue	White	Blue



b234r505b

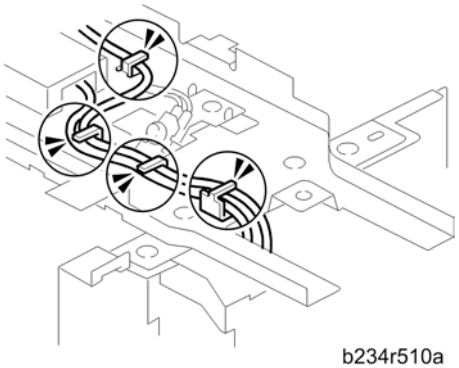
5. Make sure the ends of the fusing lamps fit snugly into the holes in the bracket.



b234r510b

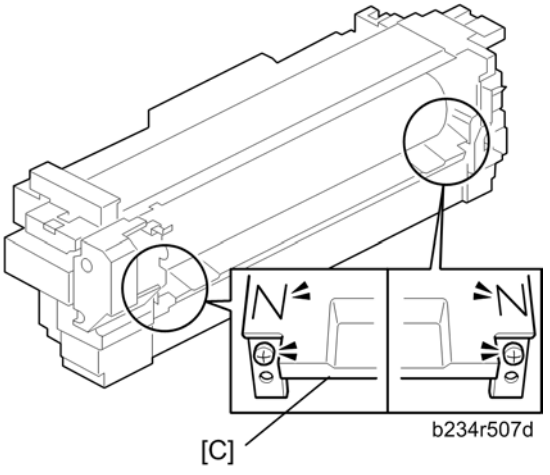
6. Connect hooks [A] of the harness terminal brackets [B] to the slots in the frame at two points and fasten (x2).

Checklist



b234r510a

- End of each fusing lamp securely inserted into holders at each end?
- Connectors connected properly (refer to previous table)?
- Are all the connectors tightly fastened?
- Are the cables all secured properly by the 4 terminal bracket clamps as shown?

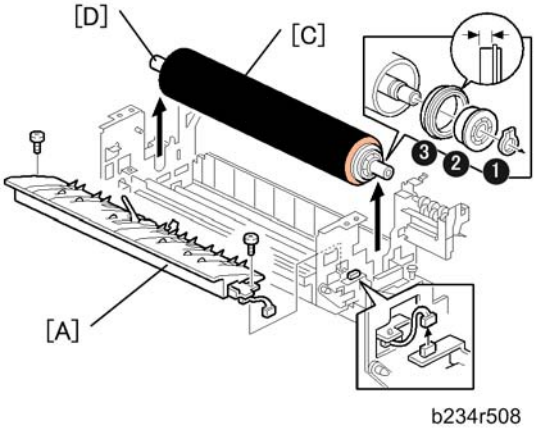


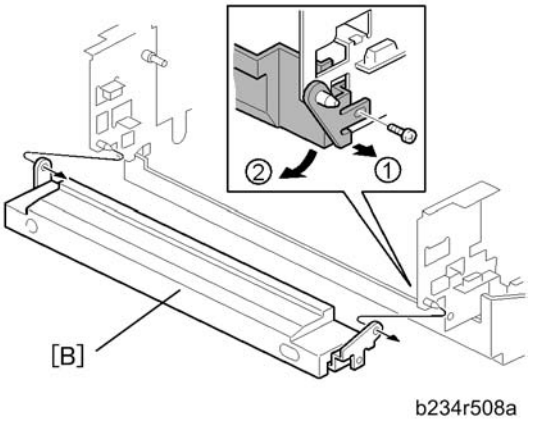
7. Attach the fusing entrance guide [C] (x2).
8. Clean the entire fusing unit with a blower brush. Rotate the hot roller gear while vacuuming.

   Checklist

   - Is the surface of the hot roller clean and free of dirt, scratches, dust?
   - Are the holes on the top of the fusing entrance guide plate free?
9. If you change the entrance guide, check for a stamp on both ends of the entrance guide, to make sure that you install the correct type of entrance guide:
   - N: North America
   - No stamp: EU/AA

Pressure Roller

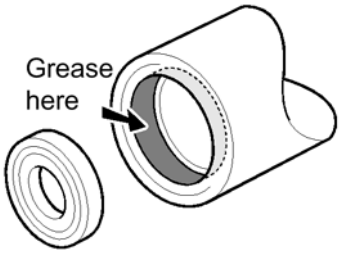




1. Hot roller unit (p.365)
2. Pressure roller stripper unit [A] (x1, x2)

3. Pressure roller cleaning unit [B] (x1).
4. Pressure roller [C].
5. On both ends of the pressure roller [D] remove:
   (1) C-rings (1 front/back)
   (2) Bearings (1 front/back)
   (3) Bushings (1 front/back)

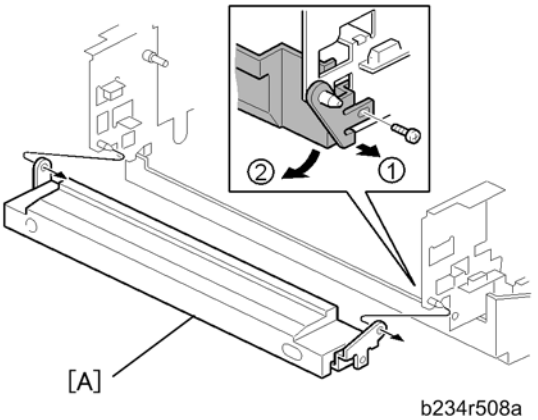
Reinstallation



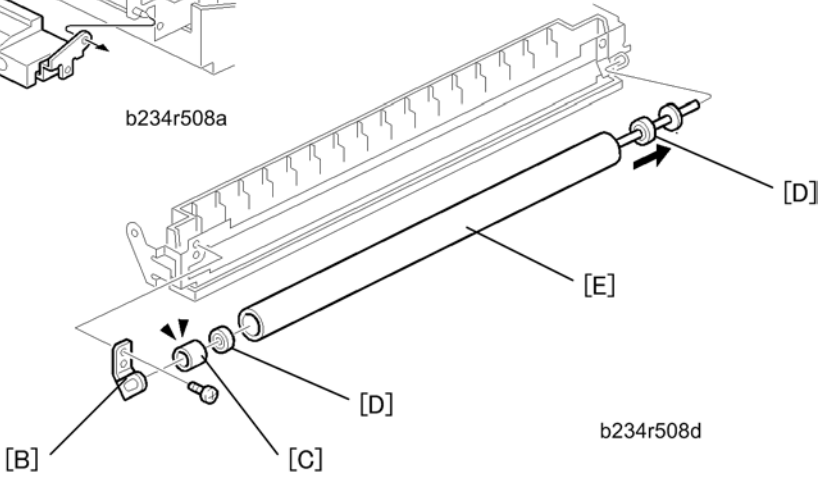
b234r894

Lubricate the inner surface at both ends of the pressure roller with Barrierta – JFE55/2.

Cleaning Roller: Pressure Roller



b234r508a



b234r508d

1. Pressure roller cleaning unit [A] (x1). (p.362 "Fusing Cleaning Unit")
2. Remove:

   [A] Cover and anti-static brush.

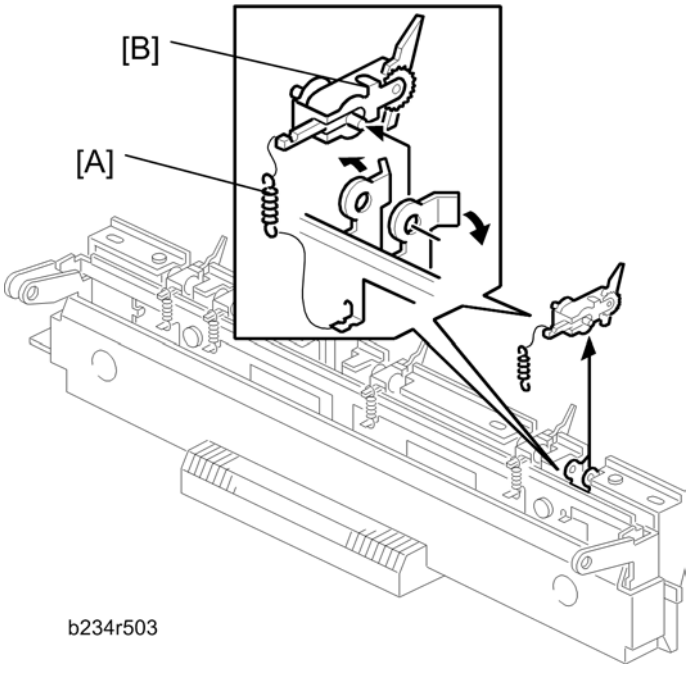
   [B]: Plate (x1)

   [C]: Bushing x1

   [D]: Bearings (x2)

   [E]: Cleaning roller
3. Clean the cleaning roller with a clean cloth.

Hot Roller Strippers

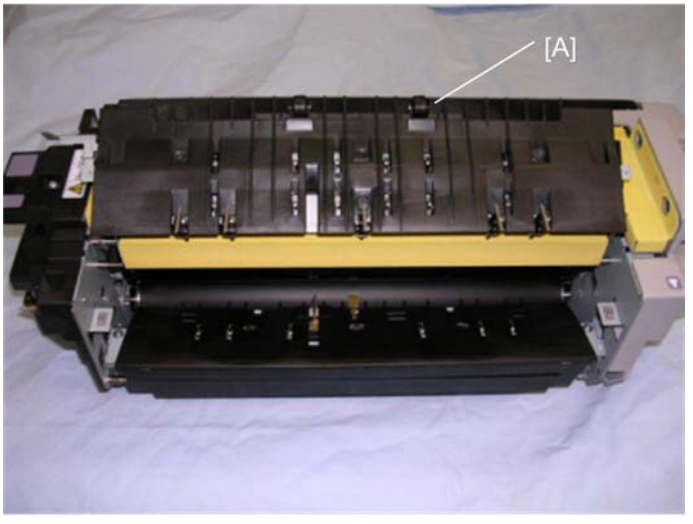


- Hot roller stripper unit (☛ p.362 "Fusing Cleaning Unit")

1. Spring [A].
2. Spread the left and right sides of the holder as shown, then remove the hot roller stripper [B].
3. Follow the same procedure to remove the stripper pawls at four other locations.

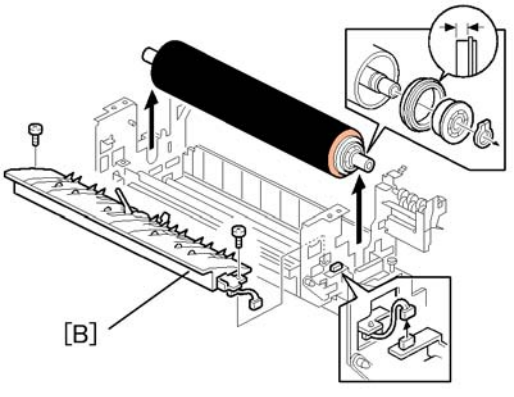
Pressure Roller Stripper

- Fusing unit
- Front cover
- Fusing Unit Covers

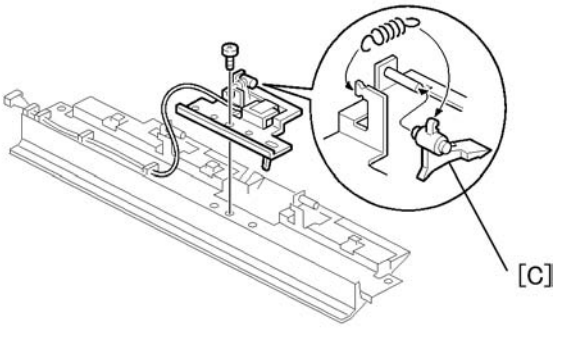


b234r926a

1. Raise the hot roller stripper unit [A].



b234r508



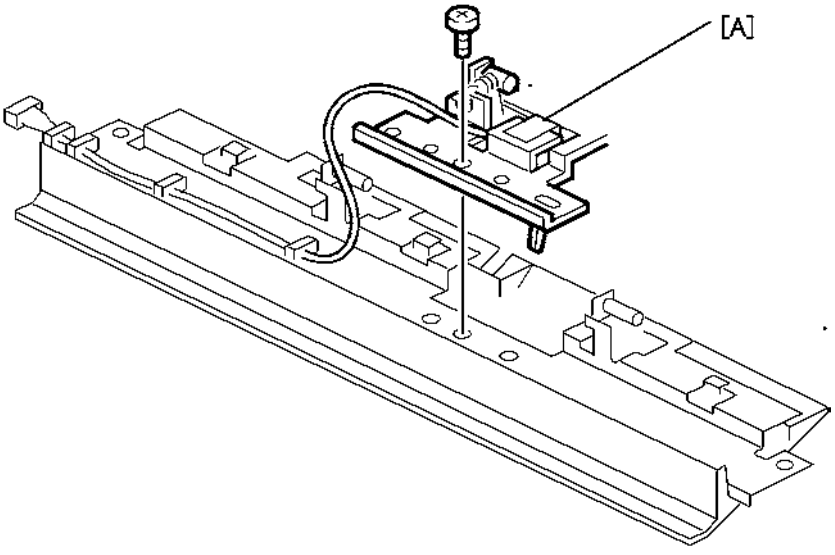
b234r509a

2. Pressure roller stripper unit [B] (x2, x1).
3. Pressure roller stripper [C] (x1, Spring x1).

Note

- Make sure that the spring is not deformed.
- Make sure the spacer is attached on the other side.

Fusing Exit Sensor

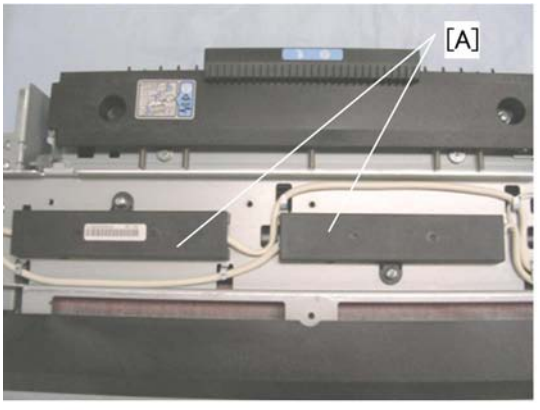


- Pressure roller stripper unit (☛ p.375 "Pressure Roller Stripper")

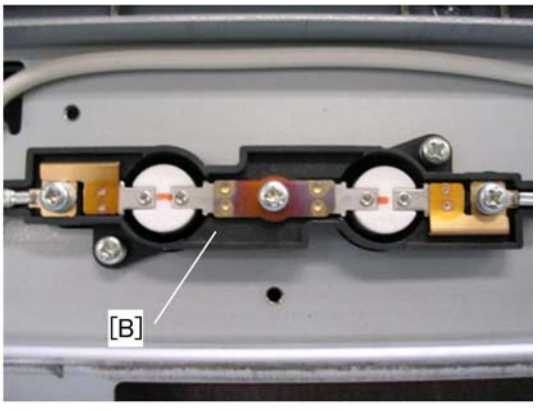
1. Remove the fusing exit sensor [A] (x1, x1, x4)

Fusing Unit Thermostats, Thermistor

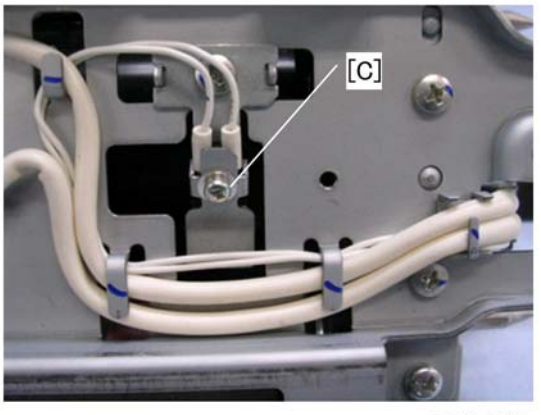
- Fusing unit (☛ p.359)
- Hot roller unit (☛ p.365)
- Fusing unit front cover, rear cover (☛ p.361 "Fusing Unit Covers")



b234r927



b234r928

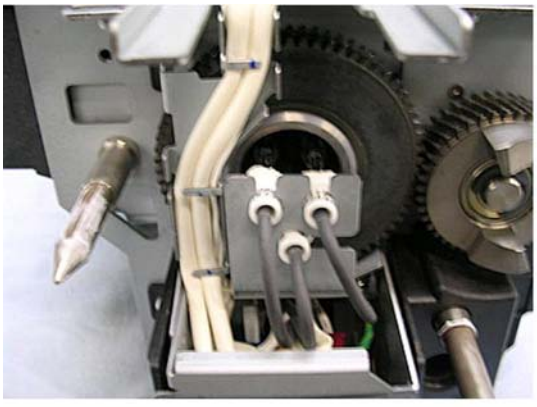


b234r929

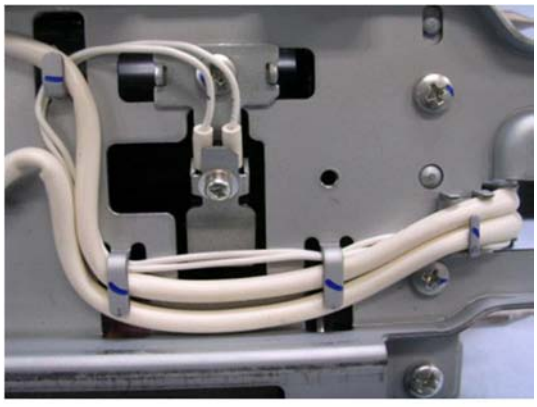
1. Remove thermostat covers [A] (x1 each)
2. Remove thermostat unit [B] (x3).
3. Remove thermistor [C] (x1, x1).

Reinstallation

Make sure the harnesses are positioned as shown below.



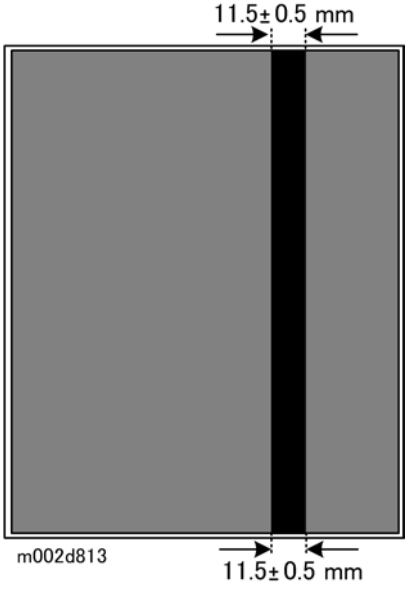
b234r931



b234r930

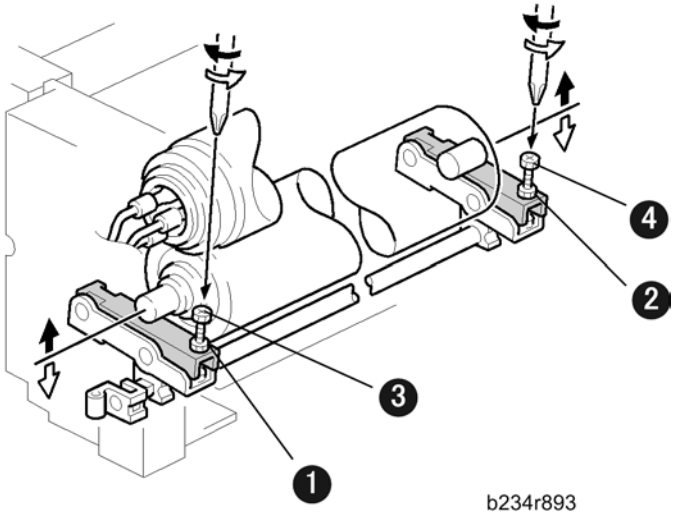
Fusing Pressure Adjustment

1. Go into the SP mode.
2. Do SP1109 (Fusing Check) and switch the fusing nip band check mode ON.
3. Select the "All Black" test pattern with SP2902-003, Pattern 023.
4. Do SP5990-005 to print the black sheet. The black sheet will stop between the hot roller and fusing roller for 30 seconds to form a dark band, then the sheet will exit.



5. Measure the nip band width (the shiny band) at each end (not the center).

   The measurement should be 11.5 mm (± 0.5 mm) at both ends.



Note

- The nip width 11.5 mm ± 0.5 mm (the difference between front and rear measurements should be less than 0.5 mm).

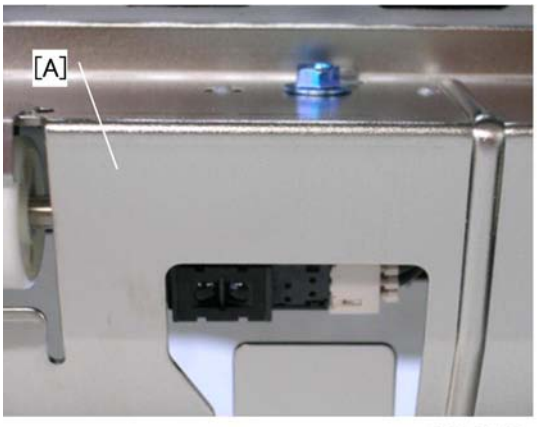
6. If the nip band width is not within specifications at both ends:
   - Loosen the lock nuts (1), (2)
   - Turn screws (3), (4) to adjust pressure (clockwise increases the pressure, counterclockwise decreases the pressure).
   - Re-tighten the nuts (1), (2) after adjusting.
7. Repeat steps 1 to 4 to check the nip band width.

Important

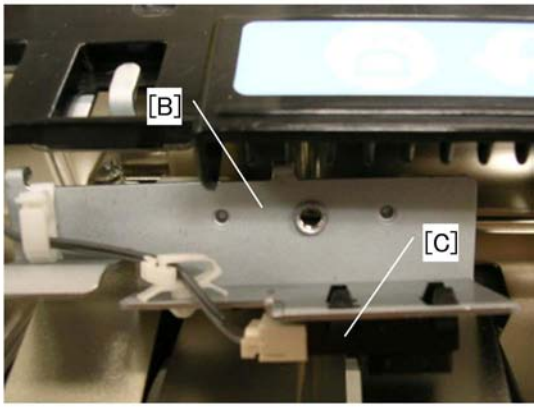
- **SP1109 switches to OFF automatically after you leave the SP mode.**
- **However, if you intend to do other test prints in the SP mode, be sure to switch SP1109 off before doing another procedure.**

Job Time Sensor

1. Pull out the fusing unit drawer. (p.359 "Removing the Fusing Unit")



b234r932

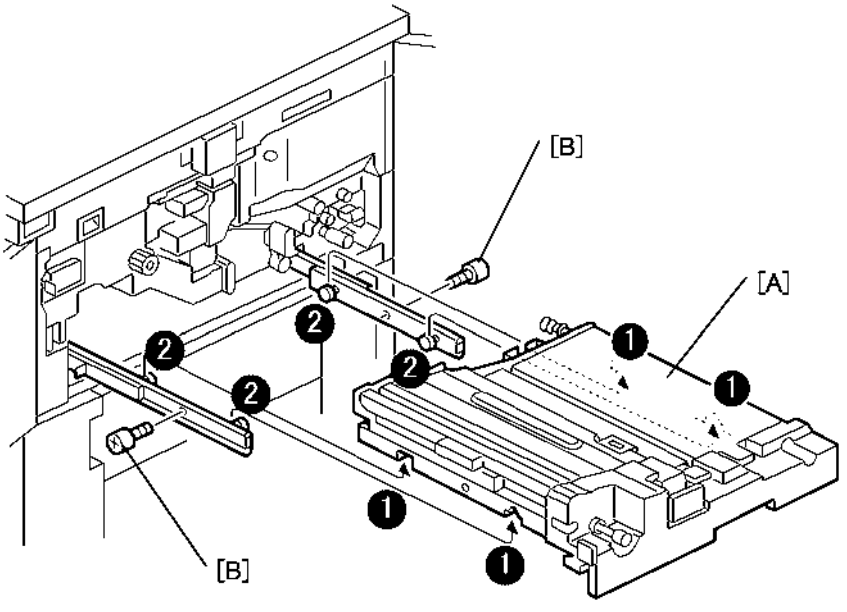


b23

2. Raise the upper guide plate [A].
3. Job time sensor bracket [B] (x1)
4. Job time sensor [C] (x1, x1)

Duplex Unit

Duplex Unit

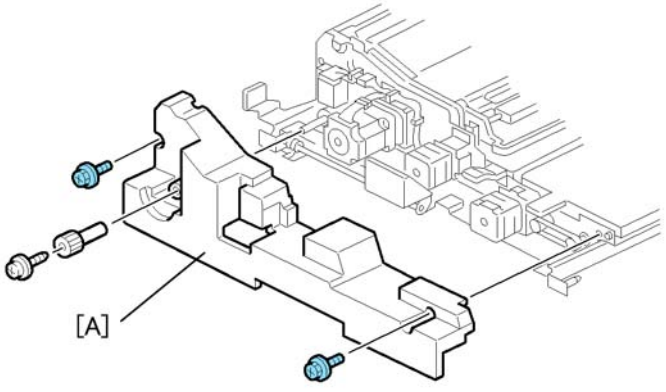


1. Open the left and right front doors and pull out the duplex unit [A].
2. Remove the shoulder screws [B] (x 2).
3. Lift up the duplex unit.

Note

- When re-installing the duplex unit, align the cutouts (1) with projections (2) on the slide rail.

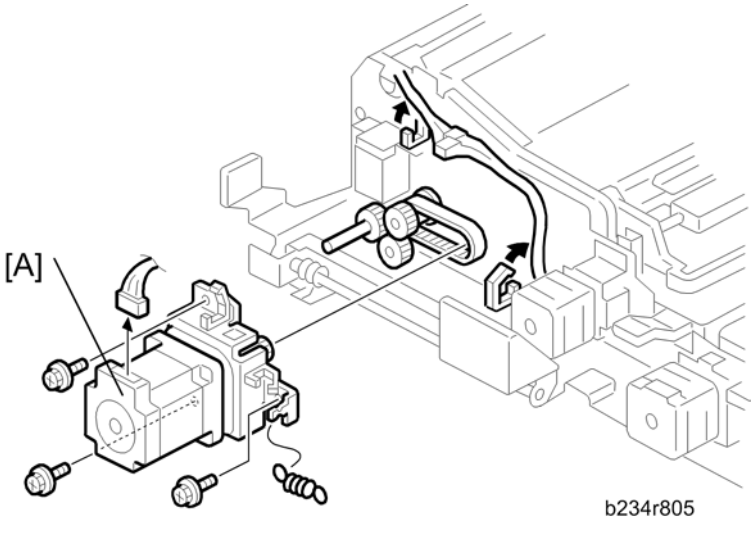
Duplex Unit Inner Cover



b234r802

1. Open both front doors.
2. Pull out the duplex unit.
3. Duplex unit inner cover [A] (x 3, Knob x 1).

Duplex Inverter Motor



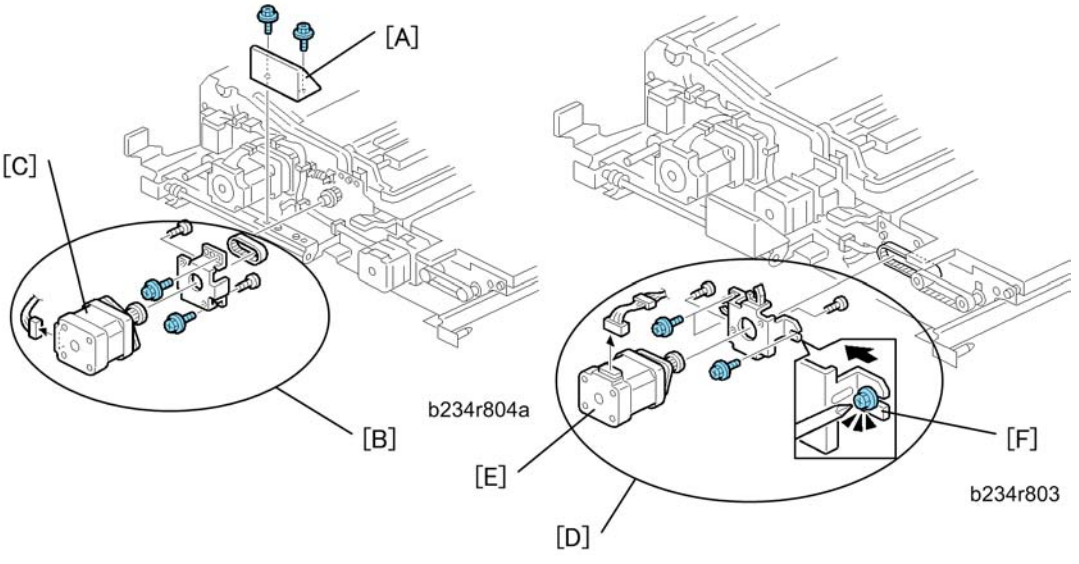
b234r805

1. Remove:

- Duplex inner cover. (p.383 "Duplex Unit Inner Cover")

[A]: Duplex inverter motor (x3, x4, x2, Spring x1)

Duplex Switchback and Transport Motors



Remove:

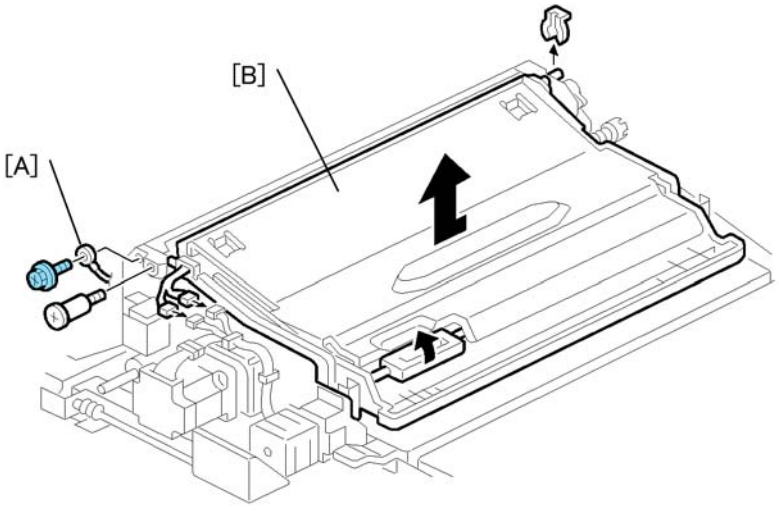
- Duplex inner cover. (p.383 "Duplex Unit Inner Cover")

1. Duplex grip handle [A] (x2)
2. Duplex transport motor unit [B] (x3, x1, Timing belt x1, x2)
3. Duplex transport motor [C] (x2)
4. Switchback motor unit [D] (x3, x1, Timing belt x1)
5. Switchback motor [E] (x2)

Re-assembly

Push the duplex transport motor bracket [F] slightly to the left to put some tension on the timing belt, then tighten the screw.

Duplex Entrance Guide Unit



b234r806

Remove:

- Duplex inner cover. (p.383 "Duplex Unit Inner Cover")

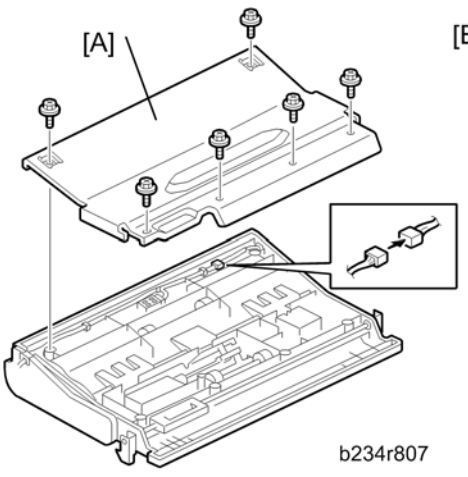
[A]: Ground (earth) wire (x1)

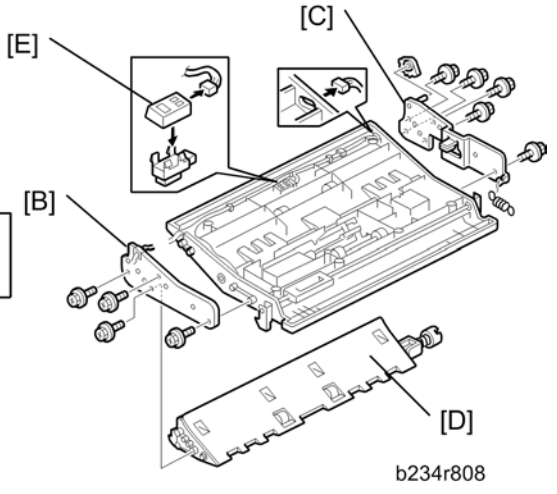
[B]: Duplex entrance guide unit (x1, x1, x2, x2)

Duplex Entrance Sensor, Inverter Sensor

Remove:

- Duplex entrance guide unit (p.385)





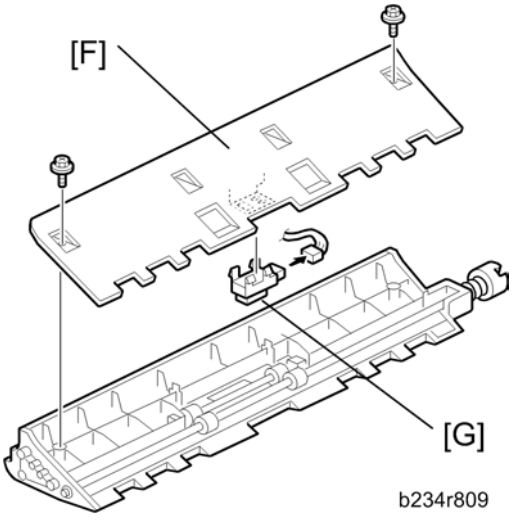
[A]: Cover (x8)

[B]: Front side plate (x5, x1)

[C]: Rear side plate (x6, Spring x1)

[D]: Lower entrance guide (x1)

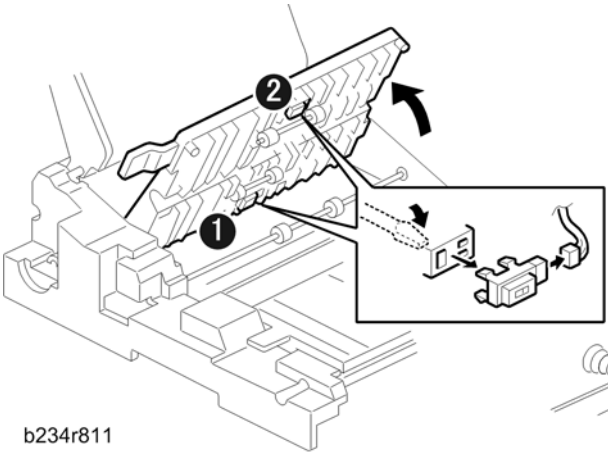
[E]: Duplex entrance sensor (x1, x1)



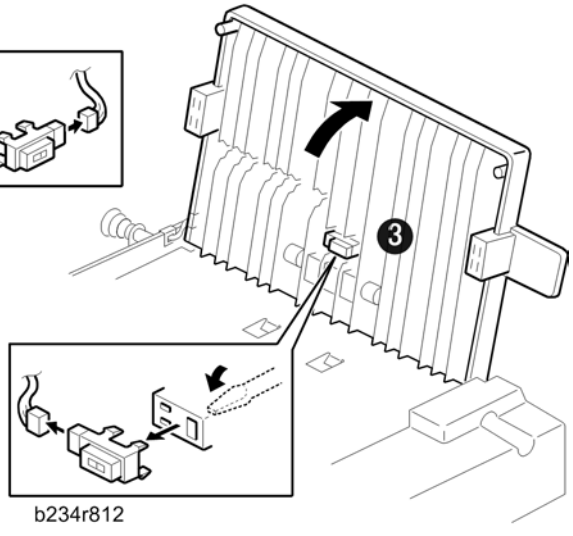
[F]: Lower entrance guide cover (x2)

[G]: Inverter sensor (x1)

Duplex Transport Sensors 1, 2, 3



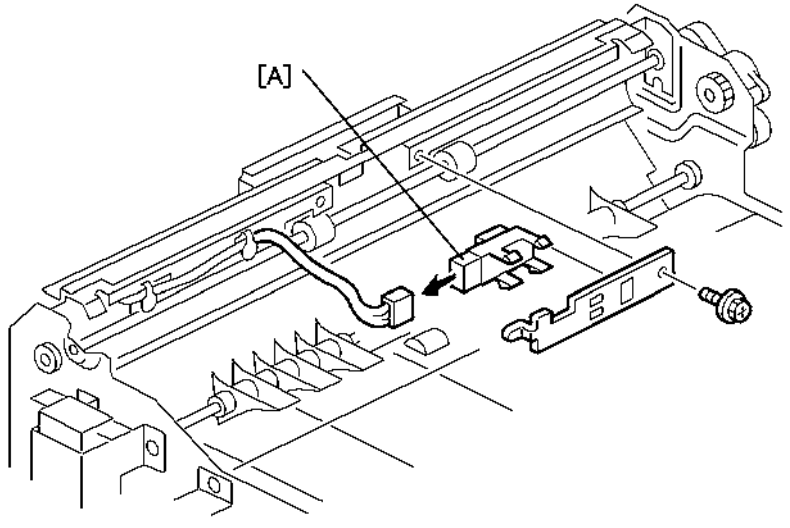
b234r811



b234r812

1. Open both front doors.
2. Pull out the duplex unit.
3. Remove:
   (1): Duplex transport sensor 1 (x1)
   (2): Duplex transport sensor 2 (x1)
   (3): Duplex transport sensor 3 (x1)

Inverter Relay Sensor



b234r810

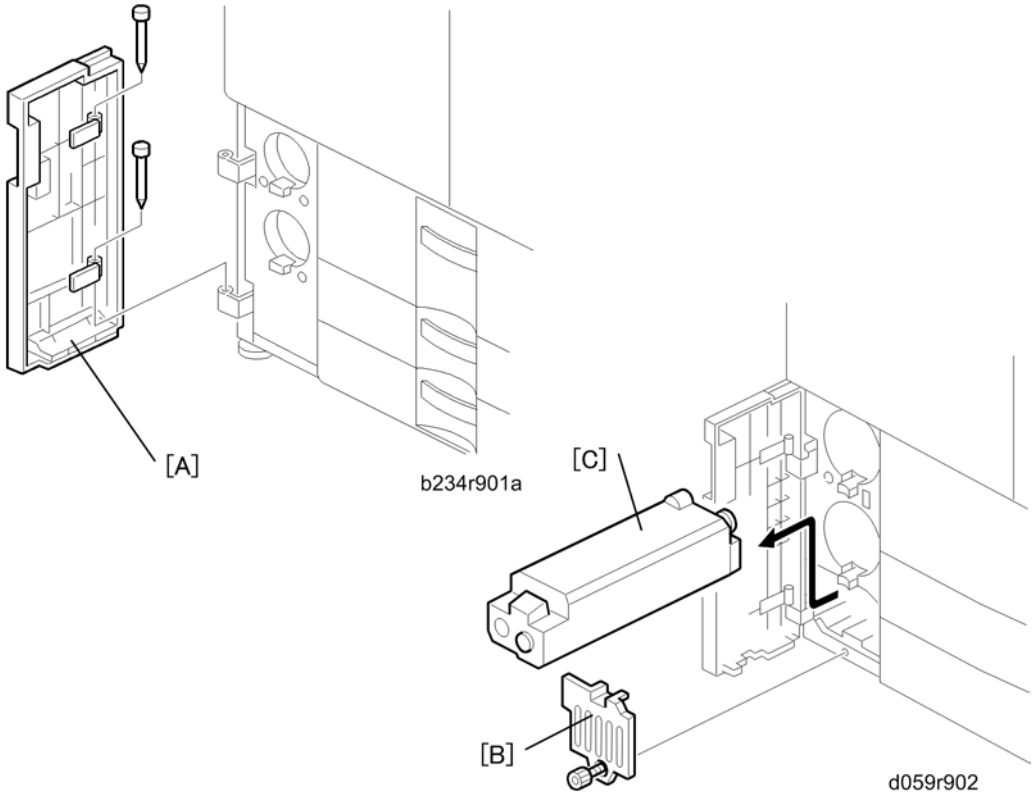
Remove:

- Duplex entrance guide unit (☛ p.385)

[A]: Relay sensor (x1, x1)

Toner Bank

Toner Collection Bottle



1. Toner bank door [A] (pins x 2).
2. Waste toner bottle cover [B] (x Knob 1).
3. Toner collection bottle [C].

Toner Bank Unit

Note

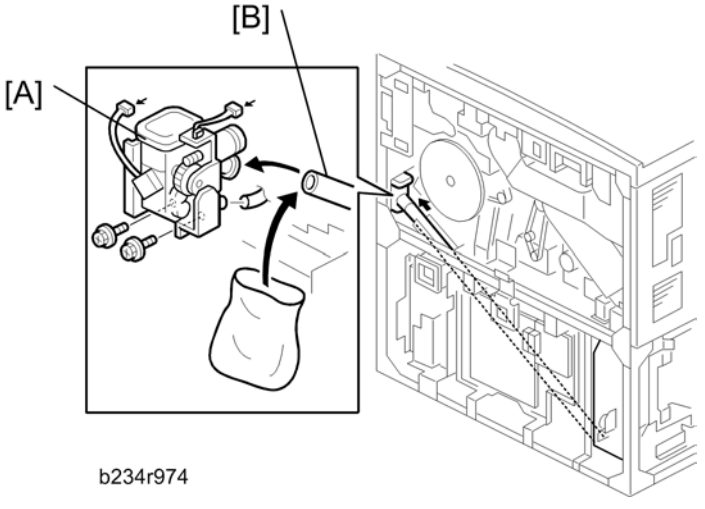
- Work carefully to avoid spilling toner during removal.

1. Execute SP5804 041 (upper bottle) and 042 (lower bottle) to close the caps,.
2. Turn off the operation switch on the operation panel.

Note

- You will not be able to remove the toner bottles if you switch off the main power switch on the front of the machine.

3. Remove the toner bottles from the bank.
4. Remove the rear cover.
5. Open the controller box (x 3).
6. Open the PSU box (x 2).
7. Left lower cover, right upper cover.



8. Remove the toner supply cylinder [A]. (x 2, tubes x 2)

Note

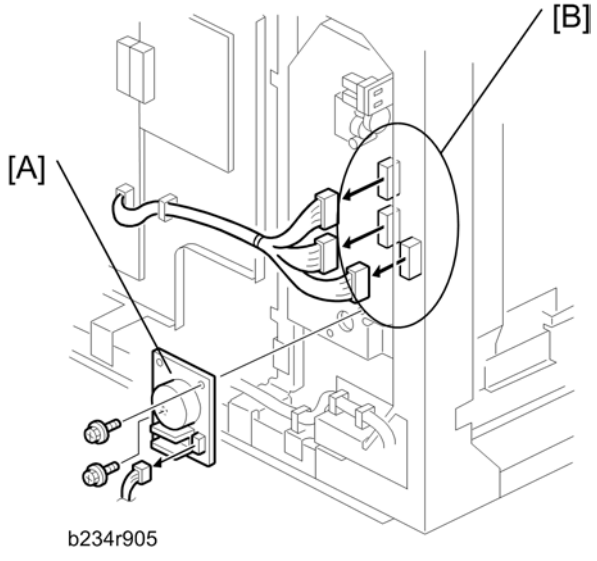
- Work carefully to avoid spilling toner.

9. Cover the end of the toner transport coil tube [B] with a plastic bag.

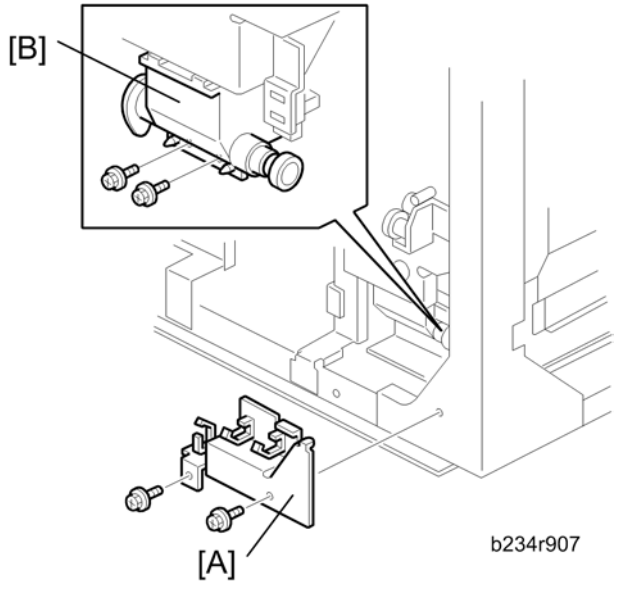
Important

- **To avoid toner spillage, hold the end of the disconnected tube up.**
- **Do not to bend the toner transport coil tube [B].**
- **If it is bent, this could overload, lock, or damage the coil.**
- **SC592 (Toner Bank Motor Error) will be displayed, and the coil (screw) inside should be replaced.**

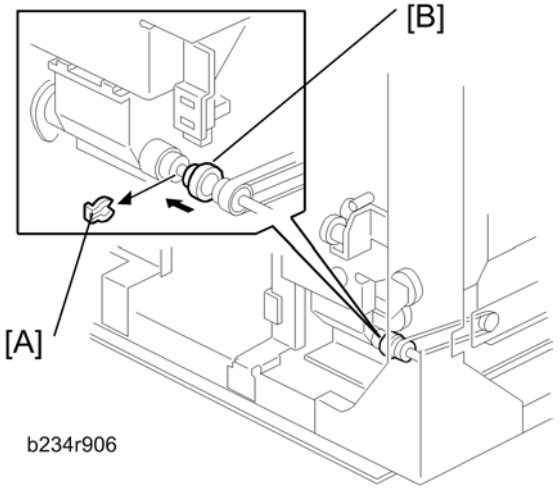
10. Turn on the operation switch and execute SP5804 038 and 039 to discharge toner from the toner bank.
11. Turn off the main switch and unplug the power cord.



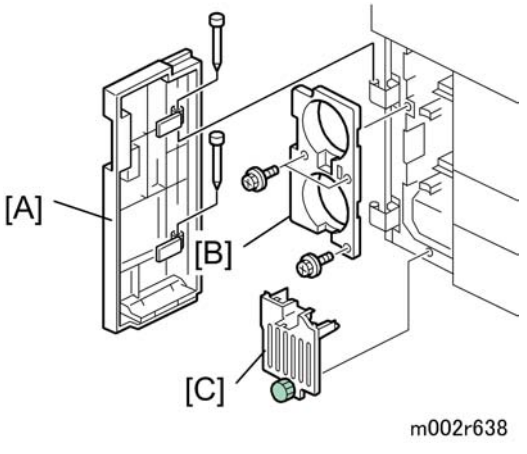
12. Toner bank motor [A] (x 2, x 1)
13. Connectors [B] (x2, x 3).



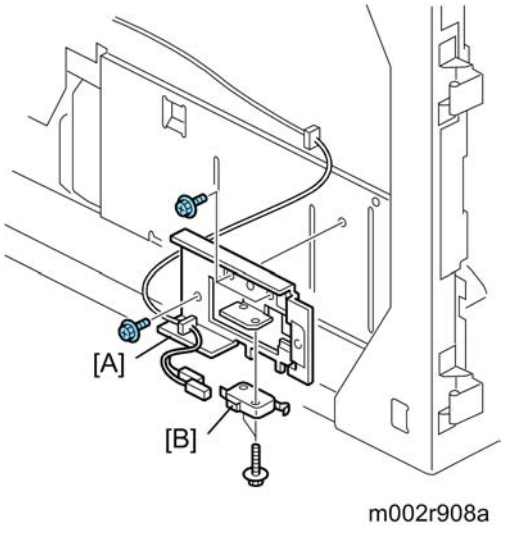
14. Harness clamp bracket [A] (x 2, x 3).
15. Toner transport coil casing [B].



16. Snap ring [A]
17. Slide coupling [B] to the left.



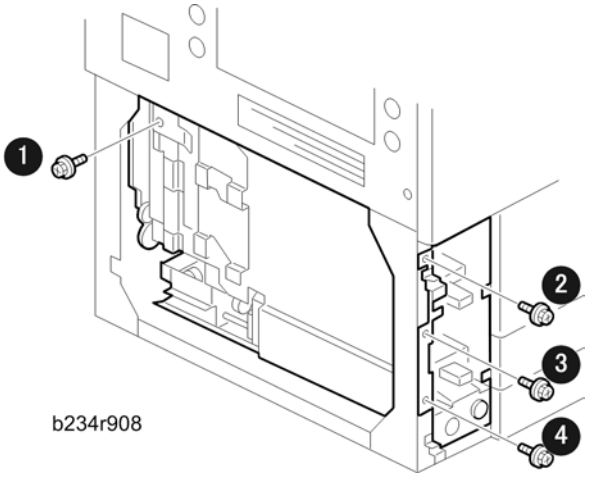
18. Remove:
    [A] Toner bank door (Pins x 2)
    [B] Toner bottle cover (x 2)
    [C] Used toner collection bottle cover (Knob screw x1)



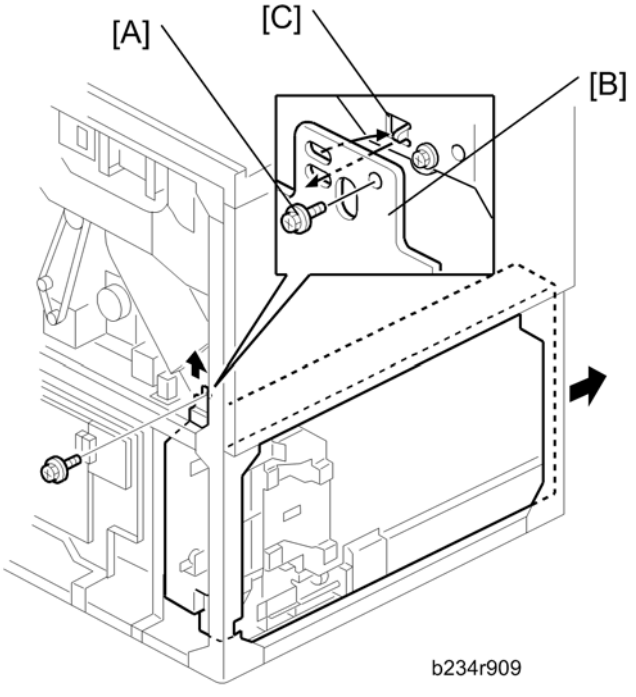
19. Remove:

    [A] Switch bracket (x 2)

    [B] Microswitch (x 2, x2)



20. Remove screw (1) and screws (2), (3), (4) that secure the toner bank unit.



21. Screw [A] securing the toner recycling and collection casing [B].
22. Remove the interlock switch unit (x 1, x 1, x 1).
23. Lift the toner recycling and collection casing [B], pull out the pin [C] from the hole under the case, then pull out the toner bank unit.

Important

- **When pulling out the toner bank unit, toner may leak out of the junction between the tube and toner bank.**
- **Place a cloth on the machine bottom plate so that the plate does not become dirty.**
- **Set the toner bank unit on a sheet of paper or cloth.**
- **Make sure that the clamp is not released when pulling out the toner bank unit.**
- **Pull out the paper tray about 20 cm before pulling out the toner bank unit.**

After Re-installing the Toner Bank Unit

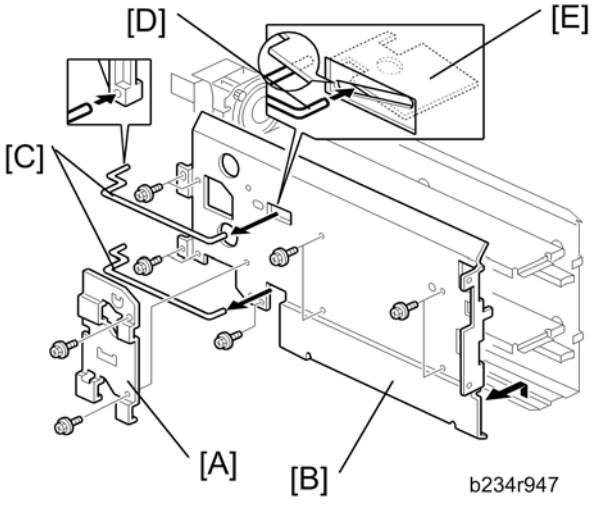
1. Remove the plastic bag from the toner transport coil tube. Re-connect the toner supply cylinder to the toner transport coil tube (x 2, tubes x 3).
2. Turn the main power switch on.
3. Load the toner bottles into the toner bank.
4. Start to supply toner from the toner bank to the toner hopper:

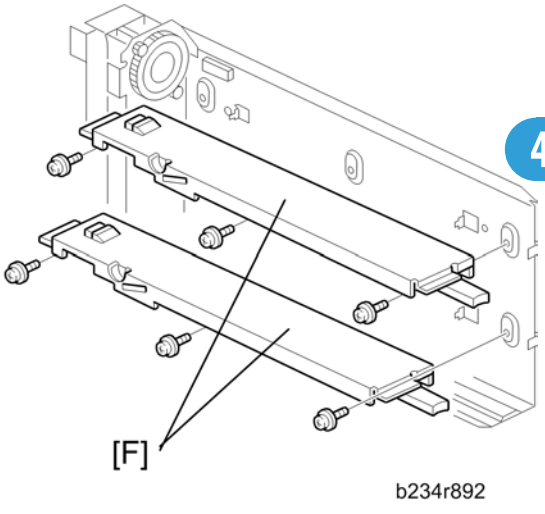
   1) Select SP2207 002 (Toner Bank Toner Setup).

2) Press "Execute" on the LCD.

This procedure supplies toner to the toner hopper and the toner transport path. It will stop automatically in about 6 minutes. If SP2207 002 fails after SP2801 is completed (an SC code is displayed), repeat only SP2207 002.

Access To Inside the Toner Bank





Note

- The toner bottle sensors and toner collection bottle sensor are inside the toner bank.

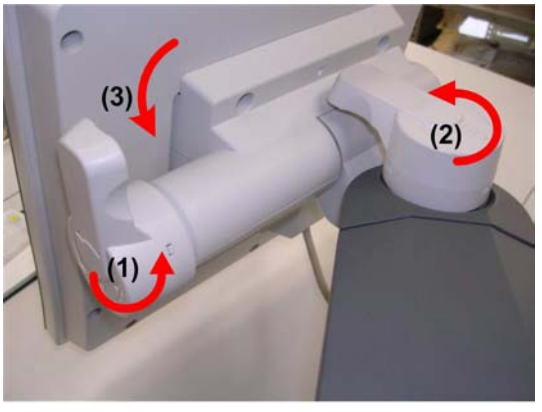
1. Toner bank. (☛ p.389 "Toner Bank Unit")
2. Toner release link bracket [A] (x 2).
3. Left side plate [B], disconnect two links (x8 M4x8, x2 M3x6, x1, x1)

   Note

   - When re-attaching the links [C], place the front pin [D] under the lock plate [E].
4. Toner bottle bottom plates [F] (x 3 each).

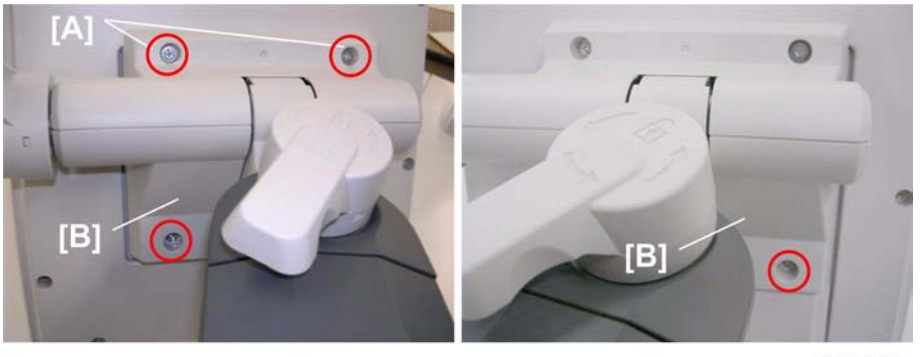
Boards, HDDs

OPU (Operation Panel Unit)



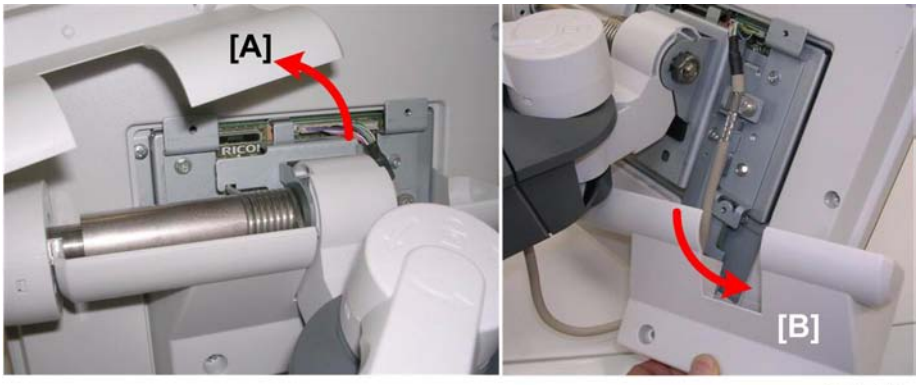
m002r951

1. Switch off the machine and disconnect the power cord.
2. Loosen the angle adjustment lever (1) and horizontal adjustment lever (2).
3. Tilt the operation panel (3) down so you can see the screws on the back.



m002r952

4. The base top cover [A] and base bottom cover [B] are fastened by two screws each.

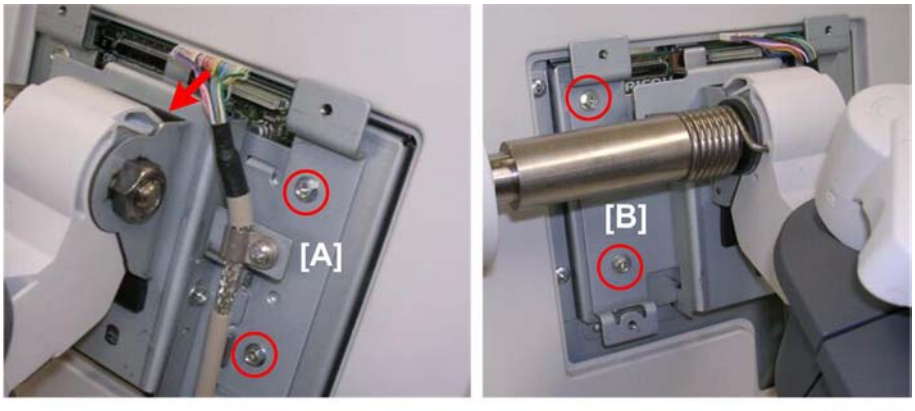


m002r953

5. Remove:

   [A] Base top cover (x2)

   [B] Base bottom cover (x2)

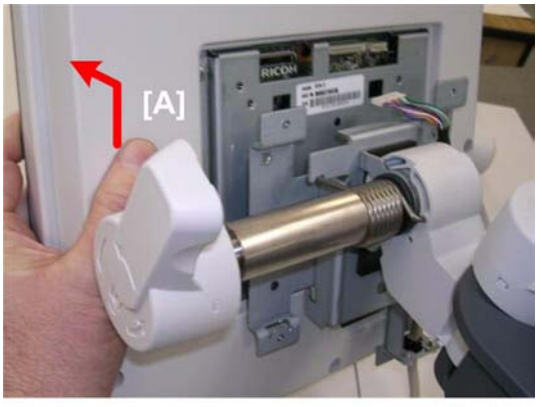


m002r954

6. Disconnect the base plate:

   [A] Right side (x1, x2)

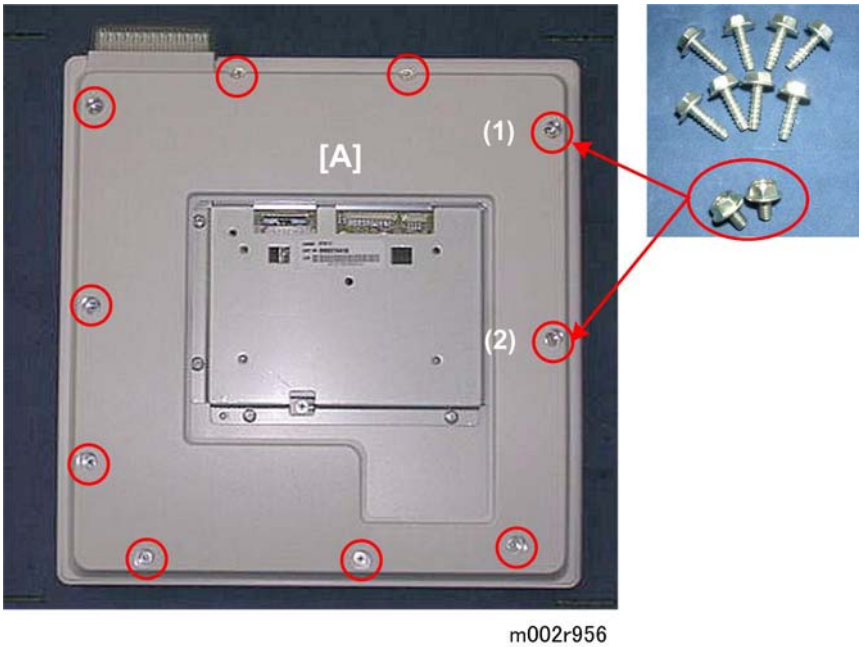
   [B] Left side (x2)



m002r955

4

7. Lift the operation panel [A] off its hooks (x2) and set it on a flat, clean surface.

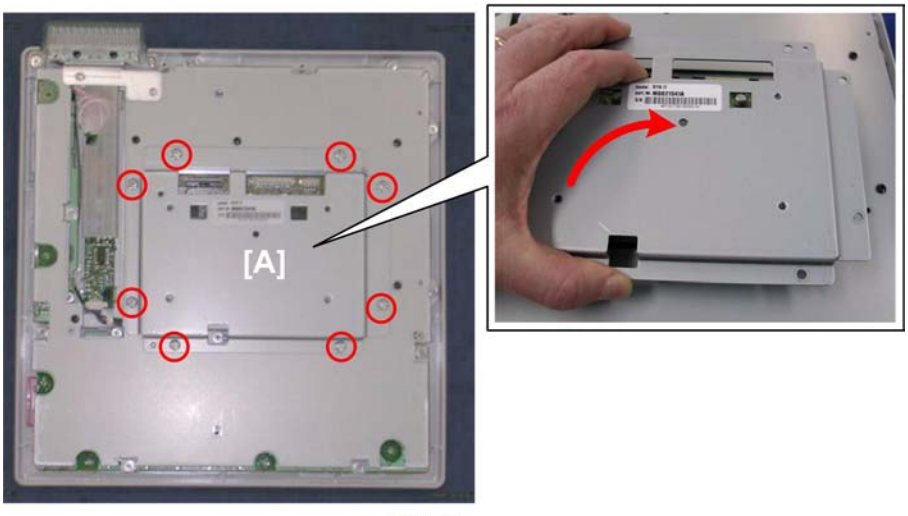


m002r956

8. Remove rear cover [A].

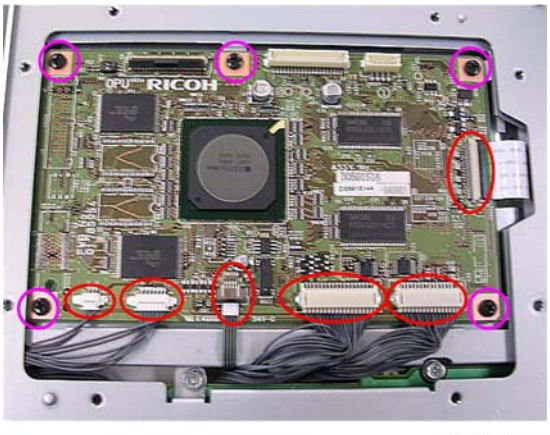
Note

- The screws at (1) and (2) are short screws with narrow pitched threads.



m002r957

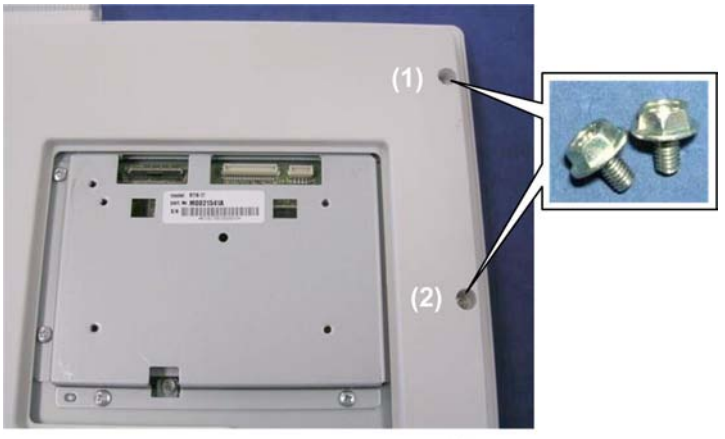
9. Remove the OPU cover [A] (x8).



m002r958

10. Remove the OPU (x6, FFC x2, x5)

Re-installation



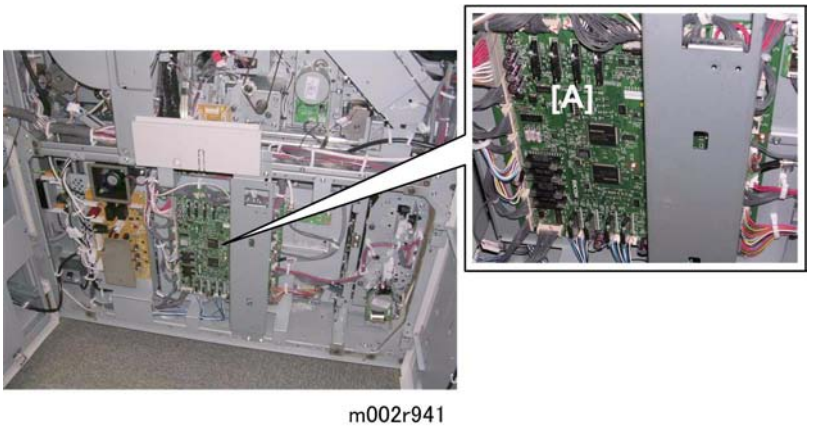
m002r959

1. Be sure to re-attach the short screws at (1) and (2).

IOB

IOB

1. Open:
    - Controller box (☛ p.272)
    - PSU box (☛ p.280)

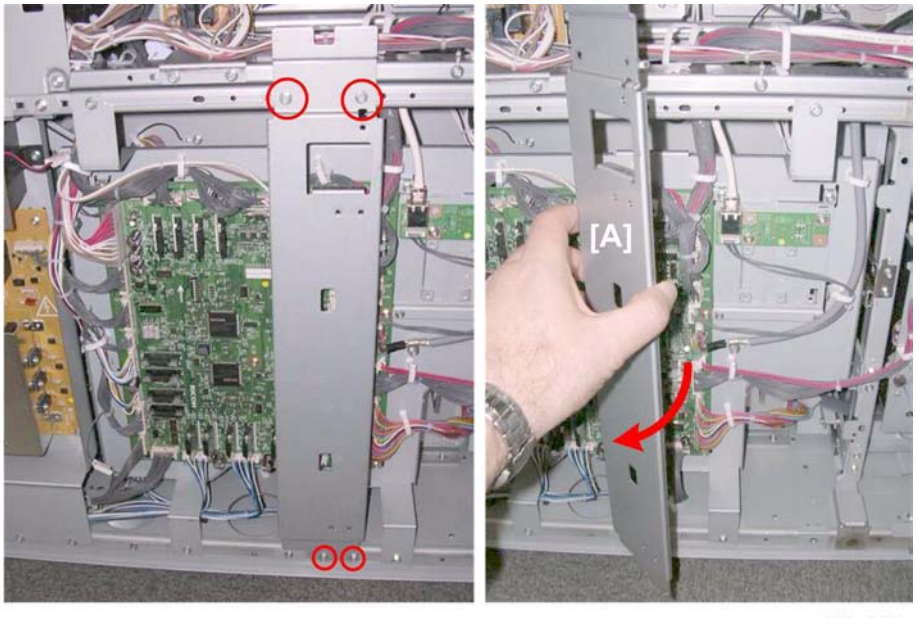


m002r941

The IOB [A] is at the bottom center.

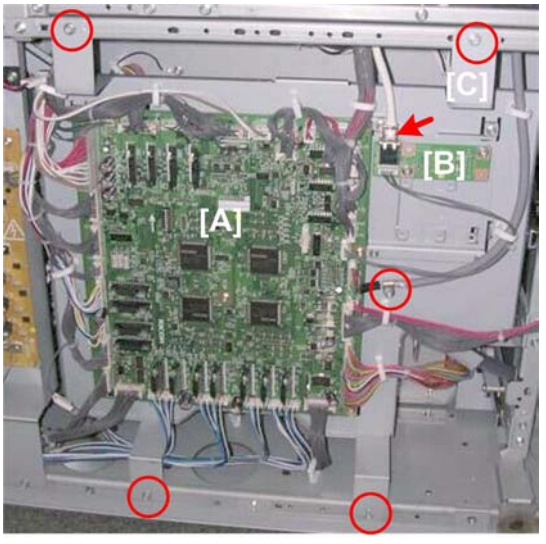
m002r942

2. Remove plate [A] (x1).



m002r943

3. Remove center stay [A] (x4).



m002r944

4. Disconnect the IOB [A] (x9, x31).
5. Disconnect the accessory light relay board [B] (x1).

Note

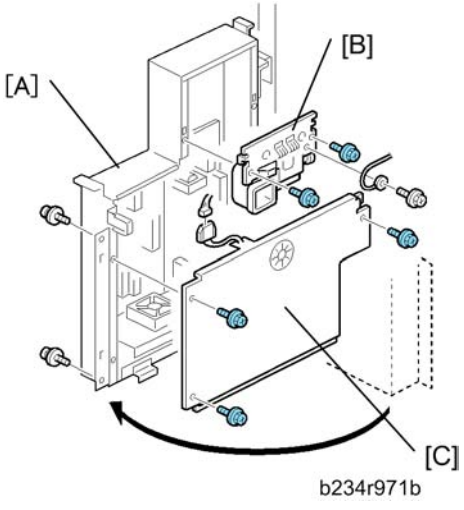
- You will see this relay board [B] only if the accessory light has been installed.

6. Remove the IOB bracket [C] with the IOB attached (x5.)

PSU-E (Engine): A, B

⚠CAUTION

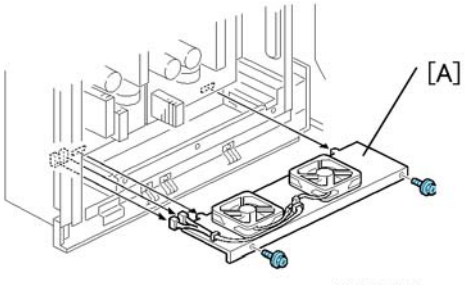
- Before replacing any part of the PSU (especially PSU Ea, PSU Eb), switch the machine off, disconnect it from the power source, and allow the machine to stand at least 10 minutes before you open the PSU box.
- Letting the machine stand for 10 minutes allows residual charges to dissipate from the large capacity electrolytic condensers on PSU Ea, Eb.

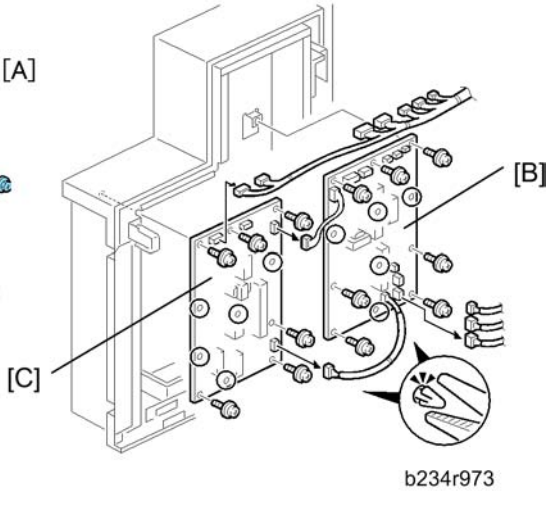


1. Open the PSU box [A] (x 2). (p.280)
2. Remove

   [B]: Duct, ground wire (x3)

   [C]: PSU cover (x3, x1)





[A]: Fan motor unit (x3, x2)

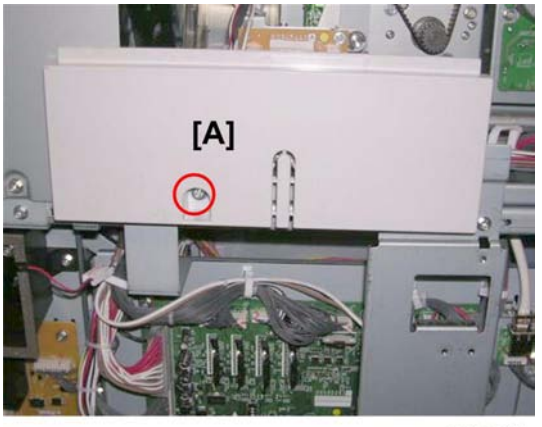
[B]: PSU-Ea (x7, x10, Standoffs x5)

[C]: PSU-Eb (x6, Standoffs x4, x2)

PPG, CGB Power Packs

Preparation

- Open the controller box (x5) (p.272)
- Open the PSU box (p.280)
- Remove rear upper cover (x4)

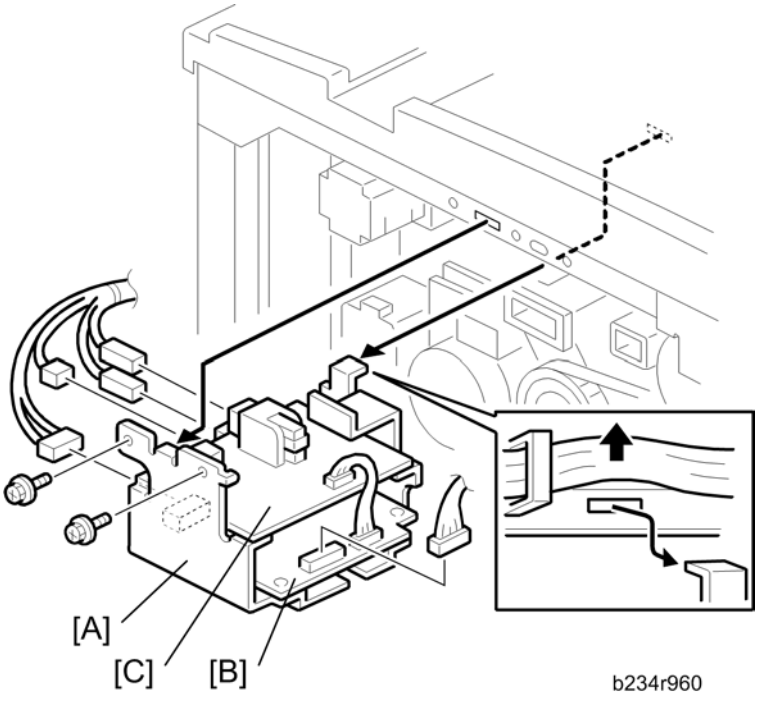


m002r963

1. Remove plate [A] (x1).

d059r960

2. Remove bracket [A] (x4).
3. Remove power pack fan [B] (x2, x1)



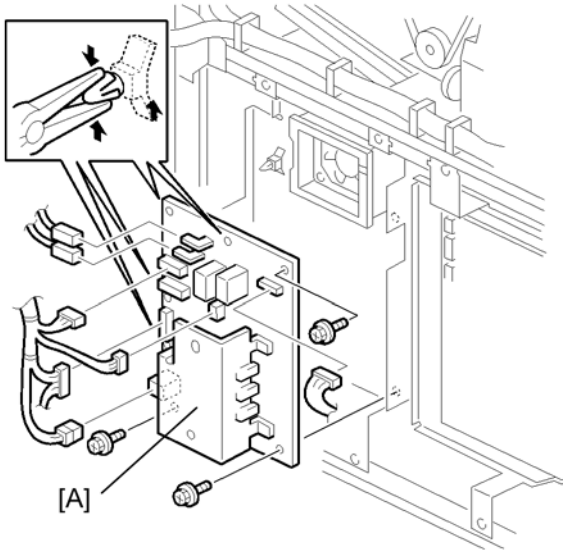
4. Remove:

   [A] Power pack unit (x2, x5)

   [B] CGB power pack (x4, x1)

   [C] PPG power pack (x4, x1)

AC Drive Board



d059r951

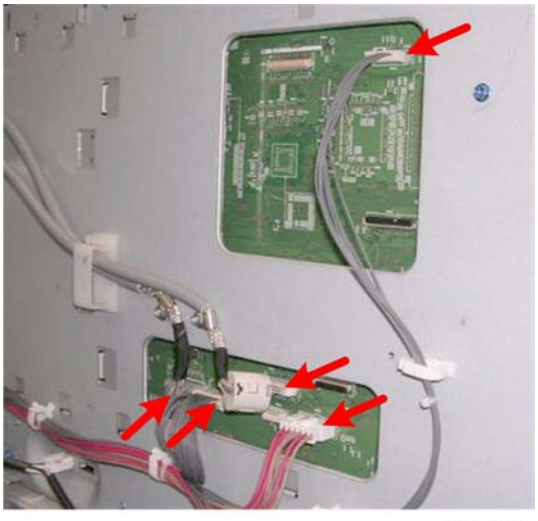
1. Open the PSU box (x 2). (p.280)
2. AC drive board [A] (x6, x3, Standoffs x3)

BICU

1. Open the controller box (x5) (p.272)

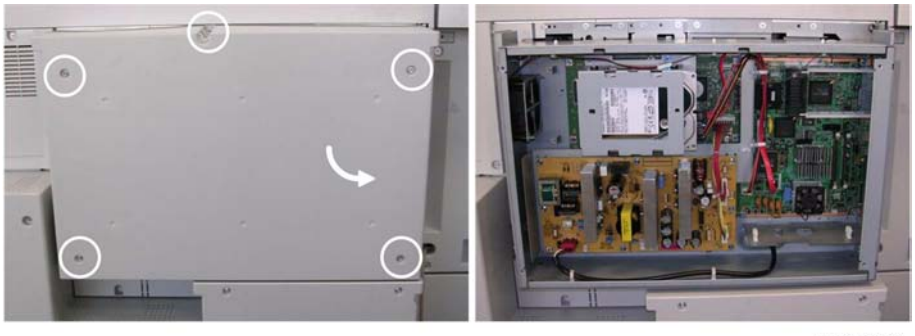
d059r910

2. Disconnect the cover plate [A] (x4).
3. Lift the plate slightly to disengage the top hooks and remove it.



m002r945

4. Disconnect the board behind the controller box door (x5).

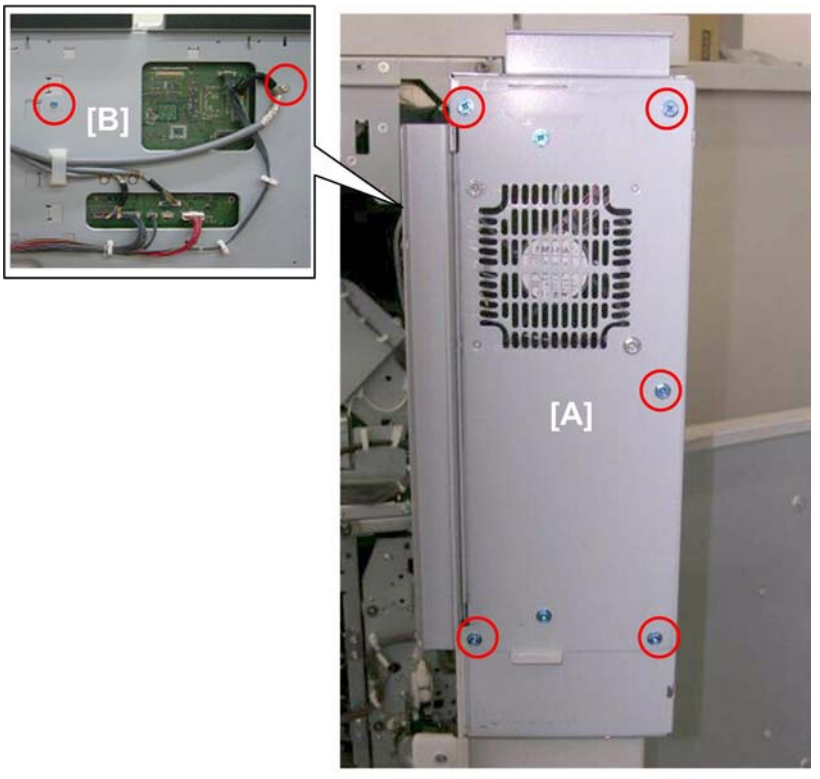


d059r903

5. Remove the controller box upper cover (x5).

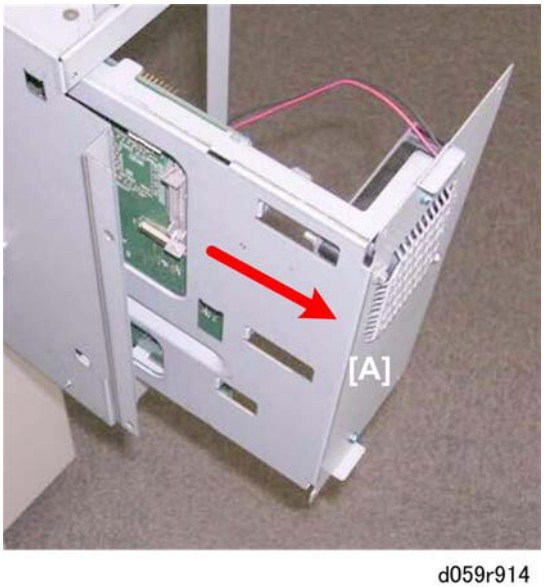
d059r912

6. Disconnect the BICU (Base Image Control Unit) [A] (x3, x1).



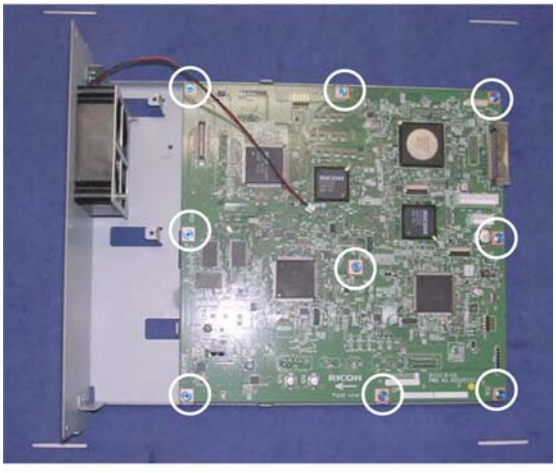
m002r946

7. Disconnect the faceplate [A] (x6).
8. Remove the screws [B] on the other side where the connector cover plate was removed (x2).



d059r914

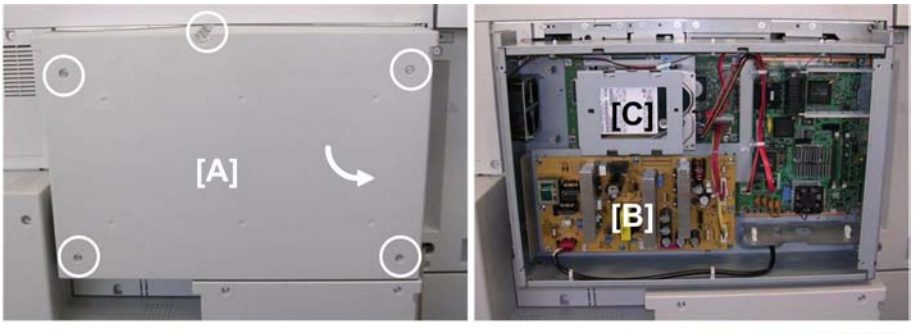
9. Slowly pull out the faceplate [A] with the board attached.



d059r915

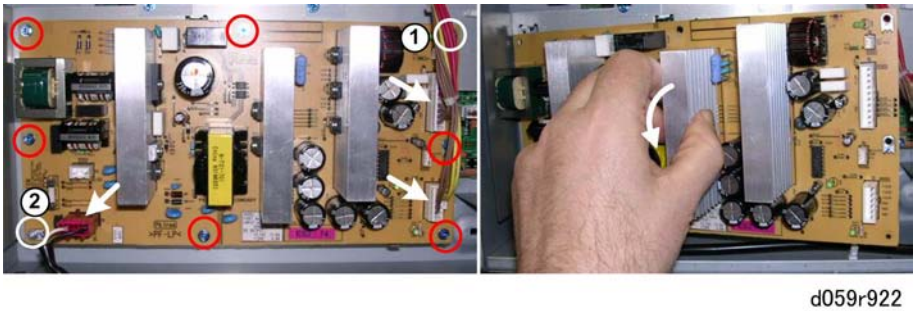
10. Disconnect the board from the bracket (x9).

PSU-C



d059r921

1. Remove the controller box upper cover [A] (x5). The PSU-C [B] is below the HDD [C].

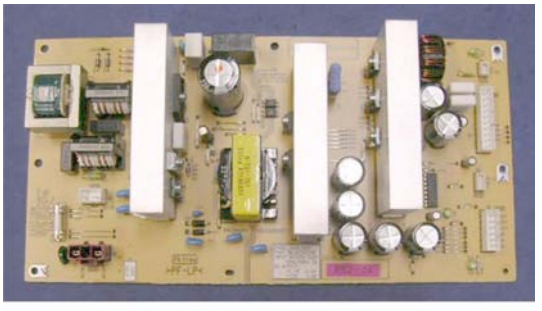


d059r922

2. Disconnect and remove the board (x8, x3).

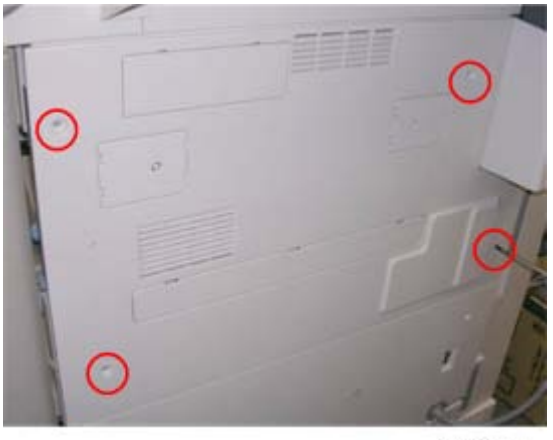
Important

- The screws at (1) and (2) are silver screws.
- These are ground screws and must be re-attached at the same positions.



d059r923

URB



d049r911

1. Remove right upper cover (x4).

d049r912

2. Remove:

   [A] Plate (x1)

   [B] Fan (x1, x1)

d049r913

3. Remove:

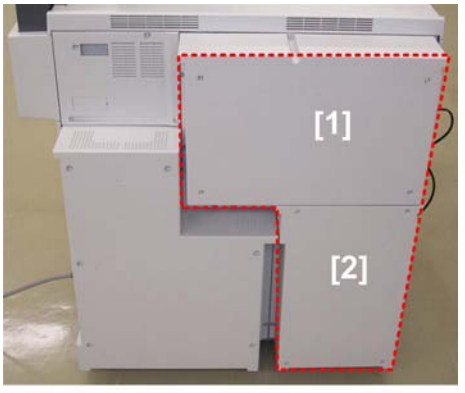
   [A] Cover (Hooks x4)

   [B] URB (x4, x1)

GW Controller

This section describes the replacement of these items for the GW Controller:

- GW Controller board
- GW Controller NVRAM
- GW Controller HDD



m002r999

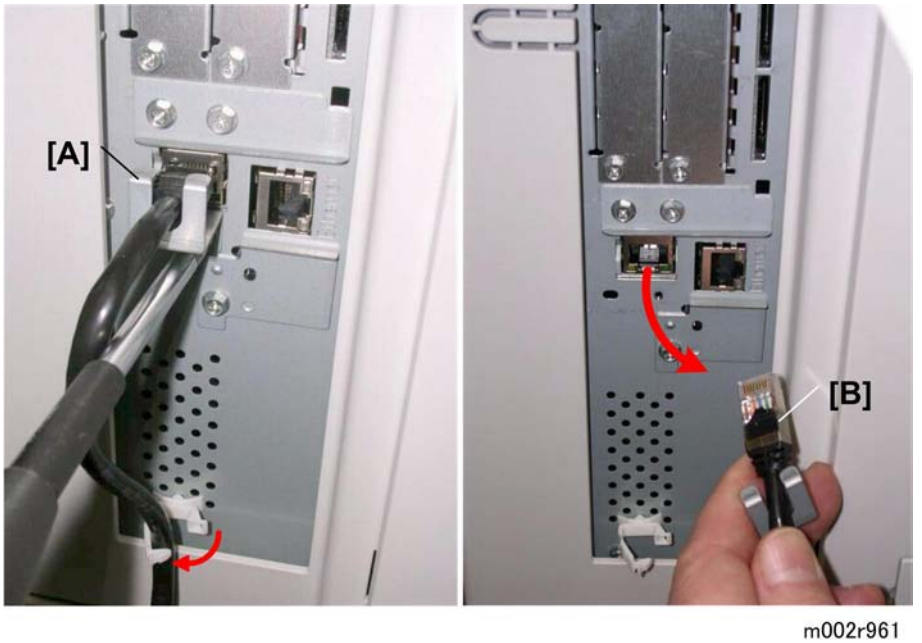
4

The GW controller [1] is in the controller box door above the Egret controller [2].

GW Controller Board

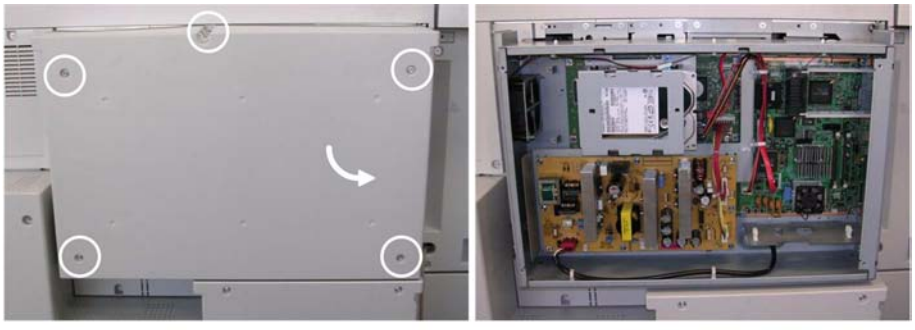
Important

- When replacing the old GW controller board with a new GW controller board, make sure that the type of the new GW controller board corresponds with the machine type (M002: type a/ M003: type b/ M004: type c).



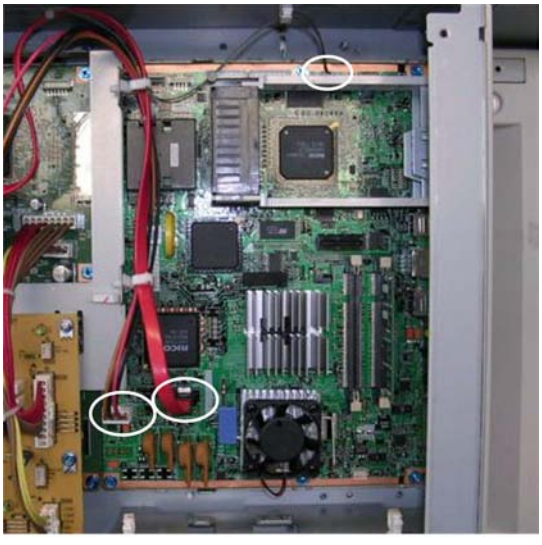
m002r961

1. Remove clamp [A] (x1).
2. Disconnect the cable [B] from the Egret controller below (x1, x1).



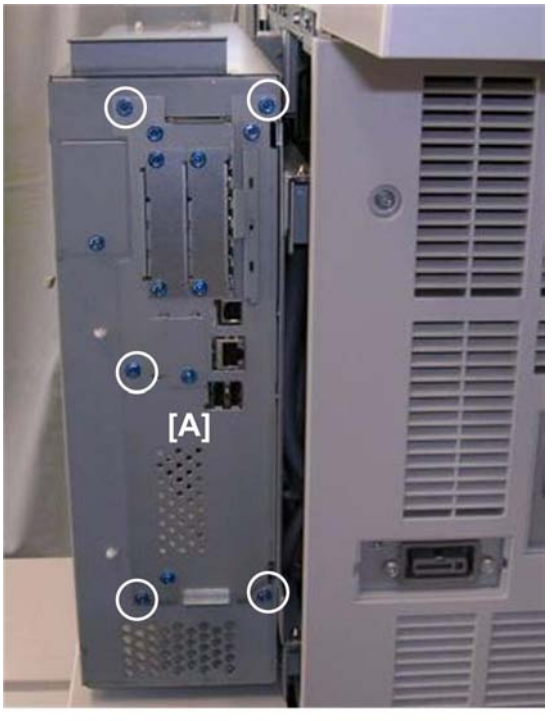
d059r903

3. Remove the controller box upper cover (x5).



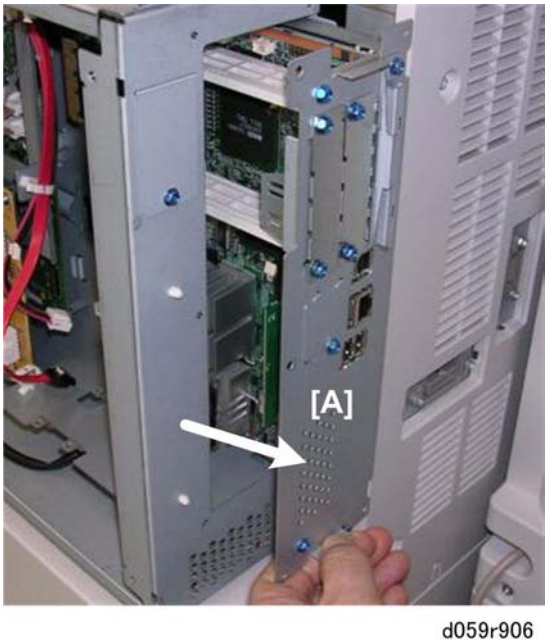
d059r904

4. Disconnect the board (x3).



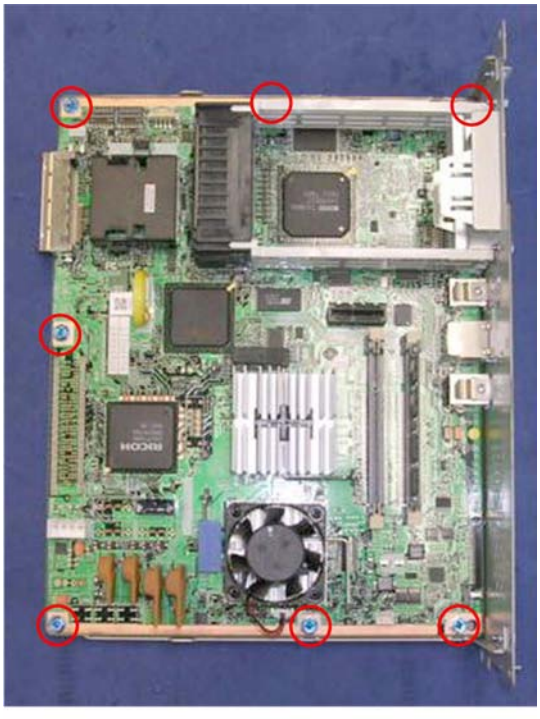
d059r905

5. Disconnect faceplate [A] (x5).



d059r906

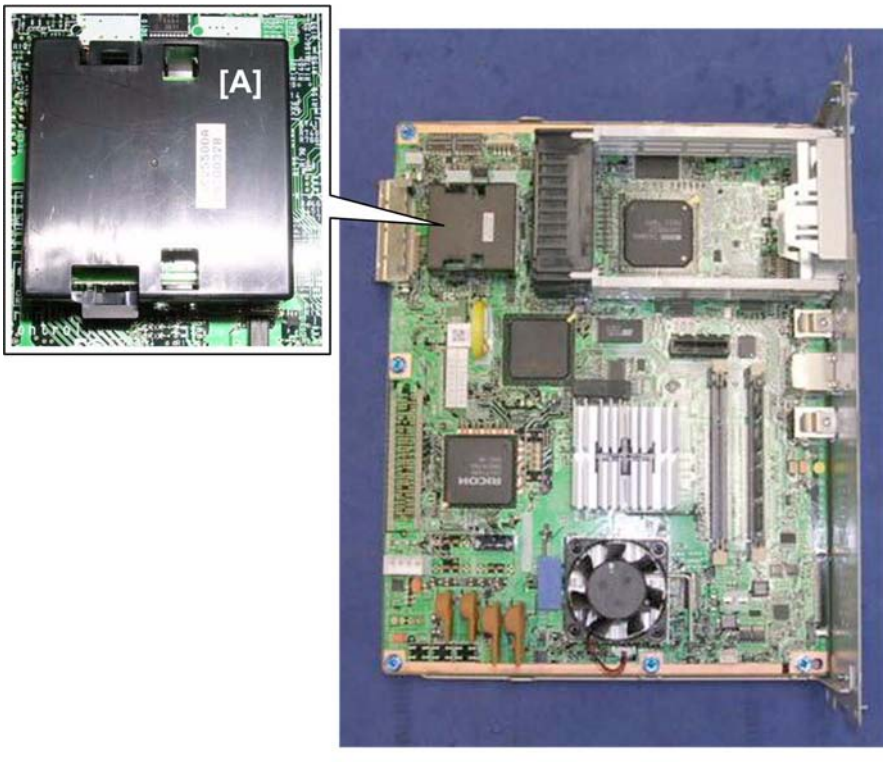
6. Slowly remove the faceplate [A] with the board attached.



d059r907

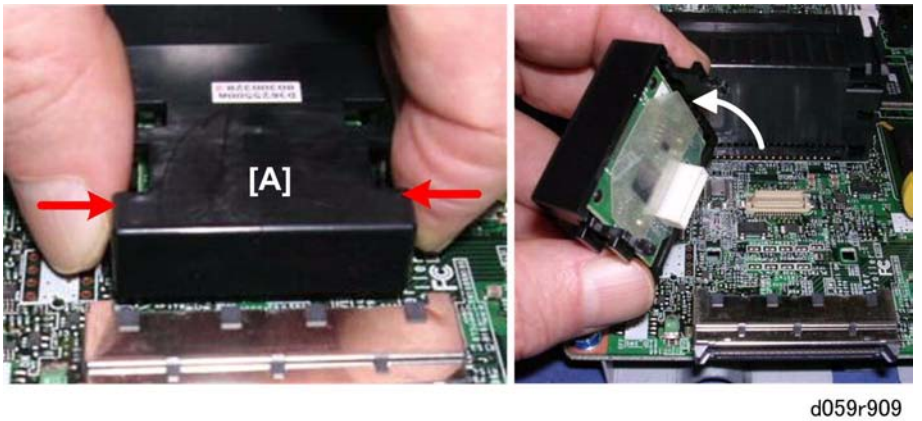
7. Disconnect the board from the faceplate (x7).

GW Controller NVRAM



d059r908

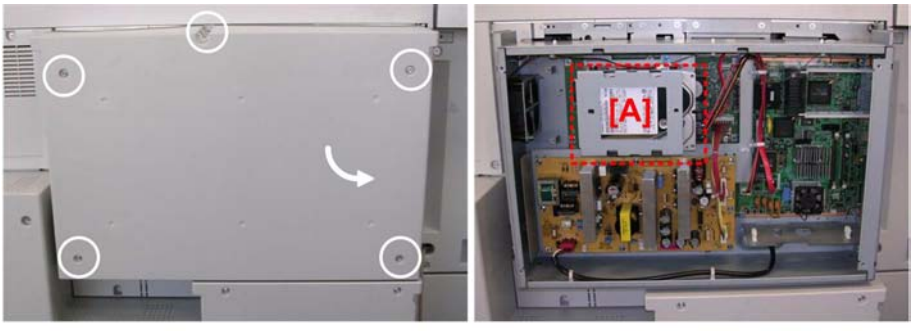
The NVRAM [A] is located at the corner.



d059r909

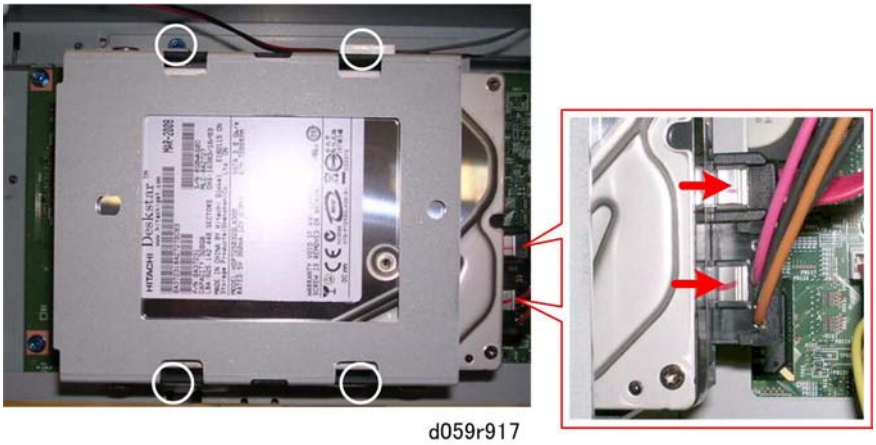
1. Press both sides of the NVRAM [A] to release the tabs and remove it.

GW Controller HDD



d059r916

1. Remove the controller box upper cover (x5). The HDD is at [A].



d059r917

2. Disconnect the HDD bracket (x4, x2).

d059r918

3. Lift the bracket off its hooks and remove it.

d059r919

4

4. Remove the HDD from the bracket:

   [A] Top (x2)

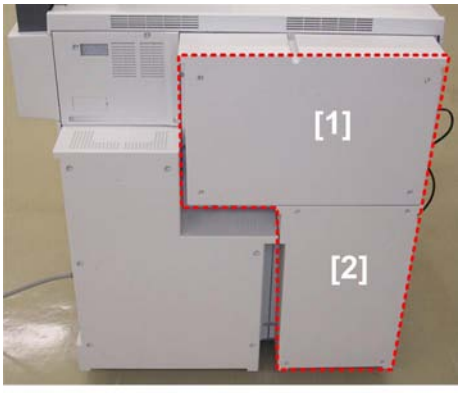
   [B] Bottom (x2)

d059r920

Egret Controller

This section describes the replacement of these items for the Egret Controller:

- Egret Controller board and DIMM
- Egret Controller HDD
- Egret Controller PSU
- Egret Controller trigger PCB



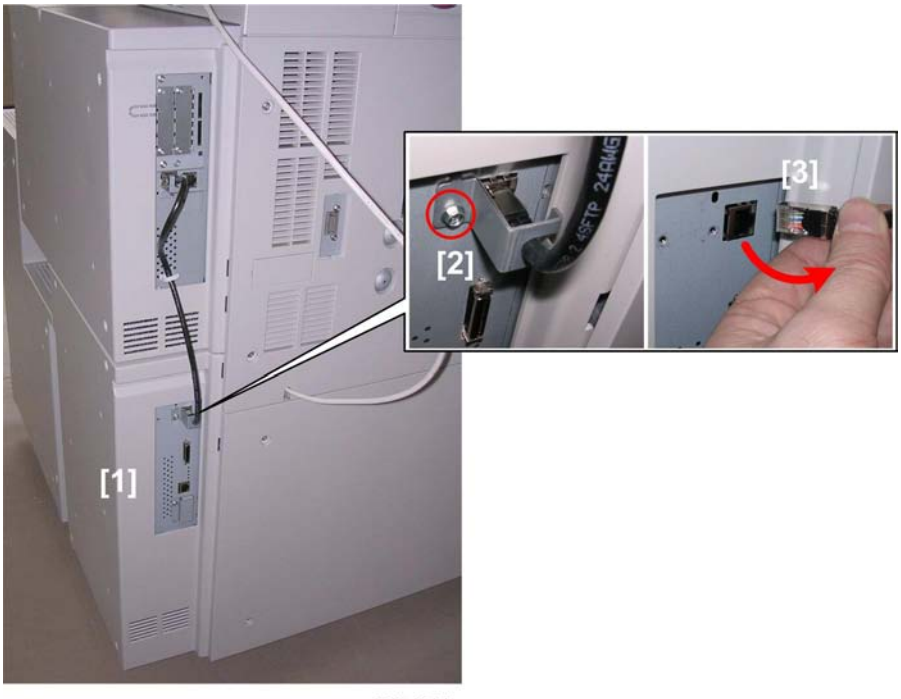
m002r999

The Egret controller [2] is in the controller box door below the GW controller [1].

Controller Box Bottom Cover

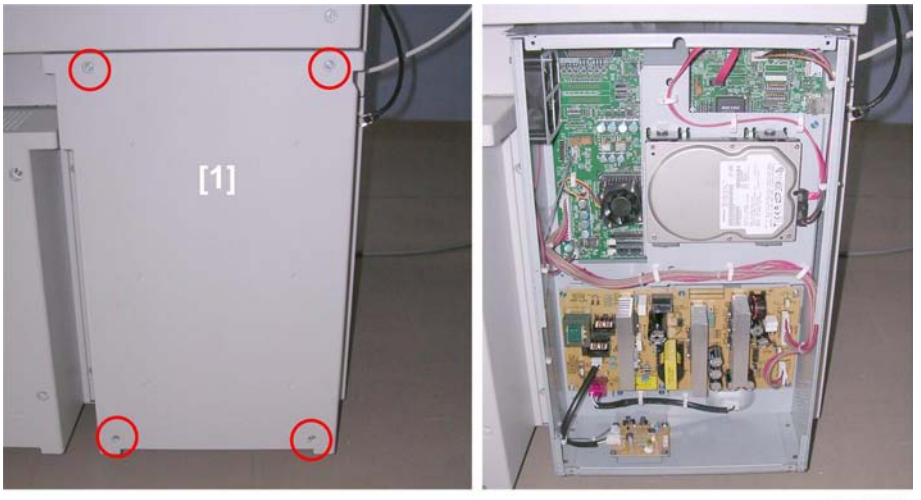
Preparation

- Turn the operation power switch on the operation panel off.
- Turn the main power switch behind the left front door off.
- Unplug the machine power cord from the power source.



m002r901

1. On the bottom of the controller box [1], remove the plate [2] and disconnect the Egret controller [3] (x1, x1).
2. If there are any other cables connected at [1], disconnect them.



m002r902

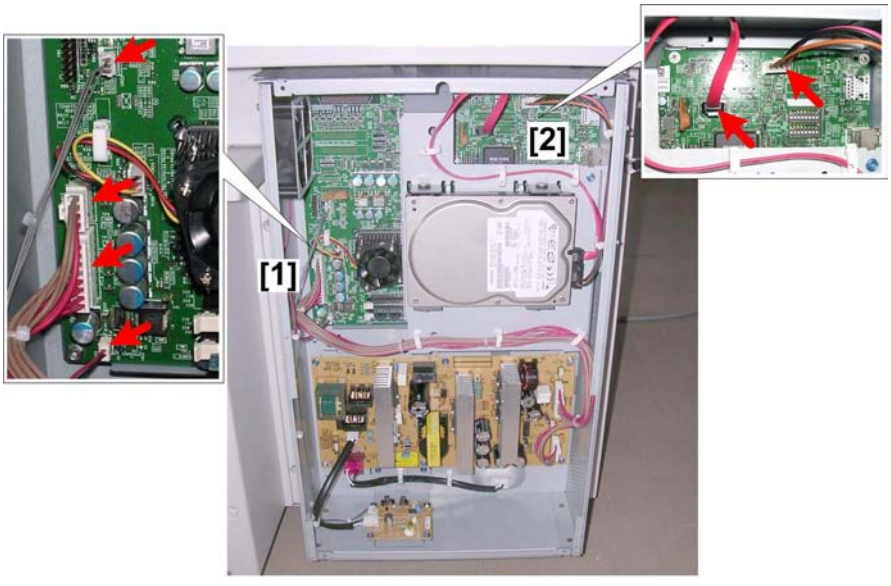
3. Remove the bottom cover [1] (x4).

Egret Controller Board, DIMM

Preparation

- Turn the operation power switch on the operation panel off.
- Turn the main power switch behind the left front door off.
- Unplug the machine power cord from the power source.
- Remove the controller box bottom cover. (p.419)

To remove the board

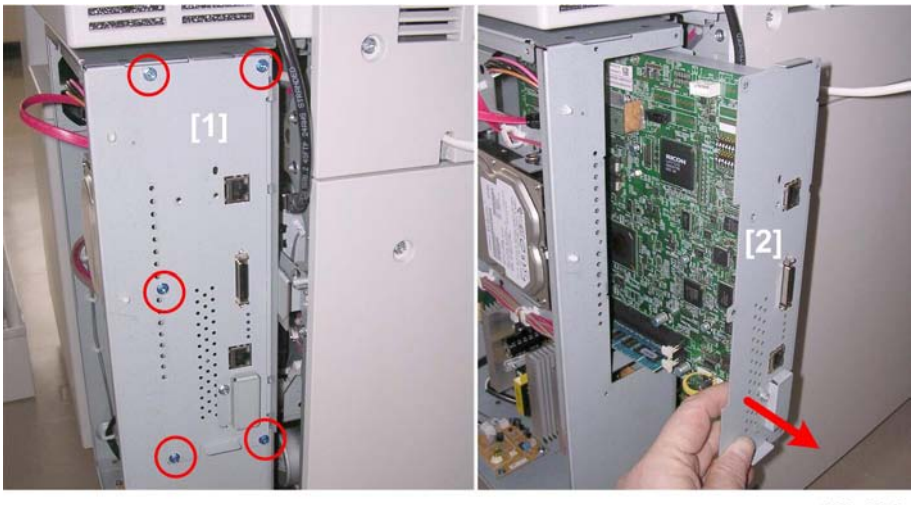


m002r903

1. Disconnect:

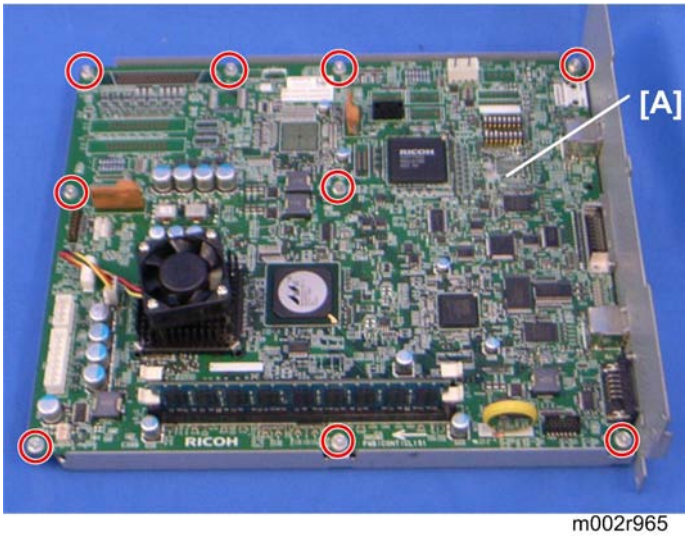
   [1] Lower left (x4)

   [2] Upper right (x2)



m002r904

2. Remove faceplate [1] (x5).
3. Pull out the board bracket and faceplate [2] slowly.



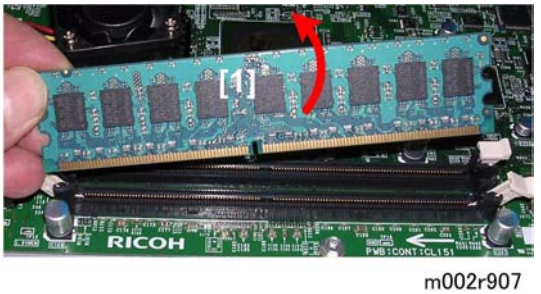
m002r965

4. Remove the egret controller board [A] from the bracket (x9)

To remove and re-insert the DIMM

m002r906

1. Press down the latches on each side of the DIMM [1].



m002r907

2. Lift the edge connector of the DIMM [1] out of its socket.

Important

- **When re-inserting the DIMM, make sure that the latches on both ends lock.**

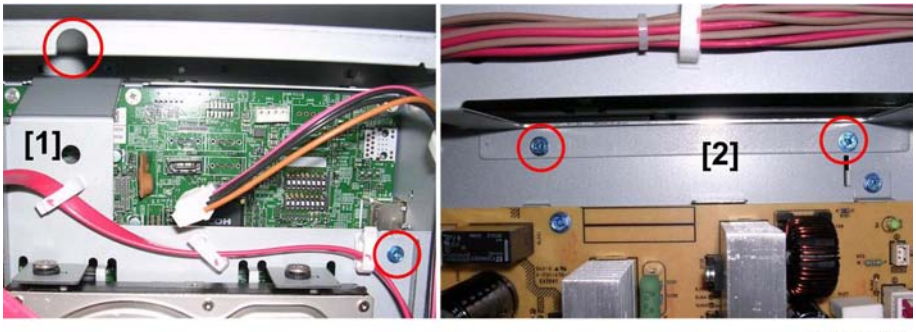
Egret Controller HDD

Preparation

- Turn the operation power switch on the operation panel off.
- Turn the main power switch behind the left front door off.
- Unplug the machine power cord from the power source.
- Remove the controller box bottom cover. (p.419)

m002r911

1. Above the HDD, disconnect the HDD from the controller board (x2).

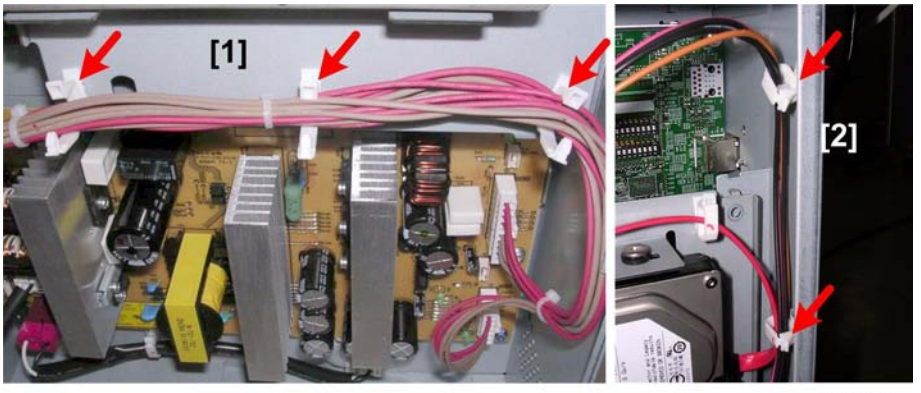


m002r912

2. Disconnect the HDD bracket.

   [1] Top (x2)

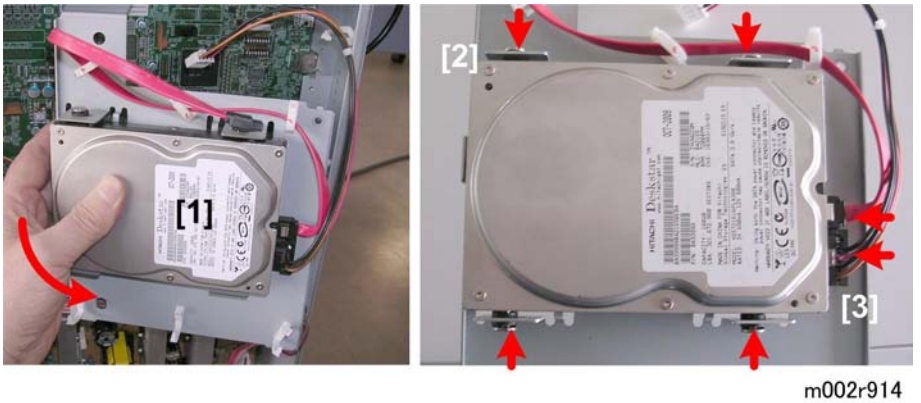
   [2] Bottom (x2)



m002r913

4

3. Release the harnesses on the HDD bracket:
   [1] Below (x3)
   [2] On the right (x2)



m002r914

4. Remove the HDD mounting bracket [1].
5. Remove the HDD from the bracket.
   [2] Screws (x4) with rubber grommets
   [3] Connectors (x2).

Egret Controller PSU

Preparation

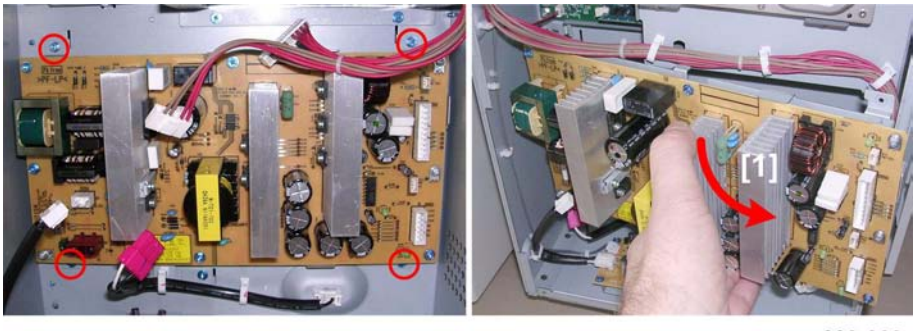
- Turn the operation power switch on the operation panel off.
- Turn the main power switch behind the left front door off.
- Unplug the machine power cord from the power source.
- Remove the controller box bottom cover. (p.419)

m002r920

1. The Egret PSU [1] is located below the controller board and HDD.

m002r921a

2. Disconnect the board [1] (x4).



m002r922

3. Remove the PSU board and mounting bracket [1] (x4).

m002r923

4. Remove the board from the mounting bracket (x8).

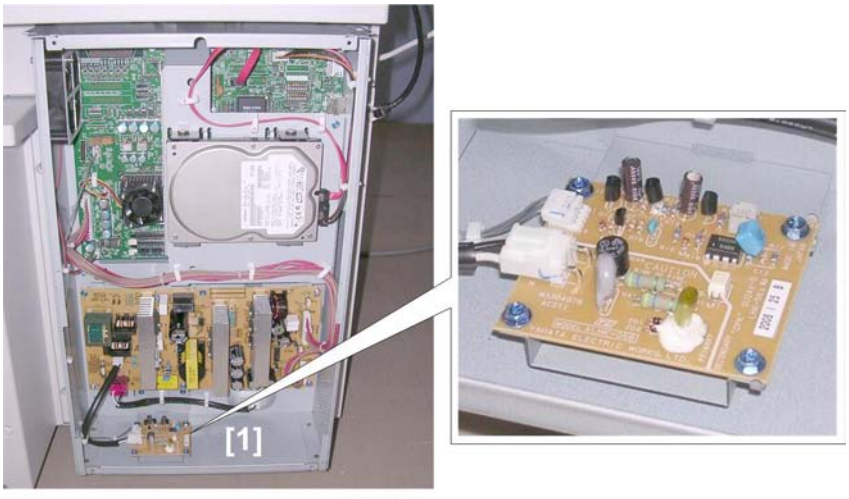
Important

- **Screws (1), (2), (3), and (4) are silver screws. Be sure to re-attach them at the same locations.**

Egret Controller Trigger PCB

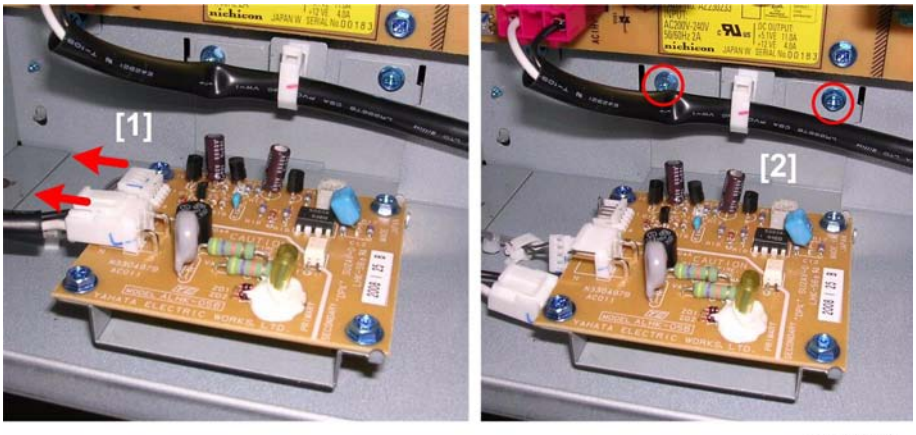
Preparation

- Turn the operation power switch on the operation panel off.
- Turn the main power switch behind the left front door off.
- Unplug the machine power cord from the power source.
- Remove the controller box bottom cover. (p.419)



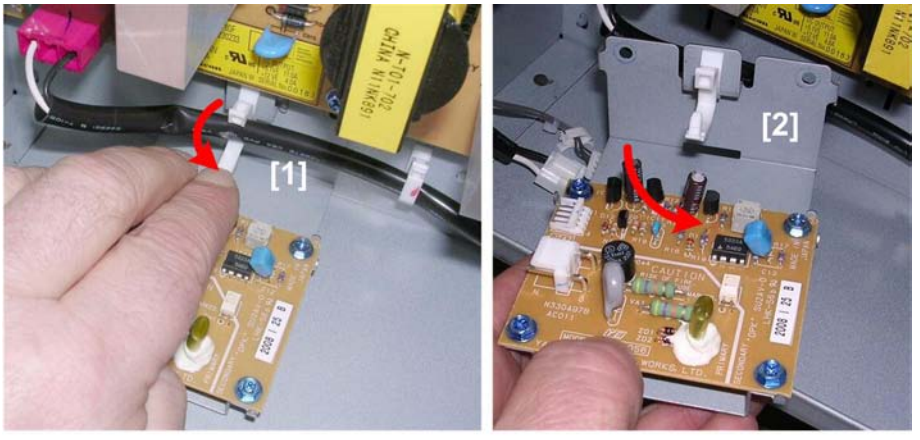
m002r930

1. The trigger board [1] is located below the Egret controller PSU.



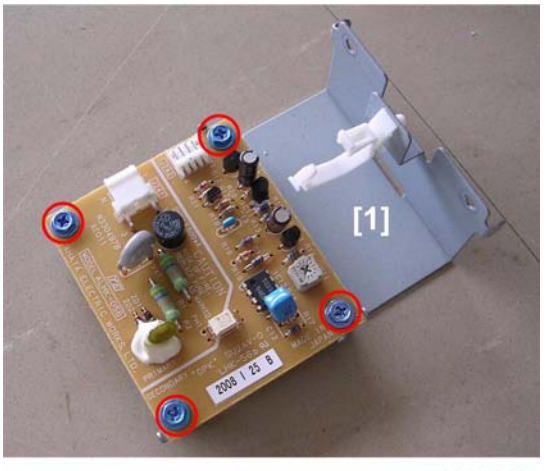
m002r931

2. Disconnect the board [1] (x2).
3. Disconnect the board bracket [2] (x2).



m002r932

4. Open the harness clamp [1] and free the harness.
5. Remove the mounting bracket and board [2].



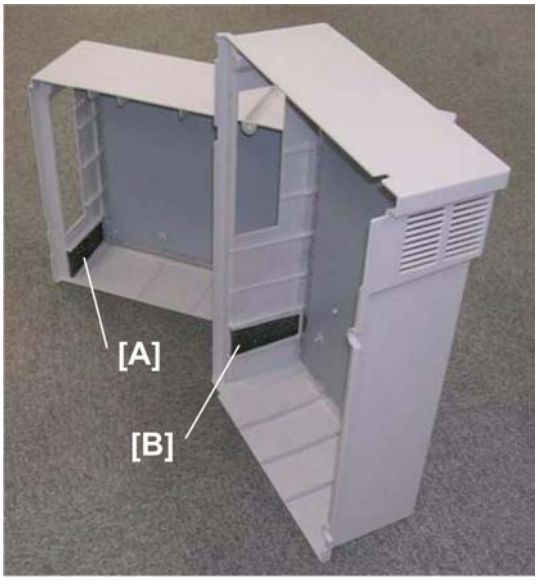
m002r933

6. Remove the board from the bracket [1] (x4).

Controller Box Filters

The controller box filters are attached to the upper and lower covers of the controller box on the back of the machine.

- Remove the upper cover of the controller box (x5).
- Remove the lower cover of the controller box (x4).



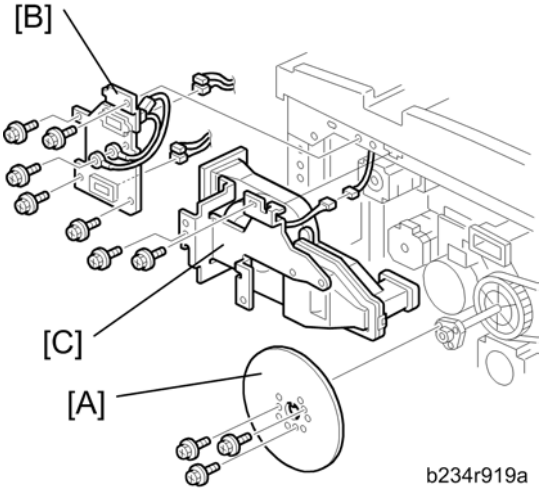
m002r934

1. Clean the filters every 500K prints.
2. Use a blower brush to clean:
   [A] Upper cover filter for the GW controller box
   [B] Lower cover filter for the Egret controller box.

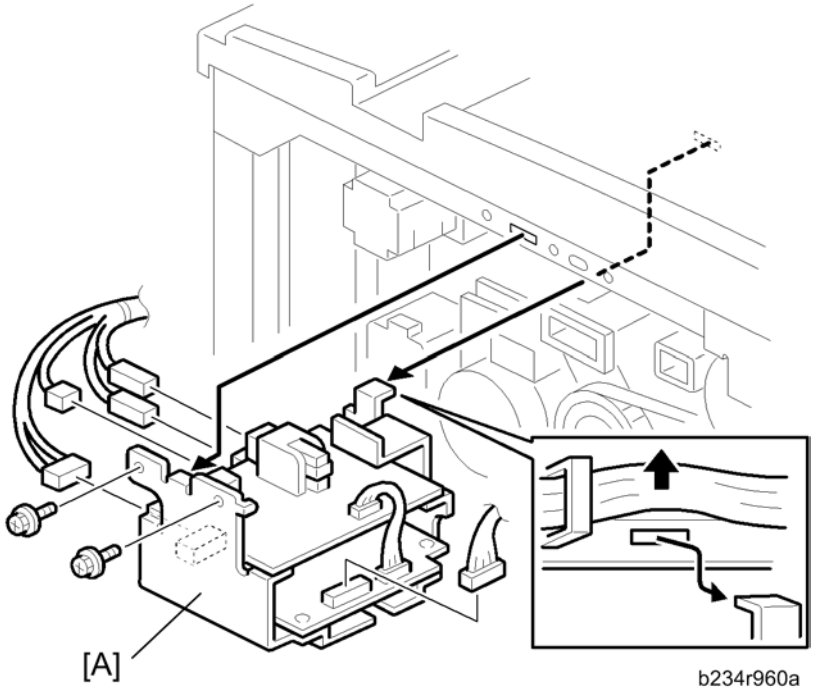
Motors

Drum Motor

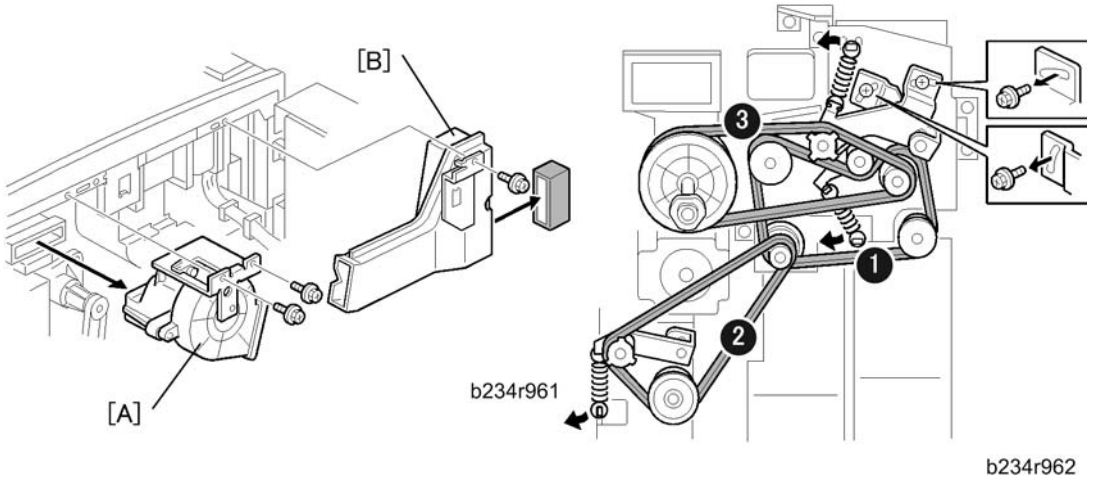
- Open the PSU box (☛ p.280)
- Open the controller box (☛ p.272)
- Remove the rear cover



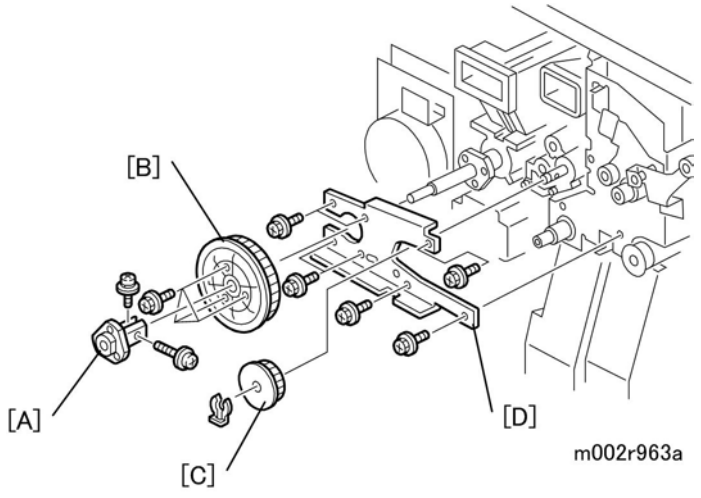
1. Remove:
    - Fly wheel [A]
    - Harness bracket [B]
    - Duct unit [C]



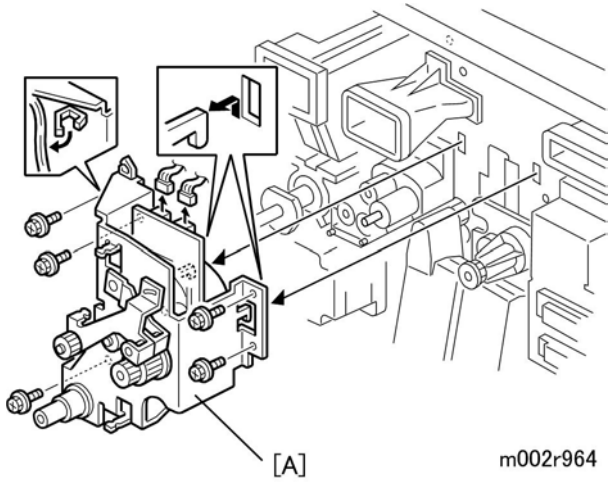
- Remove PPG and CBG power pack unit [A] (p.403 "PPG, CGB Power Packs")



2. Fan motor unit [A] (x2, x1)
3. Right duct unit [B] (x1)
4. Timing belts (1), (2), (3) (Springs x3, x 2)

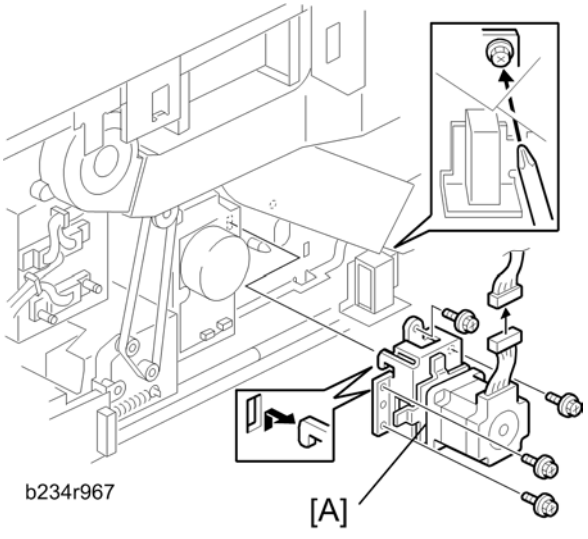


5. Flywheel holder [A] (x2)
6. Drum pulley [B] (x3)
7. Cleaning drive pulley [C] (x1)
8. Drum motor plate [D] (Tapping x4, x3)



9. Drum motor unit [A] (x2, x2, x5)
10. Drum motor (x4)

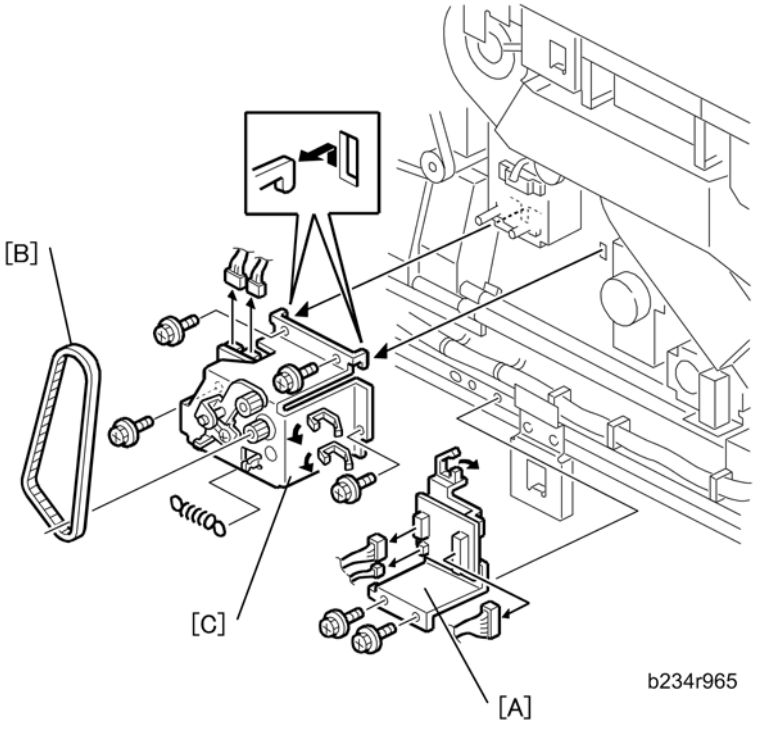
Duplex Motor



- Open the controller box (p.272)

1. Remove the duplex motor unit [A] (x4, x1)

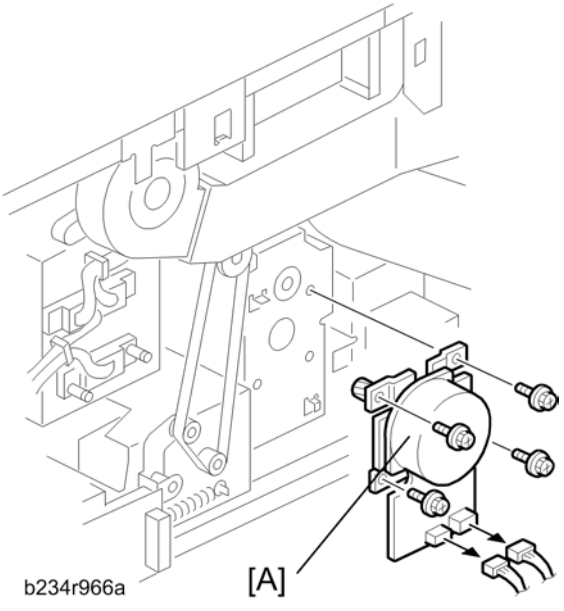
Fusing Motor



- Controller box upper cover (p.273)
- Open the controller box. (p.272)

1. Relay board [A] (x2, x3, x1)
2. Timing belt [B] (Loosen x1, Spring x1)
3. Fusing motor unit [C] (x4, x2, x2)

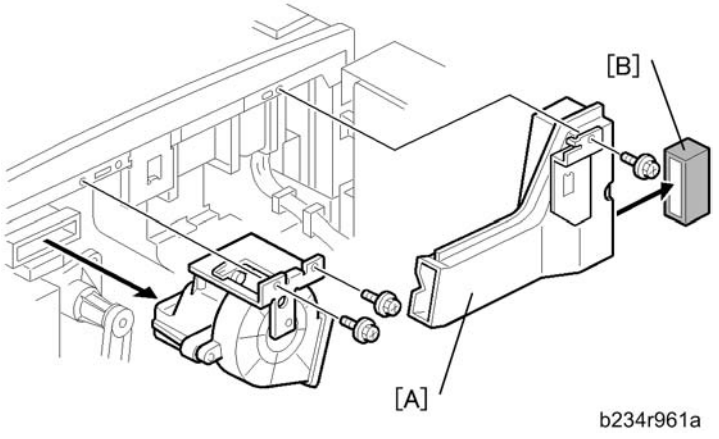
Exit Motor



- Open the controller box (p.272)
- [A]: Exit motor (x4, x2)

Ozone Filter

- Open the controller box (p.272)
- Open the PSU box. (p.280)
- Remove the rear cover.



[A]: Right duct unit (x1)

[B]: Ozone filter

Printed Image Adjustment

Important

- **You need to perform these adjustments after performing Memory All Clear or after replacing the polygon mirror motor or the paper side fences.**

Before You Begin

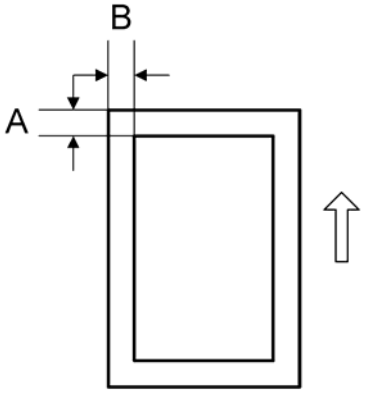
When doing these procedures:

- Make sure the paper is installed correctly in each paper tray before you start these adjustments.
- Use the Trimming Area Pattern (SP2902 003, No. 27) to print the test pattern for the following procedures.

Printing

Printing the Pattern and Checking the Registration

1. Enter the SP mode and touch "System Settings".
2. Touch "SP Direct" in the upper right corner of the screen. ("SP Direct" must be displayed with a black background.)
3. Enter **2902 003** with the operation panel keys then press [#].
4. Select Pattern "27" (Trim 1-dot line) and touch "OK".
5. Touch "SP Direct" in the upper right corner. ("SP Direct" must be displayed with a black background.)
6. Enter **5990 005** (Diagnostic Report) then press [#].
7. Touch [EXECUTE].
8. When you are prompted to select single or both faces, touch [Single Face].
9. The pattern prints. When you are prompted to end the print procedure, touch [Exit].
10. Measure the width of the leading edge on the pattern. The specification is: 0 ±3 mm.
11. If the leading edge is not within 0 ±3 mm adjust it with SP1001.



b195r827

A: Leading Edge Registration

B: Side-to-side Registration

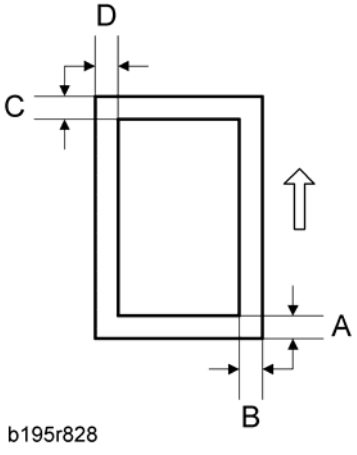
12. Check the side-to-side registration for each paper feed with the Trimming Area Pattern #27.
13. Check the measurements against the table below and make adjustments if required. In the table below:
    - SP1002 Side-to-Side Registration
    - SP1912 CIS Img Pos Adj: Normal Paper

	SP Codes		Specification
1st Tray	1002-1	1912-1	2 ± 1.5 mm
2nd Tray	1002-2		
3rd Tray	1002-3		
4th Tray (LCT)	1002-4	1912-2	
5th Tray (LCT)	1002-5		
6th Tray (LCT)	1002-6		
7th Tray (LCT)	1002-7		
Duplex	1002-8	1912-3	

Blank Margin

Note

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



A: Trailing Edge Blank Margin

B: Right Edge Blank Margin

C: Leading Edge Blank Margin

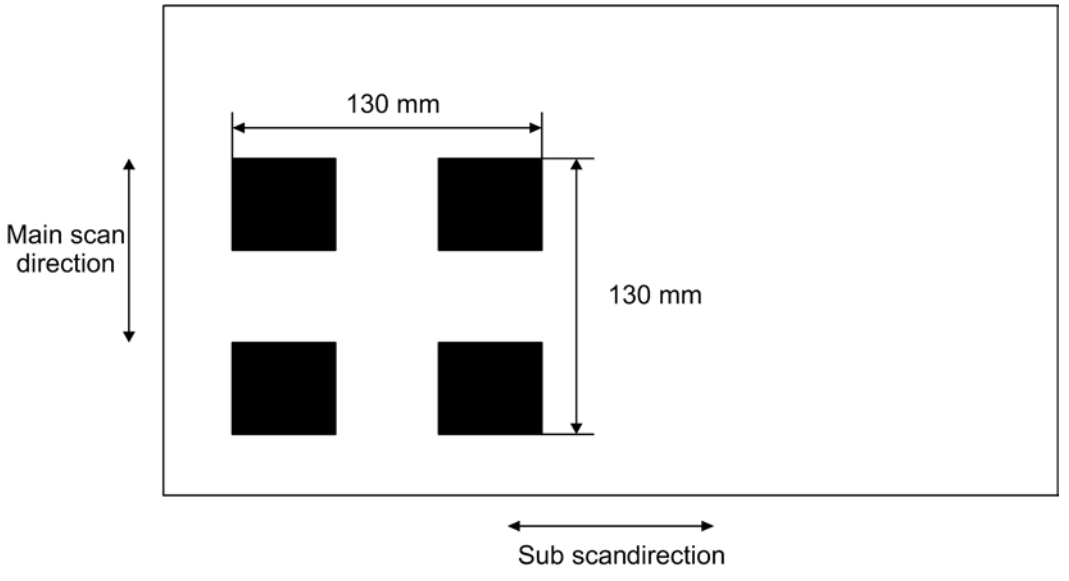
D: Left Edge Blank Margin

1. Check the trailing edge and right side edge blank margins using Trimming Area Pattern #27. Adjust with the following SP modes if necessary.

Edge	SP mode	Specification
Trailing edge	SP2101 002	3 ± 2 mm
Right edge	SP2101 004	2 ± 1.5 mm
Leading edge	SP2101 001	4 ± 2 mm
Left edge	SP2101 003	2 ± 1.5 mm

Magnification Adjustment

1. Enter SP mode and touch "System Settings".
2. Touch "SP Direct" and enter **2902 003**.
3. Select Pattern #4 (1024-Dot Alternating Dot Pattern) and touch [OK].
4. Touch "SP Direct", enter **5990 005**, then touch [Execute]. ("SP Direct" must be displayed with a black background.)
5. When you are prompted to select single or both faces, touch [Single Face].
6. The pattern prints. When you are prompted to end the print procedure, touch [Exit].



b234r888

7. Wait for the paper to cool.
8. Check the length between the edges of the black squares. The length should be 130 mm in the sub scan direction.
    - If the magnification in the sub scan direction is not within 100 ±1.0%, adjust it with SP2910.
    - If the magnification in the main scan direction is not within 100 ± 0.5%, adjust it with SP2910.

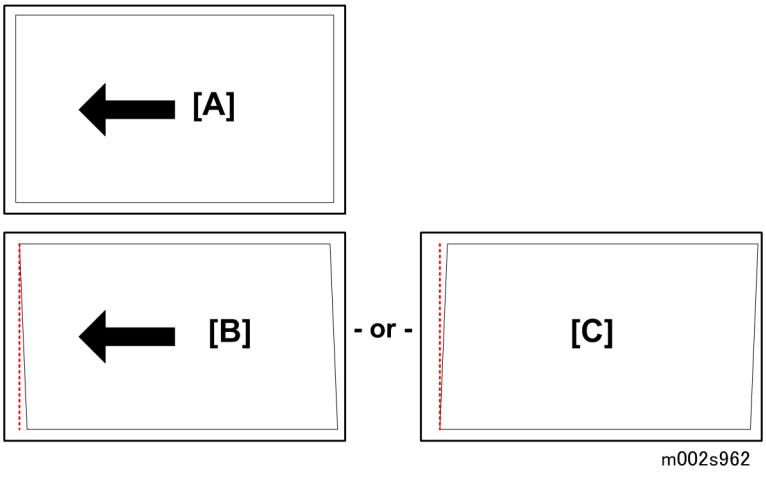
Parallelogram Image Adjustment

If a parallelogram type image is printed while using a trimming area pattern, do the following to adjust the printing registration or the printing margin.

Note

- The following procedure should be done after adjusting the side-to-side registration for each paper tray.

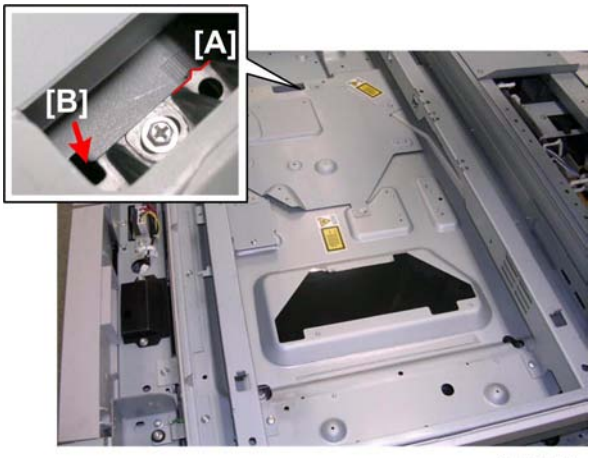
1. Printing a trimming area pattern (SP2902 003, #27) and SP5990 005.



- If the pattern is shaped as a perfect parallelogram [A] (opposite sides equal and perfectly parallel) then no adjustment is required.
- If the pattern is shaped like a trapezoid [B] or [C] (two sides not parallel) do the procedure below.

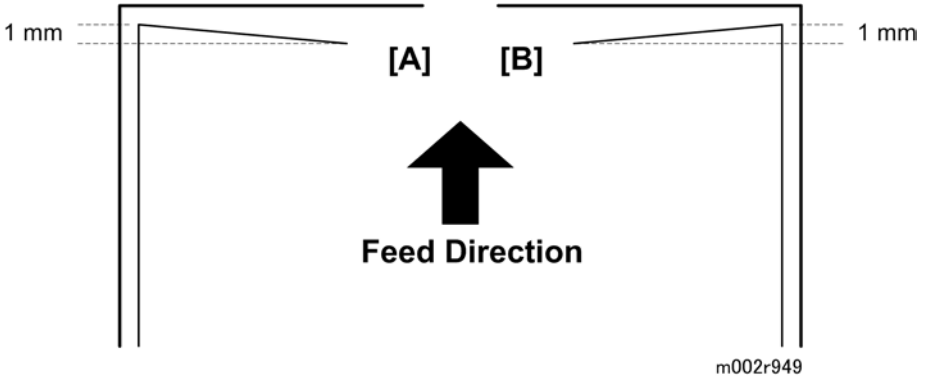
2. Remove the top covers. (p.266)

3. Loosen the three screws [B] that hold the laser unit.



m002r948

4. Look at the scale [A] and note the position of the pointer.
5. The position of the laser unit can be shifted with the tip of a flat-head screwdriver inserted at [B].



m002r949

- If the rear side of the trimming area pattern is down by about 1 mm [A], shift the laser unit 1 notch to the rear.
- If the front side [B] is down, shift the laser unit one notch to the front.

6. Tighten the three screws.
7. Print the trimming area pattern to check the shape of the pattern.
8. Repeat this procedure until the corners of the pattern are square.

Firmware Update

Before You Begin...

To update the firmware for this machine, you must have the new version of the firmware downloaded onto an SD Card. The SD Card is inserted into the lower slot on the right side of the upper GW controller box.

An SD card is a precision device. Observe the following precautions when handling SD cards:

- Always switch the machine off before inserting an SD card. Never insert the SD card into the slot with the power on.
- After the power has been switched on, never remove the SD card from the service slot.
- Never switch the machine off while the firmware is downloading from the SD card.
- Store SD cards in a safe location where they are not exposed high temperature, high humidity, or exposure to direct sunlight.
- Always handle SD cards with care to avoid bending or scratching them. Never drop an SD card or expose it to other shock or vibration.

Keep the following points in mind while you are updating firmware:

- "Upload" means to send data from the machine to the SD card, and "download" means to send data from the SD card to the machine.
- To select an item on the LCD, touch the appropriate button on the soft touch-screen of the LCD, or press the appropriate number key on the 10-key pad of the operation panel. For example, "Exit (0)" displayed on the screen means you can touch the Exit button on the screen, or press the "0" button on the operation panel.
- Before starting the firmware update procedure, always make sure that the machine is disconnected from the network to prevent a print job for arriving while the firmware update is in progress.

Downloading the Egret Software Update File

Required Items

1. Egret update file for your area: **ebxxxXpclpsJ.pjl** for Japan, **ebxxxXpclps.pjl** for overseas where "**xxx**" is the version number.
2. **LoadSoft.exe** application. (This is the application that sends the Egret upgrade file to the printer.
3. Update instructions (this document).

Note

- The archive file for updating Egret contains both ebx*.pjl files (one for Japan, one for overseas). This update procedure requires approximately 30 minutes.

Required Hardware

- A PC to download the Egret update file (a PC with either Windows 2000 or Windows XP installed and connected to a LAN). This is not required if the PC is connected to the same LAN as the Egret controller.
- A network cable (a cross-cable). This is not required if the PC is connected to the same LAN as the Egret controller.

Installing the Egret Update File

1. Download to the PC the archived Egret update file from the 08A Product Release Database.

   ebxxxXpclpsJ.exe (in Japan)

   -or-

   ebxxxXpclps.exe (outside Japan)

   where "xxx" is the version number.
2. Decompress the downloaded Egret update archive file, and make sure that the **LoadSoft.exe** file and Egret update file are in the same expanded folder.
   - **ebxxxXpclpsJ.pjl** is the Egret update file for Japan
   - **ebxxxXpclps.pjl** is the Egret update file for outside Japan

   where "**xxx**" is the version number.

Sending Egret Update File to Printer

Follow the procedure below to send the update file to the Egret controller.

1. Set the IP Address xx.xx.xx.xx for the PC in the network environment.
2. Confirm that the PC and the Egret controller are connected to the network.
3. Enter the Egret controller IP Address in the PC command line:

   ping YY.YY.YY.YY ("ping" must be followed by 1 space)
4. Open Explorer on the PC
5. Double-click **LoadSoft.exe**.
6. When the "LoadSoft-Send a File to Printer" dialog box opens, enter the Egret controller IP Address (YY.YY.YY.YY) in the "Printer IP Address" text box.

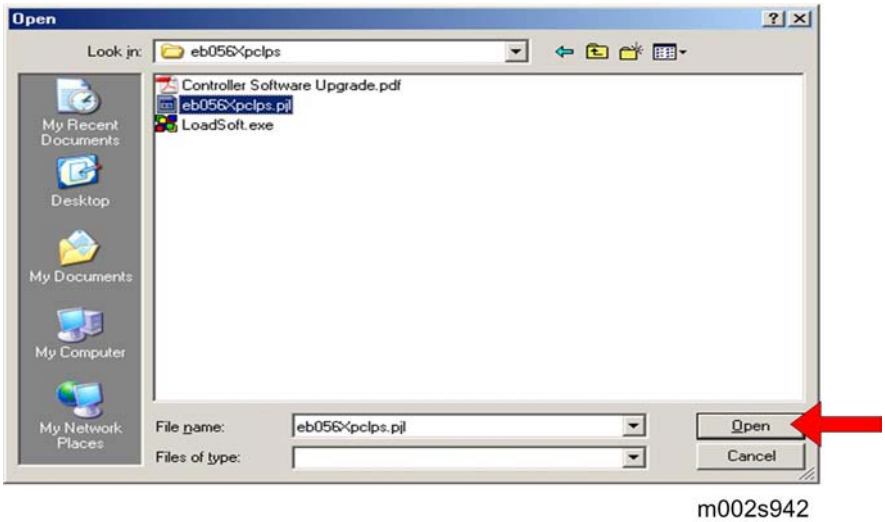
m002s941

7. Enter "3101" in the "Virtual Printer Port" text box.
8. Click the [Select File] button.
9. When the "Open" window opens, select:

   ebxxxXpclpsJ.pjl (inside Japan)

   -or-

   ebxxxXpclps.pjl (outside Japan)
10. Click the [Open] button.



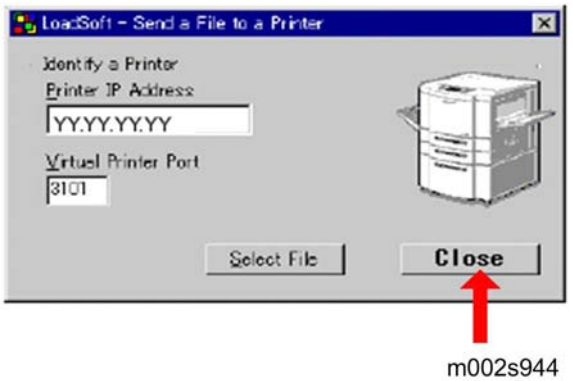
m002s942

11. If the printer and PC are not connected correctly, the "Socket Connection Error" window will open. If this occurs, check the printer/PC connection.
12. The transmission begins for the file you selected. Confirm that the Select File button on the "LoadSoft-Send a File to a Printer" dialog box is grayed out and disabled.

m002s943

- This button will remain grayed out and disabled while the update file is being sent to the printer.
- Do not close the LoadSoft program while the send operation is in progress.
- The [Select File] button will return to black (enabled) as soon as the file transmission has ended.

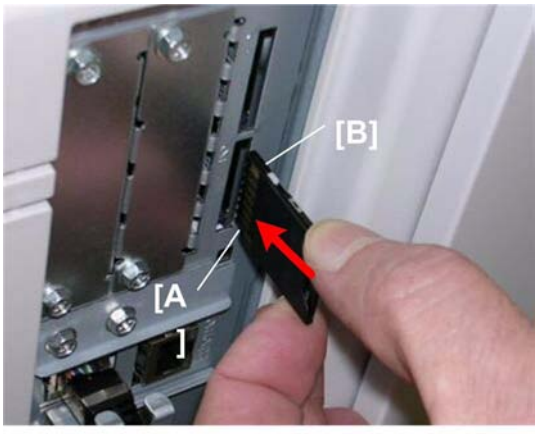
13. As soon as the [Select File] button reactivates (changes to black), click the [Close] button to close the LoadSoft program.



m002s944

Updating Machine Firmware

1. Prepare an SD with the most recent firmware update programs.
2. Switch off the main power switch.
3. Remove the SD card slot cover (x1).



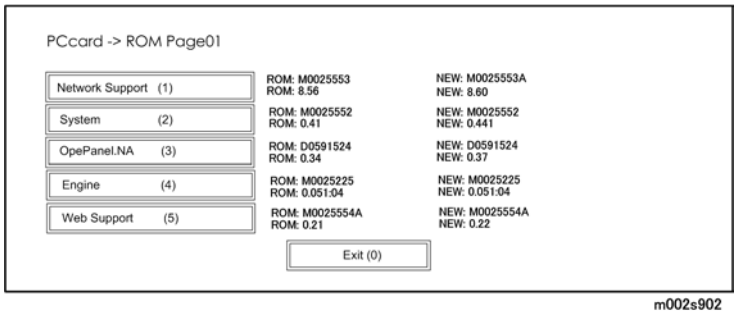
m002s901

4. With its beveled corner [A] pointing down, insert the SD card [B] into Slot 2, the lower SD card slot of the upper GW controller box.
5. Make sure the SD card locks in place.

Note

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

6. If the machine is connected to a network, disconnect the network cable.
7. Switch the main power switch on.
   - The "Please Wait" message will be replaced by the message "Preparing to start firmware update".
   - The ON LED will flash green and the Start LED will light red.
   - After about 5 minutes, the initial version update screen appears on the LCD.



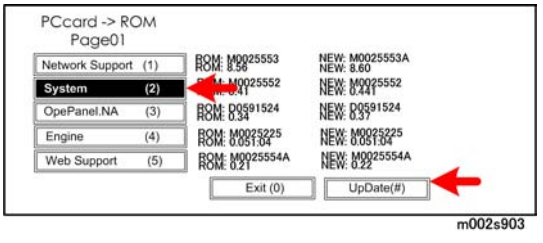
m002s902

   - ROM. This column tells you the numbers of the module and versions presently installed. The first line is the module number, the second line is the version number.
   - NEW. This column tells you the numbers of the modules versions on the SD card. The first line is the module number, the second line is the version name.

8. If module and version numbers in the "NEW" column are higher than those in the "ROM" column, these are the firmware selections that should be updated.

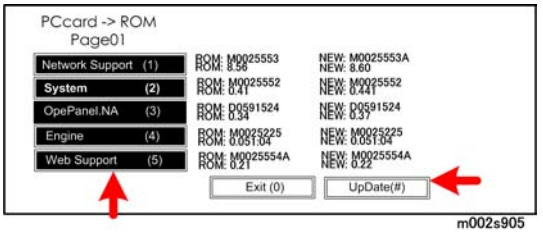
Selection	How to Start
Network Support (1)	Touch the item on the screen that you want to update or touch the corresponding key on the operation. The numbers between the parentheses tell you which key to press.
System (2)	
OpePanel.NA (3)	
Engine (4)	
Web Support (5)	

9. On the screen, touch the button or press the corresponding number key on the operation panel to select the item that you want to update.



m002s903

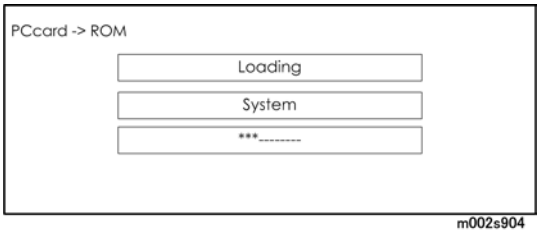
This screen shows the "System" module selected. The selection is displayed in reverse video, and the "Update" key appears at the bottom right corner of the screen.



m002s905

You can select more than one module. The screen above shows all items in the menu selected.

10. Touch "Update (#)" or push the [#] key on the operation panel to start the update procedure.



m002s904

After the update starts you will see a screen with "Loading" and the name of the module being updated (in this example: "System". A progress bar shows that the update is in progress.

If you selected more than one module (or all modules) the modules will update one by one.

Important

- **If the red warning light on top of the operation panel display lights red, let the update complete.**
- **Do not switch the machine off. After the update is finished, do the procedure described in the next section below.**

11. When you see the "Update Done" message, switch the main switch off.

Note

- You must cycle the machine off/on after updating a module.

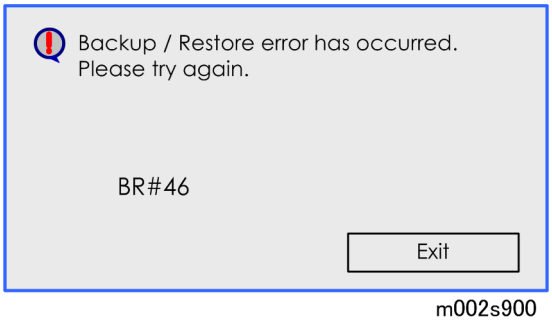
12. Remove the SD card, and turn the main switch on.

The length of time required for each update is slightly different.

Selection	Approximate Time Required
Network Support (1)	1.5 min.
System (2)	1.5 min.
OpePanel.NA (3)	10 min.
Engine (4)	2 min.
Web Support (5)	1.5 min.
All	14 to 15 min.

Egret Backup/Restore

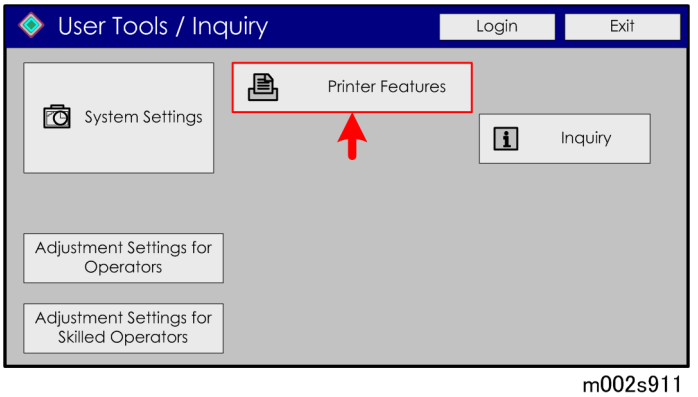
Egret Backup



m002s900

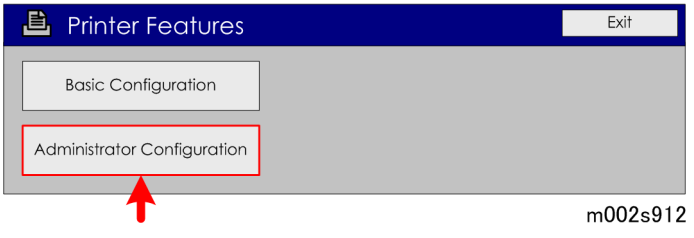
Do the procedure below if the message above appears after switching the main power switch on after updating the firmware. The current settings stored on the hard disk of the Egret controller must be backed up after updating some firmware modules.

1. Touch "Exit" to close the error message box.
2. Push the [User Tools] key.



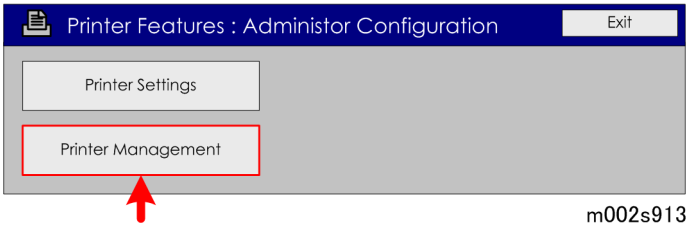
m002s911

3. Touch "Printer Features".



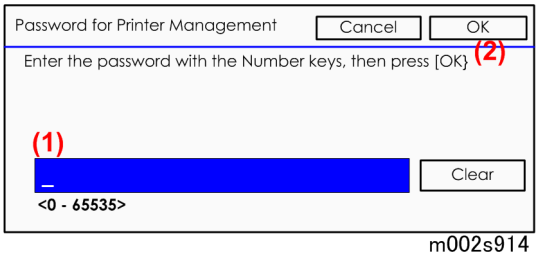
m002s912

4. Touch "Administrator Configuration".



m002s913

5. Touch "Printer Management".



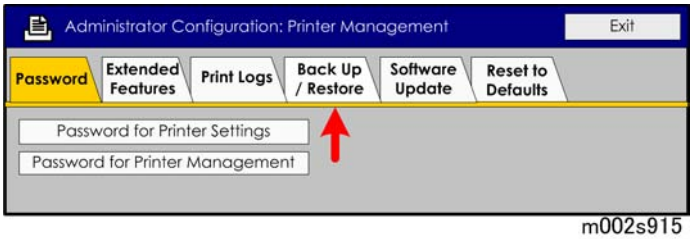
m002s914

6. Enter the password (1).

Important

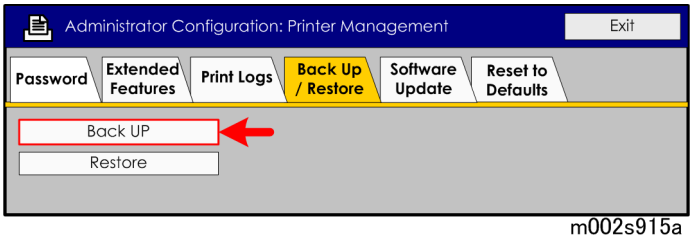
- Ask the system administrator for the password.
- If a password has not been set, enter "2000". This is the default password set at the factory.

7. Touch "OK" (2).



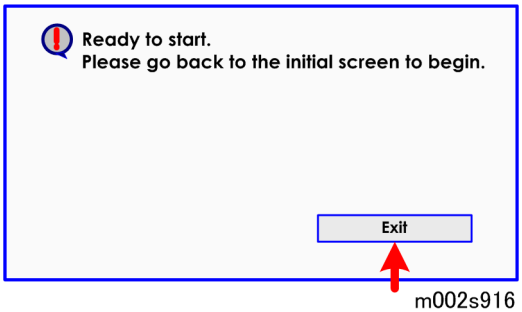
m002s915

8. Touch the "Back Up / Restore" tab.



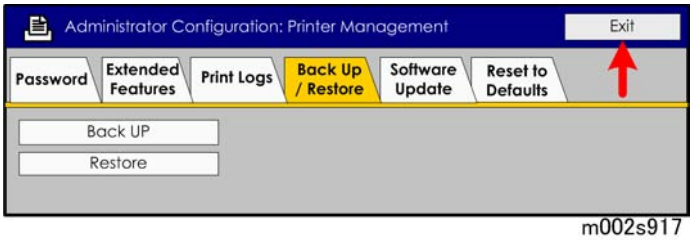
m002s915a

9. Touch "Back Up".



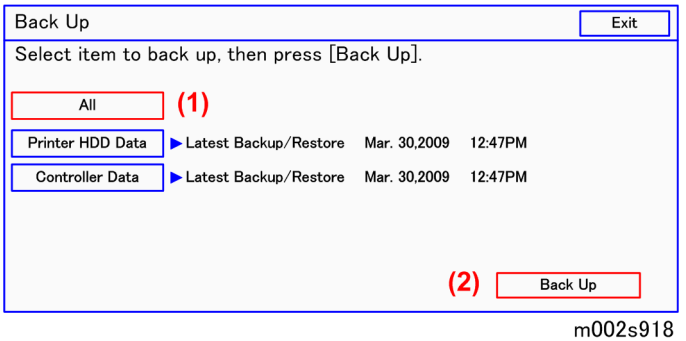
m002s916

10. Touch "Exit".



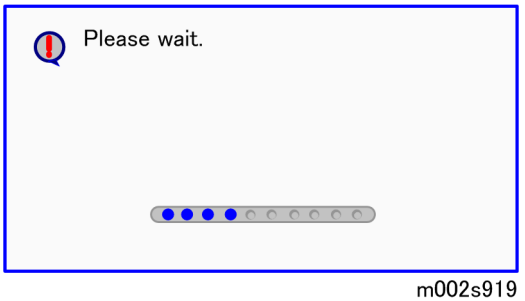
m002s917

11. Touch "Exit" four times to return to the initial (Ready) screen.



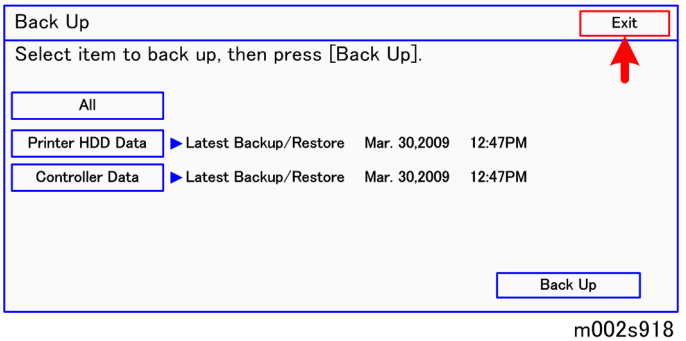
m002s918

12. Touch "All" (2) then touch "Back Up" (2).



m002s919

13. Wait for the procedure to finish.



m002s918

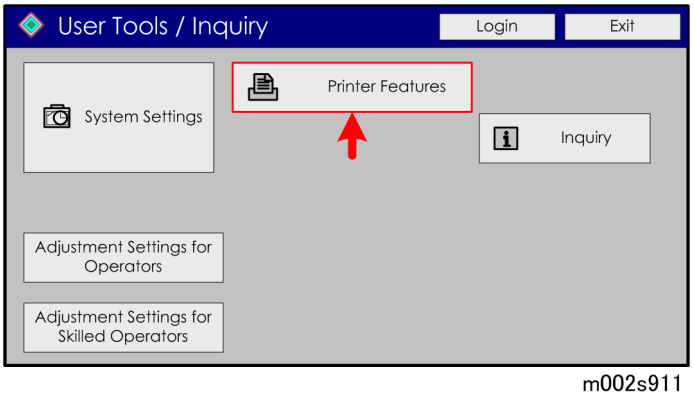
14. This completes the procedure. Touch "Exit" to return to standby mode.

Egret Restore

Do the procedure below if an error occurs during the update procedure.

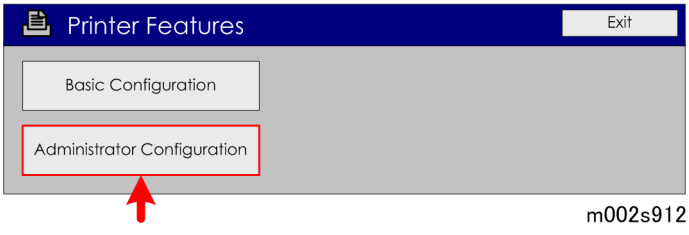
- First, do the restore procedure described below to restore the original Egret controller settings.
- Next, do the update procedure again for the module update that failed.

1. Push the [User Tools] key.



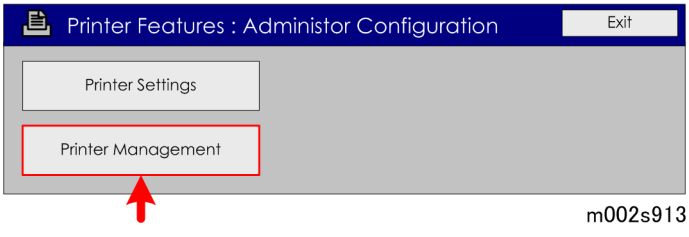
m002s911

2. Touch "Printer Features".



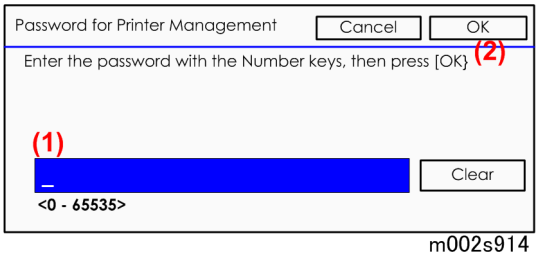
m002s912

3. Touch "Administrator Configuration".



m002s913

4. Touch "Printer Management".



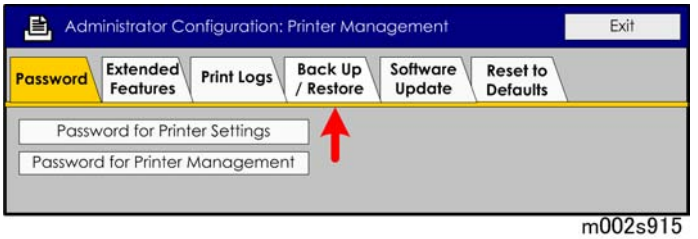
m002s914

5. Enter the password (1).

Important

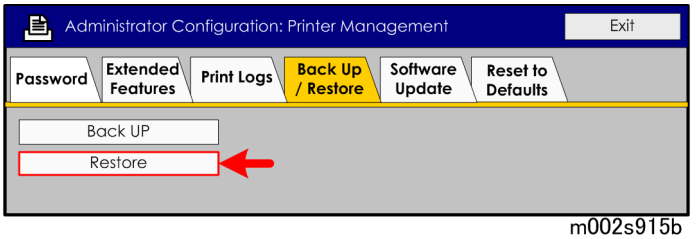
- **Ask the system administrator for the password.**
- **If a password has not been set, enter "2000". This is the default password set at the factory.**

6. Touch "OK" (2).



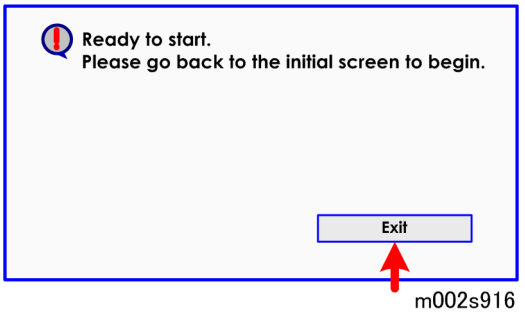
m002s915

7. Touch the "Back Up / Restore" tab.



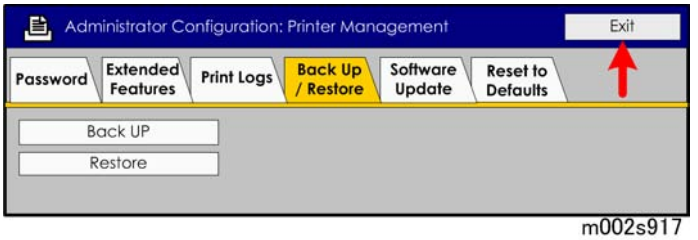
m002s915b

8. Touch "Restore".



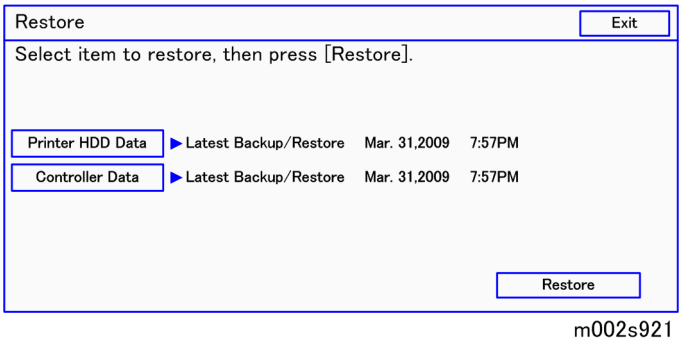
m002s916

9. Touch "Exit".



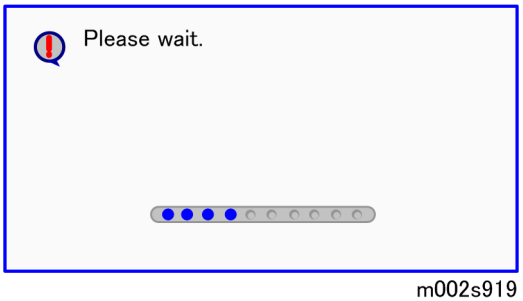
m002s917

10. Touch "Exit" four times to return to the initial (Ready) screen.



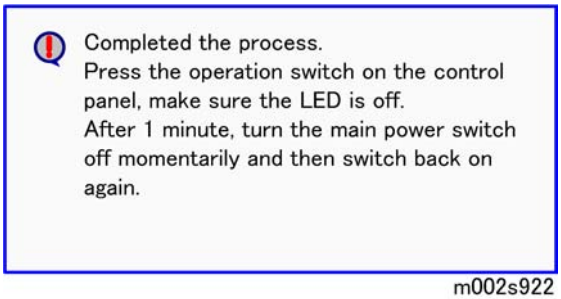
m002s921

11. Touch "Printer HDD Data" or "Controller Data" then touch "Restore".



m002s919

12. Wait for the procedure to finish.



m002s922

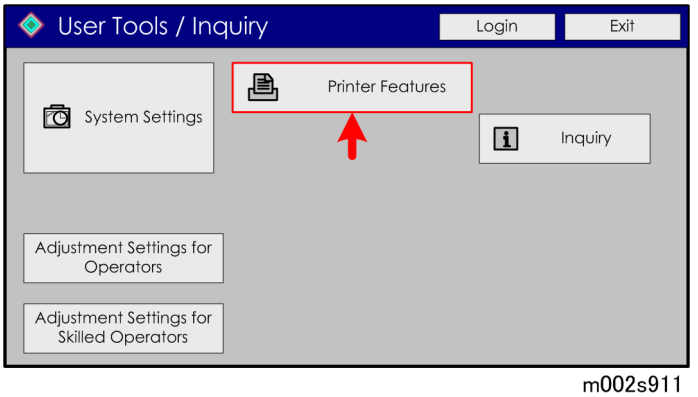
13. Follow the instructions:
    - Touch the round operation switch on the operation panel.
    - Wait for the operation switch green LED to go OFF.
    - Wait one minute.
    - Cycle the main power switch off/on.
14. This completes the procedure.

Egret Firmware Update

This procedure demonstrates for Egret:

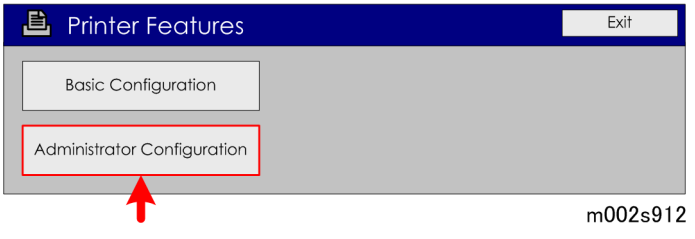
- Controller update
- Firmware update

1. Push the [User Tools] key.



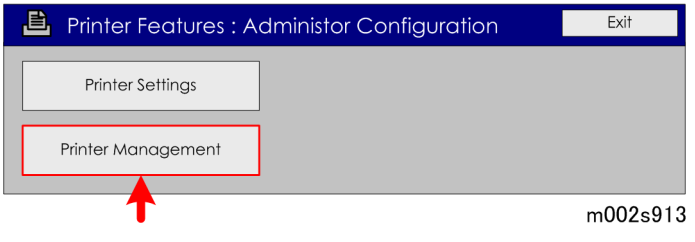
m002s911

2. Touch "Printer Features".



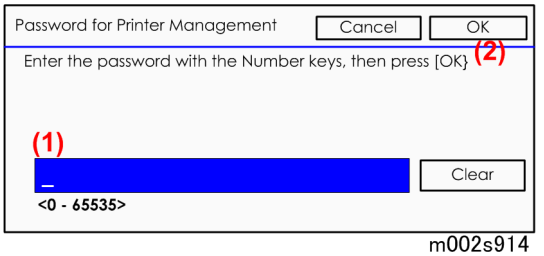
m002s912

3. Touch "Administrator Configuration".



m002s913

4. Touch "Printer Management".



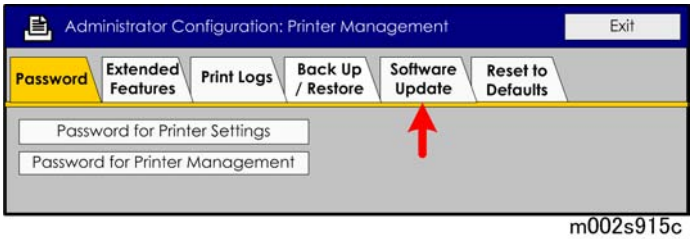
m002s914

5. Enter the password (1).

Important

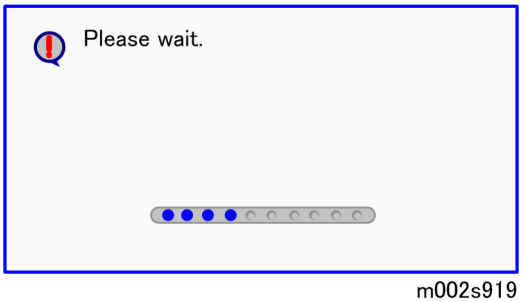
- Ask the system administrator for the password.
- If a password has not been set, enter "2000". This is the default password set at the factory.

6. Touch "OK" (2).



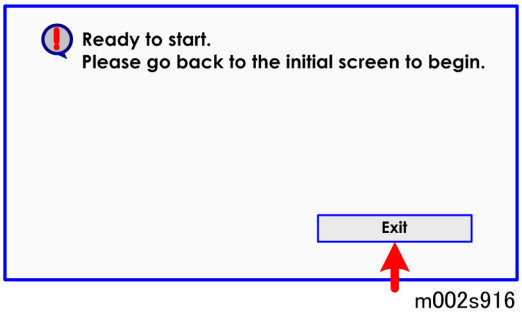
m002s915c

7. Touch the "Software Update" tab.



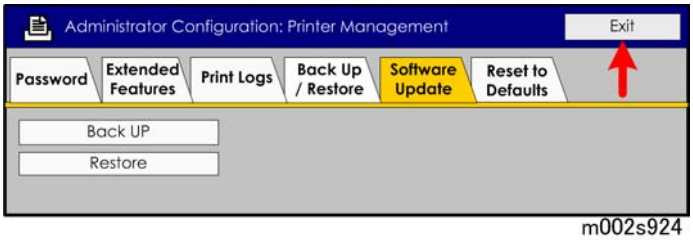
m002s919

8. Wait about 3 sec.



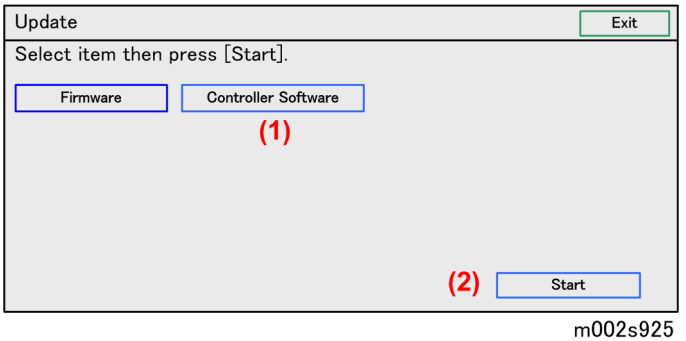
m002s916

9. Touch "Exit".



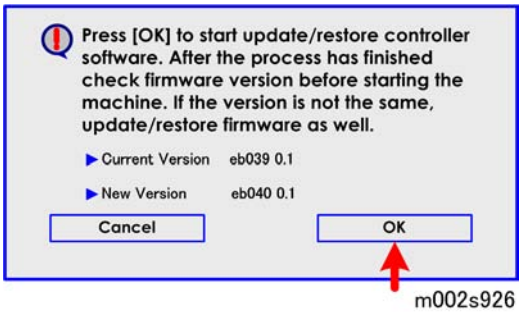
m002s924

10. Touch "Exit" four times to return to the initial screen.



m002s925

11. Touch "Controller Software" then touch "Start".



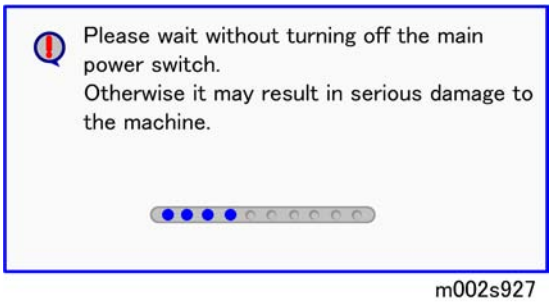
m002s926

12. Compare the version numbers.

    If the version numbers are the same, no update is necessary. Touch "Cancel" to return to the previous screen.

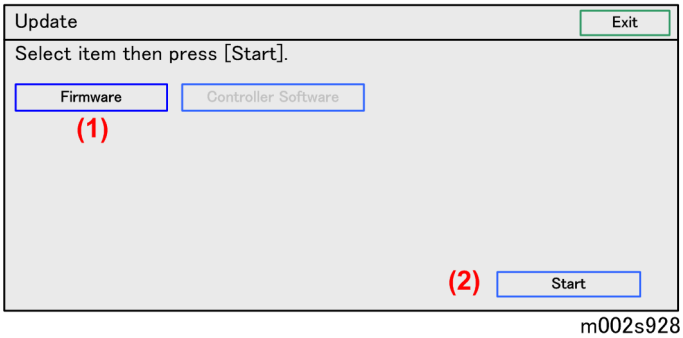
    -or-

    If the New Version number is higher, touch "OK" to start the update.



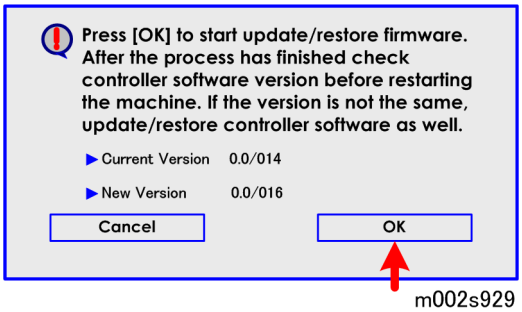
m002s927

13. Wait about 5 min. for the update to complete.



m002s928

14. Touch "Firmware" then touch "Start".



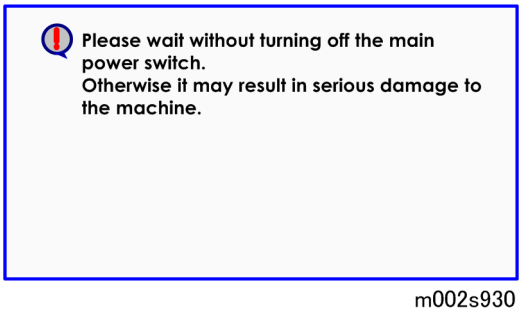
m002s929

15. Compare the version numbers.

    If the version numbers are the same, no update is necessary. Touch "Cancel" to return to the previous screen.

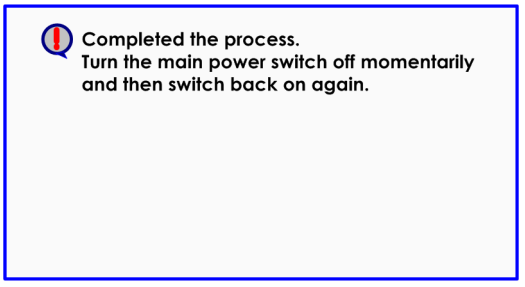
    -or-

    If the New Version number is higher, touch "OK" to start the update.



m002s930

16. Wait for the update to finish (about 30 sec.)



m002s931

17. Turn the main power switch off.
18. Wait about 1 minute.
19. Turn the main power switch on.:

    This completes the procedure.

Firmware Update Errors

If an error occurs during a download, an error message will be displayed in the first line. The error code consists of the letter "E" and a number ("E20", for example).

Error Message Table

No.	Description/Action
E20	Cannot map logical address
	• Make sure the SD card is inserted correctly. • Use another SD card.
E21	Cannot access memory
	• HDD connection incorrect. • Replace hard disks.
E22	Cannot decompress compressed data
	• Incorrect ROM data on the SD card.] • Data on SD card is corrupted.
E23	Error occurred when ROM update program started
	• Controller program abnormal. • If the second attempt fails, replace controller board.
E24	SD card access error

No.	Description/Action
	• Make sure SD card inserted correctly.] • Use another SD card.
E30	No HDD available for stamp data download
	• HDD connection incorrect. • Replace hard disks.
E31	Data incorrect for continuous download
	• Insert the SD card with the remaining data required for the download. • Re-start the procedure.
E32	Data incorrect after download interrupted
	• Execute the recovery procedure for the intended module download. • Repeat the installation procedure.
E33	Incorrect SD card version
	• Incorrect ROM data on the SD card. • Data on SD card is corrupted.
E34	Module mismatch - Correct module is not on the SD card)
	• SD update data is incorrect. • Acquire the correct data. • Install again.
E35	Module mismatch – Module on SD card is not for this machine
	• SD update data is incorrect. The data on the SD card is for another machine. • Acquire correct update data and install again.
E36	Cannot write module – Cause other than E34, E35
	• SD update data is incorrect. The data on the SD card is for another machine. • Acquire correct update data and install again.
E40	Engine module download failed
	• Replace the update data for the module on the SD card and try again. • Replace BICU board.

No.	Description/Action
E42	Operation panel module download failed
	• Replace the update data for the module on the SD card and try again. • Replace the LCDC.
E43	Stamp data module download failed
	• Replace the update data for the module on the SD card and try again. • Replace the hard disks.
E44	Controller module download failed
	• Replace the update data for the module on the SD card and try again. • Replace controller board.
E50	Electronic confirmation check failed
	• SD update data is incorrect. The data on the SD card is for another machine. • Acquire correct update data and install again.

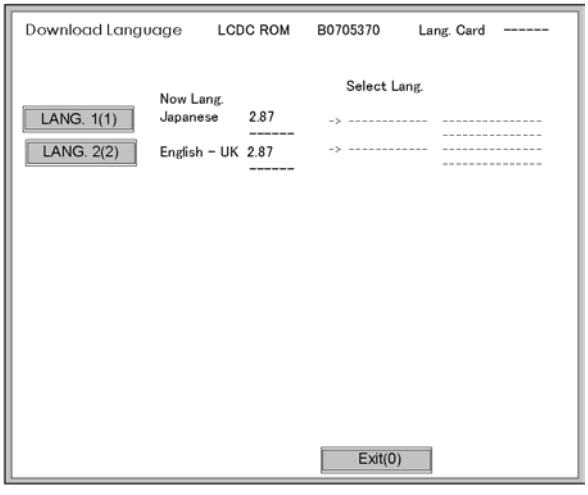
Recovery After Power Loss

- If the ROM update is interrupted as a result of accidental loss of power while the firmware is updating, the correct operation of the machine cannot be guaranteed.
- If the ROM update does not complete successfully for any other reason, the ROM update error will continue to be displayed until the ROM is updated successfully. In this case, just insert the SD card once again and switch on the machine to continue the firmware download automatically from the card without the menu display.

Installing Another Language

Many languages are available for selection, but only two can be selected for switching. Follow this procedure to select the two languages, either of which can be selected for the user interface on the operation panel.

1. Switch the main power switch off.
2. Insert the SD card with the language data into service slot (lower slot).
3. Switch the main power switch on. The initial screen opens after about 10 seconds.
4. Touch "Language (2)" on the screen (or press ②).



b234s916

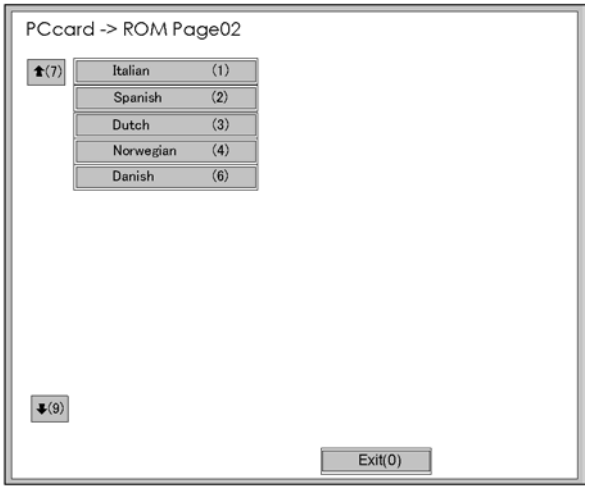
5. Touch "LANG. 1(1)" or "LANG 2(2)"

Key	What it does
LANG. 1(1)	Touch this button on the screen (or press ① on the 10-key pad) to open the next screen so you can select the 1st language.
LANG. 1(2)	Touch this button on the screen (or press ② on the 10-key pad) to open the next screen so you can select the 2nd language.
Exit(0)	Touch this key on the screen (or press ⓪ on the 10-key pad) to quit the update procedure and return to normal screen.

6. To select the 1st Language, touch "LANG 1(1)".

   -or-

   To select the 2nd Language, touch "LANG(2)".



b234s917

7. Touch the appropriate button on the screen (or press the number on the 10-keypad) to select a language as the 1st (or 2nd) Language.

   If a language is already selected, it will be displayed in reverse.

   Touching "Exit(0)" also returns the previous screen.

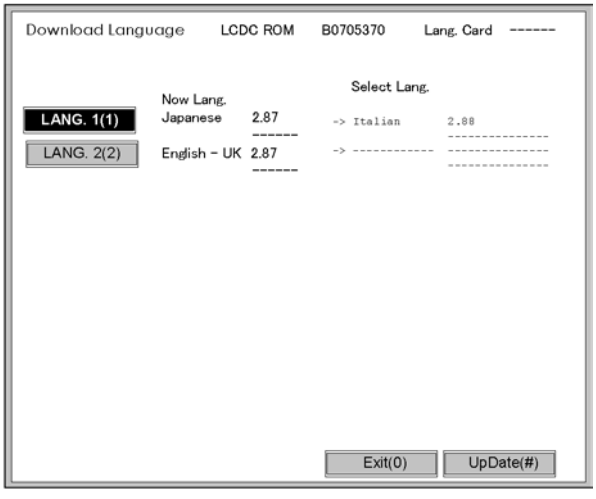
8. If you do not see the language that you want to select, touch "↑(7)" or "↓(9)" on the screen (or press ⑦ or ⑨) to display more choices.

   After you select a language, the Download Screen opens.

   The 1st or 2nd language selected for updating is displayed.

   To the right of the selection, the first column displays the language currently selected and the 2nd column displays the language selected to replace that language.

   The example below shows that the download will replace "Japanese" with "Italian" as the 1st language.



b234s918

9. Touch "Update(#)" on the screen (or press ⓗ) to start the download.

   Another screen with a progress bar is not displayed while the language is downloading.

   While the language is downloading:

   - The operation panel switches off.
   - The LED on the power on key flashes rapidly.

10. After the Start LED begins to flash slowly, switch the main power switch off, then remove the SD card from the slot.
11. Switch the main power switch on to resume normal operation.

5. System Maintenance Reference

Service Program Mode

See "Appendices" for the following information:

- System SP Tables
- User Service Program Mode Tables
- Input Check
- Output Check

Other Operations

See "Appendices" for the following information:

- NVRAM Data Upload/Download
- SMC Lists
- Memory All Clear: SP5801
- Software Reset
- Using the Debug Log
- Touch Screen Calibration

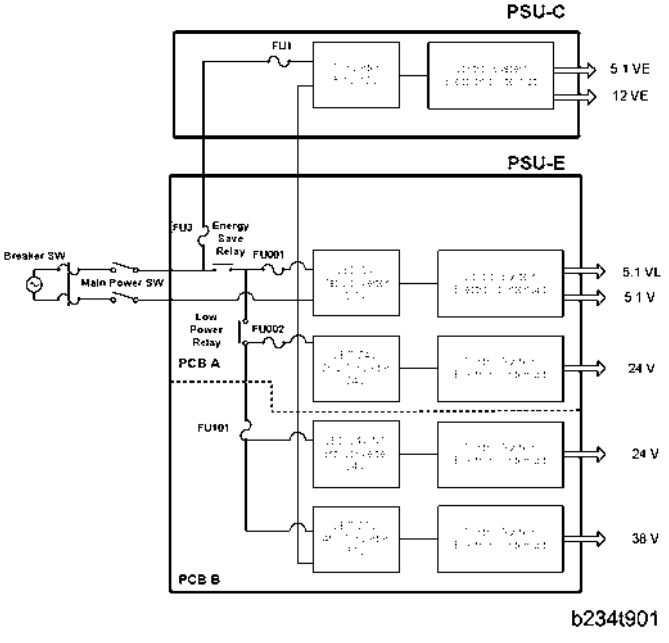
6. Troubleshooting Guide

Service Call Conditions

For "SC Table" information, see "Appendices".

PSU Protection Circuits

Overview



The diagram above shows the outputs of each converter listed in Table 1.

PSU-C and PSU-E comprise the PSU. PSU-E consists of two PCBs: PCB A and PCB B. There is a total of five converters:

- PSU-C contains the energy save converter.
- PCB A of PSU-E contains the 1st and 2nd converter.
- PCB B of PSU-E contains the 3rd and 4th converter.

The PSU contains several protective circuits that will cut power to prevent damage to the machine and dangerous fire hazards that could be caused by harness short circuits or damage to the PSU circuits due an accidental power overload. These protective circuits are provided at three locations:

- AC input
- Converter control points
- Output points

Even if one or more of these protective circuits should fail, the others will act as backup to cut power to the machine if a problem occurs,

The output points are provided with electronic interrupt circuits, so fuses are not required at these locations.

Table 1: PSU Converters and Output System

Converter	Output Name	Output Voltage	Output Connector
Energy Save	VccE	5.1V	CN763-1p-5p
	VcaE	12.0V	CN764-1p-3p
1st	VccL	5.1V	CN711-1p-3p
	Vcc	5.1V	CN712-1p-3p
2nd	Vaa1	24.0V	CN713-1p-2p
	Vaa2	24.0V	CN713-3p-6p
	Vaa3	24.0V	CN714-1p-6p
3rd	Vaa4	24.0V	CN715-1p-2p
	Vaa5	24.0V	CN715-3p-4p
4th	Vmm1	38.0V	CN716-1p
	Vmm2	38.0V	CN716-2p

AC Input Module

The AC input module has the following 5 fuses.

Input Fuse	Rating
FU1	4A/250V
FU3	4A/250V
FU001	3.15A/250V
FU002	6.3A/250V
FU101	6.3A/250V

The AC input area of the PSU has fuses to cut AC power to the board in case of damage to the PSU board or one or more short circuits in the output area.

The location of the board where output is interrupted is different, depending on which fuse blows. Table 2 shows which areas of the PSU are affected by each fuse.

As shown in Table 2, FU1 cuts all circuits if damage or short circuits occur at PSU-C, which operates independently of the other circuits while the machine is in the sleep (energy conservation) mode. A short

circuit in an input harness or other problem on PSU-C will also cause FU3 to blow and will cut all power output from the PSU.

Table 2: PSU Fuses and Related Power Output Interrupts

Converter	Output Name	FU1	FU3	FU001	FU002	FU101
Energy Save	VccE	O	O			
	VcaE	O	O			
1st	VccL	O	O	O		
	Vcc	O	O	O		
2nd	Vaa1	O	O	O	O	
	Vaa2	O	O	O	O	
	Vaa3	O	O	O	O	
3rd	Vaa4	O	O	O	O	O
	Vaa5	O	O	O	O	O
4th	Vmm1	O	O	O	O	O
	Vmm2	O	O	O	O	O

- If there is damage or a short circuit inside the 1st converter of the control system in PSU-E, FU001 blows and power is interrupted in the output of the 1st, 2nd, 3rd, and 4th converters.
- If there is damage or a short circuit inside the 2nd converter of the control system in PSU-E, FU002 blows and power is interrupted in the output of the 2nd, 3rd, and 4th converters.
- If there is damage or a short circuit inside the 3rd or 4th converter of the control system in PSU-E, FU101 blows and power is interrupted in the output of the 3rd and 4th converters.

Converter Control Module

The following devices provide primary protection against current surges:

- Energy save converter
- 1st Converter
- 2nd Converter
- 3rd Converter
- 4th Converter

Each converter generates the dc currents that are used by the CPU, motor drive boards, and other parts of the mainframe. Each converter is provided with a protection circuit to detect power surges.

As shown in Table 3, the power supply to the mainframe that is interrupted depends on which protection circuit is opened as a result of a power surge:

- The protection circuit of the energy save converter cuts all power if a problem occurs in the energy save converter.
- If the problem occurs in the 1st converter, power to the 1st, 2nd, 3rd, and 4th converters is interrupted.
- If the problem occurs in the 2nd converter, power to the 2nd, 3rd, and 4th converters is interrupted.
- If the problem occurs in the 3rd converter, power to only the 3rd converter is interrupted.
- If the problem occurs in the 4th converter, power to only the 4th converter is interrupted.

Table 3: Converter Protection Circuits and Related Output Power Interrupts

Converter	Output Name	Energy Save	1st	2nd	3rd	4th
Energy Save	VccE	O				
	VcaE	O				
1st	VccL	O	O			
	Vcc	O	O			
2nd	Vaa1	O	O	O		
	Vaa2	O	O	O		
	Vaa3	O	O	O		
3rd	Vaa4	O	O	O	O	
	Vaa5	O	O	O	O	
4th	Vmm1	O	O	O		O
	Vmm2	O	O	O		O

Important!

To reset the machine after a protection circuit has opened:

1. Switch off the operation switch.
2. Switch off the main power switch.
3. Allow the machine to remain off for at least 5 minutes.
4. Turn on the main power switch.

Output Module

The PSU output module is provided with the following interrupt devices:

- Control system electronic interrupt: 5.1V, 12V
- Drive system electronic interrupt: 24V, 38V

The output fuses of previous models have been replaced by electronic interrupt circuits. These electronic interrupt circuits hav protect the machine from excessive current, excessive voltages, and overheating.

- Excessive current can be caused by a short at the power supply.
- Excessive voltage can be caused by damage to the PSU board, short circuits in external harnesses, or an unexpected surge in the external power supply.
- Overheating occurs when the temperature level of the elements in the control circuits of the converters becomes too high due to the failure of the PSU cooling fan, for example.

Table 4 shows how the electronic interrupt circuits react to these three problems.

Table 4: Electronic Interrupt Detection Locations

Converter	Output Name	Over Current	Over Voltage	Over Heating
Energy Save	VccE	O	O	O
	VcaE	O	O	O
1st	VccL	O	O	
	Vcc	O	O	
2nd	Vaa1	O	O	O
	Vaa2	O	O	O
	Vaa3	O	O	O
3rd	Vaa4	O	O	O
	Vaa5	O	O	O
4th	Vmm1	O	O	O
	Vmm2	O	O	O

To reset the machine after a circuit has opened:

1. Switch off the operation switch.
2. Switch off the main power switch.
3. Allow the machine to remain off for at least 5 minutes.

4. Turn on the main power switch

PSU LED Display

Four converters are built into PSU-E. Each converter is provided with one LED that lights when the converter is activated.

Converter	LED Name
1st Converter	5V
2nd Converter	24V
3rd Converter	24VINT
4th Converter	38V

With the PSU box door open:

- LED 5V (1st Converter) and LED 24V (2nd Converter) are on PCB A on the right.
- LED 24VINT (3rd Converter) and LED 38V (4th Converter) are on PCB B on the left.

You can see which system is operating abnormally by checking whether these LEDs are on or off. If an LED is off, the converter for that LED is defective (see the above table).

The table below shows what will interrupt the output from a converter.

Converter On/Off States According to Mode

Converter	Output Name	Copy	Standby	Door Open	Energy Saver	Low Power	Off/ Sleep
Energy Save	VccE	ON	ON	ON	ON	ON	ON
	VcaE	ON	ON	ON	ON	ON	ON
1st	VccL	ON	ON	ON	ON	ON	OFF
	Vcc	ON	ON	ON	ON	OFF	OFF
2nd	Vaa1	ON	ON	ON	ON	OFF	OFF
	Vaa2	ON	ON	ON	ON	OFF	OFF
	Vaa3	ON	ON	ON	ON	OFF	OFF
3rd	Vaa4	ON	ON	OFF	OFF	OFF	OFF
	Vaa5	ON	ON	OFF	OFF	OFF	OFF

Converter	Output Name	Copy	Standby	Door Open	Energy Saver	Low Power	Off/ Sleep
4th	Vmm1	ON	ON	ON	OFF	OFF	OFF
	Vmm2	ON	ON	ON	OFF	OFF	OFF

PSU-E Replacement

Before replacing any part of the PSU (especially PCB A, PCB B):

- Switch the machine off.
- Disconnect it from the power source.
- Allow the machine to stand at least 10 minutes before you open the PSU box door.

PCB-A and PCB-B of the PSU-E are both provided with a large capacity electrolytic condenser.

Such large condensers store a large residual charge that can cause electrical shock if a board is handled too soon after the machine is turned off.

Troubleshooting Guide

See "Appendices" for the troubleshooting guide.

Model B-P1
Machine Code: M002/M003/M004

Appendices

19 June, 2009

TABLE OF CONTENTS

1. Appendix: Specifications

2. Appendix: Program Download

3. Appendix: Service Call

4. Appendix: Service Program Mode

1. Appendix: Specifications

Specifications: Main Machine

Engine

Configuration:	Console		
Print Technology	4-channel CCD array, electro-photographic printing Dry, dual-component toner development		
Print Speed	M002 90 ppm M003 110 ppm M004 135 ppm		
Input Capacity (sheets)	Standard	Tray 1: 2,000 (2 tandem trays, 1,000 ea.) Tray 2: 500 Tray 3: 500	
	LCIT A4/LT	Tray 4: 1,000 Tray 5: 1,000 Tray 6: 2,550	
	LCTI A3/DLT	Tray 4: 1,000 Tray 5: 2,000 Tray 6: 1,000	
	Multi Bypass	Tray 7: 500	
	Max System	8,050 sheets with LCIT A4/LG 7,500 sheets with LCIT A3/DLT	
Paper Size:	Tray 1 (Tandem):		$8_{1/2}$" x 11" LEF, A4 LEF
	Tray 2, Tray 3:		$5_{1/2}$" x $8_{1/2}$" to 11" x 17", 12" x 18", A5 to A3
	Duplex Tray (Possible Sizes):		A5 to A3, $5_{1/2}$" x $8_{1/2}$" to 11" x 17", 12" x 18", 13" x 18"

Paper Weight:	Main	Tray 1,2,3	52 to 215 g/m^2,
	LCIT A4/LT	Tray 4,5	52 to 215 g/m^2,
		Tray 6	52 to 163 g/m^2,
	LCIT A3/DLT	Tray 4	52 to 256 g/m^2,
		Tray 5	52 to 300 g/m^2,
		Tray 6	52 to 256 g/m^2,
	Multi Bypass	Tray 7	52 to 256 g/m^2,
Output Capacity	Finisher		3,000 + 500 sheets
	Booklet Finisher		2,500 + 250 sheets
	High Capacity Stacker		5,000 + 250 sheets 10,000 + 250 (if two stackers)
Print Resolution	300, 600, 1200 dpi		
Max. Print Area	307 x 408 mm (12.1 x 16.1 in.)		
Grayscale	Printing: 1-bit/pixel 32 values		
Warm-up Time:	Less 360 sec. or less from Off mode at 23°C (73.4°F)		
Multiple Prints:	Up to 9,999		
Memory:	RAM:	GW Controller: 512 MB Egret Controller: 1 GB	
	HDD:	GW Controller: 160 GB Egret Controller: 160 GB	

Toner	
Toner Bottles	Two
Replenishment	Cartridge exchange (1,650 g/cartridge)

Yield:	60 K prints, (A4 LEF, 6% chart)
	M002 (90 cpm) 1 to 25 Repeat Printing
	M003 (110 cpm), 1 to 50 Repeat Printing
	M004 (135 cpm), 1 to 100 Repeat Printing

Power Source:	North America	208 to 240 V, 60 Hz, 20 A
	Europe/Asia	220 to 240 V, 50/60 Hz, 16 A
Size (w x d x h)	Main Machine	870 x 60 x 1356 mm
		34" x 34" x 53.1"
	Full System (with B834)	3461 x 858.5 x 1356 mm
		136.3 x 33.8 x 53.1 in.
	Full System (with B832)	3151 x 858.5 x 1356 mm
		124 x 33.8 x 53.1 in.
Weight:	Less than 290 kg (639 lb)	
Space Requirements: See "Installation"		

Maximum Power Consumption

90 ppm	110 ppm	135 ppm
3500W or less	3500W or less	4000W or less

Energy Star

	North America					
	M002 (90 cpm)		M003 (110 cpm)		M004 (135 cpm)	
	Basic	MFP	Basic	MFP	Basic	MFP
Low Power Mode						
Power Consumption (W)	113.8	119.7	129.4	132.4	121.2	127.1
Default Interval (min.)	15	15	15	15	15	15

	North America					
	M002 (90 cpm)		M003 (110 cpm)		M004 (135 cpm)	
	Basic	MFP	Basic	MFP	Basic	MFP
Recovery Time (sec)	32	29	29	30	66	65.8
Off Mode						
Power Consumption (W)	4.2	---	4.2	---	4.2	---
Default Interval (min.)	90	---	120	---	120	---
Sleep Mode						
Power Consumption (W)	---	35.5	---	35	---	35.9
Default Interval (min.)	---	90	---	120	---	120

	Europe					
	M002 (90 cpm)		M003 (110 cpm)		M004 (135 cpm)	
	Basic	MFP	Basic	MFP	Basic	MFP
Low Power Mode						
Power Consumption (W)	113.3	120.1	129.7	134.5	121.1	127.1
Default Interval (min.)	15	15	15	15	15	15
Recovery Time (sec.)	36	36	37	34	81	82
Off Mode						
Power Consumption (W)	4.1	---	4.0	---	4.0	---
Default Interval (min.)	90	---	120	---	120	---
Sleep Mode						
Power Consumption (W)	---	35.3	---	35.3	---	35.6
Default Interval (min.)	---	90	---	120	---	120

Noise Emission: Sound Power Level

M002 (90 cpm)	**dB (A)**

Mainframe	Stand-by	≤ 60
	Printing	≤ 74
	Operator position	≤ 68
	Passers-by	≤ 68
Full System	Stand-by	≤ 64
	Printing	≤ 78
	Operator position	≤ 72
	Passers-by	≤ 72

M003 (110 cpm)		dB (A)
Mainframe	Stand-by	≤ 66
	Printing	≤ 76
	Operator position	≤ 70
	Passers-by	≤ 70
Full System	Stand-by	≤ 70
	Printing	≤ 80
	Operator position	≤ 74
	Passers-by	≤ 74

M004 (135 cpm)		dB (A)
Mainframe	Stand-by	≤ 73.5
	Printing	≤ 78.5
	Operator position	≤ 72.5
	Passers-by	≤ 72.5

Full System	Stand-by	≤ 77.5
	Printing	≤ 82.5
	Operator position	---
	Passers-by	---

DC Controller

The DC controller is comprised of the GW controller and the Egret controller.

The GW and Egret controllers perform the following functions:

GW Controller

- Stores job history data
- Provides temporary data storage during print jobs
- Manages address book data

Egret Controller

- Font downloading
- Stores job history data
- Print job spooling
- Image overlay
- Holds Egret firmware
- Holds GUI (Graphic User Interface) settings
- Stores board parameter backup settings
- Stores error log, events log, maintenance log, E-GAC log (GW I/F log)

GW Controller

CPU	Intel PentiumM 1.4 GHz
RAM	512 MB
HDD	160 GB
Connectivity	
Host Interface	100 Base-TX/10Base-T USB Host I/F 1000 Base-T (Connects GW and Egret controller boards)

Network Protocol	TCP/IP
MIB Support	TBA

Egret Controller

CPU	Freescale MC7448 1.7 GHz
RAM	1 GB
HDD	160 GB
PDL	Standard: PCL6, PCL5e, Adobe PostScript3 Option: IPDS
Cont. Print Speed	M002 90 ppm, M003 110 ppm, M004 135 ppm
Print Resolution	1200 dpi (max.)
Fonts	PCL: 80, PS3: 186
Connectivity	
Host Interface	1000 Base-T, 100 Base-TX, 10 Base-T1 IEEE1284
Network Protocol	TCP/IP, AppleTalk
MIB Support	TBA
Network OS	Windows 2000, Windows Server 2003, Windows Server 2008, Windows XP, Windows Vista, MacOS x 10.5 or later

Decurl DU5000 Unit (D457)

Important

- **The Decurl Unit must be installed with the M002, M003, or M004 at installation. The Decurl Unit is not optional for these models.**

A de-curler and purge tray unit comprise this unit:

- Mounted on the left side of the main machine, the de-curler unit removes curl from paper after it exits the main machine.

- The purge tray holds paper purged from the paper path at the exit of the main machine when a jam occurs downstream. (This reduces the number of sheets that have to be removed to clear paper jams from the line.)

General

Compatible Machines	M002/M003/M004
Operating Environment	Temperature and humidity ranges: Same as main machine.
De-curl Function	Pressure adjustment, 5 steps Back curl/face curl correction (manual switching)
Service Life	Expected: 5 Years or 60,000K sheets
Paper Weight	40 g/m^2 to 300g/m^2
Paper Size	331 x 488 mm (13"x19.2") to A6 SEF, postcards
Power Supply	From main machine: DC 24V±5%, 5.1V±3%
Power Consumption	Less than 30V
Size (w x d x h)	170 x 730 x 990 mm (6.7 x 28.7 x 40 in.)
Level	Less than 5 mm deviation at front/back, left/right
Weight	Less than 30 Kg (66 lb)

Noise Level: dB(A)

	M002		M003		M004	
	Alone	System	Alone	System	Alone	System
Operation	74	78	76	80	79	83
Standby	60	64	66	70	74	78

De-Curler Unit

Paper Size	331 x 488 mm (13"x19.2") to A6 SEF, postcards	
De-curling	Site	Corrects front/back curl, selectable with lift plate on the unit by operator

	Strength	5-Steps: Set by CE

Purge Tray

Capacity	10 sheets
Jam Alert	• Operation panel (main machine) • Jam LED front door • Inner Jam LED (paper remaining on tray)
Jam Removal	Tray easily opened, paper removed by operator
Purged Paper Count	None
Special Feature	Space provided for storage of one extra used toner bottle for the main machine.

Specifications: Options-1

A3/DLT Tray Kit B331 (Option)

Paper Size	A3 SEF, B4 SEF, 11"x17" SEF, $8_{1/2}$"x14" SEF, A4 SEF, A4 LEF, $8_{1/2}$"x11" SEF, 11"x$8_{1/2}$" LEF, 305 mm x 439 mm
Paper Weight	52 to 163 g/m^2
Tray Capacity	1,000 sheets
Paper Level Detection	5-Step: 100%, 75%, 50%, 25%, End

LCIT RT5030 (D452) (Option)

Compatible Machines	M002/M003/M004	
Operating Environment	Ranges of temperature and humidity: Same as main machine.	
Service Life	Expected: 5 Years or 55,000K sheets	
Speed	M002 (90 cpm)	420-555 mm/s
	M003 (110 cpm)	500-720 mm/s
	M004 (135 cpm)	630-985 mm/s
Paper Feed System:	FRR-CF (no air-knife separation)	
Tray Capacity:	Tray 1, 2	1,000 sheets (Thickness: 0.11 mm)
	Tray 3	2,550 sheets (Thickness: 0.11 mm)
Paper Weight	Tray 1, 2	52 to 216 g/m^2
	Tray 3	52 to 163 g/m^2
Paper Size	Tray 1,2,3	A5 LEF, A5 SEF, $5_{1/2}$"x$8_{1/2}$" LEF, B5 LEF, $5_{1/2}$"x$8_{1/2}$" SEF, A4 LEF, $8_{1/2}$"x11" LEF
Paper Size Switching	Tray 1, 2	Fixed position side, end fences, adjusted for other paper sizes by the operator.
	Tray 3	Fixed position side, end fences, adjusted by service technician.

Heater (Option)	Anti-condensation heaters: 36W (18W x 2)				
Size (w x d h)	540 x 730 x 980 mm (21.3 x 28.7 x 38.6 in.)				
Level	Less than 5 mm deviation at front/back, left/right				
Weight	Less than 88 kg (193.6 lb)				
Power Source	DC 24 V ±10% (from main machine)				
Power Consumption	Less than 132 W				
I/F Connection	Serial connection to main frame				
Tab Sheet:	Feed possible from Tray 4 or Tray 5. Requires installation of tab sheet fence.				
	Note: Only A4 LEF, $8_{1/2}$" x 11" LEF tab sheets can be fed.				
Paper Level Detection:	Trays 4, 5	5 Step: 900, 625, 375, 75, paper end			
	Tray 6	5 Step: 2250, 1525, 800, 75, paper end			
	Accuracy	±30 sheets (Tray 4, 5, 6)			
Bypass Tray (Option)	The Multi-Bypass Tray (B833) can be installed on either this LCIT or LCIT RT5040 (D453).				
Noise Level	Mode	Stand-alone	System		
			A	B	C
	Operation	< 73 dB	< 78 dB	< 80 dB	< 83 dB
	Standby		< 64 dB	< 70 dB	< 78 dB

LCIT RT5040 (D453) (Option)

Compatible Machines	M002/M003/M004	
Operating Environment	Ranges of temperature and humidity: Same as main machine.	
Service Life	Expected: 5 Years or 55,000K sheets	
Speed	M002 (90 cpm)	420-555 mm/s
	M003 (110 cpm)	500-720 mm/s
	M004 (135 cpm)	630-985 mm/s

Service Life	Expected: 5 Years or 55,000K	
Paper Feed System:	Tray 1, 2, 3	FRR-CF
Tray Capacity:	Tray 1, 3	1,000 sheets (Thickness: 0.11 mm)
	Tray 2	2,000 sheets (Thickness: 0.11 mm)
Paper Level Detection:	Trays 4, 5	5 Step: 900, 625, 375, 75, tray end
	Tray 6	5 Step: 2250, 1525, 800, 75, tray end
	Accuracy	±30 sheets (Tray 4, 5, 6)
Bypass Tray (Option)	The Multi-Bypass Tray (B833) can be installed on either this LCIT or LCIT RT5030 (D452).	
Paper Weight	Tray 1	52 to 256 g/m^2
	Tray 2	40 to 300 g/m^2
	Tray 3	52 to 256 g/m^2
Paper Size	Tray 1,2,3	A5 to A3, $5_{1/2}$"x$8_{1/2}$" to 13" x 18"
Paper Size Switching	Side fence, end fence adjustment.	
Paper Size Detection	Automatic	
Heater (Option)	Anti-condensation heaters: 36W (18W x 2)	
Size (w x d x h)	880 x 730 x 980 mm (33.5 x 28.7 x 38.6 in.)	
Level	Less than 5 mm deviation at front/back, left/right	
Weight	Less than 165 kg (363 lb)	
Power Source	DC 24 V ±10% (from main machine)	
Power Consumption:	Less than 150 W	
I/F Connection	Serial connection to main frame	
Tab Sheet:	Feed possible from all Tray. Requires installation of tab sheet fence.	
	Note: Only A4 LEF, $8_{1/2}$" x 11" LEF tab sheets can be fed.	

Paper Level Detection:	Trays 4, 5	5 Step: 900, 625, 375, 75, paper end			
	Tray 6	5 Step: 1750, 1250, 750, 75, paper end			
	Accuracy	±30 sheets (Tray 4, 5, 6)			
Bypass Tray (Option)	The Multi-Bypass Tray (B833) can be installed on either this LCIT or LCIT RT5040 (D453).				
Noise Level	Mode	Stand-alone	System		
			A	B	C
	Operation	< 73 dB	< 78 dB	< 80 dB	< 83 dB
	Standby		< 64 dB	< 70 dB	< 78 dB

Multi-Bypass Tray (B833) (Option)

This option can be installed on the top of either the LCIT RT5030 (452) for A4/LT paper or the LCIT RT5040 (D453) for A3/DLT paper.

Compatible Machines	M002/M003/M004
Operating Environment	Temperature and humidity ranges: Same as main machine.
Service Life	Expected: 5 Years or 60,000K sheets
Speed	M002 (90 cpm): 420-555 mm/s
	M003 (110 cpm): 500-720 mm/s
	M004 (135 cpm): 630-985 mm/s
Paper Feed System	FRR-CF
Tray Capacity	500 sheets (Paper thickness: 0.11 mm)
Paper Weight	52 to 216 g/m^2
Paper Size	A5 LEF, A5 SEF to A3 SEF, HLT LEF, HLT SEF to 13"x18" SEF
Paper Size Switching	Operator adjustable side fences accommodate different paper sizes
Paper Size Detection	Automatic (standard sizes only)
Heater	None

Paper Level Detection	Tray 7	4-Step: 500, 250, 50, paper end			
	Accuracy	±50 sheets			
Weight	Less than 18 kg (39.6 lb)				
Power Source	24 V DC (from main machine), 5 V DC (from LCT)				
Power Consumption	Less than 50 W				
Size (W x D x H)	710 x 560 x 210 mm (30 x 22 x 8.3 in.)				
Tab Sheets	A4 LEF, $8_{1/2}$" x 11" LEF (requires attachment of tab fence)				
Noise Level	Mode	Alone	System		
			A	B	C
	Operation	< 73 dB	< 78 dB	< 80 dB	< 83 dB
	Standby		< 64 dB	< 70 dB	< 78 dB

Cover Interposer Tray CI5010 (B835)

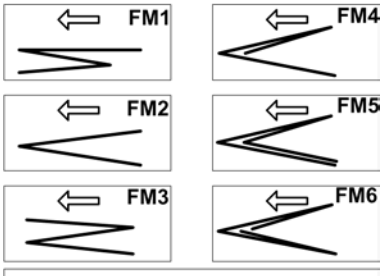
Compatible Machines	M002/M003/M004	
Speed	M002 (90 cpm)	432 mm/s
	M003 (110 cpm)	515 mm/s
	M004 (135 cpm)	649 mm/s
Paper Separation	FRR System with Feed Belt	
Paper Sizes	Width: A5 SEF/$5_{1/2}$"x$8_{1/2}$" SEF - 13"	
	Length: A5 LEF/$5_{1/2}$"x$8_{1/2}$" LEF - 18"	
Paper Weight	64 to 216 g/m^2	
Capacity	400 sheets (80 g/m^2) (2 trays 200 sheets each)	
Paper Size Detection	Yes	
Paper Size Switching	Operator adjustable side fences	
Side Registration	Yes	

Power Supply	24 V ± 5% (from mainframe)
Power Consumption	Less than 50 W
Size (w x d x h)	Less than 540 x 730 x 1200 mm, 21.2" x 28.7" x 47.2"
Weight	Less than 45 kg (99 lb)

Multi-Folding Unit FD5000 (D454)

General

Compatible Machines	M002/M003/M004	
Operating Environment	Temperature and humidity ranges: Same as main machine.	
Service Life	Expected: 5 years or 60,000 K (A4 LEF)	
Paper Weight	40 to 300 g/m^2	
Folding Methods	6 (see below)	
Speed	Straight-Through	100 to 700 mm/s
	Folding	270 to 700 mm/s
Straight-Through Feed	Size	Postcard to 13x19.2"
	Type	Used paper: A3, A4, B4, B5 OHP: A4, B5 Tap paper: A4 LEF, LT LEF
Folding Methods	6 (FM1 to FM6)	



FM1: Z-Folding
FM2: Half Fold
FM3: Letter Fold-out
FM4: Letter Fold-in
FM5: Double Parallel Fold
FM6: Gate Fold

d454v900

Paper Sizes (Folding)	FM1	A3, B4, DLT, LG, A4, LT, 12x18", 8-kai
	FM2	A3, B4, DLT, LG, A4, B5, LT 12x18", 12.6x18.5", 12.6x19.2", 13x18", 13x19", 13x19.2", 226x310 mm, 310x432 mm, SRA3, SRA4, 8-kai
	FM3	A3, B4, DLT, LG, A4, LT, B5, 12x18", 8-kai
	FM4	
	FM5	
	FM6	
Paper Weights (Folding)	FM1	64 to 105 g/m^2
	FM2	
	FM3	
	FM4	
	FM5	
	FM6	
Multiple Folding	FM1	Not allowed
	FM2	Max. 3 (64 to 80 g/m^2 only)
	FM3	Max. 3 (64 to 80 g/m^2 only)
	FM4	Max. 3 (64 to 80 g/m^2 , B4, A4, LT, B5 only)

	FM5	Not allowed
	FM6	
Line Speed (Only FM1 Z-Folded paper can exit downstream)		
No Fold	350 mm/sec. to top tray To downstream: Same as main machine.	
FM1	700 mm/sec. to top tray (paper ≤ 355.6 mm long) 450 mm/sec. to top tray (paper < 355.6 mm long) To downstream: Same as main machine.	
FM2	1 Sheet: Same as main machine 2-3 Sheets: 454 mm/sec. 700 mm/sec. to top tray (paper ≤ 355.6 mm long) 350 mm/sec. to top tray (paper ≤ 279.4 <355.6 mm long) 250 mm/sec. to top tray (paper < 279.4 mm long)	
FM3 FM4	1 Sheet: Same as main machine 2-3 Sheets: 454 mm/sec. to top tray 350 mm/sec. to top tray (paper ≤ 420 mm long) 250 mm/sec. to top tray (paper < 420 mm long)	
FM5	1 Sheet: Same as main machine 350 mm/sec. to top tray (paper ≤ 420 mm long) 250 mm/sec. to top tray (paper < 420 mm long)	
FM6	1 Sheet: Same as main machine as far as 3rd Stopper. At 3rd stopper feeds 50 mm at 100 mm/sec. 350 mm/sec. to top tray (paper ≤ 420 mm long) 250 mm/sec. to top tray (paper < 420 mm long)	
Power Supply	NA	AC 120V 60 Hz, 15A
	EU	AC 220 to 240V, 50/60 Hz 10A
Power Consumption	270 W	
Size (w x d x h)	466 x 980 x 730 mm (18.4 x 38.6 x 28.7 in.)	
Level	Less than 5 mm deviation at front/back, left/right	

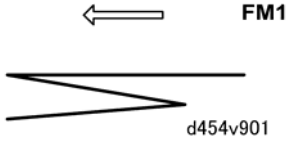
Weight	92 kg (203 lb)		
Noise Level (dB A)	Mode	Alone	System
	No Folding	< 76 dB	---
	Folding	< 78 dB	< 83 dB

Tray Capacity

The capacity of the tray on top of the unit for folded paper is determined by these variables:

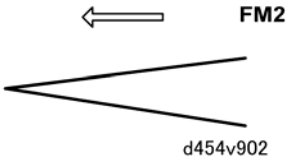
- Folding Methods (FM1 to FM6)
- Paper size
- Paper weight

Folding Mode FM1



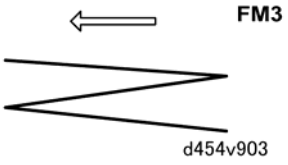
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	35	20
12x18"	35	20
A3 SEF	35	20
DLT	35	20
B4 SEF	35	20
LG SEF	35	20
A4 SEF	30	20
LT SEF	30	20

Folding Mode FM2



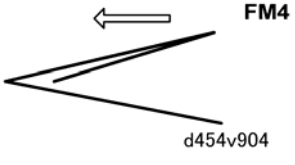
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
13x19.2"	40	25
13x19"	40	25
12.6x19.2"	40	25
12.6x18.5"	40	25
13x18"	40	25
SRA3 (320x450 mm)	40	25
SRA4 (225x320 mm)	40	25
226x310 mm	40	25
310x432 mm	40	25
8-kai	40	25
12x18"	40	25
A3 SEF	40	25
DLT	40	25
B4 SEF	40	25
LG SEF	40	25
A4 SEF	50	50
LT SEF	50	50
B5 SEF	50	50

Folding Mode FM3



Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	30	20
12x18"	30	20
A3 SEF	30	20
DLT	30	20
B4 SEF	30	20
LG SEF	30	20
A4 SEF	40	30
LT SEF	40	30
B5 SEF	40	30

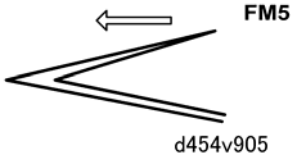
Folding Mode FM4



Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	40	20
12x18"	40	20
A3 SEF	40	20
DLT	40	20
B4 SEF	40	20

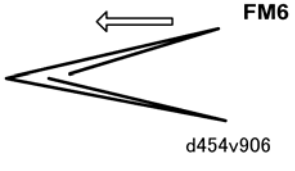
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
LG SEF	40	20
A4 SEF	50	40
LT SEF	50	40
B5 SEF	50	40

Folding Mode FM5



Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	30	20
12x18"	30	20
A3 SEF	30	20
DLT	30	20
B4 SEF	30	20
LG SEF	30	20
A4 SEF	30	30
LT SEF	30	30
B5 SEF	30	30

Folding Mode FM6



Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	50	20
12x18"	50	20
A3 SEF	50	20
DLT	50	20
B4 SEF	50	20
LG SEF	50	20
A4 SEF	30	30
LT SEF	30	30
B5 SEF	30	30

Specifications: Options-2

High Capacity Stacker SK5010 (D447)

The Tray Cart (D456) is available as an additional option for this unit.

General

Compatible Machines	M002/M003/M004		
Operating Environment	Temperature and humidity ranges: Same as main machine.		
Service Life	Expected: 5 years or 60,000 K		
Speed	280 to 700 mm/s		
Front Door Lock	Hasps provided, lock not provided		
Size (w x h x d)	900 x 980 x 730 mm (35.4 x 38.6 x 28.7)		
Weight	100 kg (220 lb.)		
Power Supply	NA	AC 120V 60 Hz, 15A	
	EU	AC 220 to 240V, 50/60 Hz 10A	
Power Consumption	250 W		
Level	Less than 5 mm deviation at front/back, left/right		
Noise Level (dB A)	Mode	Alone	System
	Shift	< 76 dB	< 83 dB

Shift Tray

Capacity (80 g/m^2)	5,000	A3 Ext., A3 SEF, B4 SEF, A4 SEF, A4 LEF, DLT SEF, LG SEF, LT SEF, LT LEF
	2,500	B5 SEF, B5 LEF, A5 SEF, A5 LEF, HLT SEF, HLT LEF
Paper Weight	40 to 300 g/m^2	
Tray Full Detection	4-Steps: 25%, 50%, 75%, 100%	

Proof Tray

Capacity	250 (A4, LT 80 g/m^2)
Paper Size	A5 SEF/Postcard to 331 x 499 mm (13" x 19.2")
Paper Weight	40 to 300 g/m^2
Tray Full Detection	None

Booklet Finisher SR5020 (D434)

General

Compatible Machines	M002/M003/M004		
Operating Environment	Temperature and humidity ranges: Same as main machine.		
Service Life	Expected: Five years or 60,000K		
Size (w x h x d)	990 x 730 x 1130 mm (39 x 28.7 x 44.5 in.)		
Weight	128 kg (281.6)		
Power Supply	NA	AC 120V 60 Hz, 15A	
	EU	AC 220 to 240V, 50/60 Hz 10A	
Power Consumption	250 W		
Level	Less than 5 mm deviation at front/back, left/right		
Noise Level (dB A)	Mode	Alone	System
	Shift	< 76 dB	---
	Staple	< 78 dB	< 83 dB

Shift Tray

Capacity	Unfolded Paper	2500	A4 LEF, B5 LEF, LT LEF
		1500	A3, A4 SEF, B4, B5 SEF, LT, LG< LT SEF, SRA4, 226x310 mm
		1000	12x18", SRA3, 13x18", 12.6x1.5", 12.6x19.2", 13x19", 13x19.2", 310x432 mm
		500	A5 LEF, HLT LEF
		100	A5 SEF, HLT SEF
	Z-Folded Paper	30	
Paper Size	Unfolded Paper	A5 to 13x19.2"	
	Z-Folded Paper	A3, B4, A4 SEF, DLT, LG LT SEF, 12x18", 8-kai	
Paper Weight	Unfolded Paper	40 to 300 g/m^2	
	Z-Folded Paper	64 to 105 g/m^2	

Proof Tray

Capacity	Unfolded Paper	250	A4, LT or smaller
		50	B4, LG or larger
	Z-Folded Paper	20	A4, LT or smaller
		20	B4, LG or larger
Paper Size	Unfolded Paper	A6 SEF to 13x19.2", Postcard SEF	
	Z-Folded Paper	A3, B4, A4 SEF, DLT, LG, LT SEF, 12x18", 8-kai	
Paper Weight	Unfolded Paper	52 to 216 g/m^2	
	Z-Folded Paper	64 to 105 g/m^2	

Corner Stapling

<table>
<tr><td rowspan="14">Stack Size (80 g/m^2)</td><td rowspan="2">Unfolded Paper</td><td>2 to 100</td><td>A4, B5, LT</td></tr>
<tr><td>2 to 50</td><td>A3, B4, DLT, LG</td></tr>
<tr><td rowspan="12">Z-Folded Paper</td><td>10</td><td></td></tr>
<tr><td colspan="2">Combined Stack</td></tr>
<tr><td>Z-Folded</td><td>Unfolded</td></tr>
<tr><td>1</td><td>1 to 90</td></tr>
<tr><td>2</td><td>0 to 80</td></tr>
<tr><td>3</td><td>0 to 70</td></tr>
<tr><td>4</td><td>0 to 60</td></tr>
<tr><td>5</td><td>0 to 50</td></tr>
<tr><td>6</td><td>0 to 40</td></tr>
<tr><td>7</td><td>0 to 30</td></tr>
<tr><td>8</td><td>0 to 20</td></tr>
<tr><td>9</td><td>0 to 10</td></tr>
<tr><td>10</td><td>0</td></tr>
<tr><td>Paper Size</td><td>Unfolded Paper</td><td colspan="2">B5 to A3, LT to DLT</td></tr>
<tr><td></td><td>Z-Folded Paper</td><td colspan="2">A3, B4, DLT</td></tr>
<tr><td>Paper Weight</td><td>Unfolded Paper</td><td colspan="2">64 to 90 g/m^2</td></tr>
<tr><td></td><td>Z-Folded Paper</td><td colspan="2">64 to 105 g/m^2</td></tr>
<tr><td>Stapling Positions</td><td colspan="3">1 Staple: Rear, Rear diagonal, or Front
2 Staples: Front/Rear</td></tr>
<tr><td>Staple Supply</td><td colspan="3">Cartridge with 5000-staple capacity</td></tr>
<tr><td colspan="4">Tray Capacity After Stapling</td></tr>
</table>

No Folding	**Pages**	**Stacks**	**Size**
	20 to 100	125 to 25	A4 LEF, B5 LEF, LT LEF
	10 to 19	200 to 105	
	2 to 9	150	
	10 to 100	150 to 15	A4 SEF, B5 SEF, LT SEF
	2 to 9	150	
	10 to 50	150 to 30	A3, B4, DLT, LG
	2 to 9	150	
No Folding, Mixed Sizes	**Pages**	**Stacks**	**Size**
	2 to 50	30	A3/A4 LEF B4/B5 LEF DLT/LT LEF
Z-Folded, Mixed with Unfolded	**Pages**	**Stacks**	**Size**
	1 to 10	30 to 3	A3 Z-fold/A4 B4 Z-fold/B5 DLT Z-fold/LT
Staple Trimming	Hopper Capacity		15,000 staples
	Hopper Full Alert		Photo-sensor
	Trimming Disposal		Alert, operator

Booklet Stapling

Stack Size	20	64 to 80 g/m^2
	15	80 to 90 g/m^2
Paper Size	13x19.2", 13x19", 12.6x19.2", 12.6x18.5", 13x18", SRA3 (320x450 mm), 12x18", A3, B4, SRA4 (320 x 225 mm), 226x310 mm, 310 x 432 mm, A4,B5, DLT, LG, LT	
Paper Weight	60 to 90 g/m^2	

Stapling Positions	2 staples, 2 fixed locations		
Staple Supply	2 cartridges, 5000 staples each		
Tray Capacity After Stapling	**Pages**	**Stacks**	**Size**
	2 to 5	30	All sizes
	6 to 10	15	
	11 to 15	10	
	16 to 20	5	

Punch Unit PU5020 (D449) (Option)

This punch unit is not pre-installed in the finisher. The punch unit must be installed.

Punching	North America		2/3 hole selectable
	Europe		2/4 hole selectable
	Scandinavia		4 hole
Skew Correction	Yes		
Paper Registration	Yes		
Paper Size	**Holes**	**Edge**	**Size**
	2 Holes	SEF	A6 to A3, HLT to DLT
		LEF	A5 to A4, HLT to LT
	NA 2 Holes	SEF	A6 to A3, HLT to DLT
		LEF	A5 to A4, HLT to LT
	3 Holes	SEF	A3, B4, DLT
		LEF	A4, B5, LT
	EU 4 Holes	SEF	A3, B4, DLT
		LEF	A4, B5, LT
	Scn 4 Holes	SEF	B6 to A3, HLT to DLT
		LEF	A5 to A4, HLT to LT

Paper Weight	**Holes**	**Weight**
	2 Holes	52 to 209 g/m^2
	NA 2 Holes	
	3 Holes	
	EU 4 Holes	52 to 163 g/m^2
	Scn 4 Holes	

Trimmer Unit TR5020 (D455) (Option)

This option is installed on the left side of the Booklet Finisher (D434).

Compatible Machines	Booklet Finisher SR5020 (D434) with the M002/M003/M004
Operating Environment	Temperature and humidity ranges: Same as main machine.
Service Life	Expected: 5 years or 12,000 K
Paper Size	
Standard Sizes	13x19.2", 13x19", 12.6x19.2", 12.6x18.5", 13x19", SRA3 (320x450 mm), 12x18", A3, B4, SRA4 (320x225 mm), 226x310 mm, 310 x 432 mm, A4, B5, DLT, LG, LT, 8 kai
Custom Size	Width: 182 to 330 mm Length: 257 to 488 mm
Stack Size	1 to 20 sheets (folded)
Trimming	40 sheets (80 g/m^2)

Tray Capacity	**Pages**	**Sets**		
	1 to 5	60 for all sizes		
	6 to 10	35 for B5 and A4/LT 40 for B4/LG and A3/DLT		
	11 to 15	25 for all sizes		
	16 to 18	20 for B5, A4/LT and B4/LG 25 for A3/DLT		
	19 to 20	20 for B5, A4/LT and B4/LG 25 for A3/DLT		
Paper Weight	Weight: 80 g/m^2 Weight: 20 lb. Bond			
Power Supply	NA	AC 120V 60 Hz, 15A		
	EU	AC 220 to 240V, 50/60 Hz 10A		
Power Consumption	75W			
Size (w x d x h)	1115 x 590 x 555 mm (43.9 x 23.2 x 21.8 in.)			
Level	Less than 5 mm deviation at front/back, left/right			
Weight	70 kg or less			
Noise Level (dB A)	Mode		Alone	System
	Straight-Through		< 68 dB	< 75 dB
	Trimming		< 72 dB	< 75 dB

Finisher SR5000 (3K Finisher B830)

Proof Tray

Paper Capacity (80 g/m^2)	500 sheets (A4, 8$_{1/2}$" x 11" and smaller)
	250 sheets (B4, 8$_{1/2}$" x 14" and larger)

Paper Size	A3 to A6 SEF, B6 SEF, 11" x 17" to $5_{1/2}$" x $8_{1/2}$", 12" x 18", 13" x 18"
Paper Weight	52 to 216 g/m^2
Upper Tray Full Detection	Provided

Shift Tray

Paper Capacity (80 g/m^2)	3000 sheets (A4 LEF, B5 LEF, $8_{1/2}$" x 11" LEF)
	1500 sheets (A3, A4 SEF, B4 and B5 SEF, 11" x 17" SEF, $8_{1/2}$" x 14", $8_{1/2}$" x 11" SEF
	1000 sheets 12" x 18"
	500 sheets (A5 LEF, $5_{1/2}$" x $8_{1/2}$" LEF)
	100 sheets (A5 SEF, $5_{1/2}$" x $8_{1/2}$" SEF)
Paper Size	A3 to A5, 11" x 17" to $5_{1/2}$" x $8_{1/2}$", 12" x 18" (including tab paper)
Paper Weight	52 to 216 g/m^2
Shift Tray Full Detection	Provided

Stapler

Stapling Stack Size	A4, B5, $8_{1/2}$" x 11" (Max. 100 Sheets)
	A3, B4, 11" x 17", $8_{1/2}$" x 14" (Max. 50 sheets)
Stapling Paper Size	A3 to B5, 11" x 17" to $8_{1/2}$" x 11"
	Z fold paper: A3 ,B4 ,11" x 17"
Stapling Paper Weight	64 to 90 g/m^2 Z fold paper: 64 to 80 g/m^2
Staple Position	4 Modes
	1 Staple: Front, Rear, Rear-Oblique
	2 Staples: 2 locations

Staple Capacity		5000 staples/cartridge		
Staple Supply		Cartridge or Staple Replacement		
Stapled Stack Size	No Folding	Sheets	Sets	Sizes
		10 - 100	200 - 30	A4 SEF, B5 SEF, $8_{1/2}$" x 11" SEF
				A4 LEF, B5 LEF, $8_{1/2}$" x 11" LEF
		2 - 9	150	
		10 - 50	150 - 30	A3, B4, 11" x 17", $8_{1/2}$" x 14"
		2 - 9	150	
	Folding	Sheets	Sets	Sizes
		1 - 10	30 - 3	A3 Z fold + A4, B4 Z fold + B5
				11" x 17" Z-Fold + $8_{1/2}$" x 11"
Trimmed Staple Capacity		15,000 or more		
Staple Hopper Full Detection		Provided		
Power Consumption		Less than 120 W		
Power Source		DC 24 V (From Mainframe)		
Size (W x D x H)		800 x 730 x 980 mm (31.5 x 28.7 x 38.6 in.)		
Weight		Less than 75 kg (165 lb)		
Compatible Machines		M002 (90 cpm), M003 (110 cpm), M004 (135 cpm)		

Punch Unit PU5000 (B831)

The punch unit is installed in the Finisher SR5000 (B830).

Punch Hole Positions	2/3-hole (North America)
	2/4-hole (Europe)
Punch Paper Size	
2-Hole (NA)	A6 - A3 SEF, 11" x 17"-5 $_{1/2}$" x $8_{1/2}$" SEF
	A5 - A4 LEF, 8 $_{1/2}$" x 11" LEF, $5_{1/2}$" x $8_{1/2}$" LEF

3-Hole (NA)	A3 SEF, B4 SEF, 11" x 17" SEF
	A4 LEF, B5 LEF, $8_{1/2}$" x11" LEF
4-Hole (EUR/A)	A3 SEF, B4 SEF, 11" x 17" SEF
	A4 LEF,B5 LEF, $8_{1/2}$" x 11" LEF
Paper Weight	
2-Hole (NA)	52 g/m^2 - 163 g/m^2
3-Hole (NA)	52 g/m^2 - 163 g/m^2
4-Hole (EUR/A)	52 g/m^2 - 128 g/m^2
Punch Waste Hopper Capacity	
2-Hole (NA)	10K
3-Hole (NA)	10K
4-Hole (EUR/A)	15K
Operation Modes	All (Shift, Proof, Staple)

2. Appendix: Program Download

Program Download

Overview

Here are some important points to keep in mind when downloading software:

- If an error interrupts download processing, the machine cannot operate normally with the program software only partially downloaded.
- When download processing execution starts, "Downloading..." is displayed and when downloading has completed successfully, the message is cleared.
- If the download is interrupted when the "Downloading ..." message is displayed, the machine does not attempt a re-try.
- The program that downloads firmware from an SD card is part of the GW controller software. If downloading this software is interrupted, the program stored in the machine may be corrupted. Because of this, it may not be possible to restart the downloading program. (In addition, if the GW controller software cannot be downloaded, other software on other SD cards cannot be downloaded.) However, it may be possible to restart the program without replacing the board by setting DIP SW 1 on the controller to ON, and re-starting.

Recovery Methods

When an error occurs during downloading, an error code is displayed on the operation panel.

- If the download procedure can be re-started, re-start the download procedure.
- If the download procedure cannot be downloaded for other than the GW controller, replace the board where the downloaded program is stored.
- If the download procedure cannot be downloaded for the GW controller, set DIP SW 1 to ON. Power the machine off and on to start the downloading program. After downloading has completed, set the DIP SW to OFF then power the machine off and on again.

Download Error Codes

	Display	Details	Recovery
01	Reboot after card insert E01 x Module ID Card No. xx/xx	Controller ROM update error 1 When the update break data is stored in NVRAM, the break module information and the decompression module capable of writing do not match.	• Use the correct card
02	Download Error E02 Power off/on	Controller ROM update error 2. Error occurs during ROM update program initialization.	• Cycle the machine off/on to rewrite
03	Download Error E03 Power off/on	Controller ROM update error 3 The ROM for the write operation does not exist.	• Cycle the machine off/on • Install the missing ROM DIMM
04	Download Error E04 Power off/on	Controller ROM update error 4 GZIP data confirmation fails. (CRC value check)	• Cycle the machine off/on • Set DIP SW 1 to ON and retry • Replace the RAM DIMM • Replace the controller board

	Display	Details	Recovery
05	Download Error E05 Power off/on	Controller ROM update error 5 Error occurs when writing to the device.	• Cycle the machine off/on • Set DIP SW 1 to ON and retry • Replace the RAM DIMM • Replace the controller board
06	Download Error E06 Power off/on	Controller ROM update error 6 CPU clock error.	• Turn the machine power off/on. • Set controller DIPSW-1 to ON to force the machine to write to ROM. • If you cannot force the machine to write, replace the controller board.
19	Download Error E19 Power off/on	Controller ROM update error 7 Schedule data is unclear.	• Software defective
20	Down Error E20 Power Off/On	System error 1 (+SC991) The physical address cannot be mapped. Software/hardware is defective	• Cycle the machine off/on and re-try • Replace the controller board
21	Download Error E21 Power Off/On	System error 2 (+SC991) There is not sufficient memory to download.	• Cycle the machine off/on and re-try. • Replace the RAM • Replace the controller board

	Display	Details	Recovery
22	Download Error E22 Module ID Card No xx/xx	System error 3 (+SC991) Data fails to decompress. Card defective.	• Cycle the machine off/on and re-try. • Replace the card • Replace the controller board
	SC991	System error 4 "Selfupdate" does not execute. Software defective.	• Cycle the machine off/on and re-try • Set DIP SW 1 to ON and re-try • Replace the controller board
23	Download Error E24 Power Off/On	System error 5 Card read/write error. Software or card defective.	• Cycle the machine off/on and re-try • Replace the card • Replace the controller board
30	No Valid Data E30	Download dysfunction 1 Print download is not possible. Cannot download to HDD because HDD not installed or defective.	• HDD defective • HDD harness disconnected, defective
31	Reboot After Card Insert E31 Module ID Card No. xx/xx	Download dysfunction 2 Download continuity error with more than one card. The second or later card is not compatible.	• Set the correct cards in the correct order

	Display	Details	Recovery
32	Reboot After Card Insert E32 Module ID Card No. xx/xx	Download dysfunction 3 Download interrupted because card is not correct, or power failure interrupted download.	• Use the correct card • If power failure caused the failure, remove the card and insert another.
33	No Valid Data E33	Download dysfunction 4 Card version error. Attempted to download program using a card with the wrong version number.	• Use the correct card
34	No Valid Data E34	Download dysfunction 5 Specification error. DOM card set in EXP machine, or vice versa.	• Use the correct card
35	No Valid Data E35	Download dysfunction 6 Wrong model. The inserted card is for another model.	• Use the correct card
36	No Valid Data E36	Download dysfunction 7 Module error. The program that you are attempting to download does not exist on the machine, or the contact points at the card and the machine slot are not connected.	• Use the correct card, inserted correctly • Install a ROM DIMM if none is installed
37	No Valid Data E37	Download dysfunction 8 Edit option card error. You attempted to employ a used card.	• Use an unused card
40	Download Error E40 Module ID Card No. xx/xx	Download result failure 1 Engine download failure.	• Cycle the machine off/on and re-try

	Display	Details	Recovery
41	Download Error E41 Module ID Card No. xx/xx	Download result failure 2 Fax download failure.	• Cycle the machine off/on and re-try
42	Download Error E42 Module ID Card No. xx/xx	Download result failure 3 Operation panel or language download failed. For this error, sometimes the message may not be displayed.	• Cycle the machine off/on and re-try
43	Download Error E43 Module ID Card No. xx/xx	Download result failure 4 Print download failed.	• Cycle the machine off/on and re-try
44	Download Error E44 Module ID Card No.	Download result failure 5 The data targeted for the write operation could not be accessed.	• Turn the machine power off. • Replace the SD card with the start-up SD card that has the source data. • Set controller DIPSW-1 to ON to force the machine to write. • Turn the machine on. • If you cannot force the machine to write, replace the controller board.

	Display	Details	Recovery
50	No Valid Data E50	Download invalid The source data for the update could not be authenticated.	• Use the correct SD card.
51	(no display)	Remote ROM update failure 1 The source data for the ROM update is corrupted because the machine is operating and an SC code has been issued.	• Turn the machine power off/on and try again.
52	(no display)	Remote ROM update failure 2 The source data received for the ROM update is corrupted; it failed a SUM check due to its abnormal length.	• Try again with the correct data.
53	(no display)	Download result failure 6 The previous download in progress was cancelled.	• Do the download procedure again.

3. Appendix: Service Call

Service Call Conditions

Service Mode Lock/Unlock

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

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

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

   - This unlocks the machine and lets you get access to all the SP codes.
   - The CE can do servicing on the machine and turn the machine off and on. It is not necessary to ask the Administrator to log in again each time the machine is turned on.
2. If you must use the printer bit switches, go into the SP mode and set SP 5169 to "1".
3. After machine servicing is completed:
   - Change SP 5169-001 from "1" to "0".
   - Turn the machine off and on. Tell the administrator that you completed servicing the machine.
   - The Administrator will then set the "Service Mode Lock" to ON.

Service Call Levels

There are 4 levels of service call conditions.

Level	Definition	Reset Procedure
A	Fusing unit SCs displayed on the operation panel. The machine is disabled. The operator cannot reset the SC.	Enter SP mode, then turn the main power switch off and on.
B	SCs that disable only the features that use the defective item. These SCs are not shown to the operator under normal conditions. They are displayed on the operation panel only when the defective feature is selected.	Turn the main power switch off and on.

Level	Definition	Reset Procedure
C	SCs that are not shown on the operation panel. They are internally logged.	Logging only
D	Turning the operation switch (or main power switch) off then on resets these SCs. These SCs are displayed on the operation panel and displayed again if the error reoccurs.	Turn the operation switch (or main power switch) off and on.

SC Code Descriptions

Important

- **If a problem concerns a circuit board, disconnect and reconnect the connectors and then test the machine. Often a loose or disconnected harness is the cause of the problem. Always do this before you decide to replace the PCB.**
- **If a motor lock error occurs, check the mechanical load before you decide to replace the motor or sensors.**
- **When a Level "A" or "B" SC occurs while in an SP mode, the machine cannot display the SC number. If this occurs, check the SC number after leaving the SP mode.**
- **If you set SP 5875 to 'on', the machine reboots automatically when the machine issues a Level "B&D" SC code. This is done for Level "D" SC codes only.**

⚠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 switch to switch the power off, wait for the power LED to go off, and then switch the main power switch off.

Note

- The main power LED (⏻) lights or flashes while the main machine is communicating with the network server, or while the machine is accessing the hard disk or memory for reading or writing data.

SC Tables: 1xx

SC161-2	B	IPU (Image Processing Unit) Error
		Initialization after power on failed because an error occurred on the IPU.
		• IPU on BICU (Base Image Control Unit) defective (replace BICU) • Controller board defective

SC195	B	Main Machine Model Entry Error
		The 11-digit serial number stored in memory is not the correct number for this model.
		• Check the entered serial number with SP5811. • If the serial number is incorrect, contact your supervisor. • NVRAM defective • BICU replaced without original NVRAM on the Controller board.

SC Tables: 2xx

SC202	B	Polygon Motor Error 1: ON Timeout
		The polygon mirror motor did not reach its operating speed within 20 s after the polygon motor switched on.
		• Connection between the polygon mirror motor control board and the motor is loose, broken, or defective • Polygon mirror motor defective • Polygon mirror motor control board defective • BICU defective

SC203	B	Polygon Motor Error 2: OFF Timeout
		The polygon mirror motor did not turn off within 3 s after the motor was switched off.
		• Connection between polygon mirror motor and its drive board is loose, broken, or defective • Polygon mirror motor defective • Polygon mirror motor drive board defective • BICU defective

SC204	B	Polygon Motor Error 3: XSCRDY Signal Error
		The machine detected that the polygon mirror motor XSCRDY signal went inactive : • While an image was being created • During the output of a synchronous laser detection signal
		• Switch the machine off/on (problem was probably due to electronic noise) • Replace the harness if cycling the machine off/on does not solve the problem • Polygon motor defective • Polygon mirror motor control board defective • BICU defective

SC205	B	Polygon Motor Error 4: Unstable Timeout
		The machine detected that the polygon mirror motor signal went inactive at some time other than: • While an image was being created • During the output of a synchronous laser detection signal
		• Switch the machine off/on (problem was probably due to electronic noise) • Replace the harness if cycling the machine off/on does not solve the problem • Polygon motor defective • Polygon mirror motor control board defective • BICU defective

SC206	B	Polygon Motor Error 5: Line Cycle Measurement Error
		The machine could not measure the line cycle within the 150 ms.
		• Polygon motor drive board I/F harness loose, broken, defective • Polygon motor or polygon motor drive board defective • BICU defective

SC220	B	Synchronization Detector Error 1: LD0
		When LD0 fired with the polygon mirror motor rotating at normal speed, an synchronous detection signal was not output within 250 ms. This can occur when the machine recovers from the energy save mode and there is no paper available.
		• Make sure there is paper in the trays • Cycle the machine off/on • Harness connector of the laser synchronization detector board is loose, broken, defective • Laser synchronization detection board defective or installed improperly • LD unit defective • BICU defective

SC221	B	Synchronization Detection Error 2: LD1
		When LD1 fired with the polygon mirror motor rotating at normal speed, a synchronous detection signal was not output. **Note**: This can occur when the machine recovers from the energy save mode and there is no paper available.
		• Make sure there is paper in the trays • Cycle the machine off/on • Harness connector of the laser synchronization detector board is loose, broken, defective • Laser synchronization detection board defective or installed improperly • LD unit defective • BICU defective

SC230	B	FGATE Error 1: Signal Failed to Turn On
		The FGATE signal did not switch on within 1 s of when the lasers were supposed to start writing the image.
		• Cycle the machine off/on • Check the harnesses, connectors of the BICU, Controller • GAVD on the BICU defective • Controller defective • BICU defective

SC231	B	FGATE Error 2: Signal Failed to Turn Off
		The FGATE signal did not switch off within 7 s of when the lasers started writing the image, or remained off at the beginning of the next job.
		• Cycle the machine off/on • Check the harnesses, connectors of the BICU, Controller • GAVD on the BICU defective • Controller defective • BICU defective

SC240	B	LD Error
		The LD error terminal of the LDB asserted an error.
		• Cycle the machine off/on • LDB harness connectors loose, broken, defective • LDB defective • BICU defective

SC Tables: 3

SC300
D059 RTB 57

3

SC300	B	Charge Corona Error 1: Charge Leak
		An abnormal detection signal (H) was detected for more than 60 ms. During this time, the detected voltage remained below –4V for more than 50 ms.)
		• Cycle the machine off/on • CGB power pack harness connectors loose, broken, defective • Corona wire caps loose, missing • CGB power pack defective • Charge corona unit connectors loose, broken, defective

SC304	B	Charge Corona Error 2: Grid Leak
		A high feedback voltage (H) for the charge corona 60 ms. Also, during this time, the voltage of the charge grid remained less than –400V
		• Cycle the machine off/on • Charge unit set incorrectly (not locked in place) • Charge unit connector loose, broken, defective

SC305	C	Charge Corona Wire Cleaner Error
		One of these occurred after the charge corona cleaner motor was switched on: The charge corona wire cleaner motor remained locked within 10 sec after the motor switched on. The charge corona wire cleaner motor failed to lock within 45 s after the start of cleaning.
		• Cycle the machine off/on • Charge corona wire cleaner motor defective

SC312	C	Pre-Charge Output Error 1: Leak
		An abnormal signal (H) was detected continuously for 60 ms. During this time the pre-charge unit voltage remained less than –3 kV for more than 50 ms.
		• Pre-charge unit set incorrectly. • Pre-charge unit contact is broken or defective.

SC313	C	Pre-Charge Output Error 2: Grid Output
		An abnormal signal (H) was detected continuously for 60 ms. During this time the pre-charge grid voltage remained less than –400V for more than 50 ms.
		• Pre-charge unit set incorrectly • Pre-charge unit contact is broken or defective

SC320	D	Development Bias Error
		An abnormal detection signal (H) was detected continuously for 60 ms. During this time the voltage exceeded –90μA for more than 50 ms.
		• Development power pack connectors loose, broken, defective • Development unit connectors loose, broken, defective • Development power pack defective

SC344	C	Development Unit Set Error
		The development is not installed, or it is installed incorrectly. The development unit set switch is checked every time the machine is turned on and when the front doors are closed.
		1. Pull out the development unit. 2. Install it again. 3. Close the front doors 4. Cycle the machine off/on

SC360	C	TD Sensor Output Error 1: Vt Above Upper Limit
		The result of the check of the TD sensor output (Vt) after every copy for 10 continuous copies was Vt > 4.0V (out of range).
		• TD sensor dirty or defective • TD sensor connector to BICU loose, broken, defective • IOB defective • BICU defective

SC364	C	TD Sensor Output Error 2: Vt Below Lower Limit
		The result of the check of the TD sensor output (Vt) after every copy for 10 continuous copies was Vt < 0.5V (out of range).
		• TD sensor dirty or defective • TD sensor connector to BICU loose, broken, defective • IOB defective • BICU defective

SC368	D	TD Sensor Adjustment Error 1
		The value for Vref could not be set because: • The target voltage could not reach 2.5V with maximum PWM (255) application • The target voltage exceeded 2.5V with minimum PWM (0) application.
		• TD sensor connector or harness to the IOB loose, broken, defective • TD sensor defective • IOB defective • BICU defective

SC372	D	TD Sensor Adjustment Error 2
		The TD sensor output voltage is not adjusted to 2.5 ± 0.1 V within 3 min. during initialization of the TD sensor with SP2801. **Note:** When an abnormal condition occurs, "0" is displayed for SP2906 (Vcont Manual Setting).
		• TD sensor connector, harness loose, broken, defective • TD sensor defective • IOB defective

SC396	B	Drum Motor Error
		The drum motor lock signal is longer than 2 s while the drum motor is on.
		• Drum motor connector, harness loose, broken, defective • Drum motor defective • Mechanical problem with the drum unit, transfer belt, toner collection unit

SC Tables: 4

SC400	C	ID Sensor Error 1: Background Adjustment Error
		One of the following ID sensor output voltages was detected for Vsg (the reading of the bare drum surface) at ID sensor initialization. • The reading was less than 4V at PWM=255 (Maximum PWM). The reading was over 4V at PWM=0 (Minimum PWM) **Note**: The most recent correct PWM value is used for control. The value displayed by SP3103 (ID Sensor Output Display) is the actual, incorrect value.
		• ID sensor harness, connector was loose, broken, defective • ID sensor dirty • ID sensor defective • IOB defective • BICU defective • LD unit defective • CGB/PPG power pack defective

SC401	C	ID Sensor Error 2: Background Output Error
		One of the following conditions was detected when checking the ID sensor pattern: • Vsg < 2.5 V • Vsg= 0 V • The ID sensor output voltage = 5.0 V and PWM signal input to ID sensor = 0 **Notes:** • Vsg is the ID sensor output after checking the bare drum surface in the ID sensor pattern. • The SC code is not displayed; only the logging data is incremented. • When this SC is issued, only the toner density sensor output (Vt) (even for jobs less than 10 copies) and Vref is not updated. • After an abnormal condition is detected, SP3103 (ID Sensor Output Display) shows "Vsp = Vsg = 0" (or "5.0V"). • If the next ID sensor pattern check is normal, this restores normal operation.

		• ID sensor harness, connector is loose, broken, or defective • ID sensor dirty • ID sensor defective • IOB defective • LD Unit defective • BICU defective • CGB/PPG power pack defective

SC402	C	ID Sensor Error 3: ID Sensor Pattern Error
		One of the following ID sensor output voltages was detected when checking the covered are of the ID sensor pattern: • Vsp > 2.5 V • Vsp = 0 V **Notes**: • The SC code is not displayed; only the logging data is incremented. • When this SC is issued, only the toner density sensor output (Vt) (even for jobs less than 10 copies) and Vref is not updated. • After an abnormal condition is detected, SP3103 (ID Sensor Output Display) shows "Vsp = Vsg = 0" (or "5.0V"). • If the next ID sensor pattern check is normal, this restores normal operation.
		• ID sensor harness, connector is loose, broken, or defective • ID sensor dirty • ID sensor defective • IOB defective • LD Unit defective • BICU defective • Development power pack defective

SC406	C	ID Sensor Error 4: ID Sensor Pattern Not Detected
		At the ID sensor pattern check of the covered area of the ID sensor pattern, the value of the edge voltage was not 2.5 V for 1.5 seconds. **Notes**: • The SC code is not displayed; only the logging data is incremented. • When this SC is issued, only the toner density sensor output (Vt) (even for jobs less than 10 copies) and Vref is not updated. • After an abnormal condition is detected, SP3103 (ID Sensor Output Display) shows "Vsp = Vsg = 0" (or "5.0V"). • If the next ID sensor pattern check is normal, this restores normal operation.
		• ID sensor harness, connector is loose, broken, or defective • ID sensor dirty • ID sensor defective • IOB defective • LD Unit defective • BICU defective • Development power pack defective

SC420	C	Drum Potential Sensor Error 1: Vd Adjustment Error
		When Vd (drum potential of the latent ID sensor pattern before exposure) was adjusted during auto process control: After 5 adjustments by Vg (voltage output of the charge corona unit) Vd failed to attain the value of SP2001 006 (total corona voltage for Photo Mode at normal speed) or Vd failed to attain the value of SP2001 012 for the CPM down mode (but not Photo Mode).
		• Drum potential sensor harness, connector is loose, broken, defective • Drum potential sensor dirty • Drum potential sensor defective • Drum connector, harness loose, broken, defective • Development power pack defective • BICU defective

SC424	C	Drum Potential Sensor Error 2: VL Error
		At the beginning of auto process control, the VL detected after creation of the ID sensor pattern was greater than 550. **Note:** VL is the drum potential after maximum laser exposure, determined by reading the white patches of the potential sensor pattern. To change VL, the machine adjusts the input current of the laser diodes.
		• Poor drum ground connection • Drum worn • LD unit dirty

SC428	C	Drum Potential Sensor Error 3: Vh Adjustment Error
		The correct value for Vh (standard drum potential for halftones) could not be detected after 45 consecutive adjustments of LD power: • The value for SP3904-1 could not be attained for normal speed, or the value of SP3904-2 could not be attained for low speed mode. • The LD power adjustments exceeded the upper and lower limits (+185 and –70).
		• Drum potential sensor harness, connector is loose, broken, defective • Drum potential sensor dirty • Drum potential sensor defective • Drum unit connector, harness loose, broken, defective • Poor drum ground connection • LD unit defective • BICU defective

SC435	C	PCU Set Error
		The PCU is not installed, or it is installed incorrectly. The PCU unit set switch is checked every time the machine is turned on and when the front doors are closed.
		1. Pull out the PCU unit. 2. Install it again. 3. Close the front doors 4. Cycle the machine off/on

SC437	C	Drum Potential Sensor Error 4: Vd Detection Error
		During execution of auto process control for normal speed and CPM down mode when VD was detected VG= -900V
		• Do SP3902 001 to determine if auto process control has been turned off. If this SP is off, turn it on.

SC438	B	Drum Potential Sensor Error 5: ID Sensor Pattern Potential
		When the ID sensor potential (Vp) was measured after a cold start, or at the end of a job, the total of this reading and the value of the setting of SP2201-4 did not exceed 900V (development unit power pack output) after 3 samplings.
		• Drum potential sensor defective • BICU defective • IOB defective • Poor drum unit connection or connectors defective • Poor drum ground connection • LD defective • Poor drum cleaning ground connection • Drum worn • Dirty laser optics

SC439	B	Drum Potential Sensor Error 6: Vh Abnormal
		When the LD power was adjusted during auto process control, the first value detected for the Vh pattern (used to set standard drum potential for halftones) exceeded 720V.
		• Drum potential sensor harness, connector loose, broken, defective • Drum potential sensor defective • LD unit defective (pattern could not be created)

SC440	B	Transfer Output Error
		One of the following conditions was detected for 17 counts (about 100 ms) when the transfer voltage was applied with the main motor operating: • The value for the transfer current was set for 70μA, but the feedback voltage was less than 0.75V (less than 1.5 KV). • When the feedback current was less than 0.16V (10μA), the feedback voltage was less than 0.15V (less than 300V) due to a poor input connection. • When the feedback current was less than 0.16V (10μA), the feedback voltage was less than 3.05V (over 6.1 KV) due to a poor output connection.
		• Transfer power pack harness, connectors loose or broken • Transfer power pack harness or connectors have short circuited • Transfer power pack is defective

SC441	D	Development Motor Lock
		While the motor is operating, the motor lock signal remained LOW for 2 s
		• Development motor lock due to overload • IOB defective

SC487	B	Toner Collection Unit Lock
		The toner collection coil rotation sensor did not detect rotation of the coil within 5 s after the drum motor turned on due to toner clumping in the collection unit. **Notes**: • The drive gear that drives the cleaning and toner transport mechanism is equipped with a torque limiter. If the rotation of the toner collection coil becomes overloaded, the torque limiter disengages the drive gear. • The sensor (a photo interrupter) detects the change in the position of the gear triggers the error. • This SC code occurs after 8K pages have been fed after a message alerts the operator that the toner collection unit needs replacement. After the 8K pages have fed, the machine will stop.
		• Enter "0" for SP2950-1 then cycle the machine off/on • Empty or replace the toner collection bottle.

SC488	C	2nd Cleaning Blade Operation Error	
		The push-switch signal from the cleaning blade solenoid was incorrect. The signal is detected 1 sec. after the solenoid operates.	• 2nd blade solenoid connector loose, broken defective • 2nd blade solenoid defective • Release mechanism defective

SC489	C	Drum Cleaning Unit Set Error	
		The drum cleaning unit is not set properly. The drum cleaning unit set switch is set every time the machine is turned on and when the front doors are closed.	1. Remove the drum cleaning unit 2. Install it again. 3. Close the front doors 4. Cycle the machine off/on

SC491	B	Polygonal Mirror Motor Cooling Fan Motor Lock
		The polygonal mirror motor cooling fan motor lock signal remains HIGH for 5 s while the polygonal mirror motor cooling fan motor is on.
		• Drive mechanism overload • Obstruction has stopped the fan • Fan connector loose, broken, defective

SC492	D	Development Unit Suction Motor Lock
		While the development unit toner suction motor is operating, the lock sensor output did not change for 1 s An electrical overload in the PCB inside the motor unit has caused the motor to malfunction.
		• Replace the motor.

SC494
RTB 10

SC494	B	Toner Transport Unit Error
		One of the following has occurred during toner transport from the toner bank to the toner supply cylinder: • An obstruction (clumped toner, other foreign material) is blocking the toner supply coil • The coil torque limiter is broken • Toner bottle end sensor is broken
		• Cycle the machine off/on • Clean the toner transport coil, tubing, toner supply clutch, torque limiter • Defective toner supply coil • Defective toner supply tube • Defective toner supply clutch • Defective torque limiter

SC495
RTB 10

SC495	B	Toner Bottle Unit Error
		During toner transport from the toner supply cylinder to the toner hopper, the toner hopper sensor cannot detect toner even after the toner supply pump switches on for 2 s and switches off 10 times during printing.
		• Toner supply pump motor harness, connector loose, broken, defective • Toner supply pump motor defective • Blockage in the toner supply tube • Toner supply tube disconnected • Blockage in the toner supply cylinder • Toner-end sensor in the toner supply cylinder defective • Agitator in the toner supply cylinder defective • Toner supply cylinder agitator motor defective

SC498	B	OPC Temperature Sensor Error
		The OPC temperature sensor detected a temperature of less than -20°C or greater than 60°C. -or- At temperature detection, the A/D input voltage was less than 0.05V or was greater than 4.95V
		• OPC temperature sensor dirty • OPC temperature sensor harness or connector loose, broken, defective • OPC temperature sensor or PCB defective

SC Tables: 5xx

SC501	D	1st Tray Lift Mechanism
		One of the following conditions is detected in the 1st tray (tandem tray) of the main machine: • The 1st tray lift sensor is not activated for 10 s after the 1st tray lift motor turned on. • Upper limit is not detected within 10 s while the paper tray is lifting during paper feed. • The 1st tray lift sensor is already activated when the 1st tray is placed in the machine.
		• Poor 1st tray lift motor connection • Remaining paper or another obstruction has stopped the tray and motor • 1st pick-up solenoid connector is loose • 1st pick-up solenoid is blocked by an obstruction

SC502	D	2nd Tray Lift Malfunction
		One of the following conditions is detected in the 2nd tray of the main machine: • The 2nd tray lift sensor is not activated for 10 s after the 2nd tray lift motor turned on. • Upper limit is not detected within 10 s while the paper tray is lifting during paper feed. • The 2nd tray lift sensor is already activated when the 2nd tray is placed in the machine.
		• Poor 2nd tray lift motor connection • Remaining paper or another obstruction has stopped the tray and motor • 2nd pick-up solenoid connector is loose • 2nd pick-up solenoid is blocked by an obstruction

SC503	D	3rd Tray Lift Malfunction
		One of the following conditions is detected in the 3rd tray of the main machine: • The 3rd tray lift sensor is not activated for 10 s after the 3rd tray lift motor turned on. • Upper limit is not detected within 10 s while the paper tray is lifting during paper feed. • The 3rd tray lift sensor is already activated when the 3rd tray is placed in the machine
		• Poor 3rd tray lift motor connection • Remaining paper or another obstruction has stopped the tray and motor • 3rd pick-up solenoid connector is loose • 3rd pick-up solenoid is blocked by an obstruction

SC504	D	4th Tray (LCT Tray 1) Lift Malfunction
		One of the following conditions is detected in the 4th tray: • The LCT 1st lift sensor is not activated for 10 s after the LCT 1st tray lift motor turned on. • Upper limit is not detected within 10 s while the paper tray is lifting during paper feed. • The LCT 1st lift sensor is already activated when the LCT 1st tray is placed in the machine.
		• Poor LCT 1st tray lift motor connection • Remaining paper or another obstruction has stopped the tray and motor • LCT 1st pick-up solenoid connector is loose • LCT 1st pick-up solenoid is blocked by an obstruction

SC505	D	5th Tray (LCT Tray 2) Lift Malfunction
		One of the following conditions is detected in the 5th tray: • The LCT 2nd lift sensor is not activated for 10 s after the LCT 2nd tray lift motor turned on. • Upper limit is not detected within 10 s while the paper tray is lifting during paper feed. • The LCT 2nd lift sensor is already activated when the LCT 2nd tray is placed in the machine.
		• Poor LCT 2nd tray lift motor connection • Remaining paper or another obstruction has stopped the tray and motor • LCT 2nd pick-up solenoid connector is loose • LCT 2nd pick-up solenoid is blocked by an obstruction

SC506	D	6th Tray (LCT Tray 3) Lift Malfunction
		One of the following conditions is detected in the 6th tray. • The LCT 3rd lift sensor is not activated for 20 s after the LCT 3rd tray lift motor turned on. • Upper limit is not detected within 20 s while the paper tray is lifting during paper feed. • The LCT 3rd lift sensor is already activated when the LCT 3rd tray is placed in the machine.
		• Poor LCT 3rd tray lift motor connection • Remaining paper or another obstruction has stopped the tray and motor • LCT 3rd pick-up solenoid connector is loose • LCT 3rd pick-up solenoid is blocked by an obstruction

SC507	D	7th Tray (Bypass Tray) Lift Mechanism
		One of the following conditions is detected in the optional bypass tray. • The bypass tray lift sensor is not activated for 10 s after the tray lift motor turned on. • Upper limit is not detected within 10 s while the paper tray is lifting during paper feed. • The bypass tray lift sensor is already activated when the bypass tray was placed in the machine.
		• Poor bypass tray lift motor connection • Remaining paper or another obstruction has stopped the tray and motor • Bypass tray pick-up solenoid connector is loose • Bypass tray pick-up solenoid is blocked by an obstruction

SC529	C	Exit Junction Gate HP Sensor Error
		The exit junction gate did not return to its home position.
		• Cycle the machine off/on

SC531	B	Fusing Motor Lock
		A fusing motor lock signal is detected for more than 2 s during operation due to an electrical overload in the motor driver board.
		• Motor driver board defective. Replace motor.

SC532-1	B	4th Tray Front Fan Error	LCIT (D453)
SC532-2	B	4th Tray Rear Fan Error	
SC533-1	B	5th Tray Front Fan Error	
SC533-2	B	5th Tray Rear Fan Error	
SC534-1	B	6th Tray Front Fan Error	
SC534-2	B	6th Tray Rear Fan Error	

		A problem has occurred with a fan and it is not operating. The tray where the fan is not operating cannot feed paper until the problem has been corrected. **Note**: • Each tray has two fans. These fans are used to help separate the paper from the top of the stack. • Paper separation will not occur unless both fans are operating correctly. • Only the tray where the error occurred cannot feed paper. The other trays can continue to feed paper.
		• Fan is disconnected • Fan harness or connector loose, broken, defective • Fan defective.

SC541	A	Fusing Thermistor Open
		The fusing temperature detected by the thermistor was below 7°C for 15 s.
		• Fusing thermistor defective or out of position • Poor thermistor terminal connection

SC542	A	Fusing Temperature Warm-up Error
		One of the following occurred: • M002/M003: Hot roller did not reach target operation temperature within 360 sec. after the machine was powered or after the doors were closed. • M004: Hot roller did not reach target operation temperature within 465 sec. after the machine was powered on after the doors were closed. • Fusing temperature rose only 5°C toward the fusing temperature within 20 s after the machine was powered on, or after the doors were closed. • Fusing temperature rose only 5°C toward the fusing temperature within 20 s after thermistor started monitoring hot roller temperature. (The thermistors start monitoring 25 s after the hot roller starts rotating.)
		• Fusing lamp(s) disconnected • Thermistor out of position

SC543	A	Fusing Overheat Error 1: Software
		A fusing temperature of over 210°C is detected for 5 s by the fusing thermistor. This prevents the fusing lamps from switching on without a fusing lamp trigger signal.
		• AC drive board defective (TRIAC short) • BICU defective • BICU firmware defective

SC544	A	Fusing Overheat Error 2: Hardware
		The fusing temperature monitoring circuit detects abnormal fusing temperature.
		• AC drive board defective (TRIAC short) • BICU defective • BICU firmware defective

SC545	A	Fusing Overheat Error 3: Continuous Lamp On
		After warm-up and while the hot roller is not rotating, the fusing lamps remain on at full power for 45 s (M002/M003) 90 s (M004).
		• Fusing thermistor out of position • One or more fusing lamp is disconnected

SC547	A	Zero-Cross Signal Not Detected
		The applied bandwidth was not within range: • Where the power supply is 50 Hz, the detected bandwidth was below 45 Hz or above 54 Hz. • Where the power supply is 60 Hz, the detected bandwidth was below 55 Hz or above 65 Hz.
		• Noise on the ac power line • Cycle the machine off/on • If the problem continues, install a noise filter

SC557	C	Zero-Cross Signal Over
		Noise was detected on the power supply line.
		• Cycle the machine off/on • If the problem continues, install a noise filter

SC559	A	Fusing Unit Jam Error
		The paper cooling job time sensor detected paper late for 3 counts. This SC only occurs if SP1159 is on, and a jam occurred in the fusing unit for three consecutive sheets of paper.
		• Remove the paper that is jammed in the fusing unit. • Make sure that the fusing unit is clean and has no obstructions in the paper feed path.

SC584	B	De-curl effect adjustment motor error	Decurl Unit (D457)
		The stepper motor in the de-curler/purge unit that applies the pressure on the de-curler soft roller to adjust the de-curling effect did not return the de-curler roller to its home position at the end of the operation.	
		• A foreign object is interfering with operation of the motor • Motor harness or connector loose, broken, defective • Soft roller HP sensor dirty • Sensor harness or connector loose, broken, defective • Motor defective • Sensor defective	

SC585	C	Double-Feed Detection Error
		Double-feed detection components failed the initial check. The initial check is done when: • The main machine is turned on • The main machine returns to full operation from energy save mode • The front doors are opened and closed.
		• Harness or connector loose, broken, defective • URB defective • Double-feed sensor defective

SC586	C	High-precision registration CIS error	LCIT (D452/D453)
		The CIS mounted above the paper path in the LCIT issued a paper detection signal when there was no paper in the LCIT paper path.	
		• Exposed surface of CIS dirty • Clean the CIS	

SC592	B	Toner Bank Motor Error
		An abnormal signal was received from the toner bank motor.
		• Toner bank motor defective • Bank motor connector loose • Mechanical overload on the drive mechanism

SC593	D	Toner Suction Motor Replace Alert
		The total operation time of the motor exceeded 600 hours. **Note:** A near-end message appears on the operation panel when the service life of the motor exceeds 570 hours.
		• The toner suction motor has reached the end of its service life.

SC Tables: 6xx

SC625	B	Communication Error Between BICU and Finisher
		The BICU cannot communicate with the finisher properly. There was no response from the finisher 100 ms after the ACK signal was sent to the finisher. Three attempts to resend the data failed.
		• Finisher door was opened while stacking/stapling was in progress. • Poor connection between the BICU board and the finisher main board

SC626	B	Communication Error Between BICU and Finisher
		A break signal (LOW) was detected.
		• Poor connection between the BICU board and the finisher main board • Finisher main board defective • BICU board defective • External electrical noise on the interface cable caused the serial line to become unstable

SC636	D	SDK Application Recognition Module
		Module management is set for ON but the module was not recognized.
		• SDK application not recognized. • Module SD card defective, or recognition file corrupted • DESS (Data Encryption Security Service) module not present Note: DESS is the data encryption module built into the GW controller board.
		1. Replace NVRAM. 2. Replace GW controller board.

SC641	B	Engine-to-controller communication error	CTL
		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.	

SC670	B	Engine Startup Error	CTL
		At power on or after the machine leaves the energy conservation mode: • ENGRDY signal does not assert • IPURDY signal does not assert After power on and the prescribed time has elapsed: • No EC response from the engine • No PC response from the engine • No SC response from the engine During machine operation mode: • Write to Rapi drive failure (could not locate destination on the PCI) • After the /ENGRDY signal asserts with no effect.	
		• BICU ↔ Controller Board disconnected • BICU board defective • Controller board defective • Mother board defective • Software error; switch off/on, if that fails, change the engine firmware • PSU-E or PSU-C defective	

SC671	D	Illegal Engine Board	CTL
		An illegal engine board was detected by the firmware at power on.	
		• Replace BICU	

SC Tables: 7xx

SC720-1	B	Entrance Roller Motor Error	Booklet Finisher (D434)
		Motor stopped operating, due to a physical obstruction or another problem.	
		• Check for and remove any physical obstructions around the motor and timing belts • Motor harness or connector loose, broken, defective • Motor defective	

SC720-2	B	Junction Gate Motor Error	Booklet Finisher (D434)
		One or both motors at the junction gates (stapler junction gate motor, proof tray junction gate motor) stopped operating, due to a physical obstruction or another problem.	
		• Check for and remove any physical obstructions around the motor and timing belt • Motor harness or connector loose, broken, defective • Motor defective • Finisher main board defective	

SC720-3	B	Punch Roller Motor (Rear) Error	Booklet Finisher (D434)
		Motor stopped operating, due to a physical obstruction or another problem.	
		• Check for and remove any physical obstructions around the motor and timing belts • Motor harness or connector loose, broken, defective • Motor defective • Finisher main board defective	

SC720-4	B	Registration Motor Error	Booklet Finisher (D434)
		Motor stopped operating, due to a physical obstruction or another problem.	
		• Check for and remove any physical obstructions around the motor and timing belts • Motor harness or connector loose, broken, defective • Motor defective • Finisher main board defective	

SC720-5	B	Proof Vertical Transport Motor Error	Booklet Finisher (D434)
		The machine failed to detect a pulse signal from the motor within the prescribed time. -or- The motor failed to reach normal operating speed within the prescribed time. The first occurrence of either condition issues a jam error, and the second occurrence issues this SC error.	
		• Motor harness loose, broken, defective • Motor defective	

SC721-1	B	Front Jogger Fence Motor	Booklet Finisher (D434)
		The system did not detect the front jogger fence at its home position (or out of its home position) within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Check for and remove any obstructions around the jogger fence • Motor harness or connector loose, broken, defective • Front jogger fence HP sensor dirty • Front jogger fence HP sensor harness or connector loose, broken, defective • Front jogger fence HP sensor defective • Front jogger fence motor defective • Finisher main board defective	

SC721-2	B	Rear Jogger Fence Motor	Booklet Finisher (D434)
		The system did not detect the rear jogger fence at its home position (or out of its home position) within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Check for and remove any obstructions around the jogger fence • Motor harness or connector loose, broken, defective • Rear jogger fence HP sensor dirty • Rear jogger fence HP sensor harness or connector loose, broken, defective • Rear jogger fence HP sensor defective • Rear jogger fence motor defective • Finisher main board defective	

SC721-3		Jogger Fence Motor Error	Finishers B830/D434
		The front or rear jogger fence in the corner stapling unit failed to return to the home position or leave the home within the prescribed time. The first occurrence issues a jam error and the second occurrence issues this SC code. -or- A short circuit occurred on the motor drive board. The first occurrence issues this SC code.	
		• Check for and remove any obstructions around the jogger fences • Motor harness loose, broken, defective • Motor defective **Note**: There are two jogger fence motors, one for the front fence and one for the rear fence. This SC code applies to both motors. Be sure to check both motors.	

SC723	D	Positioning Roller Rotation Motor Error	Finishers B830/D434
		The motor that drives the rotation of the positioning sponge roller is not operating.	
		• Cycle the machine off/on • Check for and remove any obstruction that blocks the operation of the roller or roller arm • Motor harness loose, defective • Positioning roller HP sensor dirty • Positioning roller HP sensor harness or connector loose, broken, defective • Motor defective • Sensor defective • Finisher main board defective	

SC724	D	Positioning Roller Motor	Finishers B830/D434
		The motor that lowers and raises the positioning roller above the stapling tray not operating.	
		• Cycle the machine off/on • Check for and remove any obstruction that blocks the operation of the roller arm • Motor harness loose, defective • Positioning roller HP sensor dirty • Positioning roller HP sensor harness or connector loose, broken, defective • Motor defective • Sensor defective • Finisher main board defective	

SC725	D	Exit Guide Motor Error	Finishers B830/D434
		The motor that opens and closes the exit guide at the shift tray exit is not operating correctly.	
		• Motor harness or connector loose, broken, defective • Check for and remove any obstruction that interferes with the operation of the exit guide • Exit guide plate HP sensor dirty • Exit guide plate HP sensor harness or connector loose, broken, defective • Motor defective • Sensor defective • Finisher main board defective	

SC726	D	Shift Jogger Retraction Motor Error 1	Finishers B830/D434
		The drag roller arm with the sponge roller did not return to its home position within the prescribed time.	
		• Arm blocked by an obstruction • Motor harness loose, broken defective • HP sensor harness loose, broken, defective • Motor defective • HP sensor defective	

SC728	D	Shift Jogger Retraction Motor Error 2	Finishers B830/D434
		The side fences at the exit of the finisher did not leave (or arrive at) their home positions within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• If the motor is rotating, positioning roller HP sensor loose, broken, defective • If the motor is not rotating: • Remove any obstruction blocking movement • Positioning roller motor overloaded due to obstruction • Positioning roller motor disconnected, defective • Main control board connectors loose, broken, defective • Finisher main board defective	

SC730	D	Lower Transport Motor Error	Finishers B830
		No encoder pulse signal is detected for the lower transport motor within the prescribed time. The 1st failure issues an original jam message, and the 2nd failure issues this SC code.	
		• Lower transport motor disconnected, defective • Finisher connection to lower transport motor loose, defective • Lower transport motor blocked by an obstruction • Lower transport motor defective • Finisher main board defective	

SC731	B	Proof (Upper) Tray Exit Motor Error	Finishers B830/D434
		Motor drive board output abnormal, or short circuit detected on the board. The 1st failure issues this SC code.	
		• Motor disconnected, defective • Finisher connection to motor loose, defective • Motor blocked by an obstruction • Motor defective	

SC732	D	Shift Tray Exit Motor Error	Finishers B830/D434
		The shift tray exit motor is not operating.	
		• Motor harness loose, broken, defective • Motor is blocked by an obstruction • Motor defective • Finisher main board defective	

SC733	D	Stapler Exit Motor Error	Finishers B830/D434
		The stapler exit motor is not operating.	
		• Motor harness loose, broken, defective • Motor is blocked by an obstruction • Motor defective • Finisher main board defective	

SC734	B	Proof Tray Junction Gate Motor Error	Finishers B830/D434
		The proof tray JG HP sensor did not detect the junction gate at (or out of) its home position within 2 s.	
		• Proof junction gate HP sensor dirty • Sensor harness or connector loose, broken, defective • Proof junction gate motor harness or connector loose, broken, defective • Sensor defective • Motor defective • Finisher main board defective	

SC735	B	Stapler Junction Gate Motor Error	Finishers B830/D434
		The stapler JG HP sensor did not detect the stapler junction gate at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Stapler junction gate HP sensor dirty • Sensor harness or connector loose, broken, defective • Stapler junction gate motor harness or connector loose, broken, defective • Sensor defective • Motor defective • Finisher main board defective	

SC736	D	Pre-Stack Junction Gate Motor Error	Finishers B830
		The pre-stack junction gate sensor did not detect the pre-stack junction gate in (or out of) its home position within the prescribed time.	
		• Pre-stack junction gate HP sensor dirty • Sensor harness or connector loose, broken, defective • Pre-stack junction gate motor harness or connector loose, broken, defective • Sensor defective • Motor defective • Finisher main board defective	

SC737	D	Pre-Stack Motor Error	Finishers B830/D434
		The pre-stack motor that moves the pre-stack roller is not operating.	
		• Motor harness loose, broken, defective • Motor is blocked by an obstruction • Pre-stack roller HP sensor dirty • Pre-stack roller HP sensor harness or connector loose, broken, defective • Motor defective • Sensor defective • Finisher main board defective	

SC738	D	Pre-Stack JG Motor Error	Finishers B830/D434
		The pre-stack JG motor that operates the pre-stack junction gate is not operating. The pre-stack junction gate sensor did not detect the junction gate in (or out of) its home position within the prescribed time.	
		• Pre-stack JG motor harness or connector loose, broken, defective • Pre-stack JG HP sensor dirty • Sensor harness or connector loose, broken, defective • Motor defective • Sensor defective • Finisher main board defective	

SC740	D	Finisher Corner Stapler Motor Error	Finishers B830/D434
		The stapler motor did not switch off within the prescribed time. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.	
		• Number of sheets in the stack exceeded the limit for stapling • If error occurred during stapling, stapler rotation sensor 1 defective (replace stapler) • If error did not occur during stapling: staple jam: 1. Motor blocked by an obstruction 2. Stapler motor harness loose, broken, defective 3. Corner stapler motor defective 4. Finisher main board defective	

SC741	D	Finisher Corner Stapler Rotation Motor Error	Finishers B830/D434
		The stapler did not return to its home position (or did not leave its home position) within the specified time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• If the motor is running, 1. Stapler rotation home position sensor harnesses are broken, loose, or defective 2. Stapler rotation home position sensors are defective • If the motor is not running: 1. Motor is blocked by an obstruction 2. Motor harness is loose, broken, defective 3. Motor is defective	

SC742	D	Corner Stapler Movement Motor Error	Finishers B830/D434
		The stapler did not return to its home position (or leave its home position) within the specified time after stapling. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• If the motor is running, 1. Stapler home position sensor harness is broken, loose, or defective 2. Stapler home position sensor is defective • If the motor is not running: 1. Motor is blocked by an obstruction 2. Motor harness is loose, broken, defective 3. Motor is defective	

SC743	D	Booklet Stapler Motor Error 1	Booklet Finisher (D434)
		The booklet stapler motor did not start stapling within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Motor harness loose, broken, defective • Booklet stapler clamp roller HP sensor harness loose, broken, defective • Motor overloaded due to obstruction • Booklet stapler clamp roller HP sensor defective • Motor defective • Finisher main board defective	

SC744	B	Booklet Stapler Motor Error 2	Booklet Finisher (D434)
		The booklet stapler motor did not start stapling within the prescribed time during booklet stapling.	
		Cycle the machine off/on. After cycling the machine off/on: If the motor is operating but not stapling: • Booklet stapler clamp roller HP sensor harness loose, broken, defective • Booklet stapler clamp roller HP sensor defective If the motor is not operating: • Motor overloaded due to obstruction • Motor harness loose, broken, defective • Motor defective • Finisher main board defective	

SC745	D	Feed-Out Belt Motor Error	Finishers B830/D434
		The stack feed-out belt HP sensor did not activate within the specified time after the stack feed-out belt motor turned on. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• If the motor is operating 1. Stack feed-out belt HP sensor harness loose, broken, defective 2. Sensor defective • If the motor is not operating: 1. Feed-out belt motor blocked by an obstruction 2. Motor harness loose, broken, defective 3. Motor defective 4. Finisher main board defective	

SC746	D	Stack Plate Motor Error 1: Front Motor	Finishers B830/D434
		The stack plate HP sensor (front) did not activate within the prescribed time after the motor turned on. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• If the motor is operating 1. Front stack plate HP sensor harness loose, broken, defective 2. Front stack plate HP sensor defective • If the motor is not operating: 1. Motor blocked by an obstruction 2. Motor harness loose, broken, defective 3. Motor defective 4. Booklet finisher main board defective	

SC747	D	Stack Plate Motor Error 2: Center Motor	Finishers B830/D434
		The stack plate HP sensor (center) did not activate within the prescribed time after the motor turned on. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• If the motor is operating 1. Center stack plate HP sensor harness loose, broken, defective 2. Center stack plate HP sensor defective • If the motor is not operating: 1. Motor blocked by an obstruction 2. Motor harness loose, broken, defective 3. Motor defective 4. Booklet finisher main board defective	

SC748	D	Stack Plate Motor Error 3: Rear Motor	Finishers B830/D434
		The stack plate HP sensor (rear) did not activate within the prescribed time after the motor turned on. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• If the motor is operating 1. Rear stack plate HP sensor harness loose, broken, defective 2. Rear stack plate HP sensor defective • If the motor is not operating: 1. Motor blocked by an obstruction 2. Motor harness loose, broken, defective 3. Motor defective 4. Booklet finisher main board defective	

SC750	D	Proof Tray Lift Motor Error	Finishers B830/D434
		The shift tray paper height sensor did not change its status within the prescribed time after the tray was raised or lowered. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Lift motor disconnected, defective • Paper height sensor disconnected, defective • Finisher main board connection to motor loose • Finisher main board defective	

SC753	D	Drag Drive Motor Error	Finishers B830/D434
		The drag roller HP sensor did not detect the drag roller in (or out of) its home position within the prescribed time. (The drag drive motor drives the timing belt that rotates the drag roller at the shift tray exit.)	
		• If the motor is operating 1. Drag roller HP sensor harness loose, broken, defective 2. Dray roller HP sensor defective • If the motor is not operating: 1. Motor blocked by an obstruction 2. Motor harness loose, broken, defective 3. Motor defective 4. Finisher main board defective	

SC754	D	Drag Roller Motor Error	Finishers B830/D434
		The drag roller motor did not turn on. (The drag roller motor drives the shaft that moves the drag roller left and right at the shift tray exit.)	
		• Motor harness loose, broken, defective • Motor defective • Finisher control board defective	

SC755	D	Shift Motor Error	Finishers B830/D434
		The shift tray HP sensors did not detect the shift tray in (or out of) its home position within the prescribed times. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code. **Note**: In the Finisher SR5000 (B830), these sensors are the "half-turn" sensors.	
		• If the motor is operating 1. HP sensor harnesses loose, broken, defective 2. HP sensor defective • If the motor is not operating: 1. Motor blocked by an obstruction 2. Motor harness loose, broken, defective 3. Motor defective 4. Finisher main board defective	

SC760	B	Punch Motor Error	Finishers B830/D434
		The punch HP sensor did not detect the punch movement motor in (or out) of its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• If the motor is operating: 1. Punch HP sensor loose, broken, defective 2. Punch HP sensor defective • If the motor is not operating: 1. Motor blocked by an obstruction 2. Motor harness loose, broken, defective 3. Motor defective 4. Finisher main board defective	

SC761	D	Fold Plate Motor Error	Booklet Finisher (D434)
		The fold plate moves but: 1. The fold plate HP sensor did not detect it at the home position within the specified time. -or- 2. The plate remained at the home position longer than the specified time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• If the motor is operating: 1. Fold plate HP sensor dirty 2. Fold plate HP sensor harness or connector loose, broken, defective 3. Fold plate HP sensor defective • If the motor is not operating: 1. Fold plate motor blocked by an obstruction 2. Motor harness loose, broken, defective 3. Motor defective 4. Finisher main board defective	

SC762	D	Punch Switch Motor Error	Booklet Finisher (D434)
		The punch switch motor failed to turn on within the specified time.	
		• Check for and remove obstruction blocking the motor • Motor harness or connector loose, broken, defective • Motor defective	

SC763	D	Punch Movement Motor Error	Booklet Finisher (D434)
		The punch movement HP sensor did not detect the punch at its home position (or out of its home position) within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Check for and remove any obstructions that block the movement of the punch unit • Punch movement HP sensor dirty • Sensor harness or connector loose, broken, defective • Sensor defective • Motor defective	

SC764	D	Punch Registration (CIS) Error	Booklet Finisher (D434)
		The system detected an error at the CIS (Contact Image Sensor) inside the punch unit during paper registration for paper punching.	
		• Check for and remove any obstructions that block the movement of the punch unit • Punch CIS unit harness or connectors loose, broken, defective • CIS unit defective • Punch movement motor defective	

SC765	D	Bottom Fence Lift Motor Error	Booklet Finisher (D434)
		The bottom fence in the booklet fold unit did not return to the home position within the specified time.	
		• Bottom fence mechanism overloaded due to an obstruction • Bottom fence HP sensor connector loose, broken, defective • Bottom fence HP sensor defective • Bottom fence lift motor connector loose, broken, defective • Bottom fence lift motor defective • Main control board defective	

SC766	D	Clamp Roller Retraction Motor	Booklet Finisher (D434)
		The clamp roller did not return to the home position within the specified time.	
		• Clamp roller mechanism overloaded due to an obstruction • Clamp roller HP sensor connector loose, broken, defective • Clamp roller HP sensor defective • Clamp roller retraction motor connector loose, broken, defective • Clamp roller retraction motor defective • Main control board defective	

SC767	B	Stack JG Motor: Error 1	Booklet Finisher (D434)
		The stack junction gate motor did not return to the home position within the prescribed time during stack stapling. The first occurrence issues a jam error, the second occurrence issues this SC code.	
		• Check junction gate for obstruction and remove it • Stack JG HP sensor connector loose, broken, defective • Sensor defective • Stack JG motor connector loose, broken, defective • Motor defective • Finisher main board defective	

SC767-1	D	Stack JG Motor: Error 2	Booklet Finisher (D434)
		The stack junction gate motor did not return to the home position within the prescribed time.	
		• Check junction gate for obstruction and remove it • Stack JG HP sensor connector loose, broken, defective • Sensor defective • Stack JG motor connector loose, broken, defective • Motor defective • Finisher main board defective	

SC767-2	B	Stack Transport Unit Motor	Finishers D434
		The stack transport unit HP sensor did not detect the stack transport unit at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Check for any obstruction around the motor and remove it • Stack transport unit motor harness or connector loose, broken, defective • Stack transport unit HP sensor dirty • Sensor harness connector loose, broken, defective • Sensor defective • Motor defective • Finisher main board defective	

SC770	D	Cover Interposer Lift Motor 1 Error	CIT B835
		In the first tray: • The upper limit sensor did not detect the bottom plate within the specified time after the lift motor switched on to lift the bottom plate. • The lower limit sensor did not direct the bottom plate within the specified time after the lift motor switched on to lower the bottom plate. **Note:** In both cases, 1 error count indicates a jam, 2 error counts issue this SC code.	
		• Lift motor, upper limit sensor, lower limit sensor harnesses, connectors loose, broken, defective • Lift motor defective • Upper limit sensor defective • Lower limit sensor defective	

SC771	D	Cover Interposer Lift Motor 2 Error	CIT B835
		In the second tray: • The upper limit sensor did not detect the bottom plate within the specified time after the lift motor switched on to lift the bottom plate. • The lower limit sensor did not direct the bottom plate within the specified time after the lift motor switched on to lower the bottom plate. **Note:** In both cases, 1 error count indicates a jam, 2 error counts issue this SC code.	
		• Lift motor, upper limit sensor, lower limit sensor harnesses, connectors loose, broken, defective • Lift motor defective • Upper limit sensor defective • Lower limit sensor defective	

SC772	D	Cover Interposer Pickup Motor 1 Error	CIT B835
		In the first tray: • While the pick-up roller motor was on, the pick-up roller HP sensor did not detect the pick-up roller at the home position within the specified number of pulses. • While the pick-up roller motor was on, the pick-up roller HP sensor did not detect the pick-up roller at the home position above the specified number of pulses. **Note:** In both cases, 1 error count indicates a jam, 2 error counts issue this SC code.	
		• The pick-up motor, pick-up roller HP sensor harnesses, connectors were loose, broken, defective • Pick-up motor overload due to an obstruction • Pick-up motor defective • Pick-up roller HP sensor defective	

SC773	D	Cover Interposer Pickup Motor 2 Error	CIT B835
		In the second tray: • While the pick-up roller motor was on, the pick-up roller HP sensor did not detect the pick-up roller at the home position within the specified number of pulses. • While the pick-up roller motor was on, the pick-up roller HP sensor did not detect the pick-up roller at the home position above the specified number of pulses. **Note:** In both cases, 1 error count indicates a jam, 2 error counts issue this SC code.	
		• The pick-up motor, pick-up roller HP sensor harnesses, connectors were loose, broken, defective • Pick-up motor overload due to an obstruction • Pick-up motor defective • Pick-up roller HP sensor defective	

SC775	D	Top Fence Motor Error	Finisher B830/D434
		The top fence HP sensor did not detect the top fence at (or out of) the home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• If the top fence motor is operating: 1. Top fence HP sensor dirty 2. Sensor harness loose, broken, defective 3. Sensor defective • If the jogger top fence motor is not operating: 1. Top fence motor blocked by an obstruction 2. Motor harness loose, broken, defective 3. Motor defective 4. Finisher main board defective	

SC776	D	Bottom Fence Motor Error	Finisher B830/D434
		The bottom fence HP senstor did not detect the bottom fence at (or out of) the home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• If the bottom fence motor is operating: 1. Bottom fence HP sensor dirty 2. Sensor harness loose, broken, defective 3. Sensor defective • If the bottom fence motor is not operating: 1. Bottom fence motor blocked by an obstruction 2. Motor harness loose, broken, defective 3. Motor defective 4. Finisher main board defective	

SC778-1	B	Horizontal Transport Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC778-2	B	Top Tray Exit Motor	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC778-3	B	Top Tray JG Motor	Multi Folder (D454)
		The top tray JG HP sensor did not detect the top tray junction gate at (or out of) its home position. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Top tray JG HP sensor dirty • Sensor harness or connector loose, broken, defective • Top tray JG motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC778-4	B	Entrance JG Motor	Multi Folder (D454)
		The entrance junction gate HP sensor did not detect the entrance junction gate at (or out of) its home position. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Entrance JG HP sensor dirty • Sensor harness or connector loose, broken, defective • Entrance JG motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC779	B	1st Stopper Motor Error	Multi Folder (D454)
		The 1st stopper HP sensor did not detect the 1st stopper in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• 1st stopper HP sensor dirty • Sensor harness or connector loose, broken, defective • 1st stopper motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-1	B	2nd Stopper Motor Error	Multi Folder (D454)
		The 2nd stopper HP sensor did not detect the 2nd stopper in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• 2nd stopper HP sensor dirty • Sensor harness or connector loose, broken, defective • 2nd stopper motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-2	B	3rd Stopper Motor Error	Multi Folder (D454)
		The 3rd stopper HP sensor did not detect the 3rd stopper in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• 3rd stopper HP sensor dirty • Sensor harness or connector loose, broken, defective • 3rd stopper motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-3	B	1st Fold Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC783-4	B	2nd Fold Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC783-5	B	Crease Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC783-6	B	Dynamic Roller Transport Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC783-7	B	Reg. Roller Transport Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC783-8	B	Dynamic Roller Lift Motor Error	Multi Folder (D454)
		The dynamic roller HP sensor did not detect the dynamic roller in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Dynamic roller HP sensor dirty • Sensor harness or connector loose, broken, defective • Dynamic roller lift motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-9	B	Registration Roller Release Motor Error	Multi Folder (D454)
		The registration roller HP sensor did not detect the registration roller in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Registration roller HP sensor dirty • Sensor harness or connector loose, broken, defective • Registration roller release motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-10	B	Fold Plate Motor Error	Multi Folder (D454)
		The fold plate HP sensor did not detect the fold plate in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Fold plate HP sensor dirty • Sensor harness or connector loose, broken, defective • Fold plate motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-11	B	Jogger Fence Motor	Multi Folder (D454)
		The jogger fence HP sensor did not detect the jogger fence in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Jogger fence HP sensor dirty • Sensor harness or connector loose, broken, defective • Jogger fence motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-12	B	Positioning Roller Motor Error	Multi Folder (D454)
		The positioning roller HP sensor did not detect the positioning roller in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Positioning roller HP sensor dirty • Sensor harness or connector loose, broken, defective • Positioning roller motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-13	B	FM2 Direct-Send JG Motor	Multi Folder (D454)
		The direct-send JG HP sensor did not detect the direct-send JG in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• FM2 direct-send JG HP sensor dirty • Sensor harness or connector loose, broken, defective • FM2 direct-send JG motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC783-14	B	FM6 Pawl Motor	Multi Folder (D454)
		The FM6 pawl HP sensor did not detect the FM6 pawl in (or out of) its home position. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• FM6 pawl HP sensor dirty • Sensor harness or connector loose, broken, defective • FM6 pawl motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

Important

- **Two High-Capacity Stackers can be installed in the same line.**
- **The following SC Codes (SC787-1 to 5) apply to the first stacker in the line.**

SC787-1	B	Entrance Motor Error	Stacker (D447)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC787-2	B	Shift JG Motor Error	Stacker (D447)
		The shift tray JG HP sensor did not detect the shift junction gate in (or out of) its home position. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code..	
		• Shift tray JG HP sensor dirty • Sensor harness or connector loose, broken, defective • Shift tray JG motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC787-3	B	Transport Motor Error	Stacker (D447)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC787-4	B	Proof Tray JG Motor	Stacker (D447)
		The proof tray JG HP sensor did not detect the proof tray junction gate in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Proof tray JG HP sensor dirty • Sensor harness or connector loose, broken, defective • Proof tray JG motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC787-5	B	Proof Tray Exit Motor Error	Stacker (D447)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

Important

- **Two High-Capacity Stackers can be installed in the same line.**
- **The following SC Codes (SC788-1 to 5) apply to the second stacker in the line if it is installed.**
- **SC Codes SC787-1 to -5 apply to the first stacker.**

SC788-1	B	Entrance Motor Error	Stacker (D447)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC788-2	B	Shift JG Motor Error	Stacker (D447)
		The shift tray JG HP sensor did not detect the shift junction gate in (or out of) its home position. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Shift tray JG HP sensor dirty • Sensor harness or connector loose, broken, defective • Shift tray JG motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC788-3	B	Transport Motor Error	Stacker (D447)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC788-4	B	Proof Tray JG Motor	Stacker (D447)
		The proof tray JG HP sensor did not detect the proof tray junction gate in (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Proof tray JG HP sensor dirty • Sensor harness or connector loose, broken, defective • Proof tray JG motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC788-5	B	Proof Tray Exit Motor Error	Stacker (D447)
		The motor drive PCB detected an error at the motor due to overload, overheating.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC789	B	Proof Tray Exit Motor Error	Multi Folder (D454)
		The motor drive PCB detected an error at the motor due to overload, overheating. Paper cannot exit at proof tray.	
		• Motor, motor drive board defective	

SC790	D	Booklet Stapler Jogger Motor Error	Booklet Finisher (D434)
		The jogger fence HP sensor failed to detect the jogger fence at the home position within the specified time.	
		• If the booklet stapler jogger motor is operating: 1. Jogger fence HP sensor harness loose, broken, defective 2. Jogger fence HP sensor defective • If the jogger bottom fence motor is not operating: 1. Motor blocked by an obstruction 2. Motor harness loose, broken, defective 3. Motor defective 4. Finisher main board defective	

SC791	D	Booklet Stapler Bottom Fence Motor	Booklet Finisher (D434)
		The bottom fence failed to return to home position or failed to leave the home position within the prescribed time.	
		• An obstruction is blocking the movement of the bottom fence • Motor harness loose, broken, defective • Bottom fence HP sensor loose, broken, defective • Motor defective • Sensor defective	

Important

- **Two High-Capacity Stackers can be installed in the same line.**
- **The following SC Codes (SC793-1 to 8) apply to the first stacker in the line.**

SC793-1	D	Shift Motor Error	Stacker (D447)
		The shift roller HP sensor did not detect the shift roller at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Shift roller HP sensor dirty • Sensor harness or connector loose, broken, defective • Check for and remove any obstructions that interfere with the operation of the motor • Shift motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC793-2	D	Front Jogger Fence Motor Error	Stacker (D447)
		The front jogger fence HP sensor did not detect the front jogger fence at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Front jogger fence HP sensor dirty • Sensor harness or connector loose, broken, defective • Check for and remove any obstructions that interfere with the operation of the motor • Motor harness or connector loose, broken, defective • Sensor defective • Motor or shift motor drive board defective	

SC793-3	D	Rear Jogger Fence Motor Error	Stacker (D447)
		The rear jogger fence HP sensor did not detect the rear jogger fence at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Rear jogger fence HP sensor dirty • Sensor harness or connector loose, broken, defective • Check for and remove any obstructions that interfere with the operation of the motor • Motor harness or connector loose, broken, defective • Sensor defective • Motor or shift motor drive board defective	

SC793-4	D	Jogger Fence Retraction Motor Error	Stacker (D447)
		The jogger fence retraction HP sensor did not detect the jogger fences at (or out of) their home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Jogger fence retraction HP sensor dirty • Sensor harness or connector loose, broken, defective • Check for and remove any obstructions that interfere with the operation of the motor • Motor harness or connector loose, broken, defective • Sensor defective • Motor or shift motor drive board defective	

SC793-5	D D	Sub Jogger Motor Error	Stacker (D447)
		The sub jogger HP sensor did not detect the sub jogger fence at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Sub jogger fence HP sensor dirty • Sensor harness or connector loose, broken, defective • Check for and remove any obstructions that interfere with the operation of the motor • Motor harness or connector loose, broken, defective • Sensor defective • Motor or shift motor drive board defective	

SC793-6	D	LE Stopper Motor Error	Stacker (D447)
		The LE stopper HP sensor did not detect the leading edge stopper at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• LE stopper HP sensor dirty • Sensor harness or connector loose, broken, defective • Check for and remove any obstructions that interfere with the operation of the motor • Motor harness or connector loose, broken, defective • Sensor defective • Motor or shift motor drive board defective	

SC793-7	D	Tray Lift Motor Error	Stacker (D447)
		When the tray was ascending (or descending), the state of the paper height sensor did not change at the prescribed time to detect the height of the stack and adjust the height of the tray. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Check for and remove any obstructions that interfere with the operation of the tray lift motor or paper height sensor actuator • Sensor actuator loose or broken • Sensor harness or connector loose, broken, defective • Motor harness or connector loose, broken, defective • Sensor defective • Motor defective	

SC793-8	D	Proof Tray Exit Motor Error	Stacker (D447)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

Important

- **Two High-Capacity Stackers can be installed in the same line.**
- **The following SC Codes (SC794-1 to 8) apply to the second stacker in the line if it is installed.**

- **SC Codes SC793-1 to 8 apply to the first stacker.**

SC794-1	D	Shift Motor Error	Stacker (D447)
		The shift roller HP sensor did not detect the shift roller at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Shift roller HP sensor dirty • Sensor harness or connector loose, broken, defective • Check for and remove any obstructions that interfere with the operation of the motor • Shift motor harness or connector loose, broken, defective • Sensor defective • Motor or motor drive board defective	

SC794-2	D	Front Jogger Fence Motor Error	Stacker (D447)
		The front jogger fence HP sensor did not detect the front jogger fence at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Front jogger fence HP sensor dirty • Sensor harness or connector loose, broken, defective • Check for and remove any obstructions that interfere with the operation of the motor • Motor harness or connector loose, broken, defective • Sensor defective • Motor or shift motor drive board defective	

SC794-3	D	Rear Jogger Fence Motor Error	Stacker (D447)
		The rear jogger fence HP sensor did not detect the rear jogger fence at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Rear jogger fence HP sensor dirty • Sensor harness or connector loose, broken, defective • Check for and remove any obstructions that interfere with the operation of the motor • Motor harness or connector loose, broken, defective • Sensor defective • Motor or shift motor drive board defective	

SC793-4	D	Jogger Fence Retraction Motor Error	Stacker (D447)
		The jogger fence retraction HP sensor did not detect the jogger fences at (or out of) their home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Jogger fence retraction HP sensor dirty • Sensor harness or connector loose, broken, defective • Check for and remove any obstructions that interfere with the operation of the motor • Motor harness or connector loose, broken, defective • Sensor defective • Motor or shift motor drive board defective	

SC794-5	D	Sub Jogger Motor Error	Stacker (D447)
		The sub jogger HP sensor did not detect the sub jogger fence at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Sub jogger fence HP sensor dirty • Sensor harness or connector loose, broken, defective • Check for and remove any obstructions that interfere with the operation of the motor • Motor harness or connector loose, broken, defective • Sensor defective • Motor or shift motor drive board defective	

SC794-6	D	LE Stopper Motor Error	Stacker (D447)
		The LE stopper HP sensor did not detect the leading edge stopper at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• LE stopper HP sensor dirty • Sensor harness or connector loose, broken, defective • Check for and remove any obstructions that interfere with the operation of the motor • Motor harness or connector loose, broken, defective • Sensor defective • Motor or shift motor drive board defective	

SC794-7	D	Tray Lift Motor Error	Stacker (D447)
		When the tray was ascending (or descending), the state of the paper height sensor did not change at the prescribed time to detect the height of the stack and adjust the height of the tray. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Check for and remove any obstructions that interfere with the operation of the tray lift motor or paper height sensor actuator • Sensor actuator loose or broken • Sensor harness or connector loose, broken, defective • Motor harness or connector loose, broken, defective • Sensor defective • Motor defective	

SC794-8	D	Proof Tray Exit Motor Error	Stacker (D447)
		The motor drive PCB detected an error at the motor.	
		• Motor harness or connector loose, broken, defective • Motor or motor drive board defective	

SC799-1	D	Trimming Blade Motor Error	Trimmer (D455)
		The trimming blade HP sensor did not detect the blade at (or out of) its home position within the prescribed time during trimming. The 1st detection causes a jam signal if the error occurred during cutting. The 2nd detection causes this SC code if the error occurred at the start or end of cutting.	
		• Check for and remove any obstacles (jammed paper scraps) around the blade, motor, or sensor • Trimming blade HP sensor dirty • Sensor harness or connector loose, broken, defective • Trimming blade motor harness or connector loose, broken, defective • Motor defective • Trimming unit main board defective	

SC799-2	D	Press Roller Motor Error	Trimmer (D455)
		The press roller HP sensor did not detect the press roller at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Check for and remove any obstacles around the motor and sensor • Press roller motor HP sensor dirty • Sensor harness or connector loose, broken, defective • Press roller motor harness or connector loose, broken, defective • Motor defective • Trimming unit main board defective	

SC799-3	D	Cut Position Motor Error	Trimmer (D455)
		The cut position HP sensor did not detect the cut position stopper at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Check for and remove any obstacles around the motor and sensor • Cut position HP sensor dirty • Sensor harness or connector loose, broken, defective • Cut position motor harness or connector loose, broken, defective • Motor defective • Trimming unit main board defective	

SC799-4	D	Press Stopper Motor Error	Trimmer (D455)
		The press stopper HP sensor did not detect the press stopper at (or out of) its home position within the prescribed time. The 1st occurrence causes a jam, and the 2nd occurrence causes this SC code.	
		• Check for and remove any obstacles around the motor and sensor • Press stopper HP sensor dirty • Sensor harness or connector loose, broken, defective • Press stopper motor harness or connector loose, broken, defective • Motor defective • Trimming unit main board defective	

SC Tables: 8xx

SC817	D	Monitor Error	GW CTL
		00FE	File Detection/Electronic Signature Check Error
		The boot loader failed to read the signature of one or more of the following files on the boot SD card: 1) Self-diagnostic module, 2) Kernel, 3) Root file system. One or more of these files in the flash ROM or on the SD card is false, missing, or revised.	
		• Use the correct boot SD card to update the controller system ROM	

SC819	D	0x5032	HAIC-P2 Data Compression Error	GW CTL
			A data compression error occurred in the HAIC-P2 data compression/decompressin module when the Egret controller was transferring data to the GW controller.	
			• Cycle the machine off/on. • Replace HDD • Replace memory • Replace controller board • Update firmware	
		0x5245	Link-up Failure	GW CTL
			The ASCI and Veena modules failed to link up within the prescribed time.	
			• Cycle the machine off/on • Replace GW controller board • Replace BICU	
		0x5355	L2 Status Timeout	GW CTL
		0x6261	HDD Error	GW CTL
			File system information could not be read, even after formatting the hard disk.	
			• Replace HDD	
		0x696e	gwinit Process End (Kernel Error)	GW CTL
			This is a software error. Processing stopped due to gwinit and SCS processing ending at the same time, causing a kernel error. "init died" message appears.	
			• Cycle the machine off/on • Retrieve the GW controller error log, if possible	
		0x766d	Virtual Memory (VM) Full	GW CTL
			This is a software error. RAM filled and overflowed during processing and displayed this message: "vm_pageout: VM is full"	
			• Cycle the machine off/on • Retrieve the GW controller error log, if possible	

SC820		CPU/ASIC Self-diagnostic Error		GW CTL
		0612	Interrupt Error	
		• System program defective • Controller board defective • Optional board defective • Replace controller firmware **Note**: 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.		

SC821	C	ASIC Self-diagnostic Errors		GW CTL
		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	ASCI Register Check Error	
			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	
		0B06	ASIC Not Detected During Self-Diagnostic Check	
			The self-diagnostic check could not detect the ASIC which performs system control because the ASIC I/O or the North Bridge-PCI interface is defective.	
			• Replace the GW controller board	

SC822	B	HDD Self-Diagnostic Errors		GW CTL
		3003	Time Out Error	
			The HDD BUSY signal did not go OFF within the prescribed time.	
			• HDD harness connection loose, broken, defective • HDD unit defective • GW controller board defective	
		3004	Command Error	
			The self-diagnostic check detected an error on the HDD unit.	
			• Defective HDD	
		3013	Time Out Error	
			The HDD BUSY signal did not go OFF within the prescribed time.	
			• HDD harness connection loose, broken, defective • HDD unit defective • Controller board defective	
		3014	Self-Diagnostic Command Error	
			Self-diagnostic check detected an error (Mandolin not detected, or HDD register error).	
			• Defective HDD	

SC823	B	PHY Device Self-diagnostic Errors		GW CTL
		6101	MAC Address SUM Error	
			The SUM value calculated for the MAC address does not match the format of the MAC address SUM value stored in SEEP ROM.	
			• PHY (network interface board) defective • Controller board defective	
		6104	Incorrect PHY Chip ID	
			The ID read for the PHY chip is not correct (080017h)	
			• PHY (network interface board) defective • Controller board defective	
		6105	PHY Loopback Error	
			The self-diagnostic check detected a loopback error.	
			• Connector between the PHY board and controller defective • PHY board defective • Controller board defective	

SC824	C	Standard NVRAM Self-diagnostic Error		GW CTL
		1401	The controller could not recognize the on-board standard NVRAM, or detects that the NVRAM is defective.	
			• Loose connection • Defective standard NVRAM • Defective controller board • Worn-out battery in the NVRAM	

SC829	B	Optional RAM0 Self-diagnostic Errors		GW CTL
		0301	Optional RAM Error 1	
		0302	Optional RAM Error 2	
			The self-diagnostic check detected a problem with the RAM DIMM installed as an option.	
			• Incorrect RAM DIMM installed (not compatible with this machine.) • RAM DIMM defective	

SC833	D	Engine Video I/F Self-diagnostic Errors		GW CTL
		0F30	Engine I/F ASIC Error 1	
			ASIC (Mandolin) for system control could not be detected because ASIC is defective, or North Bridge to AGPI I/F defective. After PCI was configured the device ID could not be confirmed.	
		0F31	Engine I/F ASIC Error 2	
			ASIC (Mandolin) for system control could not be detected because ASIC is defective, or North Bridge to AGPI I/F defective. The ASIC read/write test failed.	
		0F41	Engine I/F ASIC Error 3	
			The write/verify check for resident RAM on the BICU failed because the RAM is defective.	
		50B1	Engine I/F ASIC Error 4	
			Could not initialize or read the bus connection.	
		50B2	Engine I/F ASIC Error 5	
			Value of the SSCG register is incorrect.	
			• Check the cable connection between the BICU and the GW controller board. • GW controller board defective • BICU defective	

Note

- 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.

SC834		Optional Memory Self-diagnostic Error	GW CTL
5101	D	The optional RAM on the engine interface board failed the memory write/verify check.	
		• Cycle the machine off/on • Check the cable connection between the BICU and the GW controller board. • GW controller board defective • BICU defective	

SC838		Clock Generator Self-diagnostic Error	GW CTL
2701	D	The value sent by the clock generator to the I2C bus was incorrect.	
		• Cycle the machine off/on • Replace the GW controller board.	

SC851	D	IEEE 1394 I/F Error	GW CTL
		Driver setting incorrect and cannot be used by the 1394 I/F.	
		• NIB (PHY), LINK module defective; change the Interface Board • Controller board defective	

SC853	D	Wireless LAN Error 1	GW CTL
		The board that holds the wireless LAN card can be accessed, but the wireless LAN card (802.11b/Bluetooth) itself could not be accessed while the machine was starting up.	
		• Wireless LAN card has been removed	

SC854	D	Wireless LAN Error 2	GW CTL
		The board that holds the wireless LAN card can be accessed, but the wireless LAN card (802.11b/Bluetooth) itself could not be accessed while the machine was operating.	
		• Wireless LAN card has been removed	

SC855	D	Wireless LAN Error 3	GW CTL
		An error is detected for the wireless LAN card (802.11b or Bluetooth).	
		• Wireless LAN card defective • Wireless card connection not tight	

SC856	D	Wireless LAN Error 4	GW CTL
		An error is detected for the wireless LAN board (802.11b or Bluetooth).	
		• Wireless LAN card board defective • PCI connector loose (External controller interface board)	

SC857	D	USB I/F Error 1	GW CTL
		The USB driver is unstable and generated an error. The USB I/F cannot be used.	
		• USB board or controller board defective	

SC858	B	Serious Data Encryption Error	GW CTL
		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 CTL
		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	D	HDD Error 1	GW CTL
		The driver could not acquire the status of the hard disks within 30 s, or the HDD is connected, but the driver detected one of the following errors:	
		• Hard disks are not formatted • Hard disk corrupted; reformat the disks with SP mode	
		SS_NOT_READY	One or both HDDs are not ready.
		SS_BAD_LABEL	Partition types are different
		SS_READ_ERROR	Error returned during label read or label check
		SS_WRITE_ERROR	Error returned during label write or label check
		SS_FS_ERROR	File system repair failed
		SS_MOUNT_ERROR	File system mount failed
		SS_COMMAND_ERROR	Drive does not answer the command
		SS_KERNEL_ERROR	Kernel internal error
		SS_SIZE_ERROR	Driver size is too small
		SS_NO_PARTITION	Specified partition does not exist
		SS_NO_FILE	Device files do not exist

SC861	B	HDD Error 2: HDD Startup	GW CTL
		The hard disks were detected at power on, but the disks were not detected within 30 s after recovery from the energy conservation mode.	
		• Cable between the hard disks and controller board disconnected or loose • Hard disk power connector loose • One of the hard disks is defective • GW controller or BICU defective	

SC862		HDD Error 3: Bad Sectors Error	GW CTL
		The number of bad sections in the data storage area for image data on the hard disk has reached the maximum (101).	
		• Format the hard disk with SP5832 • Replace HDD	

SC863	B	HDD Error 4: HDD Read Error	GW CTL
		The system cannot read the data written on the hard disks.	
		• Sectors on the disks have become corrupted during operation; replace the hard disks	

SC864	B	HDD Error 5: Data CRC Error	GW CTL
		During HDD operation, the HDD could not respond to a CRC error query.	
		• Check the cable connection between the BICU and the GW controller board. • GW controller board defective • BICU defective	

SC865	B	HDD Error 6: Access Error	GW CTL
		HDD responded to an error during operation for a condition other than those for SC863, SC864.	
		• HDD defective	

SC866	B	SD Card Error 1: Confirmation	GW CTL
		The machine detects an electronic license error in the application on the SD card inserted in the controller slot when the machine is powered on. The program stored on the SD card contains electronic confirmation license data. If the program does not contain this license data, or if the result of the check reveals the license data in the program on the SD card is incorrect, then the checked program cannot execute and this SC code is displayed.	
		• Required program missing or incorrect • Download the correct program for this machine onto the SD card.	

SC867	B	SD Card Error 2: SD Card Removal	GW CTL
		The SD card inserted in the system slot when the machine was powered on was removed while the machine was still switched on.	
		• SD card removed from boot slot on the controller • Cycle the machine off/on	

SC868	B	SD Card Error 3: SD Card Access	GW CTL
		An error is returned during an operation using an SD card. Debug console acquires more detailed information about the error.	
		• SD card not inserted completely • SD card defective • Controller board defective **Note:** If this SC code is displayed again after cycling the machine off and on, use another SD card. If this does not solve the problem, replace the controller board.	

SC870	B	Address Book Data Error	GW CTL
		Address book data stored 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; switch off/on, and change the controller firmware if the problem is not solved • HDD defective	
		Recommended Recovery • Execute SP5846 050 (UCS Settings – Initialize all Directory Info.) to initialize all address book data. • Initialize the user information with SP5832 006 (HDD Formatting– User Information 1) and SP5832 007 (HDD Formatting – User Information 2). • Replace the HDDs. • Boot the machine from the SD card.	

SC872	D	HDD mail RX data error	GW CTL
		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 CTL
		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 CTL
		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 CTL
		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 Error	GW CTL
		The log data has been corrupted at power on, while the machine was operating, or when the machine was powered off during a print cycle. The machine should never be switched off while it is printing.	
SC876-1		Log data file was corrupted at power on or while the machine was operating.	
		• Format the HDD with SP5832-004.	
SC876-2		The loCTLas set for encryption without the encryption module installed: • At power on • While the machine was operating • When the log encryption settinCTLas changed.	
		• Install or replace and set the encryption module. • Enable the log encryption setting.	
SC876-3		• At power on the log encryption key was disabled, causing an NVRAM malfunction.	
		• Format the disk with SP5832-004.	

SC876-4		At power on the machine attempted log data encryption with the log encryption setting disabled (NVRAM malfunction). -or- At power on log encryption was attempted with the log encryption setting disabled (NVRAM malfunction).
		• Format the disk with SP5832-004.
SC876-5		Error occurred at power on. Only the NVRAM was replaced with an NVRAM from another machine. -or- Only the HDD was replaced with an HDD unit from another machine.
		• Replace NVRAM with original NVRAM. • Replace HDD with original HDD. • If the error persists, format the HDD with SP5832-004.
SC876-99		Cause unknown. The error occurred at power on or while the machine was operating.
		• Contact Ricoh design section.

SC876: More

If the error persists after doing the procedure described in the table above, do this procedure.

1. Switch the machine off, remove the HDD, then switch the machine on.
2. Do SP5801-019 then switch the machine off.
3. Install the HDD again and switch the machine on.
4. Do SP5832-004.
5. Cycle the machine power off/on.
6. Do SP9730-002 and set to "1" (ON).
7. Do SP9730-003 and set to "1" (ON).
8. Do SP9730-004 and set to "1" (ON).
9. Cycle the machine power off/on.

SC877	B	Data Overwrite Security SD card error	GW CTL
		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 CTL
		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.	

SC Tables: 9xx

SC900	C	Electrical Total Counter Error	GW CTL
		The total counter contains data that is not a number.	
		• NVRAM disturbed unexpectedly • NVRAM defective • NVRAM data corrupted	

SC901	B	Mechanical Total Counter Error
		The mechanical total counter is disconnected.
		• User removed the counter while it was operating • Poor connection • Mechanical total counter defective

SC910	D	External Controller Error 1	GW CTL
SC911	D	External Controller Error 2	GW CTL
SC912	D	External Controller Error 3	GW CTL
SC913	D	External Controller Error 4	GW CTL
SC914	D	External Controller Error 5	GW CTL
		The external controller alerted the machine about an error.	
		• Please refer to the instructions for the external controller.	

SC915	D	Egret Controller Error		Egret CTL
		001	Egret Controller Board Error	
			• Egret controller board defective	
		002	HDD Serial Communication Error	
			• Egret HDD cable defective • Egret HDD defective	
		003	Egret CPU Overheat Error	
			• Replace Egret controller board	
		004	Egret-GW Controller Communication Error 1	
			• Replace GW controller board	
		005	Egret-GW Controller Communication Error 2	
			• Egret-to-GW controller board cable defective • Egret controller board defective • GW controller board defective	

SC919	B	External Controller Down Error	GW CTL
		While EAC (External Application Converter), the conversion module, was operating normally, the receipt of a power line interrupt signal from the FLUTE serial driver was detected, or BREAK signal from the other station was detected.	
		• Power outage at the EFI controller • EFI controller was rebooted • Connection to EFI controller loose	

SC920	D	Printer Error 1	GW CTL
		An internal application error was detected and operation cannot continue.	
		• Software defective; switch off/on, or change the controller firmware if the problem is not solved • Insufficient memory	

SC921	D	Printer Error 2	GW CTL
		When the printer application started, the font to use could not be found on the SD card.	
		• The font is not on the SD card	

SC951	B	F-Gate Signal Error
		When the IPU has already received the F-GATE signal (laser writing start trigger signal), the IPU receives another F-GATE signal.
		• Firmware defective • Update the BICU firmware. • BICU defective

SC954	B	Printer Image Setting Error
		The settings that are required for image processing using the printer controller are not sent from the IPU.
		• Check the harnesses, connectors to the LDB and IPU • Check the harnesses, connectors between IPU/LDB, LDB/Polygon Mirror Motor PCB • Update the BICU firmware • LD defective • IPU on BICU defective • Polygon mirror motor or polygon mirror motor PCB defective

SC955	B	Memory Setting Error
		The settings that are required for image processing using the memory are not sent from the IPU.
		• Software bug • Hard disk unit defective • Controller defective • Replace BICU.

SC965	B	Print Start Error	
		During print processing, another command to start printing was received.	
		• Software bug	

SC966	B	Polygon Mirror Motor Ready Error	
		The polygon mirror motor does not reach ready status within 15 s after the copy paper is detected by the registration sensor. (15 s after the write request was issued for the IPU, the F-GATE signal remained LOW.)	
		• Polygon mirror motor harness, connections to BICU loose, broken, defective • Polygon mirror motor drive board harness, connector to BICU loose, broken, defective • Polygon mirror motor defective • Polygon mirror motor drive board defective • BICU defective	

SC990	B	Software Error 1	CTL
		An unexpected operation was encountered by the software.	
		• Software crash; reboot the machine • With SP5990 004 (SMC Report – Logging Data), print the most recent information for SC990. • The SC990 information displays the file name, line number, and value. Report this information to your technical supervisor. For example: `Function.c LINE: 123 VAL:0`	

SC991	C	Software Error 2	GW CTL
		The software performs an unexpected function and the program cannot continue. Recovery processing allows the program to continue.	
		• Software defective, re-boot	

		For more details about 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 zero key on the operation panel with the SP selection menu displayed, you will see detailed information about the recently logged SC991, including the software file name, line number, and so on. Of these two methods, 1) is the recommended method, because another SC could write over the information for the previous SC.

SC992	C	Undefined Error (No SC Code)	GW CTL
		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. • Re-install firmware	

SC994	C	Operation Panel Management Records Exceeded	GW CTL
		An error occurred because the number of records exceeded the limit for images managed in the service layer of the firmware. This can occur if there are too many application screens open on the operation panel.	
		No action required because this SC does not interfere with operation of the machine.	

SC995		Serial Number Setting Incorret
		The 11-digit serial number is printed on the data plate. This information is compared with the installed components to detect mismatches.
SC995-01	D	Serial Number Mismatch 1
		• Enter the correct information for the model with SP5811 or use the previous NVRAM. • Cycle the machine off/on.
SC995-02	D	NVRAM Mismatch

		Use the previous NVRAM. -or- If the NVRAM must be replaced: • Prepare an SD card with the current model information. • Do SP5825 to download the new model information from the SD card to new NVRAM. • Remove the SD card. • Cycle the main machine off/on.
SC995-03	D	Controller Mismatch, or Controller Board Defective
		You must install the CTL controller board designed for use with this machine.
SC995-04	D	Serial Number Mismatch 2
		Reinstall the components which have been removed from the machine.

SC997	B	Application Selection Error	CTL
		An application did not start after pressing the appropriate key on the operation panel.	
		• Software bug; change the firmware for the application that failed • A RAM or DIMM option required by the application is not installed or not installed correctly.	

SC998	D	Application Image Error	GW CTL
		The applications could not start, started incorrectly, or could not operate after power on.	
		• Check that the RAM, DIMM, and boards are the correct type for the application • Check that the downloaded programs are the correct ones for the applications • Replace the controller board	

Troubleshooting Guide

Main Machine (M002, M003, M004)

Problem Spotting and dirty edges

Solution

1. Raise the image transfer voltage with SP2301-1, -2 (Transfer Current Adjustment, 1 1st Copy Side, 2 Thick Paper): M002: 100 to 120, M003: 110 to 130, M004: 130 to 150
2. Raise Vpp (ID sensor pattern development potential) with SP2201-3: 200 to 270
3. Raise SP2201-6: 200 to 270. Raise SP2201- (Development Bias Adjustment – ID Sensor Development Potential (Low Speed 2)): 200 to 270.

Comments

- When the V-I value of the transfer belt is low (i.e. high resistance), the attraction between the paper and the belt is increased in order to hold the paper on the belt.
- When paper that requires a large of amount of charge to separate at the paper exit, spotting can occur because of the discharge used to separate belt and paper. Residual toner can cause this problem in filled or halftone areas.
- Also, toner scattered in the direction of paper feed on the transfer exit guide caused by the aforementioned spotting can collect on the side edges of upstream paper.

Problem Vertical white stripes on coated paper

Solution

Replace the hot roller and paper separation pawls

Comments

- Over time, the fusing separation pawls in contact with the hot roller become worn due to friction.
- This can cause white stripes to appear in the halftone, or black fill areas of images on coated paper.

Problem EVOLVE paper does not feed

Solution

Clean the feed rollers with a damp, clean cloth.

Comments

EVOLVE and similar paper that contains a large amount of paper dust can cause paper dust to adhere to the feed rollers which leads to failures to feed.

Problem **Images on large-size paper dirty after feeding small-size paper.**

Solution

1. Clean the transfer exit guide plate.
2. Clean the fusing exit guide plate.

Comments

- Toner scatter (caused by the electrical discharge when paper is peeled from the transfer belt during continuous feed of small-size paper) falls onto the transfer exit guide and fusing exit guide plate.
- This toner scattered on the guide plates will stick to the wider paper the next time large-size paper is fed.

Problem **Scattered toner, dirty images on coated paper**

Solution

Raise Vpp with SP mode settings to reduce the toner density by adjusting these SP codes:

- SP2201-3: 200V to 240V
- SP2201-6 : 200V to 240V
- SP2201-9 : 200V to 240V

Comments

- The front and cut sides of coated paper is extremely smooth, and in a low temperature/low humidity environment dirty background can occur easily on the surface of the OPC.
- Under such conditions, during toner density control toner scatter and dirty edges can occur easily with coated paper (compared with normal paper).

Problem **Incorrect double-feed detection**

Solution

1. Avoid using coated paper that has absorbed moisture, do not re-use OHP.
2. Do not use perforated paper where the holes may appear at the position of the double-feed sensors. If you need to use long-edge feed (LEF) loose-leaf paper with holes on only one edge, feed the paper so that the holes are on the trailing edges.
3. Avoid using multi-layered paper or label sheets with labels that may flutter.

Comments

The ultra-sound sensors used to detect double-feed cannot accurately detect double feeding with the following types of paper.

- Adhesive paper media (Examples: damp coated paper, used OHP)
- Paper with holes near the leading edges
- Paper with loose labels, multi layered sheets (pasted up for layout).

Problem **Failure to feed, double feed**

Solution

1. Fan the paper to remove static.
2. Remove the paper from the tray and turn the stack upside down.

Comments

If the paper has rough cut edges:

- Bits of paper on the rough edges facing down can wrap around the separation roller and cause poor feeding.
- The paper can stick together and double feed.

Problem **Jam 21 occurs with A5 LEF on the M004 (135 ppm)**

Solution

Change these User Tool Settings:

- Line speed mode setting (135 ppm to 110 ppm)
- High Temperature Mode 2 setting (178 to 163) (both settings are in User Tools)

Comments

- The strength of the spring on the feeler may have weakened and is not retracting the feeler.
- The timing interval between sheets in the M004 (135 ppm) machine is short, and if the spring is weak the leading edge of the next sheet may arrive before the feeler of the fusing exit sensor retracts.
- If this occurs, the leading edge of the next sheet hits the feeler before it can return to its home position and the sheet deviates from the paper path.
- However, this problem does not occur with paper larger than A5 LEF because the leading edges of the larger sheets are guided by the stripper pawls on both sides of the leading edge.

Problem **Fusing temperature setting**

Solution

Wait for the machine to reach the adjusted target temperature.

Comments

- When the fusing temperature setting is changed, the machine needs about 5 minutes to reach the target temperature.
- If the fusing temperature is lowered for the next job after the machine has been running at the default fusing temperature for a long period, and if paper passes through the fusing unit before the unit can reach the lower target temperature, this can cause the paper to curl and the paper may jam at the fusing exit.

Problem **Granular black spotting occurs on the back side of paper**

Solution

Clean the fusing unit carefully after paper jams in the fusing unit.

Comments

- Black spotting on the back sides of paper can occur after jams have occurred in the fusing unit.
- When black spotting on the back sides of paper occurs, the spotting can cause the paper to stick to the surface of the pressure roller.

Problem **Dotted vertical lines**

Solution

Improve fusing by raising the fusing temperature. You can further improve fusing by adjusting the line speed for thick paper.

Comments

- The fusibility of 2-by-2 half-tone and other images can be unfavorable.
- The exit rollers of downstream peripheral units can cause white tracks (dotted lines) in images by picking off un-fused toner which the rollers then transfer into the white areas of sheets that follow.

Problem **Dirty stacked edges after printing**

Solution

Improve fusing by raising the fusing temperature. You can further improve fusing by adjusting the line speed for thick paper.

Comments

- The conditions for fusing images that contain half-tones can be unfavorable.
- When this occurs, this can contribute to the black appearance of stacked edges.
- The poor fusibility of such images extends to the rollers, makes them dirty, and causes dirty corners.

Problem **Black edges, vertical lines on thin, large size paper**

Solution

Follow the PM list and perform the periodic inspection and cleaning of the fusing unit.

Comments

- The guide plate at the fusing unit exit can become dirty when feeding large-size thin paper (sizes larger than B4).
- This can cause the stacked edges to become black or cause black vertical lines at the trailing edges

Problem **Controller board replacement in the field**

Solution

Always replace the controller board with the correct type for the machine.

Comments

- Be sure to replace a controller board with the correct type for the machine: M002 (90 ppm), M003 (110 ppm), M004 (135 ppm).
- The controller board of each machine is different; the controller board specifically designed for the machine must be installed. If the wrong type of controller board is installed in a machine, this will cause the machine to issue an SC error.

Decurl Unit DU5000 (D457-17)

Problem **Black streak 8 mm pitch on paper edges**

Solution

Disconnect the unit downstream of the Decurl Unit and clean the anti-static brush at the exit of the De-Curl Unit.

Comments

After a long period of time, the brush can transfer stray toner, paper dust, etc. to the paper.

LCIT RT5030 (D452-17)

Problem **Failure to feed, double feed**

Solution

1. Fan the paper to remove static.
2. Remove it from the tray and turn the stack upside down.

Comments

The following undesirable conditions can occur with rough cut edges:

- Bits of paper on rough edges facing down can wrap around the separation roller and cause poor feeding.
- Paper can stick together and double feed.

LCIT RT5040 (D453-17)

Problem **Failure to feed, double feed**

Solution

1. Fan the paper to remove static.
2. Remove it from the tray and turn the stack upside down.

Comments

The following undesirable conditions can occur with rough cut edges:

- Bits of paper on rough edges facing down can wrap around the separation roller and cause poor feeding.
- Paper can stick together and double feed.

Problem **SC586**

Solution

Clean paper dust from the CIS (Contact Image Sensor) during PM and after the machine issues SC 586 (CIS registration error).

Comments

The CIS does not function correctly if it is contaminated with paper dust.

Problem **Poor feed with coated paper**

Solution

If the customer intends to use coated paper, replace the three feed rollers (pickup, feed, separation rollers) with the EPDM feed rollers.

Comments

The urethane feed rollers installed in the LCIT at the factory can pick up paper dust and coating material from the surfaces of coated paper, causing less friction between the roller and paper surface which can lead to poor feeding.

Problem **Leading edge of NCR bent, or bent leading edge causes a jam**

Solution

1. Switch off Air Assist (ON Duty 30%)
2. Switch off Pickup Assist.
3. Install the NCR auxiliary plate near the feed rollers in the tray where NCR is being fed.

Comments

NCR media is not stiff and easily jams.

Booklet Finisher SR5010 (D434-17)

Problem **Stapled booklet remains on the exit roller**

Solution

If this occurs, set the auxiliary Z-fold tray (intended for use with for the shift tray) on the booklet tray. Leave the auxiliary tray on the booklet tray only when needed (remove it when not needed).

Comments

When paper without stiffness is stapled at two places and output to the booklet tray, the booklet may droop and not feed out, causing the trailing edge of the paper to stop at the exit rollers.

Problem **Paper not aligned vertically by top fence and bottom fence**

Solution

Use SP6217 to adjust the position of the top fence where it contacts the high edge of the paper stack.

Comments

The top fence may not be able to touch the trailing edge of a large stack if the paper has curled.

Problem **Poor stacking of a large number of Z-folded sheets in the proof tray**

Solution

1. Set the auxiliary Z-fold tray (intended for use with for the shift tray) on the proof tray.
2. Removing the paper from the feed tray of the main machine, turning it over, and setting it in the tray again may also solve the problem.

Comments

When paper without stiffness is Z-folded, it will sag on the proof tray and make it difficult for the proof tray full sensor to detect when the tray is full, causing too many sheets to stack up on the proof tray.

Problem Black streaks on the edges of large stapled booklets (50 sheets or more) using small-size paper

Solution

Clean the brush roller in the stacker/stapler unit.

Comments

Toner or other material picked up and held in the brush roller is being transferred to paper in the stack/staple unit before it goes to the booklet unit.

High Capacity Stacker SK5010 (D447-17)

Problem **Black streaks 5 mm wide on paper edges output to the shift tray**

Solution

Clean the shaft of the shift tray exit roller, and clean the rubber paddles.

Comments

- After a long period of time, the rubber paddles can transfer stray toner, paper dust, etc. to the paper.
- The shaft of the exit roller can pass stray toner, etc. to the paddles which can then pass dirt on to the paper.

Problem **Black streak 8 mm wide on paper edges output to the shift tray**

Solution

Clean the anti-static brush at the shift tray exit.

Comments

After a long period of time, the brush can transfer stray toner, paper dust, etc. to the paper.

Problem **Incorrect paper alignment by the jogger unit**

Solution

Lower the de-curl setting on the Decurl Unit next to the main machine.

Comments

The paper is skewing due to face curl when the leading edge stopper pushes to the right, causing side fences to catch on the paper or miss it.

Problem **Last (top) sheet of every stack misaligned**

Solution

Correct paper curl at the Decurl Unit.

Comments

When the unit begins aligning the next stack, one side fence (front or rear) is catching on the last sheet of the stack below when it passes over the sheet below to start aligning the first sheet of the next stack.

Problem **Stacks of coated paper misaligned after tray lowering**

Solution

After the job ends, wait 15 to 30 seconds before pushing the tray down button on the unit operation panel.

Comments

Waiting 15 to 30 sec. before lower the tray allows more time for air between the sheets to dissipate, making it easier for the stacked sheets to cling together and not move.

Problem **Stacker cannot detect cart tray**

Solution

Make sure that the cart is perfectly level when pushing it into the stacker.

Comments

If the cart is not straight, or if it is tilted, the cart set sensor inside the stacker will not be able to detect the cart at its correct position.

Multi Folding Unit FD5000 (D454-17)

Problem **Z-folded paper not output, page output out of order**

Solution

Set the auxiliary tray on the fold (top) tray.

Comments

Transport and exit of Z-folded paper that is thick or heavy can become erratic.

Trimmer Unit TR5020 (D455-17)

Problem **Folded booklet out of position**

Solution

Adjust the center stapling unit of the Booklet Finisher.

Comments

Do the skew adjustment procedures described in the Booklet Finisher (D434) replacement and adjustment manual.

Problem **Leading edge (folded edge) of the booklet burred, crumbled, broken**

Solution

1. Do the skew adjustment for the booklet unit of the Booklet Finisher.
2. Length: Less than 3 mm, Width: Less than 1 mm (specified standards).

Comments

The cut at the trailing edge of the booklet is not clean or is torn due to skew that occurred when the booklet was folded in the fold mechanism of the booklet unit.

Problem **Trailing edges A3, DLT or larger paper are not aligned correctly**

Solution

Do the skew adjustments described in the Book Finisher replacement and adjustment procedures manual.

Comments

Standard specification: The fore edges of a booklet comprised of large-size sheets, 16 to 20 sheet sheets should be aligned within 2.5 mm.

There may be some variation in the alignment of the fore edges when folding large-size sheets to make booklets of 16 to 20 sheets.

Problem **Adjoining pages not aligned**

Solution

Do the skew adjustments described in the Book Finisher replacement and adjustment procedures manual.

Comments

Standard specification: Adjacent pages should be aligned within 0.5 mm.

The standard has been revised in consideration that some skew may occur.

Problem **Booklet too thick**

Solution

Use SP6727 to increase the number of passes made by the crease roller before the booklet leaves the booklet finisher to flatten the leading edge of the booklet. Specification: Booklet height must be less than 30 mm.

Comments

If the leading edge of the booklet is too thick, it will jam at the trimmer exit.

4. Appendix: Service Program Mode

Service Tables

Before You Begin

Service Mode Lock/Unlock

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

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

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

   - This unlocks the machine and lets you get access to all the SP codes.
   - The service technician can do servicing on the machine and turn the machine off and on. It is not necessary to ask the Administrator to log in again each time the machine is turned on.
2. If you must use the printer bit switches, go into the SP mode and set SP5169 to "1".
3. After machine servicing is completed:
   - Change SP5169 from "1" to "0".
   - Turn the machine off and on.
   - Tell the administrator that you completed servicing the machine.
   - The administrator will then set the "Service Mode Lock" to ON.

Operators, Skilled Operators

Operators and Skilled Operators can adjust machine operation for variable conditions such as paper type, changes in temperature and humidity around the machine, the effects of wear on machine parts over time, and so on.

There are two types of users:

- **Operators:** Individuals who use the machine every day for and are familiar with the operation of the machine.
- **Skilled Operators:** Individuals who also use the machine everyday. However, skilled operators are also trained in basic replacement procedures for key components such as the development unit, charge corona unit, and so on.

Access to the skilled operator menus is restricted:

- A skilled operator is assigned an access code that allows access to all the features in the skilled operator menus.
- An operator is not assigned an access code, but he or she can use the User Program Mode.

Most of the operator, skilled operator menu selections duplicate the functions of the SP codes in the main service tables.

Service Table Key

Note

- The Service Program Mode is for use only by customer engineers so that they can properly maintain product quality. If this mode is used by anyone other than a customer engineer for any reason, data might be deleted or settings might be changed. In such a case image quality can no longer be guaranteed.

Notation	What it means
[range / default / step]	[–9 to +9 / +3.0 / 0.1 mm] The default setting +3.0 can be adjusted in 0.1 mm steps in the range ±9.
DFU	Denotes "Design or Factory Use". Do not change this value.
Japan only	The feature or item is for Japan only. Do not change this value.
SEF	Short Edge Feed
LEF	Long Edge Feed
NIA	No Information Available
SSP	SP Mode (Special Service). Enter the SP mode, press and hold the [#] key and touch "System SP".
Copier	"Copier" appears in the headings of some service table titles and subtitles. This refers to the main machine (the "printer").

Important SP Codes

The SP codes are listed below in their order of appearance in the Installation section.

Installation Section

Developer, Toner		
2801 002	TD Sensor Initial Setting: Developer Lot Number	
	Enter both lot numbers, even if they are the identical. You must enter the lot numbers before TD sensor initialization.	
2801 001	TD Sensor Initial Setting: Auto Initialize	
	Initializes the TD sensor.	
2207 002	Toner Supply: Toner Bank Toner Setup	
	Starts toner supply.	
2962	Auto Process Control Execution	
	Initiates first auto process control	
Paper Size Settings		
5019 002	Paper Size: Tray 1	
	Tray paper size, main machine	
5019 001	Paper Size: Tray 6	
	Tray paper size LCIT, bottom tray. Machine automatically recognizes dial settings for Trays 4, 5. No SP setting is required for Trays 4, 5.	
Supply Information Setup		
5841	Supply Name Setting: Toner Name Setting (Black)	
	Enter toner supply name	
5812 001	Service Tel. No. Setting: Service	Service tech tel. no. contact.
5812 003	Service Tel. No. Setting: Supply	Consumable supplier contact
5812 004	Service Tel. No. Setting: Operation	Sales representative contact.
Enable TCRU		
5185	TCRU: Set Machine	
	Switch on TCRU. This ensures that the TCRU items [0119], [0120], [0121] will appear in the Skilled Operators' menus opened after pressing [User Tools].	

Before Moving Main Machine	
5804 041	Output Check: Upper Bottle Cap Motor
	Closes upper toner cap before moving machine.
5804 042	Output Check: Lower Bottle Cap Motor
	Closes lower toner cap before moving machine.
5804 038	Output Check: Toner Bank Motor
5804 039	Output Check: Toner Supply Coil Clutch
	These SPs (5804) turn on toner bank motor and toner supply coil clutch for 2 minutes to remove all toner in the supply hose before moving machine
2207 002	Toner Supply: Toner Bank Toner Setup
	Restarts toner supply after the machine has been moved to the new work site.

A3/11"x17" Tray Unit TK5010 (B331-14)

5019-2	Paper Size: Tray 1
	Select paper size for A3/11"x17" Tray Unit TK5000 (B331-11). The machine cannot detect the paper size automatically for this tray.

Key Counter

5121	Counter Up Timing
	Set counter for paper feed (key counter installation)
5113	Optional Counter Type
	Confirm set for "0" (key counter installation)

Attention Light AL5000

5804-207	Output Check: Status Lamp (Green)
	Switches on the green lamp in the access light to confirm correct installation and operation.
5804-208	Output Check: Status Lamp (Red)

	Switches on the red lamp in the access light to confirm correct installation and operation.

CIS Adjustments for LCIT Installation

1910 002	CIS Img Pos Adj: LED Strength
1909 002	CIS Img Pos Adj: PWM Duty After Adjustment
2902 003	Test Pattern: Printing Test Pattern
	Select Pattern #27 for test print (LCIT adj.) Be sure to touch [OK] to select the pattern.
5990 005	SP Print Mode: Diagnostic Report
	Prints Pattern #27 after the pattern has been selected.
1002	Side-to-Side Registration
	Adjust trim patterns for main machine Trays 4, 5, 6 and Tray 7 if the bypass unit has been installed.
1912 002	CIS Img Pos Adj

Controller Option Installations

5873 001	SD Card Appli Move: Move Exec
5873 002	SD Card Appli Move: Undo Exec
	SP5873 is used to copy applications onto one SD card.
5878	Option Setup: Data Overwrite Security
	Enable Data Overwrite Security (DOS) option with SD card inserted. The DOS SD card must be inserted in Slot 1 (upper slot).
5990-5	SP Print Mode: Diagnostic Report
	Print SMC report to confirm DOS setup.

Replacement and Adjustment

The SP codes are listed below in their order of appearance in the Replacement and Adjustment section.

SP	Name	Function
LD Unit Replacement		
SP2115	Main Scan Beam Pitch Adjustments	
	Do the nine settings (001 to 009). The values that must be input are printed on the label attached to the new LD unit.	
SP2962	Auto Process Control Execution	Executes auto process control.
Drum Replacement		
SP3905 001	OPC Drum Initial Setting: Execute Mode	
SP2962	Auto Process Control Execution	
Pre-Charge Unit Replacement		
SP2962	Auto Process Control Execution	
	Starts auto process control.	
Charge Corona Unit Replacement		
SP2001	Charge Corona Bias Adjustment	
	Execute 001 to 006.	
SP2962	Auto Process Control Execution	
	Starts auto process control.	
Drum Potential Sensor Replacement		
SP2962	Auto Process Control Execution	
	Starts auto process control.	
ID Sensor Replacement		
SP3001 002	ID Sensor Initial Setting: ID Sensor Initialization	
	Initializes the new ID sensor	
Developer Replacement		
2801-2	TD Sensor Initial Setting: Developer Lot Number	

SP	Name	Function
	Enter both lot numbers, even if they are the identical. You must enter the lot numbers before TD sensor initialization.	
2801-1	TD Sensor Initial Setting: Auto Initialize	
	Initializes the TD sensor.	
SP2207-2-	Toner Supply: Toner Bank Toner Setup	
	Starts toner supply.	
SP2962	Auto Process Control Execution	
	Starts auto process control	
Toner Density Sensor Replacement		
SP2801 002	TD Sensor Initial Setting: Developer Lot Number	
	Enter both lot numbers, even if they are the identical. You must enter the lot numbers before TD sensor initialization. **Note**: Developer should be replaced when the TD sensor is replaced.	
SP2801 001	TD Sensor Initial Setting: Auto Initialize	
	Initializes the TD sensor.	
SP2962	Auto Process Control Execution	
	Starts auto process control.	
Toner Suction Bottle Replacement		
2972	Toner Suction Bottle Operation Time	
	Resets the hour counter to "0"	
Toner Suction Motor		
SP2973	Toner Suction Motor Operation Time	
	Resets the hour counter to "0"	
Main Machine Image Position Sensor Replacement		
1910 001	CIS Img Position Adjustment: LED Strength	
1909 001	CIS Img Pos Adj: PWM Duty After Adj	

SP	Name	Function
1910 003	CIS Img Pos Adj: LED Strength	
1909 003	CIS Img Pos Adj: PWM After Adj (Duplex)	
2902 003,	Test Pattern: Printing Test Pattern	
	Select Pattern #27 for test print (LCIT adj.) Be sure to touch [OK] to select the pattern.	
5990 005	SP Print Mode: Diagnostic Report	
	Prints Pattern #27 after the pattern has been selected.	
1002	Side-to-Side Registration: Tray 1, 2, 3	
	Execute 001 to 003 to adjust for the main machine trays 1, 2, 3	
1002 008	Side-to-Side Registration: Duplex	
	Do 008 to adjust for duplexing.	
1912 003	CIS Img Pos Adj: Normal Paper	
	Do for duplexing.	
Tandem Tray Paper Size Setting Change		
5019 002.	Paper Size: Tray 1	
	Set the paper size for Tray 1. The machine automatically detects the dial settings of Trays 2, 3 (no SP setting is required).	
Fusing Cleaning Unit: Fabric Replacement		
1902 001	Web Control Motor: Web Consumption Display/Setting	
	Reset counter to "0".	
Fusing Pressure Adjustment: Nip Band Width Check		
1109	Fusing Nip Band Check	
	Set to "ON" for nip band check mode.	
2902 003	Test Pattern: Printing Test Pattern	
	Select Pattern #27 for test print (LCIT adj.) Be sure to touch [OK] to select the pattern.	

SP	Name	Function
5990 005	SP Print Mode: Diagnostic Report	
	Prints Pattern #27 after the pattern has been selected.	
Toner Bank Unit Removal, Replacement		
5804 041	Output Check: Upper Bottle Cap Motor	
	Release upper bottle for removal	
5804 042	Output Check: Lower Bottle Cap Motor	
	Release lower bottle for removal	
5804 038	Output Check: Toner Bank Motor	
	Discharge toner from upper bottle	
5804 039	Output Check: Toner Supply Coil Clutch	
	Discharge toner from lower bottle	
2207 002	Toner Supply: Toner Bank Toner Setup	
	Starts toner supply	
Printing Registration Adjustment		
2902 003	Test Pattern: Printing Test Pattern	
	Select Pattern #27 for test print. Be sure to touch [OK] to select the pattern.	
5990 005	SP Print Mode: Diagnostic Report	
	Prints Pattern #27 after the pattern has been selected.	
1001	Leading Edge Registration	
1002 1 to 8	Side-to-Side Registration	
1912 1 to 3	CIS Img Pos Adj: Normal Paper	
Blank Margin Adjustment		
2101 001	Printer Erase Margin: Leading Edge	
2101 002	Printer Erase Margin: Trailing Edge	
2101 003	Printer Erase Margin: Left Edge	

SP	Name	Function
2101 004	Printer Erase Margin: Right Edge	
Magnification Adjustment		
2902 003	Test Pattern: Printing Test Pattern	
	Select Pattern #27 for test print. Be sure to touch [OK] to select the pattern.	
5990 005	SP Print Mode: Diagnostic Report	
	Prints Pattern #27 after the pattern has been selected.	
2910	Sub Scan Magnification	
Parallelogram Image Adjustment		
2902 003	Test Pattern: Printing Test Pattern	
	Select Pattern #27 for test print. Be sure to touch [OK] to select the pattern.	
5990 005	SP Print Mode: Diagnostic Report	
	Prints Pattern #27 after the pattern has been selected.	
	Adjustment done manually.	

System SP1-nnn Feed

1001	Leading Edge Registration
	Adjusts the printing leading edge registration for feeding from the trays and duplex tray using the trimming area pattern (SP2-902-1, No.15).] Use the [./*] key to enter the minus (–) before entering the value. The specification is 4 ± 2 mm
001	Copier/LCT Paper Tray
	[-9.0 to +9.0 /0 / 0.1 mm]
002	Duplex Tray
	[-9.0 to +9.0 /0 / 0.1 mm]
003	Copier//LCT Paper Tray (Low Speed)
	[-9.0 to +9.0 /0 / 0.1 mm]
004	Duplex Tray (Low Speed)
	[-9.0 to +9.0 /0 / 0.1 mm]

Low Speed Table

	M002	M003	M004
Standard	90 ppm	100 ppm	135 ppm
Low Speed 1	Invalid	90 ppm	110 ppm
Low Speed 2	Invalid	Invalid	90 ppm

005	Copier/LCT Paper Tray (Low Speed 2)
	[-9 to +9 / 0 / 0.1 mm] • Low Speed 2 applies to the M004 only (see table above).
006	Duplex Tray (Low Speed 2)
	[-9 to +9 / 0 / 0.1 mm] • Low Speed 2 applies to the M004 only (see table above).

1002	Side-to-side Registration	
	Adjusts the printing side-to-side registration from the 1st paper feed station using the trimming area pattern (SP2-902-3, No.15). Use the [./*] key to enter the minus (–) before entering the value. Specification: 0 ± 2.0 mm.	
001	1st Tray (Tandem Tray)	[-9.0 to +9.0 / 0 / 0.1 mm]
002	2nd Tray (Main Machine)	
003	3rd Tray (Main Machine)	
004	4th Tray (LCT Tray 1)	
005	5th Tray (LCT Tray 2)	
006	6th Tray (LCT Tray 3)	
007	7th Tray (Bypass Tray)	
008	Duplex Tray (Main Machine)	

1003	Paper Buckle Adjustment (Registration)	
	Adjusts the relay clutch timing at registration. The relay clutch timing determines the amount of paper buckle at registration. (A plus or minus setting increases or decreases the amount of buckle.)	
001	Copier Paper Tray	[-6 to +6 / 0 / 1 mm]
002	LCT	
003	Duplex Tray	
004	Manual	

1016	Fine Adjust Reg Roller Speed
	This SP adjusts the speed of the registration roller. The speed can be adjusted independently for paper feed 1) when the paper is fed for 1st side printing and 2) when paper is fed for 2nd side printing after the 1st side has been printed.

001	Font Side	[-3 to +3/0/0.1 mm]
002	Back Side	

1105	Fusing Temperature Adjustment
	Note: In the descriptions below: • "[0107]" refers to the "0107 Adjust Toner Fusing Temperature" in the Operator and Skilled Operator menus of User Tools. • This feature has the same number (0107) in both menus.
001	Standby Temperature
	Sets the target temperature of the hot roller for stand-by mode. This SP is enabled only if SP1105-16 or [User Tool] [0107) is set for "Medium". This SP adjusts temperature for thick paper and other types of paper. The machine uses this setting as the target re-load temperature during fusing temperature control. [140 to 190/*/1 °C] * M002: 153, * M003: 165, * M004: 178
002	Standby (Low Temp Mode)
	This SP sets the target temperature of the hot roller for stand-by mode. This SP is enabled only if SP1105-16 or [User Tool] [0107) is set for "Low Temp Mode". This SP adjusts temperature for thick paper and other types of paper. The machine uses this setting as the target re-load temperature during temperature control. [140 to 190/*/1 °C] * M002: 163, * M003: 175, * M004: 188
003	Standby (Low Temp Mode 2)
	This SP sets the target temperature of the hot roller for stand-by mode. This SP is enabled only if SP1105-16 is set for "Low" or if the fusing temperature has been set in User Tools with "0107". This SP adjusts temperature for thick paper and other types of paper. The machine uses this setting as the target re-load temperature during temperature control. [140 to 200/188/1 °C]

004	Standby (High Temp Mode)
	This SP sets the target temperature of the hot roller for stand-by mode. This SP is enabled only if SP1105-16 is set for "High" or if the fusing temperature has been set in User Tools with "0107". This SP adjusts temperature for thick paper and other types of paper. The machine uses this setting as the target re-load temperature during temperature control. [140 to 190/*/1 °C] * M002: 148, * M003: 160, * M004: 173
005	Standby (High Temp Mode 2)
	This SP sets the target temperature of the hot roller for stand-by mode. This SP is enabled only if SP1105-16 is set for "High" or if the fusing temperature has been set in User Tools with "0107". This SP adjusts temperature for thick paper and other types of paper. The machine uses this setting as the target re-load temperature during temperature control. [120 to 190/*/1 °C] * M002: 138, * M003: 150, * M004: 163
006	Fusing Temperature Lower Limit
	Sets the low limit for the fusing temperature. If the fusing temperature falls below this temperature, the machine will display an alert message and stop the line. After the fusing temperature rises above this temperature, the machine will resume operation in high temperature mode. • This SP is enabled only if SP1105-16 is set for "Medium" or if or if the fusing temperature has been set in User Tools with "0107". • Change the setting of this SP to prevent poor image fusing to paper with special paper, or if the environmental conditions around the machine are not ideal. [120 to 180/*/1 °C] * M002: 133, * M003: 145, * M004: 158

007	Low Limit (Low Temp Mode) Sets the low limit for the fusing temperature. If the fusing temperature falls below this temperature while operating in the high temperature mode, the machine will display an alert message and stop the line. After the fusing temperature rises above this temperature, the machine resumes operation in high temperature mode. • This SP is enabled only if SP1105-16 is set for "Low" or if or if the fusing temperature has been set in User Tools with "0107". • Change the setting of this SP to prevent poor image fusing to paper with special paper, or if the environmental conditions around the machine are not ideal. [120 to 190/153/ 1°C]
008	Low Limit (Low Temp Mode 2) Sets the low limit for the fusing temperature. If the fusing temperature falls below this temperature, the machine will display an alert message and stop the line. After the fusing temperature rises above this temperature, the machine resumes operation in high temperature mode. • This SP is enabled only if SP1105-16 is set for "Low" or if or if the fusing temperature has been set in User Tools with "0107". • Change the setting of this SP to prevent poor image fusing to paper with special paper, or if the environmental conditions around the machine are not ideal. [120 to 190/5/1] * M002: 153, * M003: 155, * M004: 168
009	Low Limit (High Temp Mode) Sets the low limit for the fusing temperature. If the fusing temperature falls below this temperature, the machine will display an alert message and stop the line. After the fusing temperature rises above this temperature, the machine resumes operation in high temperature mode. • This SP is enabled only if SP1105-16 is set for "High" or if or if the fusing temperature has been set in User Tools with "0107". • Change the setting of this SP to prevent poor image fusing to paper with special paper, or if the environmental conditions around the machine are not ideal. [120 to 180 / * / 1 °C] * M002: 128, * M003: 140, * M004: 153

010	Low Limit (High Temp Mode 2)
	Sets the low limit for the fusing temperature. If the fusing temperature falls below this temperature, the machine will display an alert message and stop the line. After the fusing temperature rises above this temperature, the machine resumes operation in high temperature mode. • This SP is enabled only if SP1105-16 is set for "High" or if or if the fusing temperature has been set in User Tools with "0107". • Change the setting of this SP to prevent poor image fusing to paper with special paper, or if the environmental conditions around the machine are not ideal. [100 to 180/*/1 °C] * M002: 123, * M003: 135, * M004: 148
011	Fusing Temp Switch
	Specifies the fusing temperature at which 1 lamp of the 3 fusing lamps is switched off. The lamp that is switched off is the one heating the center of the hot roller. Switching this lamp off prevents overshooting the warm-up temperature. 0: Normal Temp. (Default) 1: Low Temp. (Fusing Mode) 2: Low Temp.2 (Fusing Mode 2) 3: High Temp. (Reduce Curl Mode) 4: High Temp.2 (Reduce Curl Mode 2)
012	Fusing Temperature Correction (A4/LT)
	Sets the amount to raise the fusing temperature above the standby temperature to print on paper sizes smaller than A4/LT LEF. [0 to 10/5/1°C]
013	Fusing Temperature Correction: Translucent
	Specifies the amount to raise or lower the fusing from the standby temperature to print on translucent paper. [-10 to +10/0/1°C]

014	Fusing Temperature Correction: Small Size
	Sets the amount to raise the fusing temperature above the standby temperature to print on paper sizes smaller than A4/LT LEF. The machine may display an alert and stop the line until it has adjusted the fusing temperature with this setting. "Small Size" (Small Size 1) is paper shorter than LT LEF (279 mm) in the main scan direction but wider than B5 SEF. [0 to 20/10 1°C]
015	Small Size (2 Copies)
	This SP adjusts the fusing temperature for "#2 Copies". These are small paper sizes (Small Size 2), smaller than A5 SEF in the main scan direction.. The value entered here is added to the "Ready" temperature (standby temperature). The job will begin when the hot roller reaches the adjusted temperature (stand-by temperature + this setting). [0 to 20/ 10/ 1 °C]
016	Small Size (Switch to 1 Lamp)
	This SP selects one fusing lamp for small paper sizes (B5 SEF and smaller). [0 to 2/0/1] 0: Medium, 1: Low, 2: High • Raise this setting if you see loose toner, indicating that the toner has not fused completely with the surface of the paper. • Lower this setting if the paper excessively curled after it leaves the machine.
017	Small Size (Switch to 2 Lamps)
	This SP selects two fusing lamps for small paper sizes (Small Size 2), paper small than A5 SEF in the main scan direction. [0 to 20/10/1 degrees]
018	Paper Size for Temp Correction (0:LT, 1:B5)
	Sets the paper size used to define "small paper" for SP codes 1105-7, SP1105-8. [0 to 1/1/1] 0: LT LEF 1: B5 LEF

019	Fusing Lamp Switching at Warm-up
	Specifies the fusing temperature at which 1 lamp of the 3 fusing lamps is switched off. The lamp that is switched off is the one heating the center of the hot roller. Switching this lamp off prevents overshooting the warm-up temperature and ensures that heat is evenly distributed over the surface of the hot roller. [20 to 190 / * /1°C * M002: 99, * M003: 99, * M004: 95
020	Low Power Mode
	Sets the target temperature of the hot roller for low power mode. The hot roller remains at this temperature until the machine leaves low power mode. [20 to 170/*/1°C] * M002: 123, * M003: 135, * M004: 148
021	Fusing Lamp Switching after Low Power Mode
	Specifies the temperature at which 1 of the 3 fusing lamps is switched off before reaching the target standby temperature when the machine returns from the low power mode. The center fusing lamp is switched off before reaching the target standby temperature to prevent overshooting the target temperature, and to ensure that the heat on the surface of the hot roller is evenly distributed. [-20 to 0 / * / 1°C] * M002: -10, * M003: -10, * M004: -20 **Note**: When this temperature is added to the stand-by temperature during warm-up after leaving low power mode, and additional 10°C is added in the M004 (135 ppm): 178°C - 20°C + 10°C = 168°C). This is done for the M004 only.
022	1st Print After Low Power Mode
	Sets the temperature at which the first sheet is allowed to print before the hot roller reaches the target standby temperature after returning from low power mode. [-50 to 0 / * / 1°C] * M002: -20, * M003: -20, * M004: -5
023	Fusing Idling Start Temperature

	This is the temperature at which printing can start during the warm-up cycle after the machine leaves low power mode and returns to full operation. This is: Stand-by Temperature SP + Print Start Temperature. [100 to 160 / * / 1°C] * M002: 130, * M003: 130, * M004: 160

1106	Fusing Temperature Display
	Displays the fusing temperature.

1107	Fusing Idling Time Setting
001	Normal/High Temp Mode
	Sets the length of time the hot roller is allowed to rotate before the first sheet is fed in normal or high temperature mode. This idling time allows the hot roller to heat up faster. This SP setting is enabled only if SP1105-16 or if User Tool setting 0107 is set "Medium (Normal) or if high temperature mode is selected. [0 to 120 / * / 1 s] * M002: 40, * M003: 50, * M004: 60
002	Low Temp Mode
	Sets the length of time the hot roller is allowed to rotate before the first sheet is fed low temperature mode. This idling time allows the hot roller to heat up faster. This SP setting is enabled only if SP1105-16 or if User Tool setting 0107 is set "Low". [0 to 120 / * / 1 s] * M002: 60, * M003: 70. * M004: 90
003	Low Temp Mode 2
	Sets the length of time the hot roller is allowed to rotate before the first sheet is fed low temperature mode. This idling time allows the hot roller to heat up faster. This setting is enabled regardless of settings done with SP1105-16 or the 0107 setting in User Tools. [0 to 120 / * / 1 s] * M002: 60, * M003: 70, * M004: 90

1109	Fusing Nip Band Check
	Use OHP to execute this SP and feed 1 sheet between the hot roller and pressure roller where it remains for 30 s and is then fed out so you can measure the nip band width. [OFF, ON] **Note:** • This SP must be switched off after the nip band check is completed. If this SP remains on, this will cause paper to jam in the fusing unit (SC559).

1159	Fusing Jam SC Setting
	This SP determines what the machine does if three consecutive jams occur in the fusing unit. 0: OFF A jam alert is shown on the screen. The customer can remove the jam and the machine works normally after that. 1: ON: SC559 occurs. The technician must remove the jam.

1802	PPM Setting **DFU** (Designer & Factory Use only)
	[0 to 255/ **90** / 1 ppm]

1902	Web Motor Control
001	Web Consumption Display/Setting
	Displays how much of the web has been used, expressed as a percentage of the roll consumed. Switch the machine off/on after changing this setting. [0 to 107 / 0 / 1%] When you install a partially used roll from another machine, read this SP before removal, then input that value with this SP on the next machine. Otherwise, the machine has no way of knowing how much of the partially used roll has been consumed.

002	Web Motor Drive Interval			
	Determines how often the web motor turns on. [3 to 130/*/0.1 sec.] **Note:** The default setting is different depending on the area and model (see below).			
	Model	**NA**	**EU**	**Asia**
	M002	17.2	11.5	17.2
	M003	14.7	9.8	14.7
	M004	12.2	8.2	12.2
003	Web Motor Drive Time			
	Changes the time that the web motor is driven. [0.3 to 3.5 / 2.8 / 0.1 s]			
004	Web Near End Setting			
	Changes the web consumption ratio at which web near end is displayed. EUR/A: [0 to 100 / 90 / 1%] NA: [0 to 100 / 92 / 1%]			
005	Web Motor Drive Interval (Low Speed)			
	Determines how often the web motor turns on in Low Speed mode. [3 to 130/*/0.1s] **Note:** The default setting is different depending on the area and model (see below).			
	Model	**NA**	**EU**	**Asia**
	M002	17.2	11.5	17.2
	M003	17.2	11.5	17.2
	M004	14.7	9.8	14.7
007	Web Correction Coefficient Setting **DFU**			
	[5 to 0 / 0.79 / 0.01]			

1903	Web Drive Time

001	Web Total Time Display (x 200ms)
	Displays the total amount of time (seconds) elapsed during web roll feed.
002	Web Actual Time Display (x 100ms)
	Displays the total amount of web roll motor operation time (seconds) for feeding the current web roll.

1906	Web Motor Control at Finishing
001	Web Rotation Setting
	[0 to 1/ 0 / 1]
002	Web Motor Drive Time
	[0 to 360 / 30 / 1 s]
003	Web Additional Temperature
	[0 to +20/ 0 / 1 degree C]

1907	Web Drive Time
001	Web Rotation Setting
	[0 to 1/0 1]
002	Web Motor Drive Time
	[0 to 120 /30/ 1 s]
003	Web Additional Temperature
	[-10 to +20/ 5/ 1 degree C]

1909	CIS Image Position Adj: PWM Duty After Adj
	Displays the results of the settings done with SP1910.
001	Tray 1, 2, 3
002	LCT
003	Duplex

1910	CIS Image Pos Adj: LED Strength	
	Press [Execute] to do the adjustment. **Note:** • For more about adjustment of the CIS components in the main machine, see "Replacement and Adjustment". • The CIS of the LCT should be adjusted at installation. For more see "Installation".	
001	Tray 1, 2, 3	Press [Execute].
002	LCT	
003	Duplex	

1912	CIS Image Pos Adj: Normal Paper
	There are three image position sensors units (1 in the LCT and 2 in the main machine). Each image position sensor unit contains a CIS. Each CIS can be adjusted independently for normal paper. **Note:** • For more about adjustment of the CIS components in the main machine, see Section "Replacement and Adjustment". • The CIS of the LCT should be adjusted at installation. For more see Section "Installation".
001	Tray 1, 2, 3
002	LCT
003	Duplex

1913	CIS Image Pixel Adjustment: Get Pixels
	This SP retrieves and displays the dot data set with SP1912.
001	Tray 1, 2, 3
002	LCT (Normal Paper)
003	Duplex (Normal Paper)

1914	CIS Abnormal Detection **DFU**
	These SP codes display feedback resulting from the machine check on the CIS

001	Error Flag
	This is the bit flag that confirms abnormal operation of the CIS. Display format: Binary Bit 2, Bit 1, Bit 0: [000] Bits correspond as follows: Bit 2 = Duplex unit Bit 1 = LCIT, Bit 0 = Bank For example, if the CIS were detected abnormal at the bank the display would be [001]. At the start of abnormal detection output, the SP value initializes (clears) and displays the current condition.
002	Error Count
	Displays the counts for when high-precision correction is OFF. If high-precision correction is more than ±5 mm, this indicates that the CIS is not detecting correctly and feedback of the correction value stops.
003	Error Count Clear
	Clears the count for SP1914-2 only. Does not clear the count for SP1914-1.
101	P_EDGE:Bank
	Displays the P_EDGE (paper edge) where an error occurred during CIS error detection ("0" lights when feedback is normal).
102	P_EDGE:LCT
	Displays the P_EDGE (paper edge) where an error occurred during CIS error detection ("0" lights when feedback is normal).
103	P_EDGE:Duplex
	Displays the P_EDGE (paper edge) where an error occurred during CIS error detection ("0" lights when feedback is normal).

1915	Fine Adjust CIS **DFU**

001	Tray 1	[-9 to +9 / 0 / 0.1 mm]
002	Tray 2	
003	Tray 3	
004	Tray 4	
005	Tray 5	
006	Tray 6	
007	Tray 7	
008	Back Side	

1916	Adjust Duplex/Invert Timing **DFU**
001	Adjust Switchback Timing [0 to 10 / 3.5 / 0.5 mm]
002	Adjust OFF Timing of Switchback [-70 to 100/ -15 / 5 ms]

1917	Proof Tray Stop Time	
	This SP adjusts the stop timing of paper feed to the proof tray if double feeds are occurring frequently.	
001	1st Tray	[0 to 1/ 0 / 0.1 sec.]
002	2nd Tray	
003	3rd Tray	
004	4th Tray	
005	5th Tray	
006	6th Tray	
007	7th Tray	

1920	LCIT Blower Fan Duty Adjustment

	These SP codes adjust the force of the air blown by the fans during paper separation with the LCT (D453).	
001	4th Tray Blower Fan	[1 to 90 / 70 /1 %]
002	5th Tray Blower Fan	
003	6th Tray Blower Fan	
011	4th Tray Blower Fan: Special Paper	
012	5th Tray Blower Fan: Special Paper	
013	6th Tray Blower Fan: Special Paper	

1921	LCIT Air Feed Start Time Adjustment	
	These SP codes adjust the start timing of the fans during paper separation with the LCIT (D453).	
001	4th Tray	[1 to 10/ 3/ 1 sec.]
002	5th Tray	
003	6th Tray	
011	4th Tray: Special Paper	
012	5th Tray: Special Paper	
013	6th Tray: Special Paper	

1922	LCIT Air Assist Selection	
	These SP codes switch the air assist function of LCIT (D453) off/on.	
001	4th Tray	[0 to 2/ 0 / 1] 0: Auto Select 1: Force ON 2: Force OFF
002	5th Tray	
003	6th Tray	
011	4th Tray: Special Paper	
012	5th Tray: Special Paper	
013	6th Tray: Special Paper	

1923	LCIT Pickup Assist Selection	
001	4th Tray	[0 to 2/ 0 / 1] 0: Auto Select 1: Force ON 2: Force OFF
002	5th Tray	
003	6th Tray	
004	7th Tray	
011	4th Tray: Special Paper	
012	5th Tray: Special Paper	
013	6th Tray: Special Paper	
014	7th Tray: Special Paper	

1925	De-curl Soft Roller Pressure Adjustment
	This SP code adjusts the amount of pressure applied by the metal roller to the soft roller in the De-Curl Unit (D457). This pressure can be adjusted on the operation panel. Do not change this SP setting until you have tried the pressure adjustments on the operation panel. [-0.3 to 0.5 /0 / 0.1 mm]

1926	De-curl Exit Guide Plate Timing
	When an error occurs in any unit downstream from the De-Curl unit, the exit guide plate drops so paper can drop into the purge tray below the de-curl unit. This SP adjusts how far the paper is allowed to feed after an error occurs downstream. [0 to 488 / 110 / 1 mm]

System SP2-nnn Drum: 1

2001	Charge Corona Bias Adjustment
001	Grid Voltage in Imaging Area
	Adjusts the voltage applied to the grid plate during printing when auto process control is off. [-600 to -1800 / -900 / 10 V] Normally, there is no need to adjust this. However, if there is an ID or TD sensor problem, the machine goes into fixed toner supply mode. After replacing the drum or charge corona wire, reset this value to the default.
002	Grid Voltage in ID Sensor Pattern
	Adjusts the voltage applied to the grid plate when making the ID sensor pattern, when auto process control is switched off. [-600 to -1800 / -770 / 10 V] Normally, there is no need to adjust this. If the user wants high-density images, the sensor pattern must be lighter, so this voltage must be a higher negative voltage.
003	Grid Voltage in Imaging Area
	Adjusts the voltage applied to the grid plate during printing when auto process control is switched on. [-600 to -1800 / -900 / 10 V] This voltage changes every time auto process control starts up (every time the machine is switched on)
004	Total Current
	Adjusts the amount of current used to apply voltage to the grid plate during normal operation mode. [-1000 to -1800 / -1550 / 10 μA]
005	Total Corona Current
	Adjusts the current applied to the charge corona wire for Photo mode. [-1000 to -1800 / -1600 / 10 μA]
006	Vd (Auto Process Control)
	Adjusts the target VD voltage for Process Control Initial Setting. [-700 to -950 / -800 / 5 V]

007	Grid Voltage in Imaging Area (Low Speed)
	Adjusts the voltage applied to the grid plate during printing when auto process control is switched off and the machine is in the low speed mode. [-600 to -1800 / -850/ 10 V]
008	Pattern Grid Voltage: Low Speed: No Procon
	Adjusts the voltage applied to the grid plate when making the ID sensor pattern, when auto process control is switched off and the machine is in the low speed mode. [-600 to -1800 / -710 / 10 V]
009	Grid Voltage:Low Speed:Procon
	Adjusts the voltage applied to the grid plate when auto process control is on and the machine is in the low speed mode. [-600 to -1800 / -900 / 10 V]
010	Total Corona Current (Low Speed)
	Adjusts the current applied to the charge corona wire when the machine is in the low speed mode and normal mode. [-750 to -950 / -800 / 10 μA]
011	Ttl Corona Current: Low Speed 2: No Procon
	Adjusts the current applied to the charge corona wire when the machine is in the low speed mode and Photo Mode. [-600 to -1800 / -850 / 10 μA]
012	Vd (Auto Process Control)
	[600 to 1800/710/5 V]
013	Ttl Corona Current: Low Speed2: Procon
	[600 to 1800/ 900/ 10V]
014	Vd (Auto Process Control)
	[700 to 950 / 800/ 5 V]

2002	Charge Corona Bias Adjustment
	These SP codes allow you to display and change the settings for the operation mode of the pre-charge unit. **Note:** The pre-charge unit supplements the function of the charge unit by reducing latent images and preventing low drum potential sensor readings in the first print cycle.
001	Set Pre-Charge Mode
	Determines how the pre-charge unit operates after it is cycled off/on for a reset in response to pre-charge unit SC code SC312 or SC313. [0 to 2/1/1] 0: Off. Pre-charge unit does not operate after the machine is cycled off/on. 1: On. Pre-charge unit operates after the machine is cycled off/on. 2: Pre-charge unit operates only after the main motor turns on. **Note:** This display is turned off if the machine returns a pre-charge related SC code when this SP code is set to "0" (Off).
002	Pre-Charge Total Current
	Sets the total amount of current used to apply a charge to the drum when the pre-charge unit turns on for normal print jobs. This setting does not apply to low speed mode. [500 to 1500/600/10 μA]

2101	Printing Erase Margin
001	Leading Edge
	Adjusts the leading edge erase margin. [0 to 9.0/ 3.5 / 0.1 mm]
002	Trailing Edge
	Adjusts the trailing edge erase margin. [0 to 9.0/ 2.5 / 0.1 mm]
003	Left edge
	Adjusts the left side erase margin. [0 to 9.0/ 2.0 / 0.1 mm]

004	Right edge
	Adjusts the right side erase margin. [0 to 9.0/ 2.0 / 0.1 mm]

2103	LD Power Adjustment	
	This SP mode corrects the banding caused by: 1) changes in drum characteristics over time, and 2) LD power fluctuations.	
001	LD0 Power Adjustment	Adjusts 1200 dpi. [-70 to +185/0/1] If you adjust one or more of these SP codes, you must select the appropriate SP (009 to 016 below) to enable adjustment.
002	LD1 Power Adjustment	
003	LD2 Power Adjustment	
004	LD3 Power Adjustment	
005	LD4 Power Adjustment	
006	LD5 Power Adjustment	
007	LD6 Power Adjustment	
008	LD7 Power Adjustment	
The SP codes below switch SP2103 001 to 008 on and off. For example, after adjusting SP2103 001, set SP2103 009 to "1".		
009	LD0 Power Adjustment Start/End	[0 to 1/0/1] 0: Off 1: On (enables adjustment)
010	LD1 Power Adjustment Start/End	
011	LD2 Power Adjustment Start/End	
012	LD3 Power Adjustment Start/End	
013	LD4 Power Adjustment Start/End	
014	LD5 Power Adjustment Start/End	
015	LD6 Power Adjustment Start/End	
016	LD7 Power Adjustment Start/End	

2104	LD Power Adjustment(for ID Sn Pattern) **DFU**	
	This SP sets the LD power level for the creation of the ID sensor pattern and the Vh pattern when process control is on and operating (enabled with SP3901). These SP codes are automatically reset to their defaults after: • Leaving the SP mode. • The copier is switched off and on.	
	LD Power Adjustment – ID Sensor Pattern	
001	Potential Pattern	[0 to 15 / 6 / 1]
002	VH Pattern	

2105	LD Power Correction	
	These SP codes correct the banding caused by: 1) changes in drum characteristics over time, and 2) LD power fluctuations.	
001	Correction in Printer Mode	
	If switched ON, this allows each channel to be adjusted for 1200 dpi print output with the SP settings below (LD0 to LD7). 0: OFF, 1: ON	
002	Correction in Copy Mode	
	If switched ON, this allows each channel to be adjusted for output with the SP settings below (LD0 to LD7). [0 to 1 / 0 / 1] 0: OFF, 1: ON	
003	LD0 Power Correction	
	Correct the power of LD0 after either SP2105-001 or -002 is switched on. [-40 to +40 / -2 /1]	
004	LD1 Power Correction	
	Corrects the power of LD1 after either SP2105-001 or -002 is switched on. [-40 to +40 / -2 /1]	

005	LD2 Power Correction
	Corrects the power of LD2 after either SP2105-001 or -002 is switched on. [-40 to +40 / +2 /1]
006	LD3 Power Correction
	Corrects the power of LD3 after either SP2105-001 or -002 is switched on. [-40 to +40 / +2 /1]
007	LD4 Power Correction
	Corrects the power of LD4 after either SP2105-001 or -002 is switched on. [-40 to +40 / +2 /1]
008	LD5 Power Correction
	Corrects the power of LD5 after either SP2105-001 or -002 is switched on. [-40 to +40 / +2 /1]
009	LD6 Power Correction
	Corrects the power of LD6 after either SP2105-001 or -002 is switched on. [-40 to +40 / -2 /1]
010	LD7 Power Correction
	Corrects the power of LD7 after either SP2105-001 or -002 is switched on. [-40 to +40 / -2 /1]

2111	FCI Shade Detection	
	Allows shading detection if FCI (Fine Character Adjustment) smoothing is on. With this SP switched on, photos and painted areas are detected, and FCI is not applied in these areas. FCI is used for printer mode output only.	
001	Matrix Size (>600 dpi)	[0 to 128 / 18 / 1] 0: OFF
002	Threshold Value (>600 dpi)	[0 to 128 / 4 / 1] 0: OFF

003	Matrix Size (<400 dpi)	[0 to 128 / 18 / 1] 0: OFF
004	Threshold Value (<400 dpi)	[0 to 128 / 4 / 1] 0: OFF

2114	Printer Dot Edge Parameter Setting	
	Allows setting a parameter for binary edge processing for the printer application with FCI switched off. This SP allows adjustment of image quality if the desired effect cannot be achieved with the default settings for edge processing. In general, increasing the values produces thicker lines and decreasing them produces thinner lines. However, some settings could cause defective images on white paper.	
001	Leading Dot Level Setting (1200 dpi)	[2 to 8 / 5/ 1]
002	Trailing Dot Level Setting (1200 dpi)	[2 to 8 / 5/ 1]
003	Multiple Dot Level Setting (1200 dpi)	[2 to 8 / 8 / 1]
004	Independent Dot Level Setting (1200 dpi)	[2 to 8 / 6/ 1]
005	Leading Dot Level Setting (600 dpi)	[2 to 16 / 12/ 1]
006	Trailing Dot Level Setting (600 dpi)	[2 to 16 / 12/ 1]
007	Multiple Dot Level Setting (600 dpi)	[2 to 16 / 16/ 1]
008	Independent Dot Level Setting (600 dpi)	[2 to 16 / 12/ 1]

2115	Main Scan Beam Pitch Adjustment	
001	Pitch Adjustment Between ch0 and ch2 (LD0)	[-100 to 100/0/1 um]
002	Pitch Adjustment Between ch0 and ch4 (LD0)	
003	Pitch Adjustment Between ch0 and ch6 (LD0)	
004	Pitch Adjustment Between ch1 and ch3 (LD1)	
005	Pitch Adjustment Between ch1 and ch5 (LD1)	
006	Pitch Adjustment Between ch1 and ch7 (LD1)	
007	Pitch Adjustment Between ch0 and ch1 (LD1)	[-99 to +99/0/1 um]

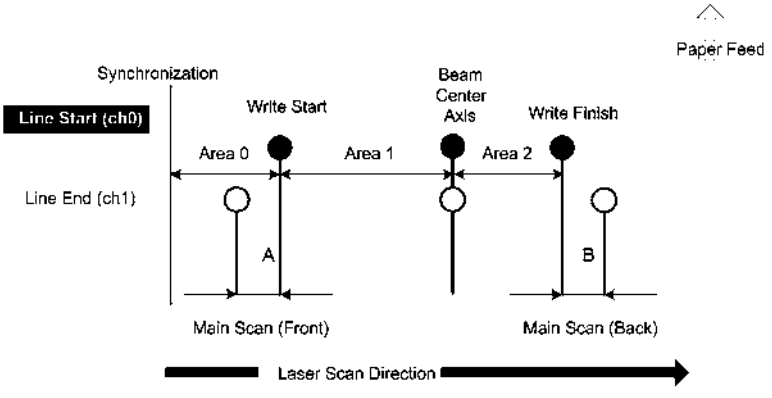
008	Front Main Scan: LD0/LD1 (ch0 to ch1)	[-50 to +50/0/1 um]
009	Rear Main Scan: LD0/LD1 (ch0 to ch1)	

Two adjustments have been added:

- The timing of the clock that controls image writing in the sub scan direction
- The speed of the revolution of the polygon mirror motor that affects image writing in the sub scan direction.

There are three new SP codes for laser beam pitch adjustment: SP2115 007, 008, 009. These new SPs are provided to correct errors in the rate of magnification from the time the line scan starts until it ends.

The rate of the main scan magnification error is the amount of correction to be done for the magnification rate based on the length of the distance in the main scan direction for line end LD1 (ch1) with reference to line start LD0 (ch1). These are the lengths of the distances "A" and "B" in the illustration below.



b234s903

With SP2115 007 set to "0", there can be as much variation in the pitch as shown above in the front area ("A") and the rear area ("B"). To correct this problem the pitches of Area 1 and Area 2 can be adjusted independently with two SP codes.

SP2115 008 is used to adjust the pitch of Area 1. SP2115 009 is used to adjust the pitch of Area 2.

2201	Development Bias Adjustment
	Low Speed (Low Speed 1) and Low Speed 2 are referenced in the settings for this SP code. Refer to the table below.

Low Speed Table

	M002	M003	M004
Standard	90 ppm	110 ppm	135 ppm
Low Speed 1	Invalid	90 ppm	110 ppm
Low Speed 2	Invalid	Invalid	90 ppm

001	Image Area (Normal Speed)
	Adjusts the development bias. [-200 to -800 / -550 / 10 V] This can be adjusted as a temporary measure if faint prints appear due to an aging drum.
002	ID Sensor Pattern (Auto Process Control OFF)
	Adjusts the development bias for making the ID sensor pattern for VSP measurement when the auto process control is set to off. [-200 to -800 / –500 / 10 V] This should not be used in the field, because it affects ID sensor pattern density, which affects toner supply.
003	LD Sensor Development Potential
	This SP adjusts the development bias of the ID sensor pattern that conforms to the value of the measured ID sensor potential when the ID sensor development potential was measured during auto process control. With the ID sensor pattern potential at –100V, if the ID sensor pattern development potential (default:+200V) were + 240V, the development potential would be –340 V. The larger the value of SP2201-2, SP2201-4, (absolute value), toner density control becomes lighter and image density becomes lighter. [140 to 380 / 200 / 10V]
004	Image Area (Low Speed)
	This SP adjusts the development bias of the ID sensor pattern that conforms to the value of the measured ID sensor potential when the ID sensor development potential was measured during auto process control. [200 to 800 / 550 / 10V]
005	ID Sensor Pattern (Low Speed)
	[200 to 800 / 500 / 10V]

006	ID Sensor Pattern Potential (Low Speed)
	[140 to 380 / 200 / 10V]
007	Image Area (Low Speed 2)
	[200 to 800 / 550 / 10V]
008	ID Sensor Pattern (Low Speed 2)
	[200 to 800 / 550 / 10V]
009	ID Sensor Development Potential (Low Speed 2)
	[140 to 380 / 200 / 10V]

2207	Toner Supply
001	Forced Toner Supply
	Touch [Execute]. Touching [Execute] switches on the drum motor, development motor, development bias, and charge unit to operate toner supply for 10 consecutive 1 sec. intervals from the toner bank to the toner hopper. This mode finishes automatically after the toner supplied 10 times. Use to determine if toner supply is operating correctly. If forcing toner supply with this SP does not darken the image, then toner supply is not operating correctly.
002	Toner Bank Toner Setup
	Touch [Execute]. Touching [Execute] checks the toner lever in the toner supply cylinder and the toner hopper. The toner transport mechanism then supplies toner to the cylinder or hopper (or both) if the toner level is low. The 1) toner bank motor, 2) toner supply clutch, and 3) cylinder agitator motor turn on to supply toner to the toner supply cylinder, then switch off with the toner reaches a sufficient level. To supply toner to the toner hopper, in addition to the 3 items above that turn on to supply toner to the toner supply cylinder, the 4) development agitator motor, and 5) toner pump motor turn on. This requires about 4 minutes. **Note:** Use this SP to fill the toner transport path with toner after cleaning the toner supply unit, or at installation.

2208	Toner Supply Mode
	Selects the toner supply mode: Sensor Control or Image Pixel Count. [0 to 1 / 0 / 1] [0: Sensor Control], 1: [Pixel Count Control] Select Image Pixel Count only if the TD sensor has failed and cannot be replaced immediately, so that the customer can use the machine. Return the setting to Sensor Control after replacing the sensor.

2209	Toner Supply Rate
	Adjust the toner supply amount from the hopper for the normal operation. [100 to 2000 / 1300 / 10 mg/s] Increasing this value reduces the toner supply roller clutch on time. Use a lower value if the user tends to make lots of prints that have a high proportion of black.

2210	ID Sensor Pattern Interval
	Changes the interval for making the ID sensor pattern (VSP/VSG detection). [1 to 500 / 10 / 1 Mai] **Note**: • "Mai" means "1 sheet". • If the user normally prints with a high proportion of black, reduce the interval.

2220	Vref Display or Set
	Adjusts the TD sensor reference voltage (Vref) manually. [0 to 5.0 / 2.5 / 0.01 V] Change this value after replacing the development unit with another one that already contains toner. To use a development unit from another machine for test purposes: 1) Check the value of SP2220 and SP2906 in both the machine containing the test unit and the machine that you are going to move it to. 2) Install the test development unit, then input the VREF for this unit into SP2220 and the Vcont for this unit into SP2906. 3) After the test, put back the old development unit, and change SP2220 and SP2906 back to the original value.

2223	Vt Display
	Displays the current TD sensor output voltage. [0 to 5.0 / 2.5 / 0.01 V]

2227	Toner Supply Mode Display
	Displays the toner supply mode (1 to 4) used for the last print. 1: ID Sensor and TD Sensor (from the 11th print, using VT – VREF) 2: ID Sensor and TD Sensor (using VSP/VSG) – before the 10th print of a job 3: TD Sensor – temporary mode when ID sensor output is abnormal 4: Image Pixel Count

2301	Transfer Current Adjustment
	Adjusts the current applied to the transfer belt during printing, depending on the machine, side, media type, paper thickness, and operation mode (normal or low speed). [20 to 200/ 100 /1 ua]

Low Speed Table

Refer to this table for the meaning of Low Speed 1, Low Speed 2.

	M002	M003	M004
Standard	90 ppm	110 ppm	135 ppm
Low Speed 1	Invalid	90 ppm	110 ppm
Low Speed 2	Invalid	Invalid	90 ppm

These are weights for the paper thickness references:

- **Thin Paper**: 40 to 51g/m^2
- **Med Thick Paper**: 106 to 163g/ m^2
- **Thick Paper 1**: 164 to 216g/ m^2
- **Thick Paper 2**: 217 to 256g/ m^2
- **Thick Paper 3**: 257 to 300g/ m^2

001	1st Copy Side

002	2nd Copy Side
003	Thin Paper
004	Med Thick Paper
005	Med Thick Paper (2nd Copy Side)
006	Thick Paper 1
007	Thick Paper 1 (2nd Copy Side)
008	Thick Paper 2
009	Thick Paper 2 (2nd Copy Side)
010	Thick Papers
011	Coated Paper
012	Coated Paper (2nd Copy Side)
013	Transparencies
014	Translucent Sheet
015	Postcard
016	Between Pages
017	1st Copy Side: Low Speed 1
018	2nd Copy Side: Low Speed 1
019	Thin Paper: Low Speed 1
020	Med Thick Paper: Low Speed 1
021	Med Thick Paper: 2nd Copy Side
022	Thick Paper 1: Low Speed 1
023	Thick Paper 1: 2nd Copy Side: Low Speed 1
024	Thick Paper 2: Low Speed 1
025	Thick Paper 2: 2nd Copy Side: Low Speed 1
026	Thick Paper 3: Low Speed 1
027	Coated Paper: Low Speed 1

028	Coated Paper (2nd Copy Side): Low Speed 1
029	Transparencies: Low Speed 1
030	Translucent Sheet: Low Speed 1
031	Postcard: Low Speed 1
032	Between Papers: Low Speed 1
033	1st Copy Side: Low Speed 2
034	2nd Copy Side: Low Speed 2
035	Thin Paper: Low Speed 2
036	Med Thick Paper: Low Speed 2
037	Med Thick Paper (2nd Copy Side): Low Speed 2
038	Thick Paper 1: Low Speed 2
039	Thick Paper 1 (2nd Copy Side): Low Speed 2
040	Thick Paper 2: Low Speed 2
041	Thick Paper 2 (2nd Copy Side): Low Speed 2
042	Thick Paper 3: Low Speed 2
043	Coated Paper: Low Speed 2
044	Coated Paper (2nd Copy Side): Low Speed 2
045	Transparencies: Low Speed 2
046	Translucent Sheet: Low Speed 2
047	Postcard: Low Speed 2
048	Between Papers: Low Speed 2

2506	Cleaning Interval-Multiple Copy

001	On / Off
	Selects whether multiple jobs are stopped at regular intervals in order to 1) reverse the drum to clean the cleaning blade edge, or 2) create an ID sensor pattern to correct toner density control. This SP switches this feature on and off. SP2506 002 sets the interval. [0 to 1 / 1/1] 0: OFF, 1: ON Use if the drum gets dirty or images get too pale or too dark during long print jobs.
002	Interval
	Selects the interval at which multi print jobs are stopped for blade cleaning. [1 to 100 / 30/ 1 min] Reduce the value if a large amount of paper dust is causing black lines on the printout.

2507	Pattern During Jobs	SP2507 RTB 1f: Modified (f/w ver. 1.08:04)
001	Set Operation	
	This On/Off setting determines whether the toner entry patterns are created on the drum during and at the end of jobs. [0 to 1 / 0 / 1] Default: OFF (no patterns)	
002	Set Interval	
	This SP sets the count for the number of sheets to print before the patterns are created on the drum. When the count exceeds this setting, the machine retracts the transfer belt from the drum, creates the patterns, resets the transfer belt against the drum and continues the job. [1 to 2000/100/ 1 K sheets] **Note**: "mai" means "sheets"	
003	Set Number of Patterns	
	This setting determines the number of patterns to be created on the drum. [0 to 200/5/1]	

Low Speed Table

Refer to this table for the meaning of Low Speed 1, Low Speed 2.

	M002	M003	M004
Standard	90 ppm	110 ppm	135 ppm
Low Speed 1	Invalid	90 ppm	110 ppm
Low Speed 2	Invalid	Invalid	90 ppm

2602	PTL Setting
	Use this SP to adjust the on/off timing of the PTL (pre-transfer lamp). **Note:** • This PTL light emitted from the PTL is intended to reduce charge on the drum and improve image transfer from drum to paper. The default setting for SP2602 001 is set to "On". • However, adjusting the on/off of the PTL can caused blurred images appear at the leading edges of the paper.

Low Speed Table

Refer to this table for the meaning of Low Speed 1, Low Speed 2.

	M002	M003	M004
Standard	90 ppm	110 ppm	135 ppm
Low Speed 1	Invalid	90 ppm	110 ppm
Low Speed 2	Invalid	Invalid	90 ppm

001	1st Copy Side
	Switches the PTL on and off for the front side of the paper passing through the fusing unit at normal speed. **Note:** When feeding thick paper or OHP transparencies, this setting is always off. [0 to 1/1/1] 0: Off, 1: On PTL timing can be adjusted with SP2602 002.

002	OFF Timing (1st Copy Side)
	This SP adjusts the length of the space from the leading edge where the PTL quenching is applied to the front side at normal speed. For example, if you set +5, 5 mm from the leading edge will be quenched. [-5 to 10/2/0.1 mm]
003	2nd Copy Side
	Switches the PTL on and off for the rear side of the paper passing through the fusing unit in the duplex mode at normal speed. [0 to 1/0/1] 0: Off, 1: On **Note:** • When this setting is switched on, make sure that the setting of SP2940 008 is the same as the default setting of SP2940 001. • When feeding thick paper or OHP transparencies, this setting is always off.
004	OFF Timing (2nd Copy Side)
	This SP adjusts the length of the space from the leading edge where the PTL quenching is applied to the rear side at normal speed. For example, if you set +5, 5 mm from the leading edge will be quenched. [-5 to 10/2/0.1 mm]
005	1st Copy Side: Low Speed 1
	Switches the PTL on and off for the front side of the paper passing through the fusing unit at Low Speed 1. **Note:** • When feeding thick paper or OHP transparencies, this setting is always off. • Low Speed 1 is 90 ppm for the M003 (110 ppm) and 110 ppm for M004 (135 ppm). [0 to 1/1/1] 0: Off, 1: On

006	OFF Timing (1st Copy Side): Low Speed 1
	This SP adjusts the length of the space from the leading edge where the PTL quenching is applied to the front side at Low Speed 1. For example, if you set +5, 5 mm from the leading edge will be quenched. [-5 to 10/2/0.1 mm] **Note**: • Low Speed 1 is 90 ppm for the M003 (110 ppm) and 110 ppm for M004 (135 ppm).
007	2nd Copy Side: Low Speed 1
	Switches the PTL on and off for the rear side of the paper passing through the fusing unit in the duplex mode at Low Speed 1. [0 to 1/0/1] 0: Off, 1: On **Note:** • When this setting is switched on, make sure that the setting of SP2940 016 is the same as the default setting of SP2940 009. • When feeding thick paper or OHP transparencies, this setting is always off. • Low Speed 1 is 90 ppm for the M003 (110 ppm) and 110 ppm for M004 (135 ppm).
008	OFF Timing (2nd Copy Side): Low Speed 1
	This SP adjusts the length of the space from the leading edge where the PTL quenching is applied to the rear side at Low Speed 1. For example, if you set +5, 5 mm from the leading edge will be quenched. [-5 to 10/2/0.1 mm] **Note**: • Low Speed 1 is 90 ppm for the M003 (110 ppm) and 110 ppm for M004 (135 ppm).
009	1st Copy Side: Low Speed 2
	Switches the PTL on and off for the front side of the paper passing through the fusing unit at Low Speed 2. **Note:** When feeding thick paper or OHP transparencies, this setting is always off. [0 to 1/1/1] 0: Off, 1: On PTL timing can be adjusted with SP2602 002.

010	OFF Timing (1st Copy Side): Low Speed 2
	This SP adjusts the length of the space from the leading edge where the PTL quenching is applied to the front side at Low Speed 2. For example, if you set +5, 5 mm from the leading edge will be quenched. [-5 to 10/2/0.1 mm] **Note**: Low Speed 2 (90 ppm) applies to the M004 (135 ppm) only.
011	2nd Copy Side: Low Speed 2
	Switches the PTL on and off for the rear side of the paper passing through the fusing unit in the duplex mode at Low Speed 2. [0 to 1/0/1] 0: Off, 1: On **Note:** • When this setting is switched on, make sure that the setting of SP2940 008 is the same as the default setting of SP2940 001. • When feeding thick paper or OHP transparencies, this setting is always off. • Low Speed 2 (90 ppm) applies to the M004 (135 ppm) only.
012	OFF Timing (2nd Copy Side): Low Speed 2
	This SP adjusts the length of the space from the leading edge where the PTL quenching is applied to the rear side at Low Speed 2. For example, if you set +5, 5 mm from the leading edge will be quenched. [-5 to 10/2/0.1 mm] Note: • Low Speed 2 (90 ppm) applies to the M004 (135 ppm) only.

2801	TD Sensor Initial Setting
	Performs the TD sensor initial setting. • This SP mode controls the voltage applied to the TD sensor to make the TD sensor output about 2.5 V. • After finishing this, the TD sensor output voltage is displayed. Touch [Start] to execute. • You must also enter the developer lot number. (The lot number is stenciled on the top edge of the developer package.) • Use this mode only after replacing the TD sensor or the developer.
001	Auto Initialize

002	Developer Lot Number

2803	Charge Corona Cleaner On
	Touch [Execute] to clean the corona wire cleaner manually. When image density across the paper is uneven, clean the wire with this SP.

2804	Charge Corona Cleaner Setting
001	Corona Wire Cleaner Operation Setting
	Selects when automatic corona wire cleaning is done. [0 to 3/2/1] 0: Off. No cleaning done. 1: Procon Sync At the beginning process control and at intervals selected with SP2804 002 2: Interval At intervals selected with SP2804 002 only (not at the beginning of process control). 3: Suspend Suspends wire cleaning.
002	Corona Wire Cleaner Interval
	Selects the interval for automatic corona wire cleaning. [100 to 10000 / 5000 / 100 sheets]

System SP2-nnn Drum: 2

SP 2902 001
RTB 13

2902	Test Pattern
001	IPU Scanning Test Pattern
	Prints the test patterns for the IPU chip. Prints 17 patterns for selection. [0 to 17 / 0 / 1]
	0: OFF
	1: Vertical 1-dot Line
	2: Vertical 2-dot Line
	3: Horizontal 1-dot Line
	4: Horizontal 2-dot Line
	5: Independent 1-dot
	6: Cross Stripes 1-dot Lines
	7: Vertical Stripes
	8: Horizontal Grayscale
	9: Vertical Grayscale
	10: 16-step Grayscale
	11: Cross
	12: Slant Cross Stripes
	13: 256-Color Density Pattern
	14: 64-Color Density Pattern
	15: Trimming Area
	16: Vertical Frequency Spec.
	17: Horizontal Frequency Spec.

002	IPU Printing Test Pattern
	Prints the print test pattern for the IPU chip. Presents 4 selections for selection. [0 to 4 / 0 / 1] 0: OFF 1:1200 Date Image 1 (Edge) 2:1200 Date Image 2 (Non-Edge) 3: Vertical Grayscale 4: Caterpillar
003	Printing Test Pattern
	Presents 42 selections for selection. [0 to 42/0/1]
	0:None
	1:1-dot Independent Pattern
	2:2-dot Independent Pattern
	3:4-dot Independent Pattern
	4:1024-dot Independent Pattern
	5: Grid 1-dot Line (0ch)
	6: Grid 1-dot Line (1ch)
	7: Grid 1-dot Line (2ch)
	8: Grid 1-dot Line (3ch)
	9: Grid 1-dot Line (4ch)
	10: Grid 1-dot Line (5ch)
	11: Grid 1-dot Line (6ch)
	12: Grid 1-dot Line (7ch)
	13: Vertical 1-dot Line
	14: Vertical 2-dot Line
	15: Horizontal 1-dot Line

	16: Horizontal 2-dot Line
	17: Grid 1-dot Parallel Lines
	18: Checkered Flag
	19: Slanted Grid 1-dot Line
	20: Slanted Grid 2-dot Line
	21: Argyle 670
	22: Argyle 012
	23: All Black
	24: Grid 2-dot Line
	25: Vertical Belt Pattern
	26: Horizontal Belt Pattern
	27: Trim 1-dot Line
	28: Trim 2-dot Line
	29: Stair Pattern
	30: Grayscale Horizontal (20mm W)
	31: Grayscale Horizontal (40mm W)
	32: Grayscale Vertical (20mm W)
	33: Grayscale Vertical (40mm W)
	34: Grayscale Hor. 20 (No Loop)
	35: White Paper (Test: No Output)
	36: Grid 1-dot (0ch) Ext. Data
	37: Trim 1-dot External Data
	38: Slanted Grid Pattern Ext.Data
	39: LD Channel Adjust 1
	40: LD Channel Adjust 2
	41: LD Channel Adjust 3

	42: LD Channel Adjust 4

2906	Vcont Display or Set
	Adjusts the TD sensor control voltage (Vcont) manually. [0 to 24 / 8 / 0.1 V] Change this value after replacing the development unit with another one that already contains toner. For example, when using a development unit from another machine for test purposes. (See SP2220.)

2909	Main Scan Magnification
	Adjusts the magnification in the main scan direction for printing. [-2.0 to +2.0 / 0 / 0.1%] Use the [./*] key to enter the minus (–) before entering the value.

2910	Sub Scan Magnification
	Fine adjusts the magnification in the sub scan direction. **Note:** Normally this SP adjustment is done at the factory. However, this SP may require adjustment in the field after replacement of the polygon mirror motor or LD unit.
001	Image Sub Scan Magnification [-1.0 to +1.0 / 0 / 0.1%]
002	Image Sub Scan Magnification: Back Side [-0.4 to +0.4 / 0 / 0.1%]

2911	Transfer Current On / Off Timing

Here is a summary of the notations that appear in the descriptions of these SP codes:

- La: Adjusts the OFF timing for transfer bias between sheets at the leading edge.
- Lb: Adjusts ON timing for bias in the image transfer area after leading edge transfer current goes ON.
- Lc: Adjusts the OFF timing of image transfer bias after the trailing edge of a sheet exits the nip of the transfer roller.}

Transfer current OFF between pages

After the registration roller starts to rotate again after buckle adjustment, the transfer power pack starts up and switches on leading edge transfer bias 50 ms before the leading edge of the sheet reaches the nip of the transfer roller (the distance between the registration roller and transfer roller nip is 57.02 mm).

If the line speed is 630 mm/s, the timing after the registration roller restarts is :

57.02/630 – 0.05 = 40.5 ms.

Leading edge transfer current ON

Ton(Tc) = Toff(T(b))

Leading edge transfer transfer current OFF

Toff(Tc) = Ton(Tc)+0.05+Lb/Vp

As for the standard for leading edge transfer current ON timing, the image area bias goes ON at 50 ms plus the distance after Lb (this adjusts the criterion for leading edge ON timing).

Lb: SP2911-2 Lb Switch Timing

This control is for when normal paper or tracing paper is selected. Image transfer efficiency is given priority for Thick Paper 1, Thick Paper 2, Thick Paper 3, OHP, postcard, and Medium Thick paper to prevent power separation with these media. Lb is fixed at "0" when OHP, postcard, Thick Paper 1, Thick Paper 2, or Thick Paper 3 is selected. }

Image area transfer current ON

After the trailing edge of each sheet passes the registration sensor then reaches the exit of the nip of the transfer roller after Lc, transfer bias goes OFF and switches to bias for between sheets. Lc: SP2911-3 Lc Timing OFF (OFF timing is delayed from the maximum number of tab sheets (15 mm).

Low Speed Table

Refer to this table for the meaning of Low Speed 1, Low Speed 2.

	M002	M003	M004
Standard	90 ppm	110 ppm	135 ppm
Low Speed 1	Invalid	90 ppm	110 ppm
Low Speed 2	Invalid	Invalid	90 ppm

These are weights for the paper thickness references:

- Thin Paper: 40 to 51g/m^2
- Med Thick Paper: 106 to 163g/ m^2
- Thick Paper 1: 164 to 216g/ m^2
- Thick Paper 2: 217 to 256g/ m^2
- Thick Paper 3: 257 to 300g/ m^2

2911	Transfer Current On / Off Timing
001	La (ON)
	[-15 to +20 / 0 / 1 mm]
002	Lb (Switch)
	[0 to 45 / * / 1 mm] * M002: 20, M003: 20, * M004: 26
003	Lc (OFF)
	[-40 to +40 / 0 / 1 mm]
004	Med Thick La (ON)
	[-15 to +20/ 0 / 1 mm]
005	Med Thick Lb (Switch)
	[0 to 45/ 0 / 1 mm]
006	Med Thick Lc (Switch)
	[-40 to +40/ 0 / 1 mm]
007	After Punch La (Switch)
	[-15 to +20/ 0 / 1 mm]
008	After Punch Lb (Switch)
	[0 to 45/ * / 1 mm] * M002: 20, M003: 20, * M004: 26
009	After Punch Lc (Switch)
	[-40 to +40/ * / 1 mm] * M002: –25, * M003: –30, * M004: –38
010	Coated Paper: La (ON) [-15 to +20 / 0 / 1 mm]
011	Coated Paper Lb (Switch) [0 to 45 /20/ 1 mm]

012	Coated Paper: Lc (OFF) [-40 to +40 / 0 / 1 mm]
013	Thin Paper: La (ON) [-15 to 20 / 0 / 1 mm]
014	Thin Paper: Lb: (Switch) [0 to 45 / 20 / 1 mm]
015	Thin Paper: Lc (Switch) [-40 to +40 / 0 / 1 mm]
016	Thick Paper 1: La (ON) [-15 to +20 / 0 / 1 mm]
017	Thick Paper 1: Lb (Switch) [0 to 45 / 0 / 1 mm]
018	Thick Paper 1: Lc (OFF) [-40 to +40 / 0 / 1 mm]
019	Thick Paper 2: La (ON) [-15 to +20 / 0 / 1 mm]
020	Thick Paper 2: Lb (Switch) [0 to 45 / 0 / 1 mm]
021	Thick Paper 2: Lc (Switch) [-40 to +40 / 0 / 1 mm]
022	Thick Paper 3: La (ON) [-15 to +20 / 0 / 1 mm]
023	Thick Paper 3: Lb (Switch) [0 to 45 / 0 / 1 mm]
024	Thick Paper 3: Lc (Switch) [-40 to +40 / 0 / 1 mm]
025	Transparencies: La (ON) [-15 to +20 / 0 / 1 mm]

026	Transparencies: Lb (Switch) [0 to 45 / 0 / 1 mm]
027	Transparencies: Lc (Switch) [-40 to +40 / 0 / 1 mm]
028	La (ON) (Low Speed 1) [-15 to +20 / 0 / 1 mm]
029	Lb (Switch) (Low Speed 1) [0 to 45 / 20 / 1 mm]
030	Lc (OFF) (Low Speed 1) [-40 to +40 / 0 / 1 mm]
031	Med Thick La (ON) (Low Speed 1) [-15 to +20 / 0 / 1 mm]
032	Med Thick Lb (Switch) (Low Speed 1) [0 to 45 / 0 / 1 mm]
033	Med Thick Lc (Switch) (Low Speed 1) [-40 to +40 / 0 / 1 mm]
034	After Punch La (ON) (Low Speed 1) [-15 to +20 / 0 / 1 mm]
035	After Punch Lb (Switch) (Low Speed 1) [0 to 45 / 20 / 1 mm]
036	After Punch Lc (Switch) (Low Speed 1) [-40 to +40 / -25 / 1 mm]
037	Coated Paper La (ON) (Low Speed 1) [-15 to +20 / 0 / 1 mm]
038	Coated Paper Lb (Switch) (Low Speed 1) [0 to 45 / 20 / 1 mm]
039	Coated Paper Lc (Switch) (Low Speed 1) [-40 to +40 / 0 / 1 mm]

040	Thin Paper La (ON) (Low Speed 1) [-15 to +20 / 0 / 1 mm]
041	Thin Paper Lb (Switch) (Low Speed 1) [0 to 45 / 20 / 1 mm]
042	Thin Paper Lc (Switch) (Low Speed 1) [-40 to +40 / 0 / 1 mm]
043	Thick Paper 1: La (ON) (Low Speed 1) [-15 to +20 / 0 / 1 mm]
044	Thick Paper 1: Lb (Switch) (Low Speed 1) [0 to 45 / 0 / 1 mm]
045	Thick Paper 1: Lc (Switch) (Low Speed 1) [-40 to +40 / 0 / 1 mm]
046	Thick Paper 2: La (ON) (Low Speed 1) [-15 to +20 / 0 / 1 mm]
047	Thick Paper 2: Lb (Switch) (Low Speed 1) [0 to 45 / 0 / 1 mm]
048	Thick Paper 2: Lc (Switch) (Low Speed 1) [-40 to +40 / 0 / 1 mm]
049	Thick Paper 3: La (ON) (Low Speed 1) [-15 to +20 / 0 / 1 mm]
050	Thick Paper 3: Lb (Switch) (Low Speed 1) [0 to 45 / 0 / 1 mm]
051	Thick Paper 3: Lc (Switch) (Low Speed 1) [-40 to +40 / 0 / 1 mm]
052	Transparencies: La (ON) (Low Speed 1) [-15 to +20 / 0 / 1 mm]
053	Transparencies: Lb (Switch) (Low Speed 1) [0 to 45 / 0 / 1 mm]

054	Transparencies: Lc (Switch) (Low Speed 1) [-40 to +40 / 0 / 1 mm]
055	La (ON) Low Speed 2 [-15 to +20 / 0 / 1 mm]
056	Lb (Switch) Low Speed 2 [0 to 45 / 0 / 1 mm]
057	Lc (Switch) Low Speed 2 [-40 to +40 / 0 / 1 mm]
058	Med Thick La (ON) Low Speed 2 [-15 to +20 / 0 / 1 mm]
059	Med Thick Lb (Switch) Low Speed 2 [0 to 45 / 0 / 1 mm]
060	Med Thick Lc (Switch) Low Speed 2 [-40 to +40 / 0 / 1 mm]
061	After Punch La (ON) Low Speed 2 [-15 to +20 / 0 / 1 mm]
062	After Punch Lb (Switch) Low Speed 2 [0 to 45 / 0 / 1 mm]
063	After Punch Lc (Switch) Low Speed 2 [-40 to +40 / -25 / 1 mm]
064	Coated Paper La (ON) Low Speed 2 [-15 to +20 / 0 / 1 mm]
065	Coated Paper Lb (Switch) Low Speed 2 [0 to 45 / 20 / 1 mm]
066	Coated Paper Lc (Switch) Low Speed 2 [-40 to +40 / 0 / 1 mm]
067	Thin Paper La (ON) Low Speed 2 [-15 to +20 / 0 / 1 mm]

068	Thin Paper Lb (Switch) Low Speed 2 [0 to 45 / 20 / 1 mm]
069	Thin Paper Lc (Switch) Low Speed 2 [-40 to +40 / 0 / 1 mm]
070	Thick Paper 1: La (ON) Low Speed 2 [-15 to +20 / 0 / 1 mm]
071	Thick Paper 1: Lb (Switch) Low Speed 2 [0 to 45 / 0 / 1 mm]
072	Thick Paper 1: Lc (Switch) Low Speed 2 [-40 to +40 / 0 / 1 mm]
073	Thick Paper 2: La (ON) Low Speed 2 [-15 to +20 / 0 / 1 mm]
074	Thick Paper 2: Lb (Switch) Low Speed 2 [0 to 45 / 0 / 1 mm]
075	Thick Paper 2: Lc (Switch) Low Speed 2 [-40 to +40 / 0 / 1 mm]
076	Thick Paper 3: La (ON) Low Speed 2 [-15 to +20 / 0 / 1 mm]
077	Thick Paper 3: Lb (Switch) Low Speed 2 [0 to 45 / 0 / 1 mm]
078	Thick Paper 3: Lc (Switch) Low Speed 2 [-40 to +40 / 0 / 1 mm]
079	Transparencies: La (ON) Low Speed 2 [-15 to +20 / 0 / 1 mm]
080	Transparencies: Lb (Switch) Low Speed 2 [0 to 45 / 0 / 1 mm]
081	Transparencies: Lc (Switch) Low Speed 2 [-40 to +40 / 0 / 1 mm]

2912	Drum Reverse Rotation Interval
001	1st Reverse Rotation
	Sets the length of time the drum is reversed to clean the drum cleaning blade. [0 to 7 / 2 / 1 ms]
002	Forward Rotation After 1st Reverse Rotation
	Sets the length of time the drum is rotated forward after the 1st reverse rotation. [0 to 7 / 0 / 1 ms]
003	2nd Reverse Rotation
	Sets the length of time the drum is reversed for the 2nd reverse rotation to clean the drum cleaning blade again. [0 to 7 / 0/ 1 ms]

2913	Temperature & Humidity Display
	This SP displays readings of the current temperature and humidity inside the machine.
	Internal Temp
001	Temperature
	Displays current temperature inside the machine. [-20 to 60/None/1°C]
002	Humidity
	Current humidity level inside the machine. [0 to 100/None/1% rH]
003	Drum (OPC) Temperature
	[0 to 2 / 1 / 1] Temperature around the drum.

2920	LD Off Check **DFU**
	Checks whether the LD turns off or on when the front door is opened. [0 to 1 / 0 / 0] 0: ON, 1: OFF

2930	2nd Cleaning Blade
	The 2nd cleaning blade is provided to reduce the incidence of spotting in printed images. These SP codes control the interval between 2nd blade cleanings and the length of time the blade is held against the surface of the drum. **Note**: Shortening the interval between cleanings and increasing the time the 2nd cleaning blade is held against the drum can slow productivity.
001	Condition 1
	This SP setting determines when 2nd blade cleaning is done. **0: NoExe**. 2nd blade cleaning is never done. **1: During Process Control**. 2nd blade cleaning is done during process control with the settings of SP2930 002, and 003 has elapsed with process control on. **2: Manual.** 2nd blade can be executed manually with SP2930 004 below. Otherwise, 2nd blade cleaning is never done.
002	Interval 1
	This SP sets the time to elapse before 2nd blade cleaning operates. 2nd blade cleaning is done when the time exceeds this value, but only if SP2930-1 is set to "1" (During Process Control). [5 to 1400/90/1 min.]
003	Time 1
	This SP sets the length of time the 2nd cleaning blade is held against the drum. At the end of this time, the 2nd cleaning blade is retracted and does not touch the drum until the next cleaning. This SP operates only when SP2930-1 is set to "1" (During Process Control). [10 to 90/20/1 sec.] **Note**: If the time setting elapses during a print job, 2nd blade cleaning executes immediately after the end of the job or if the job is cancelled.
004	Force 2nd Blade Cleaning
	Press [Start] to force cleaning the drum with the 2nd cleaning blade.

005	Condition 2
	This SP setting determines when 2nd blade cleaning is done, as prescribed by the settings of SP2930 006, 007. [0 to 3/1/1] 0: No Switching 1: Level 1 (cleaning every sheet) 2: Level 2 (cleaning every 2 sheets) 3: Level 3 (cleaning every 3 sheets)
006	Interval 2
	This SP sets the length of time to elapse before 2nd blade cleaning. This SP operates only if SP2930 008 is set for "1: Low (temperature)" [5 to 1440 / 15 / 1 min.]
007	Time 2
	This SP sets the length of time the 2nd cleaning blade is held against the drum. This SP operates only if SP2930 008 is set for "1: Low (temperature)" [10 to 90/20/1 sec.] **Note**: If the time setting elapses during a print job, 2nd blade cleaning executes immediately after the end of the job or if the job is cancelled.
008	Set Level
	This SP displays a number that tells you which mode is controlling the operation of the 2nd cleaning blade. [0 to 1 / 0 / 1] 0: Normal. The settings of SP2930 002, 003 control the operation of the 2nd cleaning blade. 1: Low. The settings of SP2920-005, 006, 007 control the operation of 2nd blade cleaning in a low temperature environment.

2940	Leading Edge Transfer Current
	Adjusts the leading edge transfer current for each paper feed station at normal and low speed.

Low Speed Table

Refer to this table for the meaning of Low Speed 1, Low Speed 2.

	M002	M003	M004
Standard	90 ppm	110 ppm	135 ppm
Low Speed 1	Invalid	90 ppm	110 ppm
Low Speed 2	Invalid	Invalid	90 ppm

001	Tray 1	[20 to 200 / */ 1 μA] M002: 25, M003: 30, M004: 35
002	Tray 2	
003	Tray 3	
004	Tray 4	
005	Tray 5	
006	Tray 6	
007	Tray 7	
008	Duplex Tray	[20 to 200 / * / 1 ua] M002: 25, M003: 25, M004: 30
009	Tray 1 (Low Speed 1)	
010	Tray 2 (Low Speed 1)	
011	Tray 3 (Low Speed 1)	
012	Tray 4 (Low Speed 1)	
013	Tray 5 (Low Speed 1)	
014	Tray 6 (Low Speed 1)	
015	Tray 7 (Low Speed 1)	
016	Duplex Tray (Low Speed 1)	[20 to 200 / * / 1 um] M002: 100, M003: 100, M004: 110

017	Tray 1 (Low Speed 2)	[20 to 200 / 25 / 1 um]
018	Tray 2 (Low Speed 2)	
019	Tray 3 (Low Speed 2)	
020	Tray 4 (Low Speed 2)	
021	Tray 5 (Low Speed 2)	
022	Tray 6 (Low Speed 2)	
023	Tray 7 (Low Speed 2)	
024	Duplex Tray (Low Speed 2)	[20 to 200 / 100 / 1 um]

2950	Pages Allowed After TCB Lock
	This SP displays the number of sheets allowed after Toner Collection Unit Lock is detected. After detection, "Replacement of Toner Recycling Unit will soon be necessary" is displayed at the bottom of the operation panel. When this number reaches 8K, SC487 is issued and the machine stops. Enter "0" and cycle the machine power off/on to reset this symptom. [0 to 50/0/1 K Sheets]

2960	Process Interval
	This SP extends the time delay before the machine shifts to shut down mode. [0 to 7/ 0 / 1 sec.]

2961	Developer Initialization (Factory)	**DFU**

2962	Auto Process Control Execution
	Press [Start] to execute and automatically adjust the following: • Drum potential sensor • ID sensor • Charge grid voltage Vg (by changing Vd) • LD power (by changing Vh) • VL detection. **Note:** • Before using this SP, auto process control should be on (SP3-901). • Always execute this SP after changing the drum, ID sensor, drum potential sensor, LD unit, charge corona wires, or toner density sensor.

2966	Periodical Auto Process Control
	Selects whether auto process control is done after 24 hours have elapsed after the last job. This setting is required for a customer who keeps the main switch on all day.
001	Operation Setting
	[0 to 1 / 1/ 1] 0: OFF, 1: ON
002	Interval Setting
	[1 to 24 / 24 /1 hour]

2967	Auto Image Density Adjustment
	Selects whether auto image density adjustment is done during machine warm up. This mode is to counter dirty background that occurs when a machine is used in an area that contains ammonia. [0 to 1 / 0/ 1] 0: OFF, 1: ON If Periodical Auto Process Control (SP2-966) is used, this adjustment is done also after the auto process control is finished.

2968	Toner Density Correction
	To prevent the image density dropping during continuous printing after a long interval (this is caused by a sudden increase of Q/M), VREF is changed by –0.06 V every (100 x [SP2-974 value + 1]) prints. This correction is applied from when the auto process control is done, until "(the number of prints set in this SP mode) x (SP2-974 value +1)" has been made. [0 to 20 / 0 / 1K sheets]

2969	ID Sensor Pattern Interval-Multiple Copy
001	Operation Setting
	[0 to 2/ 0 / 1] 0: No Operation 1: Process Control Execution Mode 2: Environment Sensor Mode
002	Interval Setting Between Jobs
	[10 to 1000/70/ 10]
003	Total Number of Created Patterns
	This is the frequency of the number of ID sensor patterns created during continuous jobs. [1 to 100/ 20 / 1 Pattern]
004	Switch Level
	This is the switching level for the creation of ID sensor patterns during continuous jobs. [1 to 3 / 1 / 1] 1: Switch When > 1300 2: Switch When > 1600 3: Switch When > 1800

2970	Initialize by Unit	
	This SP can initialize units independently.	
001	#Development Unit	
003	#Drum Unit	
005	#Drum Cleaning Unit	

009	#Charge Unit	
014	#Pre-Charge Unit	
017	#Fusing Unit	
021	#Fusing Cleaning Unit	

2972	Toner Suction Bottle Operation Time
	Displays the total operation time of the development unit toner collection bottle. [0 to 65 535 / 0 / 1 hour] • Need to replace soon: 680 hours • Need to replace now: 720 hours • After the bottle is replaced, reset the value to "0" by pressing 0 and [#] (Enter).

2973	Toner Suction Motor Operation Time
	Displays the total operation time of the development toner suction motor. [0 to 600 / 0 / 1 hour] • Need to replace soon: 570 hours • Need to replace now: 600 hours • After the motor is replaced, reset the value to 0 (zero) by pressing 0 and [#].

2974	Toner Supply Interval
	Adjusts how often toner is supplied [0 to 3 / * / 1] 0: 1/1 (every print) 1: 1/2 (every 2 prints) 2: 1/3 (every 3 prints) 3: 1/4 (every 4 prints) * Defaults: 0: M002 (90 ppm), M003 (110 ppm) 1: M004 (135 ppm) **Note**: Adjust this setting when prints are extremely light or when image problems occur close the to the leading edge of the printout.

2975	Toner Recycle Cut Counter
001	ON Counter
	Determines how long all toner is recycled. [0 to 999 / P1a, b: 25 or P1c: 12 / 1 K prints] This setting determines when the toner separation solenoid switches ON to stop shunting toner to the toner collection bottle (Recycle ON).
002	OFF Counter
	This setting determines how often all recycled toner is discarded. The purpose of this feature is to periodically remove all recycled toner contaminated with paper dust. [0 to 255 / 25 / 1 K prints] This setting determines when the toner separation solenoid switches OFF to close the shutter and shunt all toner to the toner collection bottle (Recycle OFF).
003	Recycle Level Setting
	Adjusts recycling according to ambient conditions. [0 to 3/1/1]

2977	Toner Supply/Transport Display
	This SP displays information about toner supply operation.

001	Toner Bank Mtr: Total On Time	[0 to 9 999/0/1 Hour]
002	Toner Supply CL: On/Off Times	[0 to 9 999/0/1 K Prints]
003	TCB Agitator: Total On Time	[0 to 999/0/1 Hour]
004	TS Agitator: Total On Time	[0 to 999/0/1 Hour]
005	Toner Pump: Total On Time	[0 to 999/0/1 Hour]

2978	Recycle Status Display
001	Status (0:OFF 1:ON) This SP displays whether recycling is on or off. [0 to 1/0] 0: On, 1: Off
002	Page Count [0 to 999 / 0 / K sheets] Displays the number of K (1,000) pages printed with recycling on.

2985	Coat Drum With Toner
	Touch [Execute] to coat the drum with toner.

2986	Refresh Mode
	This SP code is used periodically to discard toner in the developer/toner mixture and replenish it with fresh toner. Over a long period of time the quality of the toner in the developer/toner mixture may deteriorate. • Set the setting value of SP2975-001 to "0" before using "Refresh Mode". This makes "Refresh Mode" more effective. • Reset the setting value of SP2975-001 to the default value (model a, b: 25, model c: 12) after using "Refresh Mode". • This can occur with machines that are used infrequently or on machines where the average printed image is of very low density. • Toner may can also deteriorate due to the amount of time for downstream peripherals to process jobs at work sites where heavy peripheral processing jobs are done frequently. **Note**: Doing this adjustment can shorten the service life of the toner collection bottle. Frequently discarded toner will fill the bottle within a shorter period.
001	Interval
	Sets the interval between refresh executions. The toner refresh is done when the count exceeds this number. [0 to 25/0/1 K Mai] **Note:** • "KMAI" Means K sheets (1,000 sheets). • The machine will execute the refresh mode immediately as soon as the count exceeds this setting, even if this occurs during a print job. • When the count is exceeded during a print job the job will pause and a message tell the operator to wait while the machine makes the adjustment.

002	Level Selects the Vsp value that will trigger toner refresh. Toner is refreshed if the value of Vsp drops below the selected level. [0 to 4/2/ 1] 0: Vsp = 0.8 1: Vsp = 1.0 2: Vsp = 1.2 3: Vsp = 1.5 4: Vsp = 1.8 **Note:** Vsp is the ID sensor output after it measures the toner density of the ID sensor pattern.
003	Repetitions Sets the number of times the refresh cycle is repeated for one refresh execution. [1 to 3/2/1 times]

2987	Toner Consumption with Ring Binder **Not Used**

2990	Adjust Start Timing This SP adjusts the timing of the first print to ensure the quality of its image. Clean toner is occasionally consumed when the drum starts to rotate. This can lead to poor cleaning and other poor conditions on the drum. [0 to 2/0/1] 0: Normal Mode 1: Mode 1 The transfer belt separation from the drum is delayed for the 1st rotation of the drum to keep the belt against the drum in order to counter the effects of a possible faulty reading by the drum potential sensor. 2: Mode 2 The transfer belt separation from the drum is delayed for two drum rotations to keep the belt against the drum to counter the effects of faulty readings by the drum potential sensor or poor drum cleaning.

2991	Toner Supply Interval: Large Paper

	This SP sets the toner supply interval for large size paper. Large size paper is paper longer than 350 mm in the sub scan direction. [0 to 3 / **0** / 1 **0**: 1/1 (every sheet) 1: 1/2 (every 2nd sheet) 2: 1/3 (every 3rd sheet) 3: 1/4 (every 4th sheet)

2992	Edge Pattern Creation
	Switches the trailing edge pattern on/off. When this SP code is ON, a trailing edge pattern is created if the number of images have exceeded the specified number by the time the job and main motor have stopped. SP2993 specifies the interval. [0 to 1/0/1] [*0:OFF] [1:ON]

2993	Edge Pattern Interval Setting Between Jobs
	This SP sets the interval for creation of the edge patterns. This setting is enabled only when SP2992 is ON. [1 to 9999 / 10 / 1]

System SP3-nnn Processing

3001	ID Sensor Initial Setting
001	ID Sensor PWM Setting
	This SP mode recovers the machine when an SC condition occurs because ID Sensor Initial Setting is not done after doing an NVRAM Clear or replacing the NVRAM. Reset this SP to the factory setting in this case. [0 to 255 / 62 / 1] The PWM data is stored when ID Sensor Initial Setting is done.
002	ID Sensor Initialization
	Performs the ID sensor initial setting. The ID sensor output for the bare drum (VSG) is adjusted to 4.0 ± 0.2 V. This SP mode should be performed: 1) After replacing or cleaning the ID sensor, 2) After replacing the NVRAM or doing an NVRAM clear.

3103	ID Sensor Output Display
001	Vsg
	Displays the current value of the ID sensor output after checking the bare drum surface.
002	Vsg Initial
	Displays Vsg when the Vsp adjustment is done.
003	Vsp
	Displays the current value of the ID sensor output after checking the ID sensor pattern image.
004	Vsgp
	Displays the value of the ID sensor output immediately after Vsp is output when the charge potential drops. This reading is used to test and determine characteristics for design. DFU

3901	Process Control ON/OFF Setting

001	Auto Process Control Setting
	Determines whether machine checks and corrects drum potential (Vd) and LD power when the fusing temperature is lower than 100°C at power-on. [0 to 1 / 1/ 1] 0: OFF, 1: ON This setting attempts to change the Vd setting consistent with the OPC, the charge corona unit, and environment to improve the reliability of the system.
002	VL & VD Correction Control Setting **DFU**
	Determines whether VL detection and correction are performed during process control every 1K printouts. [0 to 1 / 1 / 1] 0: OFF, 1: ON Even with this SP switched ON, VL detection and correction will not be performed if SP3901 001 is OFF.
003	Temperature Control (ON/OFF Setting)
	Displays the value of VH measured by the potential sensor. 0: OFF 1: ON

3902	Process Control Data Display
001	Auto Process Control (0:OFF 1:ON)
	Displays whether auto process control is switched on or off [0:Off, 1:On] When auto process control is on and the potential sensor is calibrated correctly, "ON" appears on the operation panel. Auto process control is not executed when this SP is switched off. After RAM is cleared, this SP setting goes off.
002	VD
	Displays the drum potential.
003	VH
	Displays the standard halftone drum potential, used for laser power adjustment.

004	VG
	Displays the charge grid voltage resulting from the latest Vd adjustment.
005	LD Power (Correction)
	Displays the LD power correction value as a result of the latest Vh adjustment.
006	V ID
	Displays the latest drum surface voltage measured on the ID sensor pattern.
007	VD Correction
	Shows whether VD correction is being done or not
	0: Not being done; process control is using the value of SP2001 007 only
	1: Being done; process control is using the value of SP2001 007 + 50V
008	VL (Auto Process Control)
	Displays the value of VL at auto process control initialization.
009	VL Correction (Auto Process Control)
	Displays the amount of correction (ΔVLref) according to results of the VL detection at auto process control.
010	VL
	Displays the latest value of VL.
011	VL Correction
	Displays the amount of correction (ΔVLref) according to the latest VL detection results.
012	VB
	Displays the value of the current image development bias output, determined by the results of VL detection.
013	VG
	Displays the value of Vg (charge corona grid voltage).
014	VD
015	Temperature Correction Value: VL

016	Temperature Correction Value: VBp
017	Process Control Temperature
018	Line Speed

3903	VD Correction Counter
	Adjusts the starting point for the VD Correction. Displays whether the VD correction is being performed. The target value is "the value of SP2-001-7 + 50". [0 to 9999 / 9999 / 1 K Mai] • "KMai" means K (1000) sheets". • Reduce the setting if dirty background occurs. • The counter is automatically reset to 0 (zero) when SP2-801 is performed.

3904	Vh Adjustment
	These SP codes allow adjustment of the target Vh (standard drum potential for halftone) for process control. Adjust setting for a drum that has been in use for a long period of time if the text is not sharp. This problem can occur with drums designed for longer service life. Raising the value reduces the amount of light fired from the LD unit. However, if the adjust is set too high, this can lower image density and cause poor reproduction of low contrast images. **Note:** Changing this SP resets the standard for SC428 (Drum Potential Sensor Error 3: Vh Adjustment Error). If the target is adjusted to 300V, for example, the standard for drum potential sensor sampling of Vh will be reset to 300V±20.
001	Normal Line Speed This resets the target Vh for machine operation (but not low speed mode). [200 to 500/280/10V]
002	Low Speed Mode This resets the target Vh for low speed mode. [200 to 500/280/10V] • Low Speed 1 is 90 ppm for the M003 (110 ppm). • Low Speed 1 is 110 ppm for the M004 (135 ppm).

003	Low Speed 2 This resets the target Vh for Low Speed Mode 2. [200 to 500/280/10V] • Low Speed 2 is 90 ppm for the M004 (135 ppm). • Low Speed 2 does not apply to either the M002 or M003.

3905	OPC Drum Initial Setting
001	Execute Mode
	Resets the counters of SP3905-002 and -003 to zero. This SP code must be executed after the drum has been replaced.
002	Time
	Displays the time that has elapsed since the last time the count was cleared. The displayed time is the total run time of the main motor.
003	Distance
	Displays the time that has elapsed since the last time the count was cleared. The displayed value is the distance calculated based on the total run time of the main motor. Running distance is calculated as follows; OPC running distance (meter) = main motor run time x process line speed

3906	VB Correction Setting
	Vb (development bias) is used during process control to control drum potential. Normally, VB is recalibrated every 11,400 minutes (about every 8 days).
001	On/Off Setting Switches periodic calibration of Vb off on. [0 to 1/1/1] 0: Off, 1: On
002	VB Correction Counter When SP3906 1 is on, use this SP to adjust the interval between VB calibrations. [3800 to 9 999 999 / 1 m]
003	2nd Step ON/OFF Setting

	This SP sets the value for 1st cycle Vb correction at Level 2. When set to zero no correction is done. When set to any value other than zero, this value is subtracted from the setting for SP3902-12. [0 to 200 / 20 / 1V
004	Start Distance for 2nd Step Correction
	This SP sets the value the start time for 1st cycle Vb correction at Level 2. SP3905-2 displays the initial setting of the OPC use time, this condition is satisfied with any value higher than this setting. [0 to 999 999 /420 000 / 1 m
005	3rd Step ON/OFF Setting
	This SP sets the value for 1st cycle Vb correction at Level 3. When set to zero no correction is done. When set to any value other than zero, this value is subtracted from the setting for SP3902-12. [0 to 200 / 120 / 1V]
006	Start Distance for 3rd Step Correction
	This SP sets the value the start time for 1st cycle Vb correction at Level 3. SP3905-2 displays the initial setting of the OPC use time, this condition is satisfied with any value higher than this setting. [0 to 000 000 / 560 000 / 1m]
007	Job Time Setting
	The condition is satisfied if the time set for this SP is more that the time from the last main motor stoppage until the next time the main motor starts. SP3906-001 to –006: The correction is input when the conditions of these SP codes are met and the correction is input for the 1st Vb cycle. [0 to 9 / 3 / 1 min.]

3907	OPC Drum Initial Setting
001	Correction Setting
	This SP corrects transfer voltage. When set to zero no correction is done. When set to a value other than zero, this setting is subtracted from the image area transfer current. [0 to 100 / 0 / 1 µa]
002	Correction End Setting

	This SP sets the stop time of the transfer current. SP3907-001: Even if the setting of SP307-001 (transfer current correction) is any value other than zero, if the value of SP3905-002 (OPC use time setting/display) is more than this SP value, then the transfer current correction is not done. [0 to 999 9999 / 140 000 / 1 m]

3908	VH Correction for Low Temperature
001	1st Level ON/OFF Setting
	Level 1: Setting (approx. 10°C, below 25%) When set to zero no correction is done. [0 to 100 / 20 / 10°C]
002	2nd Level ON/OFF Setting
	Level 2: Setting (approx. 14°C, below 40%) When set to zero no correction is done. [0 to 100 / 10 / 10°C]
003	Correction End Setting
	Sets the stop time for Vh correction in a low temperature, low humidity environment. [0 to 999 999 / 56 000 / 1 m]

System SP5-nnn Mode: 1

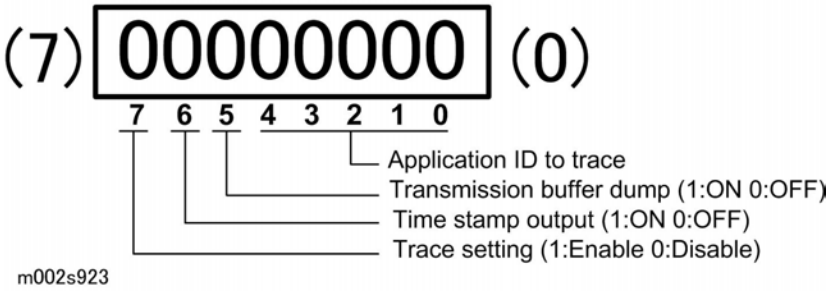
5019	Paper Size
	Selects the paper size for the trays. LT LEF: USA version A4 LEF: Other versions
002	Tray 1
005	Tray 4
006	Tray 5
007	Tray 6

5024	mm/inch Display Selection
	Selects whether mm or inches are used in the display. **Note:** After selecting the number, you must turn the main power switch off and on. Europe/Asia model: [0 = mm / 1 = inch] American model: [0 = mm / 1 = inch]

5039	User Code Display **DFU**

5040	Custom Size: Vertical	
	Adjusts the vertical dimension of custom size paper for Tray 1. 'Custom size' must be selected with SP 5019-2.	
002	Tray 1	[0 to 297.0 / 297.0 / 0.1 mm]
005	Tray 4	
006	Tray 5	
007	Tray 6	

5041	Custom Size: Horizontal	
	Adjusts the horizontal dimension of custom size paper for Tray 1. 'Custom size' must be selected with SP 5019-2.	
002	Tray 1	[0 to 4320 / 2100 / 0.1 mm]
005	Tray 4	
006	Tray 5	
007	Tray 6	

5044	Operation Panel Bit SW	SSP
	This SP creates an OCS debug log for the functions of the WVGA/SVGA operation panel. Setting the DIP switches can create the OCS log with "mmesg 1500". 	
001	SW1	
002	SW2	

5045	Accounting Counter
	Selects the counting method if the meter charge mode is enabled with SP5-930-001. **Note:** You can change the setting only one time. [0 to 1/ 1] 0: Development counter. Shows the total counts for color (Y,M,C) and black (K). 1: Paper counter. Shows the total page counts for: Black Total, Black Copies, Black Prints.

5047	Paper Display
001	Backing Paper Display

	Determines whether the tray loaded with paper printed on one side is displayed on the operation panel. [0 to 1/0/1] 0: Not displayed, 1: Displayed
002	Punched Paper
	Determines whether the tray loaded with punched paper is displayed on the operation panel. [0 to 1/1/1] 0: Disabled, 1: Enabled

5055	Display IP Address
	Switches the banner display of MFP device display on and off. [0 to 1 / 0 / 1] [OFF] ON

5056	Coverage Counter Display
	Switches the coverage counter display On/Off. [0 to 1/0/1] 0: Display off, 1: Display on

5062	Part Replacement Alert Display
	Enables/disables the appearance of the PM parts in the yield list on the operation panel. PM parts can be selected independently for display. [ON] OFF **Note**: SP5066 must be set to "1: Display".
001	#Development Unit
002	Developer
003	#Drum Unit
004	Drum Pick-off Pawls
005	#Drum Cleaning Unit
006	Cleaning Blade

007	Cleaning Brush
008	Drum Cleaning Unit Filter
009	#Charge Unit
010	Grid Plate
011	Charge Corona Wire
012	Cleaning Pad
013	Cushion
014	#Pre-Charge Unit
015	Pre-Charge Corona Wire
016	Pre-Charge Grid Plate
017	#Fusing Unit
018	Hot Roller Strippers
019	Hot Roller
020	Pressure Roller
021	#Fusing Cleaning Unit
022	Web Roll
023	Web Cleaning Roll
024	Web Brake Pad
025	Toner Suction Bottle
026	Toner Suction Motor
027	Tray 1 Roller Assembly
028	Feed Roller – Tray 1
029	Pick-up Roller – Tray 1
030	Separation Roller – Tray 1
031	Tray 2 Roller Assembly
032	Feed Roller – Tray 2

033	Pick-up Roller – Tray 2
034	Separation Roller – Tray 2
035	Tray 3 Roller Assembly
036	Feed Roller – Tray 3
037	Pick-up Roller – Tray 3
038	Separation Roller – Tray 3
040	Transfer Belt
041	Transfer Belt Cleaning Blade
042	Toner Filter
047	Tray 4 Roller Assembly
048	Feed Roller – Tray 4
049	Pick-up Roller – Tray 4
050	Separation Roller – Tray 4
051	Tray 5 Roller Assembly
052	Feed Roller – Tray 5
053	Pick-up Roller – Tray 5
054	Separation Roller – Tray 5
055	Tray 6 Roller Assembly
056	Feed Roller – Tray 6
057	Pick-up Roller – Tray 6
058	Separation Roller – Tray 6
059	Tray 7 Roller Assembly
060	Feed Roller – Tray 7
061	Pick-up Roller – Tray 7
062	Separation Roller – Tray 7
063	Toner Collection Unit

5066	PM Parts Display
	Determines whether the PM parts button is displayed on the initial screen. [*0: No Display] [1: Display] Note: Individual PM parts can be selected for display or no display with SP5062.

5067	Part Replacement Operation Type
	Configures the PM parts display for either the customer engineer (Service) or user. [*0: Service] [1: User] Note: SP5066 must be set to "1: Display".
001	#Development Unit
002	Developer
003	#Drum Unit
004	Drum Pick-off Pawls
005	#Drum Cleaning Unit
006	Cleaning Blade
007	Cleaning Brush
008	Drum Cleaning Unit Filter
009	#Charge Unit
010	Grid Plate
011	Charge Corona Wire
012	Cleaning Pad
013	Cushion
014	#Pre-Charge Unit
015	Pre-Charge Corona Wire
016	Pre-Charge Grid Plate
017	#Fusing Unit
018	Hot Roller Strippers

019	Hot Roller
020	Pressure Roller
021	#Fusing Cleaning Unit
022	Web Roll
023	Web Cleaning Roll
024	Web Brake Pad
025	Toner Suction Bottle
026	Toner Suction Motor
027	Tray 1 Roller Assembly
028	Feed Roller – Tray 1
029	Pick-up Roller – Tray 1
030	Separation Roller – Tray 1
031	Tray 2 Roller Assembly
032	Feed Roller – Tray 2
033	Pick-up Roller – Tray 2
034	Separation Roller – Tray 2
035	Tray 3 Roller Assembly
036	Feed Roller – Tray 3
037	Pick-up Roller – Tray 3
038	Separation Roller – Tray 3
040	Transfer Belt
041	Transfer Belt Cleaning Blade
042	Toner Filter
047	Tray 4 Roller Assembly
048	Feed Roller – Tray 4
049	Pick-up Roller – Tray 4

050	Separation Roller – Tray 4
051	Tray 5 Roller Assembly
052	Feed Roller – Tray 5
053	Pick-up Roller – Tray 5
054	Separation Roller – Tray 5
055	Tray 6 Roller Assembly
056	Feed Roller – Tray 6
057	Pick-up Roller – Tray 6
058	Separation Roller – Tray 6
059	Tray 7 Roller Assembly
060	Feed Roller – Tray 7
061	Pick-up Roller – Tray 7
062	Separation Roller – Tray 7
063	Toner Collection Unit

5104	A3/DLT Double Count
	This SP determines whether the count for A3/DLT is doubled. [0 to 2/ **0** /1] *0: NO • A3 count for one sheet = 1 • DLT count for one sheet = 1 1: YES • A3 count for one sheet = 2 (A4 x2) • DLT count for one sheet = 2 (LT x2) 2: YES Except By-pass

5112	Non-Std. Paper Sel.
	Determines whether a non-standard paper size can be input for the universal cassette trays (Tray 2, Tray 3) [0 to 1/1] 0: No 1: Yes. If "1" is selected, the customer will be able to input a non-standard paper size using the UP mode.

5131	Paper Size Type Selection
	Selects the paper size. (The default setting depends on the setting of DIP SW 1 and 2 on the BICU.) [0 to 2 / **0** / 1] 0: [JP]: Japan, 1: [NA]: North America, 2: [EU]: Europe After changing the value, turn the main power switch off and on.

5148	Size Detection Off
	This SP switches off paper size detection for the paper feed trays in the LCT. Each tray can be selected independently. The number of trays displayed will depend on whether the LCT and bypass unit are installed. [0 to 1 / **0** / 1] 0: OFF 1: ON
005	Tray 4
006	Tray 5
007	Tray 6

5158	Cover Feeder Size Change
	This SP sets the priority paper size setting for the cover interposer tray.
001	[0: A3] [1: 12x18]
002	[0: 8 1/2 x 13] [1: 81/2 x 13 [2: 8 1/4 x 13]

003	[0: 8 1/2x 14] [1: [8 1/2 x 13]
004	[0: 11x8 1/2] [1: 10 1/2 x 7 1/4
005	[0: 8 1/2 x 11] [1: 8 x 10]
006	[0: K] [1: DLT]
007	[0: 16K (267 x 195)] [1: 8 1/2 x 11]
008	[0: 16K (195 x 267)] [1: 11 x 81/2]

5160	Thick Paper Setting (0: OFF 1: ON)
	Adjusts the machine for line speed with thick paper. 0: OFF 1: ON (Low Speed Mode) 2: ON (Low Speed Mode 2) **Notes**: • M002: Do not change (90 ppm only). • M003: "1" selects 90 ppm. "2" setting has no effect. • M004: "1" selects 110 ppm, "2" selects 90 ppm

5162	App. Switch Method
	Controls if the application screen is changed with a hardware switch or a software switch. [0 to 1/1] 0: Soft Key Set, 1: Hard Key Set

5169	CE Login
	If you will change the printer bit switches, you must 'log in' to service mode with this SP before you go into the printer SP mode. [0 to 1/1] 0: Off. Printer bit switches cannot be adjusted. 1: On. Printer bit switches can be adjusted.

5185	TCRU: Set Machine
	Determines whether the machine is TCRU compatible or not. [*0: OFF] [1: ON]

5187	PM Counter Print Out in UP
	This setting determines whether parts without standard counts print in addition to the normal counter list [0 to 1/0/1] 0: No, 1: Yes

5190	Unit Life Target Change
	This SP determines whether operators and skilled operators are allowed to make changes in the Operator and Skilled Operator display screens on the machine operation panel. 0: Changes allowed 1: No changes allowed.

5193	External Controller Info. Setting
	Selects the information setting for the type of external controller.
	[0 to 10/ 3 / 1] 0: No external controller 1: EFI Controller 2: Ratio Controller 3: Egret Controller 4 to 10: Reserved (Do not select)

5194	SC991 Operation Mode Setting DFU	SSP

	SC990 and SC991 detect software errors in the GW controller. [0 to 1 / 0 / 1] 0: SC991 Mode 1: SC990 Mode SC991 (Software Error 2) is set as the default. • When SC991 is selected, SC990 is switched off. • With SC991 enabled, you have the option of printing the SMC report with SP5990-4, or displaying the 10 most recent SC errors with SP7403. • However, SC900 is not switched off for some modules. SC990 (Software Error 1) is the alternate selection. • With SC990 enabled you have the option of printing and SMC report with SP5990-4 after the error occurs. • The SMC report lists the file name, line number, and value where the error occurred.

5195	Limitless SW
	Selects the paper feed mode priority (productivity or tray). This SP is activated only when a customer selects the "Auto Paper Select". • **Productivity priority**. Changes the feed station as soon as the machine detects the priority tray even the paper still remains in the current tray. • **Tray priority**. This changes the feeding tray after the paper in the tray where the machine has been feeding paper has run out of paper. [0 to 1/0/1] 0: Productivity priority 1: Tray priority

5199	Paper Set After Staple End
	Enables or disables feeding out of the finisher without stapling. [0: OFF] [1: ON] 0: OFF" Paper feeds out with stapling at the maximum number of the finisher stapling when the machine gets a multiple printing job (over maximum number). 1: ON Paper feeds out without stapling at the maximum number of the finisher stapling when the machine gets a multiple printing job (over maximum number).

5302	Set Time **DFU**
	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: +6- (Paris) CH: +480 (Peking) TW: +480 (Taipei) AS: +480 (Hong Kong)

5307	Summer Time	
	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).

001	Setting	Enables/disables the settings for 002 and 003. [0 to 1/1] 0: Disable, 1: Enable
003	Rule Set (Start)	The start of summer time.
004	Rule Set (End)	The end of summer time.

System SP5-nnn Mode: 2

5401	Access Control **DFU** This SP adjusts the settings below when installing and SDK application. **Note**: "SDK" is the "Software Development Kit". This data can be converted from SAS (VAS) when installed or uninstalled.	
160	Access Control: Extend Certification Detail **DFU**	SSP
161	Access Control: Extend Certification Detail **DFU**	SSP
162	Extend Certification Detail	
	Logout without an IC card. [0 to 1/0/1] 0: Not allowed (default) 1: Allowed	
200	SDK1 Unique ID	
201	SDK1 Certification Method	
210	SDK2 Unique ID	
211	SDK2 Certification Method	
220	SDK3 Unique ID	
221	SDK3 Certification Method	
230	SDK Certification Device	
	This setting determines how user certification is performed for system initialization. (7) [0000 0000] (0) Bit 0: SDK Certification • 1: Enabled • 0: Disabled Bit 1: Reserved Bit 2: System Administrator Login • 1: Enabled • 0: Disabled	

240	Detail Option This SP determines how the logout feature operates after the [Login/Logout] key is pressed. (7) [0000 0000] (0) Bit 0: Logout Confirmation • 1: Enable • 0: Disable Bit, 1, 2: Logout timer (re-try timer) • 01: 10 sec. • 10: 20 sec. • 11: 30 sec. • 00: 60 sec.

5404	User Code Count Clear
	Clears the counts for the user codes assigned by the key operator to restrict the use of the machine. Press [Execute] to clear.

5411	LDAP Certification
004	Easy Certification
	Determines whether easy LDAP certification is done. [0 or 1 / **1** / 1] 1: On, 0: Off
005	Password Null Not Permit
	Enabled only when SP5411-4 is set to "1" (On). [0 or 1 / **0** / -] 0: Password NULL not permitted. 1: Password NULL permitted.

5413	Lockout Setting
001	Lockout On/Off
	Switches the local address book account lock on/off. [0 or 1 / **0** / -] 0: Off, 1: On

002	Lockout Threshold
	Sets a limit on the frequency of lockouts for account lockouts. [1 to 10 / **5** / 1/step]
003	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 or 1 / **0** / -] 0: Off (no wait time, lockout not cancelled) 1: On (system waits, cancels lockout if correct user ID and password are entered.
004	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./step]
005	Counter Clear Time **Not Used**

5414	Access Mitigation
001	Mitigation On/Off
	Switches on/off masking of continuously used IDs and passwords that are identical. [0 or 1 / **0** / -] 0: Off, 1: On
002	Mitigation Time
	Sets the length of time for excluding continuous access for identical user IDs and passwords. [0 to 60 / **15** / 1 min./step]

5415	Password Attack
001	Permissible Number
	Sets limit on the number of attacks on the system with random passwords to gain illegal access to the system. [0 to 100 / 30 / 1 attempt/step]
002	Detect Time

	Sets the time limit to stop a password attack once such an attack has been detected. [1 to 10 / 5 / 1 sec./step]

5416	Access Information
001	Access Use Max Num
	Limits the number of users used by the access exclusion and password attack detection functions. [50 to 200 / **200** / 1 users/step]
002	Access Password Max Num
	Limits the number of passwords used by the access exclusion and password attack detection functions. [50 to 200 / **200** / 1 password/step]
003	Monitor Interval
	Sets the processing time interval for referencing user ID and password information. [1 to 10 / **3** / 1 sec./step]

5417	Access Attack
001	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/step]
002	Attack Detect Time
	Sets the length of time the frequency of access to MFP features are monitored. [10 to 30 / **10** / 1 sec./step]
003	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 / **3** / 1 sec./step]
004	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/step]

5420	User Authentication	
	These settings should be done with the System Administrator. **Note**: These functions are enabled only after the user access feature has been enabled.	
041	Printer	
	Determines whether certification is required before a user can use the printer applications. [0 or 1/ **0** /1] 0: On, 1: Off	
051	SDK1	Determines whether certification is required before a user can use the SDK application. [0 or 1 / **0** / 1] 0: ON. 1: OFF
061	SDK2	
071	SDK3	

5430	Auth Dialog Message Change **DFU**
001	Message Change On/Off
002	Message Text Download
003	Message Text ID
	[0 to 1/0/1 0: OFF 1: ON

5481	Authentication Error Code
	These SP codes determine how the authentication failures are displayed.
001	System Log Disp
	Determines whether an error code appears in the system log after a user authentication failure occurs. [0 or 1/ **0** /1] 0: Off, 1: On

002	Panel Disp
	Determines whether an error code appears on the operation panel after a user authentication failure occurs. [0 or 1/ **0** /1] 0: Off, 1: On

5501	PM Alarm
	Sets the count level for the PM alarm. [0 to 9999 / 0 / 1] 0: Alarm disabled The PM alarm goes off when the print count reaches this value multiplied by 1,000.

5504	Jam Alarm **Japan Only**
	Sets the alarm to sound for the specified jam level (document misfeeds are not included). RSS use only [0 to 3 / 3 / 1 step] 0: Zero (Off) 1: Low (2.5K jams) 2: Medium (3K jams) 3: High (6K jams)

5505	Error Alarm **Japan only DFU**
	Sets the error alarm level. [0 to 255 / **250** / 100 sheets per step]

5507	Supply Alarm
001	Paper Supply Alarm

	Switches the control call on/off for the paper supply. **DFU** 0: Off, 1: On 0: No alarm. 1: Sets the alarm to sound for the specified number transfer sheets for each paper size (A3, A4, B4, B5, DLT, LG, LT, HLT)	
002	Staple Supply Alarm	
	Switches the control call on/off for the stapler installed in the finisher. **DFU** 0: Off, 1: On 0: No alarm 1: Alarm goes off for every 1K of staples used.	
003	Toner Supply Alarm	
	Switches the control call on/off for the toner end. **DFU** 0: Off, 1: On If you select "1" the alarm will sound when the copier detects toner end.	
080	Toner Call Timing	
	Changes the timing of the "Toner Supply Call" via the NRS, when the following conditions occur. **0:** Toner is replaced (default) 1: Toner near end or End	
128	Interval: Others	The "Paper Supply Call Level: nn" SPs specify the paper control call interval for the referenced paper sizes. [00250 to 10000 / 1000 / 1 Step]
132	Interval: A3	
133	Interval: A4	
134	Interval: A5	
141	Interval: B4	
142	Interval: B5	
160	Interval: DLT	
164	Interval: LG	
166	Interval: LT	
172	Interval: HLT	

5508	CC Call **Japan Only**	
001	Jam Remains	Enables/disables initiating a call. [0 to 1/1] 0: Disabled, 1: Enabled
002	Continuous Jams	
003	Continuous Door Open	
011	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).	
012	Jam Detection Continuous Count	
	Sets the number of continuous paper jams required to initiate a call. [02 to 10/1] This setting is enabled only when SP5508-004 is enabled (set to 1).	
013	Door Open: Time Length	
	Sets the length of time the remains opens to determine when to initiate a call. [03 to 30/1] This setting is enabled only when SP5508-004 is enabled (set to 1).	

5513	Parts Alarm Level Count
001	Normal
	Sets the parts replacement alarm counter to sound for the number of printouts. [1 to 9999 / 350 / 1]
002	DF **Not Used**
	Sets the parts replacement alarm counter to sound for the number of scanned originals. [1 to 9999 / 350 / 1]

5514	Parts Alarm Level	
001	Normal	[0 to 1 / 1 / 1]
002	DF **Not Used**	[0 to 1 / 0 / 1]

5515	SC/Alarm Setting	
	With NRS (New Remote Service) in use, these SP codes can be set to issue an SC call when an SC error occurs. If this SP is switched off, the SC call is not issued when an SC error occurs.	
001	SC Call	[0 to 1/1/1] 0: Off, 1: On
002	Service Parts Near End Call	
003	Service Parts End Call	
004	User Call	
006	Communication Test Call	[0 or 1 / 1 / -] 0: Off 1: On
007	Machine Information Notice	
008	Alarm Notice	
010	Supply Automatic Ordering Call	[0 to 1/0/1]
011	Supply Management Report Call	
012	Jam/Door Open Call	[0 to 1/1/1]

5516	Individual PM Part Alarm Call
	This SP sets an alarm to send a notice to the service center when one of the seven service parts covered by the TCRU replacement procedures has reached the end or near end of service life. **Note:** The service parts covered in the TCRU replacement procedures are: 1) development unit, 2) pre-charge unit, 3) charge unit, 4) drum cleaning unit, 5) PCU, 6) fusing unit, 7) fusing cleaning unit.
001	Disable/Enable Setting (0:Not Send 1:Send)
	This SP switches this feature on/off. Default 0: Not send.
004	Percent yield for triggering PM alert
	Sets the percentage of yield (used service life) to trigger the PM alert.

5791	DCS Debug Setting **DFU**	SSP
	These are debugging tools for DCS (Delivery Control Service).	

001	Common
002	IFC
003	SMM
004	SJM/RJM
005	DSS
006	MRS
007	NAS

5792	MCS Debug SW **DFU**
5793	ECS Debug SW **DFU**

5801	Memory Clear
	Resets NVRAM data to the default settings. Before executing any of these SP codes, print an SMC Report.
001	All Clear
	Initializes items 1 to 15 below.
002	Engine Clear
	Initializes all registration settings for the engine settings.
003	SCS
	Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information.
004	IMH Memory Clear
	Initializes the image file system. (IMH: Image Memory Handler)
005	MCS
	Initializes the automatic delete time setting for stored documents. (MCS: Memory Control Service)
008	Printer application

	Initializes the printer defaults, programs registered, the printer SP bit switches, and the printer CSS counter.
010	Web Service/Network application
	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
011	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)
014	Clear DCS Setting
	Initializes the DCS (Delivery Control Service) settings.
015	Clear UCS Setting
	Initializes the UCS (User Information Control Service) settings.
016	MIRS Setting
	Initializes the MIRS (Machine Information Report Service) settings.
017	CCS
	Initializes the CCS (Certification and Charge-control Service) settings.
018	SRM Memory Clear
	Initializes the SRM (System Resource Manager) settings.
019	LCS Clear
	Initializes the LCS (Log Count Service) settings.
021	ECS
	Initializes the ECS settings.

5802	Printer Free Run
	Makes a base engine free run [0 to 1/0/1] 0: Release free run mode, 1: Enable free run mode Return this setting to off (0) after testing is completed. Finisher connectors should be disconnected and duplex mode should be off.

5803	Input Check: Decurl Unit	Decurler (D457)
	Displays signals received from sensors and switches. This is the input check for the main machine.	
050	Entrance Sensor	
051	Exit Sensor	
052	Soft Roller HP Sensor	
053	Decurl Roller Set Sensor	
055	Purge Tray Paper Sensor 1	
056	Purge Tray Paper Sensor 2	
057	Purge Tray Paper Sensor 3	
058	Front Door Switch	

5804	Output Check
	Turns on the electrical components individually for testing. This is the output check for the main machine.
001	1st Pick-up SOL
002	2nd Pick-up SOL
003	3rd Pick-up SOL
004	LCT 1st Pick-up SOL
005	LCT 2nd Pick-up SOL
006	LCT 3rd Pick-up SOL

007	Bypass Pick-up SOL
008	1st Separation Roller SOL
009	2nd Separation Roller SOL
010	3rd Separation Roller SOL
011	LCT 1st Separation Roller SOL
012	LCT 2nd Separation Roller SOL
013	LCT 3rd Separation Roller SOL
014	Bypass Separation Roller SOL
015	1st Tray Lift Motor
016	2nd Tray Lift Motor
017	3rd Tray Lift Motor
018	Rear Fence Drive Motor
019	Tandem Tray Connect Solenoid
020	Front Side Fence Solenoid
021	Rear Side Fence Solenoid
022	Left 1st Tray Lock Solenoid
031	Drum Motor
032	Fusing/Exit Motor
033	Fusing Motor
034	Web Motor
035	Development Motor
036	Upper Toner Bottle Motor
037	Lower Toner Bottle Motor
038	Toner Bank Motor
039	Toner Supply Coil Clutch
040	Toner Suction Motor

041	Upper Bottle Cap Motor
042	Lower Bottle Cap Motor
043	Toner Collection Bottle Agitator Motor
044	Hopper Agitator Motor
045	Toner Cylinder Agitator Motor
051	Guide Plate Solenoid
052	LCT Guide Plate Solenoid
053	Duplex Inverter Gate Solenoid
054	Reverse Roller Solenoid
055	Inverter Guide Plate Solenoid
056	Toner Recycling Shutter Solenoid
057	2nd Cleaning Blade Solenoid
058	Transfer Belt Lift Solenoid]
061	ID Sensor LED
062	Quenching Lamp
063	Charge Corona
064	Grid Plate
065	Development Bias
066	Transfer Belt Bias
067	Pre-Charge Grid
068	Charge Corona Grid
069	ID Sensor
070	PTL
081	Polygonal Motor Mirror Cooling Fan
082	Exhaust Fan (Low)
083	Exhaust Fan (High)

084	Drum Cooling Fan (Low)
085	Drum Cooling Fan (High)
086	Paper Cooling Pipe Fan1
087	Paper Cooling Pipe Fan2
088	Steam Removal Fan (Low)
089	Steam Removal Fan (High)
090	Development Unit Cooling Fan1
091	Development Unit Cooling Fan2
092	Duplex Entrance Cooling Fan
093	Duplex Cooling Fan
094	Cleaning Unit Cooling Fan
095	Toner Collection Cooling Fan
098	Laser Diode
099	Total Counter
101	1st Paper Feed Motor (Low Speed)
102	1st Paper Feed Motor (High Speed)
103	2nd Paper Feed Motor (Low Speed)
104	2nd Paper Feed Motor (High Speed)
105	3rd Paper Feed Motor (Low Speed)
106	3rd Paper Feed Motor (High Speed)
107	1st Transport Motor (Low Speed)
108	1st Transport Motor (High Speed)
109	2nd Transport Motor (Low Speed)
110	2nd Transport Motor (High Speed)
111	3rd Transport Motor (Low Speed)
112	3rd Transport Motor (High Speed)

113	Upper Relay Motor (Low Speed)
114	Upper Relay Motor (High Speed)
115	Vertical Relay Roller (Low Speed)
116	Vertical Relay Roller (High Speed)
117	Registration Motor
118	Registration Motor
121	4th Paper Feed Motor (Low Speed)
122	4th Paper Feed Motor (High Speed)
123	5th Paper Feed Motor (Low Speed)
124	5th Paper Feed Motor (High Speed)
125	6th Paper Feed Motor (Low Speed)
126	6th Paper Feed Motor (High Speed)
127	7th Paper Feed Motor (Low Speed)
128	7th Paper Feed Motor (High Speed)
129	4th Grip Motor (Low Speed)
130	4th Grip Motor (High Speed)
131	5th Grip Motor (Low Speed)
132	5th Grip Motor (High Speed)
133	6th Grip Motor (Low Speed)
134	6th Grip Motor (High Speed)
135	7th Grip Motor (Low Speed)
136	7th Grip Motor High Speed)
137	4th Transport Motor (Low Speed)
138	4th Transport Motor (High Speed)
139	5th Transport Motor (Low Speed)
140	5th Transport Motor (High Speed)

141	6th Transport Motor (Low Speed)
142	6th Transport Motor (High Speed)
143	7th Transport Motor (Low Speed)
144	7th Transport Motor High Speed)
145	LCT Exit Motor (Low)
146	LCT Exit Motor (High)
151	1st Vertical Transport Clutch
152	2nd Vertical Transport Clutch
153	3rd Vertical Transport Clutch
154	LCT 1st Grip Clutch
155	LCT 2nd Grip Clutch
156	LCT 3rd Grip Clutch
157	Bypass Grip Clutch
158	Relay Clutch
159	LCT Relay Clutch
161	Inverter Gate Solenoid
162	Duplex Transport Motor1
163	Toner Supply Pump Motor
164	Toner Supply Roller Motor
165	4th Front Blower Fan
166	4th Rear Blower Fan
167	5th Front Blower Fan
168	5th Rear Blower Fan
169	6th Front Blower Fan
170	6th Rear Blower Fan
171	Decurl Pressure Adjustment Motor

172	Transport Motor
173	Exit Guide Solenoid
174	Purge Tray JG Solenoid
207	Status Lamp (Green) (Attention Light AL5000)
208	Status Lamp (Red) (Attention Light AL5000)
209	Paper Dehumidifier Fan (Main)
210	Transport Motor Cooling Fan (Main)
211	Power Pack Fan (Main)

5807	Option Connection Check
	This SP displays whether the devices listed below are connected or not: 1: Connected, 0: Not connected.
001	ADF (1:Connect) **Not Used**
002	LCT (1:Connect)
003	FIN (1:Connect)
004	Decurler (D457) (1: Connected)

5811	Machine Serial **DFU**
	This SP presents the soft keyboard used to enter the 11-digit number of the machine. The allowed entries are "A" to "Z" and "0" to "9". The setting is done at the factory, and should not be changed in the field.
001	Set
	Allows setting the machine serial number with the soft keyboard. **Important**: Never change this setting unless instructed to do so.
004	Set: BICU **DFU**
005	Display: Novita

5812	Service Tel. No. Setting

001	Service
	Inputs the telephone number of the CE (displayed when a service call condition occurs.)
002	Facsimile
	Use this to input the fax number of the CE printed on the Counter Report (UP mode).
003	Supply
	Displayed on the initial SP screen.
004	Operation
	Sales representative telephone number.

System SP5-nnn Mode: 3

5816	Remote Service
001	I/F Setting
	Turns the remote diagnostics off and on. [0 to 2/1] 0: Remote diagnostics off. 1: Serial (CSS or NRS) remote diagnostics on. 2: Network remote diagnostics.
002	CE Call
	Lets the customer engineer start or end the remote machine check with CSS or NRS; to do this, push the center report key
003	Function Flag
	Enables and disables remote diagnosis over the NRS network. [0 to 1/1] 0: Disables remote diagnosis over the network. 1: Enables remote diagnosis over the network.
004	Communication Test Call **DFU**
005	Device Information Call **DFU**
007	SSL Disable
	Controls if RCG (Remote Communication Gate) confirmation is done by SSL during an RCG send for the NRS over a network interface. [0 to 1/1] 0: Yes. SSL not used. 1: No. SSL used.
008	RCG Connect Timeout
	Sets the length of time (seconds) for the time-out when the RCG (Remote Communication Gate) connects during a call via the NRS network. [1 to 90/1 sec.]

009	RCG Write Timeout
	Sets the length of time (seconds) for the time-out when sent data is written to the RCG during a call over the NRS network. [0 to 100/1 sec.]
010	RCG Read Timeout
	Sets the length of time (seconds) for the timeout when sent data is written from the RCG during a call over the NRS network. [0 to 100/1 sec.]
011	Port 80 Enable
	Controls if permission is given to get access to the SOAP method over Port 80 on the NRS network. [0 to 1/1] 0: No. Access denied 1: Yes. Access granted.
012	@Remote Communication Permission **DFU**
013	RFU Timing
021	RCG – C Registed
	This SP displays the Cumin installation end flag. 1: Installation completed 2: Installation not completed
022	RCG – C Registed Detail
	This SP displays the Cumin installation status. 0: Basil not registered 1: Basil registered 2: Device registered
023	Connect Type (N/M)
	This SP displays and selects the Cumin connection method. 0: Internet connection 1: Dial-up connection

027	Connection Timeout	SSP
	Sets the time limit for connection to the GW controller. Enabled only for Cumin. [0 to 100 / 30 /1 sec.]	
028	Send Timeout	SSP
	[0 to 100 / 30 /1 sec.]	
029	Receive Timeout	SSP
	[0 to 100 / 30 /1 sec.]	
030	Retry Interval	
	Sets the time interval between re-tries to connect with the GW controller. [0 to 100 / 3 /1]	
031	Retry Count	SSP
	Sets the number of unsuccessful attempts allowed to connect with the GW controller. Default: 3 counts	
032	Connect Send Relay	SSP
	Sets the time limit for remaining in standby for a communication request. Default: 5 sec.	
033	Max Multipart	SSP
	Sets the maximum number of multi-part messages with the GW controller. [0 to 10 / 10 /1]	
034	Firm DL Interval	SSP
	[0 to 0xffff / 300 / 1]	
035	Firm DL Retry Count	SSP
	[0 to 255 / 3 / 1]	
061	Cert. Expire Timing **DFU**	SSP
	Proximity of the expiration of the certification.	

062	Use Proxy
	This SP setting determines if the proxy server is used when the machine communicates with the service center.
063	Proxy Host
	This SP sets the address of the proxy server used for communication between Cumin-N and the gateway. Use this SP to set up or display the customer proxy server address. The address is necessary to set up Cumin-N. **Note:** • The address display is limited to 127 characters. Characters beyond the 127th character are ignored. • This address is customer information and is not printed in the SMC report.
064	HTTP Proxy Port Number
	This SP sets the port number of the proxy server used for communication between Cumin-N and the gateway. This setting is necessary to set up Cumin-N. **Note:** This port number is customer information and is not printed in the SMC report.
065	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.
066	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.

067	CERT: Up State
	Displays the status of the certification update. 0: The certification used by Cumin 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 an 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.

068	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.
069	CERT: Up ID
	The ID of the request for certification.
083	Firmware Up Status
	Displays the status of the firmware update.
085	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.
086	Firmware Size
	Allows the service technician to confirm the size of the firmware data files during the firmware update execution.
087	CERT: Macro Version
	Displays the macro version of the NRS certification
088	CERT: PAC Version
	Displays the PAC version of the NRS certification.
089	CERT: ID2 Code
	Displays ID2 for the NRS certification. Spaces are displayed as underscores (_). Asterisks (*) indicate that no NRS certification exists.

090	CERT: Subject
	Displays the common name of the NRS certification subject. CN = the following 17 bytes. Spaces are displayed as underscores (_). Asterisks (*) indicate that no DESS exists.
091	CERT: Serial No.
	Displays serial number for the NRS certification. Asterisks (*) indicate that no DESS exists.
092	CERT: Issuer
	Displays the common name of the issuer of the NRS certification. CN = the following 30 bytes. Asterisks (*) indicate that no DESS exists.
093	CERT: Valid Start
	Displays the start time of the period for which the current NRS certification is enabled.
094	CERT: Valid End
095	Server CN Check **DFU**
096	GW Host **DFU**
097	GW URL Path **DFU**
099	Debug Rescue G/W URL Set **DFU**
094	CERT: Valid End
	Displays the end time of the period for which the current NRS certification is enabled.
200	Manual Polling
	No information is available at this time.
201	Regist: Status
	Displays a number that indicates the status of the NRS service device. 0: Neither the NRS device nor Cumin device are set. 1: The Cumin device is being set. Only Box registration is completed. In this status the Basil unit cannot answer a polling request. 2: The Cumin device is set. In this status the Basil unit cannot answer a polling request. 3: The NRS device is being set. In this status the Cumin device cannot be set. 4: The NRS module has not started.

202	Letter Number
	Allows entry of the number of the request needed for the Cumin device.
203	Confirm Execute
	Executes the inquiry request to the NRS GW 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 Cumin 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.

	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	Basil not managed
		-2394	Device not managed
		-2395	Box ID for Basil is illegal
		-2396	Device ID for Basil is illegal
		-2397	Incorrect ID2 format
		-2398	Incorrect request number format
209	Instl Clear		
	Releases a machine from its Cumin setup.		
250	CommLog Print		
	Prints the communication log.		

5821	Remote Service Address **Japan Only**
	RCG IP Address: Sets the IP address of the RCG (Remote Communication Gate) destination for call processing at the remote service center. [0. 0. 0. 0.]

5824	NVRAM Data Upload
	Uploads the UP and SP mode data (except for counters and the serial number) from NVRAM on the control board to an SD card. Note: While using this SP mode, always keep the front cover open. This prevents a software module accessing the NVRAM during the upload.

5825	NVRAM Data Download
	Downloads data from an SD card to the NVRAM in the machine. After downloading is completed, remove the SD card and turn the machine power off and on.

5828	Network Setting
050	1284 Compatibility (Centro)
	Do this SP to set Centronics compatibility. [0 to 1 / **1**/ 1] 1: Allowed. 0: Not Allowed. Disables bi-directional communication
	Enables and disables bi-directional communication on the parallel connection between the machine and a computer. [0 to 1/1] 0: Off, 1: On
052	ECP (Centro)
	Disables and enables the ECP feature (1284 Mode) for data transfer. [0 to 1/1] 0: Disabled, 1: Enabled
065	Job Spool Setting
	Switches job spooling on and off. 0: No spooling, 1: Spooling enabled
066	Job Spool Clear: Start Time

	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.
069	Job Spool Protocol
	This SP determines whether job spooling is enabled or disabled for each protocol. This is an 8-bit setting.

0	LPR	4	BMLinks (Japan Only)
1	FTP (Not Used)	5	DIPRINT
2	IPP	6	Reserved (Not Used)
3	SMB	7	Reserved (Not Used)

090	TELNET (0:OFF 1:ON)
	Disables or enables Telnet operation. If this SP is disabled, the Telnet port is closed. [0 to 1/1] 0: Disable, 1: Enable
091	Web (0:OFF 1:ON)
	Disables or enables the Web operation. [0 to 1/1] 0: Disable, 1: Enable
145	Operation IPv6 Link Local Address
	This is the IPv6 local address link referenced on the Ethernet or wireless LAN (802.11b) in the format: "Link Local Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
147	Operation IPv6 Stateless Address 1
149	Operation IPv6 Stateless Address 2
151	Operation IPv6 Stateless Address 3
153	Operation IPv6 Stateless Address 4
155	Operation IPv6 Stateless Address 5

	These SPs are the IPv6 status addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11b) in the format: "Status Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
156	IPv6 Manual Setting Address
	This SP is the IPv6 manually set address referenced on the Ethernet or wireless LAN (802.11b) in the format: "Manual Set Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
158	IPv6 Gateway Address
	This SP is the IPv6 gateway address referenced on the Ethernet or wireless LAN (802.11b). The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
161	IPv6 Stateless Auto Setting
	Enables or disables the automatic setting for IPv6 stateless. [0 or 1 / **1** / 1 /step] 0: Disable, 1: Enable
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 Support 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 Link 1 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 Link 1 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 Link 1 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 Link 2 Name	Same as "-239"
243	Web Link 2 URL	Same as "-240"
244	Web Link 2 Visible	Same as "-241"

5832	HDD
	Touch [EXECUTE] to format the HDD. When the execution ends, cycle the machine power off and on.

5834	Operation Panel Image Exposure **DFU**	SSP

5840	IEEE 802.11
006	Channel MAX
	Sets the maximum range of the bandwidth for the wireless LAN. This bandwidth setting varies for different countries. [1 to 14/1]

007	Channel MIN
	Sets the minimum range of the bandwidth for operation of the wireless LAN. This bandwidth setting varies for different countries. [1 to 14/1]
008	Transmission Speed
	Not used for this machine.
011	WEP Key Select
	Determines how the initiator (SBP-2) handles subsequent login requests. [0 to 1/1] 0: If the initiator receives another login request while logging in, the request is refused. 1: If the initiator receives another login request while logging in, the request is refused and the initiator logs out. **Note:** Displayed only when the wireless LAN card is installed.
042	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.
043	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.
044	11g Start Time
	Selects the slot time for IEEE802.11. [0 to 1 / **0** / 1] 0: 20 µm, 1: 9 µm
045	WPA Debug Lvl1
	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
	Press the [User Tools] key. These names appear when the user presses the Inquiry button on the User Tools screen.
001	Toner Name Setting: Black
011	Staple Std 1
012	Staple Std 2
013	Staple Std 3
014	Staple Std 4
021	Staple Bind 1
022	Staple Bind 2
023	Staple Bind 3

5842	GWS Analysis Mode Setting **DFU**
	This settings select the output mode for debugging information as each network file is processed.
001	Setting 1
	Default: **00000000** Do not change Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software
002	Setting 2
	Adjusts the debug program modesetting. Bit7: 5682 mmseg-log setting 0: Date/Hour/Minute/Second 1: Minute/Second/Msec. 0 to 6: Not used

5844	USB

001	Transfer Rate
	Sets the speed for USB data transmission. [Full Speed] [Auto Change]
002	Vendor ID
	Sets the vendor ID: Initial Setting: 0x05A Ricoh Company [0x0000 to 0xFFFF/1] **DFU**
003	Product ID
	Sets the product ID. [0x0000 to 0xFFFF/1] **DFU**
004	Device Release No.
	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.
005	Fixed USB Port
	Selects the PnP name standardization mode. [0 to 2 / **0** / 1/step] 0: Disable 1: Level 1 2: Level 2
006	PnP Model Name
	Specifies PnP name for USB device.
007	PnP Serial Number
	Specifies PnP serial number for USB device.
100	Notify Unsupport

	Displays or does not display USB unsupport message. [0 or 1 / **1** / -] 0: Not displayed,

5845	Delivery Server Setting
	These are delivery server settings.
003	Retry Interval
	Determines the time to elapse before the next transmission is allowed after an error occurs when sending to the SMTP server, FTP/NCP/SMB server, or after an e-mail notification fails. If another document is sent before this time elapses, it is queued for sending. [60 to 900 / 300 / 1 sec.]
004	Number of Retries
	Sets the number of unsuccessful attempts if an error occurs when sending to the SMTP server, FTP/NCP/SMB server, or after an e-mail notification fails. [0 to 99 / 3 / 1]
022	Rapid Sending Control
	Determines how rapid sending is performed. [0 to 1 / 1 / 1] 0: Does not stop if rapid sending fails 1: Stops if rapid sending fails

SP5-nnn Mode: 4

5846	UCS Setting
010	LDAP Search Timeout
	Sets the length of the time-out for the search of the LDAP server. [1 to 255/1]
041	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.
043	Add Book Media
	Displays the slot number of address book data location. [0 to 30 / - /1] 0: Unconfirmed 1: SD Slot 1 2: SD Slot 2 4: USB Flash ROM 20: HDD 30: Nothing
046	Initialize All Settings & Addr Book **DFU**

	Used for debugging.
047	Initialize Local Address Book
	Clears all of the address information from the local address book of a machine managed with UCS.
049	Initialize LDAP Addr Book
	Push [Execute] to delete all items (this does not include user codes) in the LDAP address book that is controlled by UCS.
050	Initialize All Addr Book
	Clears everything (including users codes) in the directory information managed by UCS. However, the accounts and passwords of the system administrators are not deleted.
051	Backup All Addr Book
	Uploads all directory information to the SD card.
052	Restore All Addr Book
	Downloads all directory information from the SD card.
053	Clear Backup Info.
	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.

<table>
<tr><td rowspan="11">060</td><td colspan="2">Search Option</td></tr>
<tr><td colspan="2">This SP uses bit switches to set up the fuzzy search options for the UCS local address book.</td></tr>
<tr><td>Bit</td><td>Meaning</td></tr>
<tr><td>0</td><td>Checks both upper/lower case characters</td></tr>
<tr><td>1</td><td>Japan Only</td></tr>
<tr><td>2</td><td>Japan Only</td></tr>
<tr><td>3</td><td>Japan Only</td></tr>
<tr><td>4</td><td>--- Not Used ---</td></tr>
<tr><td>5</td><td>--- Not Used ---</td></tr>
<tr><td>6</td><td>--- Not Used ---</td></tr>
<tr><td>7</td><td>--- Not Used ---</td></tr>
<tr><td rowspan="2">062</td><td colspan="2">Complexity Option 1</td></tr>
<tr><td colspan="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 upper case and sets the length of the password.
[0 to 32/1]
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.</td></tr>
<tr><td rowspan="2">063</td><td colspan="2">Complexity Option 2</td></tr>
<tr><td colspan="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 32/1]
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.</td></tr>
</table>

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 32/1] **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 32/1] **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.	
094	Encryption Start	
	Shows the status of the encryption function of the address book on the LDAP server. [0 to 255/1] No default	
098	Bit SW2 **DFU**	SSP
	Used for debugging.	
099	Bit SW **DFU**	SSP
	Used for debugging.	

5848	Web Service
	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.

004	Acc. Ctrl.: User Directory (Lower 4 Bits)	Switches access control on/off. 0000: OFF, 0001: ON
011	Acc. Ctrl: Device Management (Lower 4 Bits)	
022	Acc. Ctrl: User Administration (Lower 4 Bits)	
210	Setting: Log Type: Job 1	Switches access control on/off. 0000: OFF, 0001: ON
211	Setting: Log Type: Job 2	
212	Setting: LogType Access	
213	Setting: Primary Srv **DFU**	
214	Setting: Secondary Srv	
	Specifies the maximum size of the image data that the machine can download. [1 to 1024 / **1024** / 1 MB /step]	
215	Setting: Start Time	-
216	Setting: Interval Time	
217	Setting: Timing	

5849	Installation Date
	Displays or prints the installation date of the machine.
001	Display
	The "Counter Clear Day" has been changed to "Installation Date" or "Inst. Date".
002	Switch to Print
	Determines whether the installation date is printed on the printout for the total counter. [0 to 1/1] 0: No Print, 1: Print
003	Total Counter
	Displays the total count from the day set with SP5849-001. [0 to 9999 9999]

5851	Bluetooth
	Sets the operation mode for the Bluetooth unit. Press either key. [0: Public] [1: Private]

5856	Remote ROM Update
	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 to 1/1] 0: Not allowed, 1: Allowed

5857	Save Debug Log
001	On/Off (1:ON 0:OFF)
	Switches on the debug log feature. The debug log cannot be captured until this feature is switched on. [0 to 1/1] 0: OFF, 1: ON
002	Target (2: HDD 3: SD Card)
	Selects the destination where the debugging information generated by the event selected by SP5858 will be stored if an error is generated [2 to 3 /1] 2: HDD, 3: SD Card
005	Save to HDD
	Specifies the decimal key number of the log to be written to the hard disk.
006	Save to SD Card
	Specifies the decimal key number of the log to be written to the SD Card.

009	Copy HDD to SD Card (Latest 4 MB)
	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.
010	Copy HDD to SD Card Latest 4 MB Any Key)
	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.
011	Erase HDD Debug Data
	Erases all debug logs on the HDD
012	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.
013	Free Space on SD Card
	Displays the amount of space available on the SD card.
014	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.
015	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.
016	Make HDD Debug
	This SP creates a 32 MB file to store a log on the HDD.
017	Make SD Debug
	This SP creates a 4 MB file to store a log on an SD card.

5858	Debug Save When
	These SPs select the content of the debugging information to be saved to the destination selected by SP5857 002. SP58583 stores one SC specified by number.
001	Engine SC Error (0:OFF 1:ON)
	Stores SC codes generated by copier engine errors.
002	Controller SC Error (0:OFF 1:ON
	Stores SC codes generated by GW controller errors.
003	Any SC Error (0:OFF 1:ON
	[0 to 65535 / 0 / 1]
004	Jam (0:OFF 1:ON
	Stores jam errors.

5859	Save Key No.	
001	Key 1	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]
002	Key 2	
003	Key 3	
004	Key 4	
005	Key 5	
006	Key 6	
007	Key 7	
008	Key 8	
009	Key 9	
010	Key 10	

5860	SMTP/POP3/IMAP4

002	SMTP/POP3/IMAP4: SMTP Server Port Number
	Sets the number for the SMTP server port. [1 to 65535 / 25 / 1]
003	SMTP/POP3/IMAP4: SMTP Authentication
	Switches SMTP authentication on and off for e-mail sending. [0 to 1 / 0 /1] 0: OFF 1: ON
006	SMTP/POP3/IMAP4: SMTP Auth. Encryption
	Determines whether the password for SMTP authentication is encrypted. [0 to 2 / 0 / 1] 0: Automatic 1: No encryption 2: Encryption
007	SMTP/POP3/IMAP4: POP Before SMTP
	Determines whether POP server authentication is done before connection to the SMTP server when e-mail is sent. [0 to 1/ 0 / 1] 0: No 1: Yes
008	SMTP/POP3/IMAP4: POP to SMTP Waiting Time
	Sets the length of time to pause until connection to the SMTP server after POP-Before-SMTP or POP server authentication. [0 to 10 000/ 300 / 1 sec.]
009	SMTP/POP3/IMAP4: Mail Receiver Protocol

	Sets the mail RX protocol. [1 to 3 / 1 / 1] 0: No RX 1: POP3 2: IMAP4 3: SMTP
013	SMTP/POP3/IMAP4: POP3/IMAP4 Auth. Encryption
	Determines whether password encryption is done for POP3/IMAP4 authentication. [0 to 2 / 0 / 1] 0: Automatic 1: No encryption 2: Encryption
014	SMTP/POP3/IMAP4: POP3 Server Port Number
	Sets the port number for the POP3 server. [0 to 65535 / 110 / 1]
015	SMTP/POP3/IMAP4: IMAP4 Server Port Number
	Sets the port number for the IMAP4 server. [0 to 65535 / 143 / 1]
016	SMTP/POP3/IMAP4: SMTP Receive Port Number
	Sets the RX port number for SMTP mail receiving. [0 to 65535 / 25 / 1]
017	SMTP/POP3/IMAP4: Mail Receive Interval
	Sets the time interval between mail-receive transmissions. [2 to 1440 / 3 / 1 min.]
019	SMTP/POP3/IMAP4: Mail Keep Setting

	Determines whether received mail is stored on the server. [0 to 2 / 0 / 1] 0: Not saved 1: All saved 2: Only mail errors saved
020	Partial Mail Receive Timeout
	[1 to 168/72/1] 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.
021	MDN Response RFC2298Compliance
	Determines whether RFC2298compliance is switched on for MDN reply mail. [0 to 1/1] 0: No, 1: Yes
022	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 to 1/1] 0: No. "From" item not switched. 1: Yes. "From" item switched.
025	SMTP Auth Direct Sending
	Occasionally, all SMTP certifications may fail with SP5860 006 set to "2" to enable encryption during SMTP certification for the SMTP server. This can occur if the SMTP server does not meet RFC standards. In such cases you can use this SP to set the SMTP certification method directly. However, this SP can be used only after SP5860 003 has been set to "1" (On). Bit0: LOGIN Bit1: PLAIN Bit2: CRAM_MD5 Bit3: DIGEST_MD5 Bit4 to Bit 7: Not Used

026	S/MIME: MIME Header Settings
	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	
	This SP controls operation of the email notification function.	
001	Report Validity	
	Enables or disables the e-mail notification to @Remote. [0 or 1 / **0** / 1] 0: Enable, 1: Disable	
005	Add Date Field	
	Disables and re-enables the addition of a date field to the email notification. [0 to 1/0/1]	
100	Log Format **DFU**	SSP
	Sets the lever for MIRS log output. Used for debugging.	

5870	Common Key Info Writing	
	Writes to flash ROM the common proof for validating the device for NRS specifications. Note: These SPs are for future use and currently are not used.	
001	Writing	
003	Initialize	

5873	SD Card Appli Move	
	Allows you to move applications from one SD card another.	
001	Move Exec	Executes the move from one SD card to another.

002	Undo Exec	This is an undo function. It cancels the previous execution.

5876	Security Clear **DFU**
	Used for debugging.
001	All Clear
011	Clear NCS Security Setting
015	Clear UCS Security Setting

5878	Option Setup: Data Overwrite Security
	Enables the Data Overwrite Security unit. Touch [EXECUTE] on the operation panel. Then cycle the machine off/on.

5887	SD Get Counter
	This SP sends a text file to an SD card inserted in SD card the service slot. • 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
	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)

5892	Engine Data Check **DFU**	SSP
	Used for debugging.	

5893	SDK Application Couner

	Displays the counter name of each SDK application.
001	SDK-1
002	SDK-2
003	SDK-3
004	SDK-4
005	SDK-5
006	SDK-6

5897	Double Sheet Feed Setting **DFU**

5899	PM Double Count
	This SP sets the PM counter to count double for paper longer than 420 mm. [0 to 1/ 0 / 1] 0: OFF 1: PM registers a double-count for paper longer than 420 mm in the sub scan direction.

5907	Plug & Play Maker/Model Name
	Selects the brand name and the production name for Windows Plug & Play. This information is stored in the NVRAM. If the NVRAM is defective, these names should be registered again. After selecting, press the "Original Type" key and "#" key at the same time. When the setting is completed, the beeper sounds five times.

5915	Mechanical Counter Detection
	Displays whether the mechanical counter is installed in the machine. [0 to 2] 0: Not detected 1: Detected 2: Unknown

5970	Debug Serial Output **DFU**	SSP

	This is a debugging tool.

5974	Cherry Server
	Selects which version of the Scan Router application program, "Light" or "Full (Professional)", is installed. [0 to 1 / 0 / 1 /step] 0: Light version (supplied with this machine) 1: Full version (optional)

5990	SP Print Mode (SMC Print)
	In the SP mode, press "APL Window" to move to the main 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.
001	All (Data List)
002	SP (Mode Data List)
003	User Program Data
004	Logging Data
005	Diagnostic Report
006	Non-Default (Prints only SPs set to values other than defaults.)
007	NIB Summary

System SP6-nnn Peripherals: 1

6100	Staple Position Adjustment	
	Use this SP to shift the position of the stapling done by the corner stapler of the finisher (B830). This SP shifts the staple position forward and back across the direction of paper feed. • Use the [./*] key to toggle between + and –. • A larger value shifts the stapling position to shift forward. A smaller value shifts the stapling position backward.	
001	A3 SEF	The settings are done for each paper size. SEF denotes "Short Edge Feed". LEF denotes "Long Edge Feed". [-2 to +2 / 0 / 0.5 mm]
002	B4 SEF	
003	A4 SEF	
004	A4 LEF	
005	B5 SEF	
006	B5 LEF	
007	DLT SEF	
008	LG SEF	
009	LT SEF	
010	LT LEF	
011	Others	

6101	Punch Hole Position Adjustment
	Use this SP to shift the position of the punching done by the Punch Unit B831. This SP shifts the punching position left and right in the direction of paper feed. There are three versions of the Punch Unit B831 1) NA 2/3 (2 or 3 hole punching selectable for the job), 2) NA 4 (4 hole punching only), and 3) EU 2/4 (2 or 4 hole punching selectable for the job) [-7.5 to +7.5 / 0 / 0.5 mm] • Use the [./*] key to toggle between + and –. • A larger value shifts the punch holes away from the edge of the paper. A smaller value shifts the punch holes toward the edge of the paper.

001	JPN/EU: 2-Hole	
002	JPN/NA: 3-Hole	
003	EU: 4-Hole	
004	NA: 4-Hole	
005	NA: 2-Hole	
006	JPN: 1-Hole	

6102	End Bind Jogger Adjustment Use this SP code to adjust the positions of the jogger fences when the pages are aligned (jogged) horizontally in the stapling tray for corner stapling in the Finisher B830. These jogger fences close in on the sides of the stack on the paper tray. These side fences move in and out perpendicular to the direction of paper feed. • The higher the setting, the narrower the jogger span and the smaller the gaps between the fences and the edges of the paper. Stacking is tighter. • The lower the setting, the wider the jogger span and the wider the gaps between the fences and the edges of the paper. Stacking is not as precise.
	The settings below are done for each paper size. SEF denotes "Short Edge Feed". LEF denotes "Long Edge Feed". [-2.0 to +1.5 / 0 / 0.5 mm]
001	A3 SEF
002	B4 SEF
003	A4 SEF
004	A4 LEF
005	B5 SEF
006	B5 LEF
007	DLT SEF
008	LG SEF
009	LT SEF
010	LT LEF

011	Custom Size

6103	Adjust Output Jog Position
	Use this SP code to adjust the positions of the jogger fences when the pages are aligned (jogged) horizontally in the stapling tray for stapling in the Booklet Finisher B836. The jogger fences close in on the sides of the stack on the paper tray. These side fences move in and out perpendicular to the direction of paper feed. [-3 to +3 / 0 / 0.1 mm] • The higher the setting, the narrower the jogger span and the smaller the gaps between the fences and the edges of the paper. Stacking is tighter. • The lower the setting, the wider the jogger span and the wider the gaps between the fences and the edges of the paper. Stacking is not as tight.
	The settings below are done for each paper size. SEF denotes "Short Edge Feed". LEF denotes "Long Edge Feed".
001	A3 SEF
002	B4 SEF
003	A4 SEF
004	A4 LEF
005	A5 SEF
006	A5 LEF
007	B5 SEF
008	B5 SEF
009	DLT LEF
010	LG SEF
011	LT SEF
012	LT SEF
013	HLT SEF
014	HLT LEF
015	Other

6104	Pre Stack Adjustment
	[-3 to +3/0/0.1]
001	A4 LEF
002	B5 LEF
003	LT LEF
004	Others

6105	Adj Leading Edge Stopper Pressure	
001	A4 LEF	[-5 to +10 / 0 / 0.1]
002	B5 LEF	[-5.0 to +2.0/0/0.11]
003	LT LEF	[-5.0 to +10.0/0/0.1]
004	Other	[-5.0 to +10.0/0/0.1]

6106	Staple Jogging Repeat Settings
	Allows you to increase by 1 the number of times the stack is jogged on the stapling tray. [*0: DEFAULT] [1: +1]

6107	Staple Tray Jog Off/On
	Allows you to switch jogging on the stapling tray off and on for the paper sizes listed below. The default for each paper size is 0 (On)
001	A3 SEF 0:On 1:Off
002	B4 SEF 0:On 1:Off
003	A4 SEF 0:On 1:Off
004	A4 LEF 0:On 1:Off
005	A5 SEF 0:On 1:Off
006	A5 SEF 0:On 1:Off
007	B5 SEF 0:On 1:Off

008	B5 LEF 0:On 1:Off
009	DLT SEF 0:On 1:Off
010	LG SEF 0:On 1:Off
011	LT SEF 0:On 1:Off
012	LT LEF 0:On 1:Off
013	HLT SEF 0:On 1:Off
014	HLT LEF 0:On 1:Off
015	Other

6112	Finisher Input Check
	Displays the signals received from sensors and switches of the finisher.
001	Entrance Sensor
002	Upper Exit Tray Sensor
003	Shift Tray Exit Sensor 1
004	Stapler Tray Exit Sensor
005	Shift Tray Lower Limit Sensor
006	Shift Tray Near Full Sensor
007	Feed-Out Belt HP Sensor
008	Jogger HP Sensor
009	Shift Tray Half-Turn Sensor 1
010	Stapler HP Sensor (Front/Rear)
011	Stapler HP Sensor
012	Staple Out Sensor
013	Staple Tray Paper Sensor
014	Front Door Open Switch
015	Punch Detection Sensor

016	Punch HP Sensor 1
017	Punch-out Hopper Full Sensor
018	Stapling Paper Height Sensor
019	Staple Mode HP Sensor
020	Jam Detection Sensor
021	Upper Tray Full Sensor
022	Stapler Rotation Sensor 1
023	Stapler Trimmings Hopper Full Sensor
024	Pre-Stack Sensor
025	Stack Plate HP Sensor (Center)
026	Exit Guide Open Sensor
027	Stapler Rotation Sensor 2
028	Staple Ready Sensor
029	Stack Plate HP Sensor (Front)
030	Stack Plate HP Sensor (Back)
031	Positioning Roller HP Sensor
032	Return Drive HP Sensor
033	Stapling Paper Height Sensor
034	Shift Lower Limit Sensor (Large Paper)
035	Punch HP Sensor 2
036	Shift Jogger Sensor
037	Shift Jogger HP Sensor
038	Shift Jogger Retraction HP Sensor
039	Emergency Stop Switch
040	Top Fence HP Sensor
041	Bottom Fence HP Sensor

042	LowerTray Full Sensor (Z-Folded Paper)
043	Shift Tray Exit Sensor 2
044	Upper Tray Junction Gate HP Sensor
045	Staple Junction Gate HP Sensor
046	Pre-Stack Junction Gate HP Sensor
047	Pre-Stack Sensor (Right)
048	Pre-Stack Junction Gate Release HP Sensor
049	Shift Tray Half-Turn Sensor 2
050	Staple Trimmings Hopper Set Sensor

System SP6-nnn Peripherals: 2

6113	Finisher Output Check
	Turn on the electrical components of the finisher individually for test purposes.
001	OFF (Stop)
002	Upper Transport Motor
003	Shift Tray Exit Motor
004	Upper Tray Junction Gate Motor
005	Shift Tray Lift Motor
006	Jogger Motor
007	Shift Jogger Motor
008	Staple Hammer Motor
009	Punch Motor
010	Staple Junction Gate Motor
011	Positioning Roller Motor
012	Stack Feed-Out Belt Motor
013	Shift Motor
014	Stapler Rotation Motor
015	Lower Transport Motor
016	Exit Guide Motor
017	Stack Plate Motor (Center)
018	Pre-Stack Junction Gate Motor
019	Pre-Stack Junction Gate Release Motor
020	Stack Plate Motor (Front)
021	Stack Plate Motor (Rear)
022	Stacking Roller Motor

023	Stacking Roller Drag Motor
024	Shift Jogger Motor
025	Shift Jogger Lift Motor
026	Jogger Top Fence Motor
027	Jogger Bottom Fence Motor
028	Lower Transport Motor
029	Upper Tray Exit Motor
030	Positioning Transport Motor
031	Pre-Stack Transport Motor
032	Staple Trimming Shooter Solenoid

6114	Finisher Free Run
001	Free Run 1
	System free run. A4 LEF at 90 ppm, with simulated staple mode.
002	Free Run 2
	Free run for durability testing. All motors and solenoids operate to simulate full staple mode run for durability testing.
003	Free Run 3
	Shipping free run. Simulates standby conditions during shipping.
004	Free Run 4
	Shift free run. A4 LEF at 90 ppm with simulated output jogging with the shift jogger unit mounted on the side of the finisher.

6200	Adjust Booklet Stapling Position (D434)
	Use this SP to adjust the stapling position of the booklet stapler when paper is stapled and folded in the Booklet Finisher.

001	A3 SEF	[-2 to +2/0/0.2 mm] When viewing the open booklet: + Value: Shifts staple position right . - Value: Shifts staple position left .
002	B4 SEF	
003	A4 SEF	
004	B5 SEF	
005	12 x 18 SEF	
006	13 x 19 SEF	
007	DLT	
008	LG	
009	LT SEF	
011	Other	

6201	Adjust Booklet Fold Position (D434)	
	This SP corrects the folding position when paper is stapled and folded in the Booklet Finisher.	
001	A3 SEF	[-3 to +2/0/0.2 mm] When viewing the open booklet: + Value: Shifts staple position right - Value: Shifts staple position left.
002	B4 SEF	
003	A4 SEF	
004	B5 SEF	
005	12 x 18 SEF	
006	13 x 19 SEF	
007	DLT	
008	LG	
009	LT SEF	
011	Other	

6202	Fine Adj Booklet Jog Fence Pos (D434)	
	This SP adjusts the distance between the jogger fences and the sides of the stack on the finisher stapling tray in the Booklet Finisher. The adjustment is done perpendicular to the direction of paper feed.	
001	A3 SEF	[-0.5 to +0.5/0/0.1 mm] + Value: Increases distance between jogger fences and the sides of the stack. - Value: Decreases the distance between the jogger fences and the sides of the stack.
002	B4 SEF	
003	A4 SEF	
004	B5 SEF	
005	12x18 SEF	
006	13x19 SEF	
007	DLT	
008	LG	
009	LT SEF	
011	Other	

6205	Booklet Stapler Jog Pawl Adjust (D434)	
001	A3 SEF	[-3 to +3 / 0 / 0.2]
002	B4 SEF	
003	A4 SEF	
004	B5 SEF	
005	12 x 18 SEF	
006	13 x 19 SEF	
007	DLT	
008	LG	
009	LT SEF	
011	Other	

6208	Staple Position Adjustment (D434)	
001	A3 SEF	[-1 + 1 /0 / 0.5 mm]
002	B4 SEF	
003	A4 SEF	
004	A4 LEF	
005	B5 SEF	
006	B5 LEF	
007	DLT	
008	LG	
009	LT SEF	
010	LT LEF	
011	8-Kai SEF	
012	16-Kai SEF	
013	16-Kai LEF	
015	Other	

6209	Punch Position Adjust: Sub Scan (D434)	
001	2-Hole EU/JPN	[-3.5 +3.5 / 0 / 0.5]
002	3-Hole NA/JPN	
003	4-Hole EU	
004	4-Hole Scandinavia	
005	2-Hole Scandinavia	

6210	Punch Position Adjust: Main Scan (D434)

001	2-Hole EU/JPN	[-3 to +3 / 0 / 0.5 mm]
002	3-Hole NA/JPN	
003	4-Hole EU	
004	4-Hole Scandinavia	
005	2-Hole Scandinavia	

6211	End Bind Jogger Adjustment (D434)	
001	A3 SEF	[-3 to +3 / 0 / 0.5 mm]
002	B4 SEF	
003	A4 SEF	
004	A4 LEF	
005	B5 SEF	
006	B5 LEF	
007	DLT	
008	LG	
009	LT SEF	
010	LT LEF	
011	8-Kai SEF	
012	16-Kai SEF	
013	16-Kai LEF	
015	Other	

6212	Adjust Output Jog Position (D434)

001	A3 SEF	[-2 to +2 / 0 / 0.1 mm]
002	B4 SEF	
003	A4 SEF	
004	A4 LEF	
005	A5 SEF	
006	A5 LEF	
007	B5 SEF	
008	B5 LEF	
009	DLT	
010	LG	
011	LT SEF	
012	LT LEF	
013	HLT SEF	
014	HLT LEF	
016	Other	

6213	Pre Stack Adjustment (D434)	
001	A3 SEF	[0 to 2 / 2/ 1 Sheet]
002	B4 SEF	
003	A4 SEF	[0 to 5 / 5 / 1 Sheet]
004	A4 LEF	
007	B5 SEF	
008	B5 LEF	

009	DLT	[0 to 2 / 2/ 1 Sheet]
010	LG	
011	LTSEF	
012	LT LEF	
013	8-Kai SEF	
014	16-Kai SEF	[0 to 5 / 5 / 1 Sheet]
015	16-Kai LEF	
016	Other	

6214	Adj Leading Edge Stopper Pressure (D434)	
001	A3 SEF	[-2.5 to +2.5 / 0 / 0.5 mm]
002	B4 SEF	
003	A4 SEF	
004	A4 LEF	
005	B5 SEF	
006	B5 LEF	
007	DLT	
008	LG	
009	LT SEF	
010	LT LEF	
011	8-Kai SEF	
012	16-Kai SEF	
013	16-Kai LEF	
015	Other	

6215	Staple Jogging Repeat Setting (D434)

	[0 to 1/ 0 / 1] [0: Default] [1: High Precision]

6216	Staple Tray Jog Off/On (D434)	
001	A3 SEF 0: ON 1: OFF	
002	B4 SEF 0: ON 1: OFF	
003	A4 SEF 0: ON 1: OFF	
004	A4 LEF 0: ON 1: OFF	
005	A5 SEF 0: ON 1: OFF	
006	A5 LEF 0: ON 1: OFF	
007	B5 SEF 0: ON 1: OFF	
008	B5 LEF 0: ON 1: OFF	
009	DLT 0: ON 1: OFF	
010	LG 0: ON 1: OFF	
011	LT SEF 0: ON 1: OFF	
012	LT LEF 0: ON 1: OFF	
013	HLT SEF 0: ON 1: OFF	
014	HLT LEF 0: ON 1: OFF	
016	Other 0: ON 1: OFF	

6217	Top/Bottom Jog Adjustment (D434)
	[-10 to +10/ 0 / 5 deg.] -10, -5, 0, +5, +10

6218	Booklet Finisher Input Check (D434)
	Displays the signals received from sensors and switches of the booklet finisher.
001	Finisher Entrance Sensor

002	Pre-Stack Paper Sensor
003	Pre-Stack Roller HP Sensor
004	Proof Tray JG HP Sensor
005	Stack JG HP Sensor
006	Proof Tray Exit Sensor
007	Proof Tray Full Sensor
008	Punch Vertical Registration Sensor
009	Punch Side-to-Side Registration Sensor
010	Punch Blade HP Sensor
011	Punch Unit HP Sensor
012	Punch Switch
013	Punch Hopper Full Sensor
014	Punch Set Sensor
015	Stack Plate HP Sensor: Front
016	Stack Plate HP Sensor: Center
017	Stack Plate HP Sensor: Rear
018	Corner Stapler HP Sensor
019	Stapler Rotation HP Sensor: Front
020	Stapler Rotation HP Sensor: Rear
021	Bottom Fence HP Sensor
022	Jogger Fence HP Sensor: Front
023	Jogger Fence HP Sensor: Rear
024	Positioning Roller HP Sensor
025	Top Fence HP Sensor
026	Stack Feed-Out Belt HP Sensor
027	Stapling Tray Paper Sensor

028	Corner Stapler HP Sensor
029	Staple End Sensor
030	Self-Limit Sensor
031	Staple Trimmings Hopper Set Sensor
032	Staple Trimmings Hopper Full Sensor
033	Stapling Tray Entrance Sensor
034	Stack Transport Unit HP Sensor
035	Stack JG HP Sensor
036	Booklet Top Fence HP Sensor
037	Booklet Stapler Clamp Roller HP Sensor
038	Fold Plate Cam HP Sensor
039	Fold Plate HP Sensor
040	Booklet Stapler Side Fence HP Sensor (Front)
041	Booklet Stapler Side Fence HP Sensor (Rear)
042	Booklet Stapler Bottom Fence HP Sensorr
043	Fold Unit Entrance Sensor
044	Booklet Stapler Entrance Sensor
045	Fold Unit Entrance Sensor
046	Booklet Stapler Staple End Sensor: Front
047	Booklet Stapler Staple End Sensor: Rear
048	Booklet Tray Full Sensor: Upper
049	Booklet Tray Full Sensor: Lower
050	Shift Tray Exit Sensor: Long
051	Shift Tray Exit Sensor: Short
052	Exit Guide HP Sensor
053	Drag Roller HP Sensor

054	Shift Tray Upper Limit Switch
055	Shift Tray HP Sensor: Front
056	Shift Tray HP Sensor: Rear
057	Paper Height Sensor: Staple
058	Paper Height Sensor: Shift
059	Paper Height Sensor: Z-Fold
060	Paper Height Sensor: TE
061	Shift Tray Full Sensor: 2500
062	Shift Tray Full Sensor: 1500
063	Shift Tray Full Sensor: 1000
064	Shift Tray Full Sensor: 500
065	Shift Tray Emergency Stop Switch
066	Shift Tray Jogger HP Sensor
067	Shift Jogger Fence Retract HP Sensor
068	Shift Tray Jogger HP Sensor
069	Front Door Switch
070	Punch Type 1
071	Punch Type 2
072	Staple Tray Set Sensor
073	Sub Board Set Sensor
074	Reserved

System SP6-nnn Peripherals: 3

6219	Finisher Output Check (D434)	
001	Entrance Motor	
002	Registration Motor	
003	Proof Tray Vertical Transport Motor	
004	Pre-stack Release Motor	
005	Pre-stack Motor	
006	Shift JG Motor	
007	Stapler JG Motor	
008	Proof Tray Exit Motor	
009	Horizontal Transport Motor	
010	Punch Movement Motor	
011	Punch Switch Motor	
012	Punch Drive Motor	
013	Stapling Tray Entrance Motor	
014	Stack Plate Motor: Front	
015	Stack Plate Motor: Center	
016	Stack Plate Motor: Rear	
017	Punch S-to-S Registration: CIS Lamp	
018	Stapler Rotation Motor	
019	Stapler Movement Motor	
020	Bottom Fence Lift Motor	
021	Front Jogger Fence Motor	
022	Rear Jogger Fence Motor	
023	Positioning Roller Rotation Motor	

024	Positioning Roller Motor	
025	Stack Feed-out Belt Motor	
026	Top Fence Motor	
027	Shutter Solenoid	
028	Booklet Stapler Motor	
029	Stack Transport Motor	
030	Stack JG Motor	
031	Stack Transport Motor	
032	Reserved	
033	Booklet Stapler Clamp Roller Motor	
034	Booklet Stapler Bottom Fence Motor	
035	Booklet Stapler Side Fence Motor	
036	Booklet Stapler Top Fence Motor	
037	Booklet Stapler Motor	
038	Fold Roller Motor	
039	Fold Plate Motor	
040	Shift Tray Exit Motor	
041	Shift Motor	
042	Drag Drive Motor	
043	Drag Roller Motor	
044	Exit Guide Motor	
045	Shift Tray Lift Motor	
046	Shift Tray Jogger Fence Motor	
047	Shift Tray Jogger Fence Retraction Motor	

6220	Finisher Free Run (D434)

001	Finisher Free Run 1
	System free run. A4 LEF at 90 ppm, with simulated staple mode.
002	Finisher Free Run 2
	Free run for durability testing. All motors and solenoids operate to simulate full staple mode run for durability testing.
003	Finisher Free Run 3
	Shipping free run. Simulates standby conditions during shipping.
004	Finisher Free Run 4
	Shift free run. A4 LEF at 90 ppm with simulated output jogging with the shift jogger unit mounted on the side of the finisher.

6222	Registration Buckle Adjustment (D434)	
001	A4 LEF	[-2 to +2 / 0 / 0.5 mm]
002	A5 SEF	
003	A5 LEF	
004	B5 LEF	
005	LT LEF	
006	HLT SEF	
007	HLT LEF	
008	Other	

6309	Input Check: Folder (D454)	
001	Entrance Sensor	
002	Entrance JG HP Sensor	
004	Registration Sensor	
005	Dynamic Roller HP Sensor	
006	Registration Roller HP Sensor	

007	Fold Plate HP Sensor	
008	Jogger Fence HP Sensor	
009	Positioning Roller HP Sensor	
010	1st Stopper Paper Sensor	
011	1st Stopper HP Sensor	
012	2nd Stopper Paper Sensor	
013	2nd Stopper HP Sensor	
014	3rd Stopper Paper Sensor	
015	3rd Stopper HP Sensor	
016	Direct-Send JG HP Sensor	
017	FM6 Pawl HP Sensor	
018	Top Tray Paper Path Sensor	
019	Top Tray Exit Sensor	
020	Horizontal Path Exit Sensor	
021	Top Tray Full Sensor (E)	
023	Front Door Switch (SW1)	
024	Horizontal Path Paper Sensor	
025	Vertical Path Paper Sensor	
026	Bypass Entrance Paper Sensor	
027	Bypass Exit Paper Sensor	

6310	Output Check: Folder (D454)	
001	Horizontal Transport Motor	
002	Top Tray Transport Motor	
003	Top Tray Exit Motor	
004	Dynamic Roller Transport Motor	

005	Registration Roller Transport Motor	
007	Entrance JG Motor	
008	1st Stopper Motor	
009	2nd Stopper Motor	
010	3rd Stopper Motor	
011	Dynamic Roller Lift Motor	
012	Registration Roller Release Motor	
013	Fold Plate Motor	
014	Jogger Fence Motor	
015	Positioning Roller Motor	
016	Direct-Send JG Motor	
017	FM6 Pawl Motor	
018	1st Fold Motor	
019	2nd Fold Motor	
020	Crease Motor	
021	Bypass JG Solenoid	
022	Exit JG Solenoid	
023	Top Tray JG Solenoid	
024	LE Stop Pawl Solenoid	
025	Reverse JG Solenoid	

6311	Folder Free Run (D454)
001	Free Run 1
	System free run. A4 LEF at 90 ppm, with simulated staple mode.
002	Free Run 2

	Free run for durability testing. All motors and solenoids operate to simulate full staple mode run for durability testing.
003	Free Run 3
	Shipping free run. Simulates standby conditions during shipping.
004	Free Run 4
	Shift free run. A4 LEF at 90 ppm with simulated output jogging with the shift jogger unit mounted on the side of the finisher.

6324	Jogger Fence Position Adjust (D454)	
001	A3 SEF	[+1 to 1 /0/ 0.5 mm]
002	B4 SEF	
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
007	12x18	
008	8-Kai	
009	B5 SEF	
019	Other	

6325	Registration Buckle Adjust (D454)

001	A3 SEF	[+1 to 1 /0/ 0.5 mm]
002	B4 SEF	
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
007	12x18	
008	8-Kai	
009	B5 SEF	
019	Other	

6326	Registration Buckle Adjust Select (D454)
	[0: With Buckle Control] [1: Without Buckle Control]

6400	Input Check: Cvr Inserter (B835)
001	1st Paper Feed Sensor
002	2nd Paper Feed Sensor
003	1st Transport Roller
004	2nd Transport Roller
005	1st Vertical Transport Sensor
006	2nd Vertical Transport Sensor
007	Output Sensor
008	Entrance Sensor
009	Exit Sensor
010	1st Pick-up Roller HP Sensor
011	2nd Pick-up Roller HP Sensor

012	1st Upper Limit Sensor
013	2nd Upper Limit Sensor
014	1st Lower Limit Sensor
015	2nd Lower Limit Sensor
016	1st Paper Near End Sensor
017	2nd Paper Near End Sensor
018	1st Paper End Sensor
019	2nd Paper End Sensor
020	1st Paper Length Sensor
021	2nd Paper Length Sensor
022	1st Paper Width Sensor 1
023	1st Paper Width Sensor 2
024	1st Paper Width Sensor 3
025	1st Paper Width Sensor 4
026	1st Paper Width Sensor 5
027	2nd Paper Width Sensor 1
028	2nd Paper Width Sensor 2
029	2nd Paper Width Sensor 3
030	2nd Paper Width Sensor 4
031	2nd Paper Width Sensor 5
032	1st Feed Cover Sensor
033	2nd Feed Cover Sensor
034	Cover Vertical Transport Switch
035	Front Door Open Switch

6401	Output Check: Cvr Inserter

	Turn on the electrical components of the cover interposer tray individually for test purposes.
001	OFF (Stop)
002	1st Pick-up Motor
003	2nd Pick-up Motor
004	1st Paper Feed Motor
005	2nd Paper Feed Motor
006	1st Transport Motor
007	2nd Transport Motor
008	Vertical Transport Motor
009	Horizontal Transport Motor

System SP6-nnn Peripherals: 4

6600	Input Check: Stacker 1	High Capacity Stacker (D447)
001	Entrance Sensor	
002	Shift Tray Exit Sensor	
003	Proof Tray Exit Sensor	
004	Exit Sensor	
005	Transport Sensor	
006	Proof Tray Full Sensor	
007	Shift Tray JG HP Sensor	
008	Proof Tray JG HP Sensor	
009	Shift Tray Roller HP Sensor	
010	---	
011	Front Jogger Fence HP Sensor	
013	Jogger Fence Retraction HP Sensor	
014	LE Stopper HP Sensor	
015	Paper Height Sensor	
016	Shift Tray Paper Sensor	
017	Tray Full Sensor 1: 25%	
018	Tray Full Sensor 2: 50%	
019	Tray Full Sensor 3: 75%	
020	Tray Full Sensor 4: 100%	
021	Tray Low Limit Sensor	
022	Roll Away Cart Set SW	
023	Tray Guard Sensor 1	
024	Tray Guard Sensor 2	

025	Sub Jogger HP Sensor
026	Down Button
027	Jam Button
028	Top DoorSW
029	Front Door SW

6601	Output Check: Stacker 1	High Capacity Stacker (D447)
001	Stop	
002	Entrance Motor	
003	Proof Tray Exit Motor	
004	Shift Exit Motor	
005	Transport Motor	
006	Shift JG Motor	
007	Proof Tray JG Motor	
008	Shift Motor	
009	Front Jogger Fence Motor	
010	Rear Jogger Fence Motor	
011	Jogger Fence Retraction Motor	
013	LE Stopper Motor	
014	Sub Jogger Motor	
015	Tray Lift Motor	
016	Front Door Lock SOL	
017	Fan Motor	
018	Tray Full LED	
019	Jog In Progress LED	
020	Tray Lift LED	

021	Error LED

6602	Jog Fence Adjust: Stacker 1	High Capacity Stacker (D447)
001	A3 SEF	[+2 to -2 / 0 / 0.1 mm]
002	B4 SEF	
003	A4 SEF	
004	A4 LEF	
005	A5 SEF	
006	A5 LEF	
007	B5 SEF	
008	B5 LEF	
009	DLT SEF	
010	LG SEF	
011	LT SEF	
012	LT LEF	
013	HLT SEF	
014	HLT LEF	
015	Other	

6603	LE Stopper Adjust: Stacker 1	High Capacity Stacker (D447)

001	A3 SEF	[+2 to -2 / 0 / 0.1 mm]
002	B4 SEF	
003	A4 SEF	
004	A4 LEF	
005	A5 SEF	
006	A5 LEF	
007	B5 SEF	
008	B5 LEF	
009	DLT SEF	
010	LG SEF	
011	LT SEF	
012	LT LEF	
013	HLT SEF	
014	HLT LEF	
015	Other	

6604	Sub Jog Fence Adjust: Stacker 1	High Capacity Stacker (D447)

001	A3 SEF	[+2 to -2 / 0 / 0.1 mm]
002	B4 SEF	
003	A4 SEF	
004	A4 LEF	
005	A5 SEF	
006	A5 LEF	
007	B5 SEF	
008	B5 LEF	
009	DLT SEF	
010	LG SEF	
011	LT SEF	
012	LT LEF	
013	HLT SEF	
014	HLT LEF	
015	Other	

6605	Free Run: Stacker 1	High Capacity Stacker (D447)
001	Free Run 1	
002	Free Run 2	

6606	Input Check: Stacker 2	High Capacity Stacker (D447)
001	Entrance Sensor	
002	Shift Tray Exit Sensor	
003	Proof Tray Exit Sensor	
004	Exit Sensor	
005	Transport Sensor	
006	Proof Tray Full Sensor	

007	Shift Tray JG HP Sensor
008	Proof Tray JG HP Sensor
009	Shift Tray Roller HP Sensor
011	Front Jogger Fence HP Sensor
013	Jogger Fence Retraction HP Sensor
014	LE Stopper HP Sensor
015	Paper Height Sensor
016	Shift Tray Paper Sensor
017	Tray Full Sensor 1: 25%
018	Tray Full Sensor 2: 50%
019	Tray Full Sensor 3: 75%
020	Tray Full Sensor 4: 100%
021	Tray Low Limit Sensor
022	Roll Away Cart Set SW
023	Tray Guard Sensor 1
024	Tray Guard Sensor 2
025	Sub Jogger HP Sensor
026	Down Button
027	Jam Button
028	Top DoorSW
029	Front Door SW

6607	Output Check: Stacker 2	High Capacity Stacker (D447)
001	Stop	
002	Entrance Motor	
003	Proof Tray Exit Motor	

004	Shift Exit Motor
005	Transport Motor
006	Shift JG Motor
007	Proof Tray JG Motor
008	Shift Motor
009	Front Jogger Fence Motor
010	Rear Jogger Fence Motor
011	Jogger Fence Retraction Motor
013	LE Stopper Motor
014	Sub Jogger Motor
015	Tray Lift Motor
016	Front Door Lock SOL
017	Fan Motor
018	Tray Full LED
019	Jog In Progress LED
020	Tray Lift LED
021	Error LED

6608	Jog Fence Adjust: Stacker 2	High Capacity Stacker (D447)

001	A3 SEF	[-2 to +2 / 0 / 0.1 mm]
002	B4 SEF	
003	A4 SEF	
004	A4 LEF	
005	A5 SEF	
006	A5 LEF	
007	B5 SEF	
008	B5 LEF	
009	DLT SEF	
010	LG SEF	
011	LT SEF	
012	LT LEF	
013	HLT SEF	
014	HLT LEF	
015	Other	

System SP6-nnn Peripherals: 5

6609	LE Stopper Adjust: Stacker 2	High Capacity Stacker (D447)
001	A3 SEF	[-2 to +2 / 0 / 0.1 mm]
002	B4 SEF	
003	A4 SEF	
004	A4 LEF	
005	A5 SEF	
006	A5 LEF	
007	B5 SEF	
008	B5 LEF	
009	DLT SEF	
010	LG SEF	
011	LT SEF	
012	LT LEF	
013	HLT SEF	
014	HLT LEF	
015	Other	

6610	Sub Jog Fence Adjust: Stacker 2	Hi Capacity Stacker (D447)

001	A3 SEF	[-2 to +2 / 0 / 0.1 mm]
002	B4 SEF	
003	A4 SEF	
004	A4 LEF	
005	A5 SEF	
006	A5 LEF	
007	B5 SEF	
008	B5 LEF	
009	DLT SEF	
010	LG SEF	
011	LT SEF	
012	LT LEF	
013	HLT SEF	
014	HLT LEF	
015	Other	

6611	Stacker 2: Free Run	High Capacity Stacker (D447)
001	Free Run 1	
002	Free Run 2	

6612	Stacker 1 Fan Setting	High Capacity Stacker (D447)
	0: ON 1: OFF	

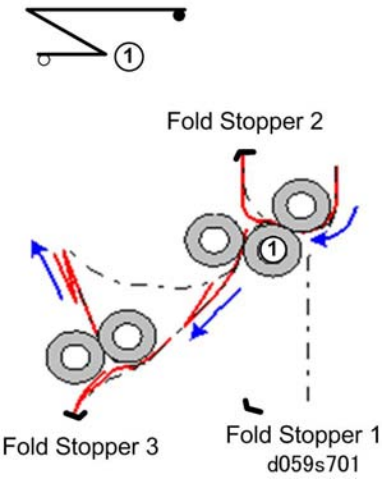
6613	Stacker 2 Fan Setting	High Capacity Stacker (D447)
	0: ON 1: OFF	

6650	Input Check: Trimmer (D455)
001	Entrance Sensor
002	Stopper Sensor
003	Exit Sensor
004	Booklet Sensor 1
005	Booklet Sensor 2
006	Booklet Sensor 3
007	Trimming Blade HP Sensor
008	Cut Position HP Sensor
009	Press Roller HP Sensor
010	Press Stopper HP Sensor
011	Scrap Hopper Full HP Sensor
012	Scrap Hopper HP Sensor
013	Door Switch

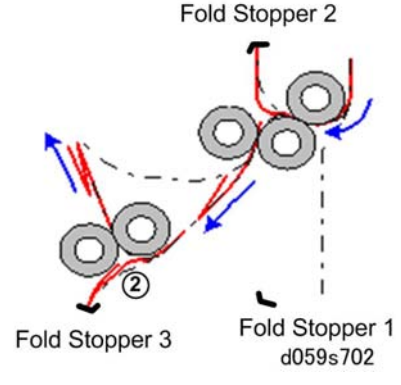
6651	Output Check: Trimmer (D455)
001	Entrance Motor
002	Exit Motor
003	Press Roller Motor
004	Cut Position Motor
005	Press Stopper Motor
006	Tray Motor
007	Trimming Blade Motor

6750	FM1 Z-Fold: Fine Adjust 1st Fold (D454)	FM1 Z-Folding

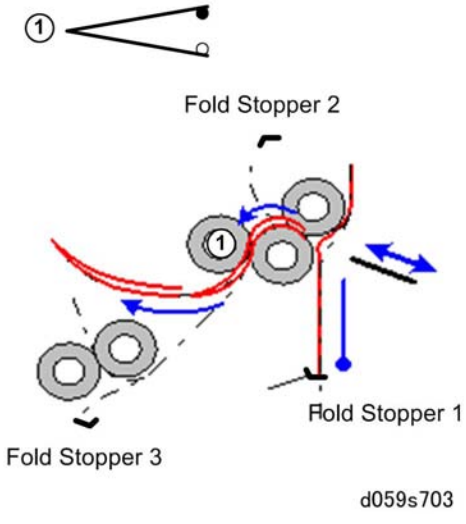
001	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
002	B4 SEF	**FM1: 1st Fold**
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
007	12x18	
008	8-Kai	
019	Other	



6751	FM1 Z-Fold: Fine Adjust 2nd Fold (D454)	FM1 Z-Folding
001	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
002	B4 SEF	**FM1: 2nd Fold**
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
007	12x18	
008	8-Kai	
019	Other	

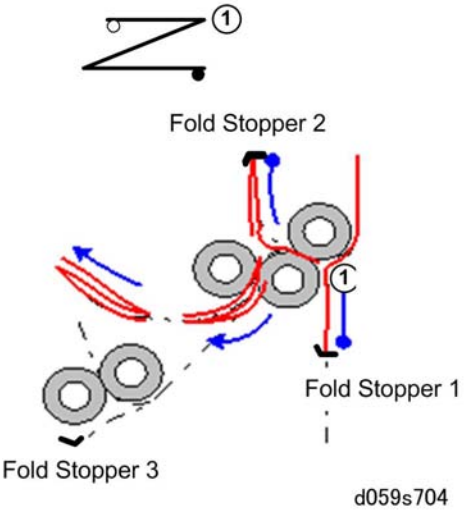


6752	FM2 Equal Halves: Fine Adjust Fold (D454)	FM2 Half Fold

001	A3 SEF	[-4 to +4 / 0 / 0.2 mm] **FM2: 1st Fold** 
002	B4 SEF	
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
007	12x18	
008	8-Kai	
009	B5 SEF	
010	13x19.2	
011	13x19	
012	12.6x19.2	
013	12.6x18.5	
014	13x18	
015	SR A3	
016	SR A4	
017	226x310	
018	310x432	
019	Other	

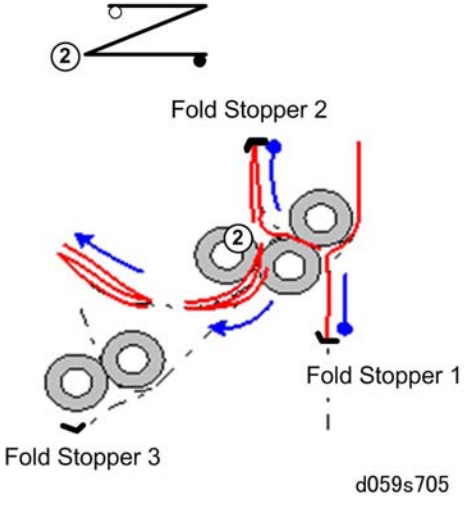
6753	FM3 Equal 3rds: Fine Adjust 1st (D454)	FM3 Letter Fold-out

001	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
002	B4 SEF	**FM3: 1st fold**
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
007	12x18	
008	8-Kai	
009	B5 SEF	
019	Other	



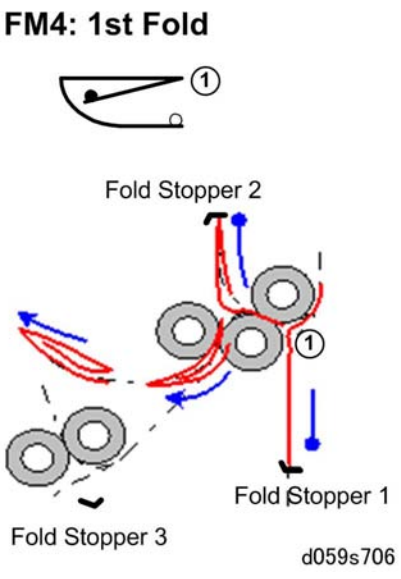
6754	FM3 Equal 3rds: Fine Adjust 2nd (D454)	FM3 Letter Fold-out

001	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
002	B4 SEF	**FM3: 2nd fold**
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
007	12x18	
008	8-Kai	
009	B5 SEF	
019	Other	

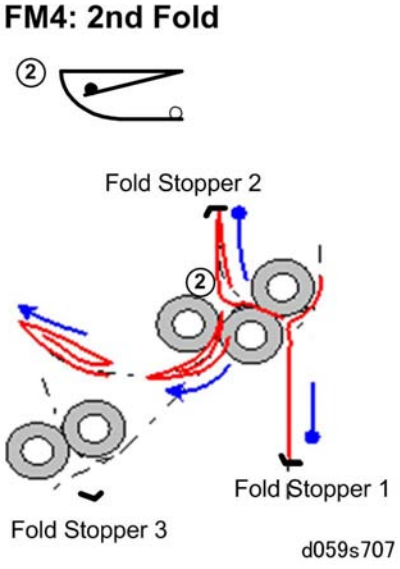


6755	FM4 3rds 1 Flap: Fine Adjust 1st (D454)	FM4 Letter Fold-in

001	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
002	B4 SEF	
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
007	12x18	
008	8-Kai	
009	B5 SEF	
019	Other	

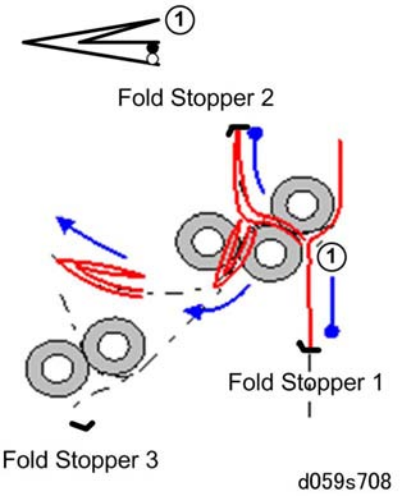


6756	FM4 3rds 1 Flap: Fine Adjust 2nd (D454)	FM4 Letter Fold-in
001	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
002	B4 SEF	
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
007	12x18	
008	8-Kai	
009	B5 SEF	
019	Other	

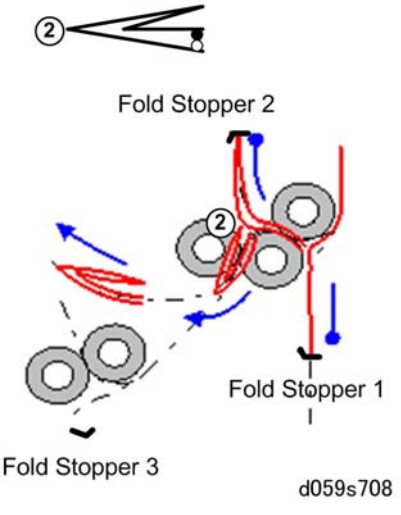


6757	FM5 4ths "V": Fine Adjust 1st (D454)	FM5 Double Parallel Fold

001	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
002	B4 SEF	**FM5: 1st Fold**
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
007	12x18	
008	8-Kai	
009	B5 SEF	
019	Other	

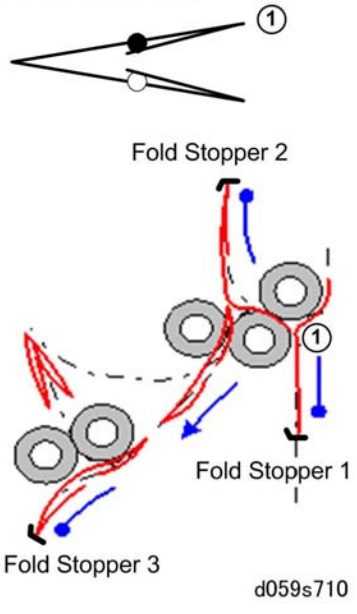


6758	FM5 4ths "V": Fine Adjust 2nd (D454)		FM5 Double Parallel
001	A3 SEF	[-4 to +4 / 0 / 0.2 mm]	
002	B4 SEF	**FM5: 2nd Folds**	
003	A4 SEF		
004	DLT SEF		
005	LG SEF		
006	LT SEF		
007	12x18		
008	8-Kai		
009	B5 SEF		
019	Other		

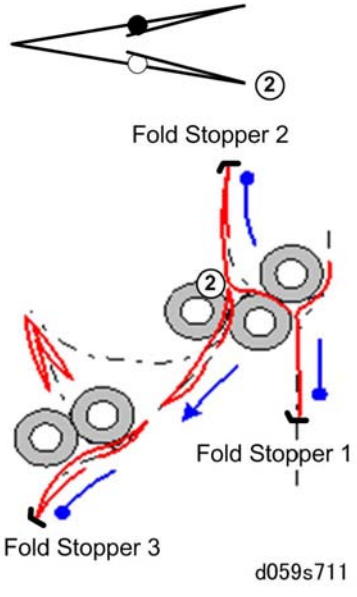


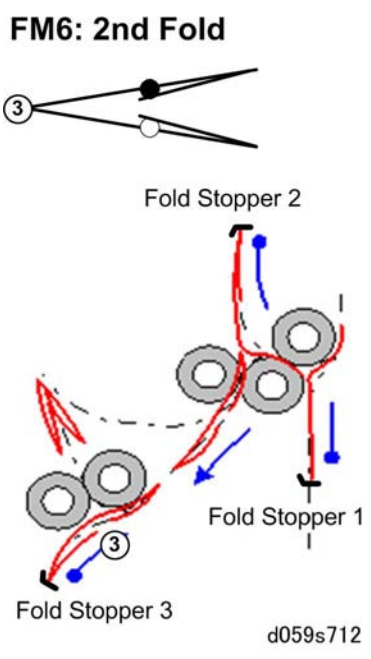
6759	FM6 4ths 2 Flap: Fine Adjust 1st (D454)	FM6 Gate Fold

001	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
002	B4 SEF	**FM6: 1st Fold**
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
008	8-Kai	
009	B5 SEF	
019	Other	



6760	FM6 4ths 2 Flap: Fine Adjust 2nd (D454)	FM6 Gate Fold
001	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
002	B4 SEF	**FM6: 2nd Fold**
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
008	8-Kai	
009	B5 SEF	
019	Other	



6761	FM6 4ths 2 Flap: Fine Adjust 3rd (D454)	FM6 Gate Fold
001	A3 SEF	[-4 to +4 / 0 / 0.2 mm]
002	B4 SEF	
003	A4 SEF	
004	DLT SEF	
005	LG SEF	
006	LT SEF	
007	12x18	
008	8-Kai	
009	B5 SEF	
019	Other	

6800	Sheet Conversion (Thick Paper)
	Selects the count type for stapling the thick paper. The machine calculates one sheet of thick paper as three sheets of plain paper by default. [1 to 3 / 3 /1] 1: 1 sheet 2: 2 sheets 3: 3 sheets

6830	Extra Staples **DFU**

	More than the standard number of corner staples can be loaded. This SP recognizes the maximum number of staples (This Setting + Standard Number). • If the number of the maximum for staples is increased, and the mechanical warranty of the unit can be guaranteed, then the setting can take effect without changing the controller software. • However, assurance that mechanical performance can be guaranteed is required before changing the setting to increase the staple load for more than the maximum in the feed/exit specifications. Raising this setting without quality assurance could damage the machine.
001	0 to 50 (Initial: 0) [0 to 50 / 0 / 1]
002	0 to 50 (Initial: 0) [0 to 50 / 0 / 1]

6890	Punch Function Enabled (Z-Fold)
	Permission for punching thick (tab) paper is forbidden and it is up to the service technician to pass this on to the customer. 0: Simultaneous use forbidden 1: Simultaneous use allowed

6980	Punch Enable Setting for 135 ppm
	Enables punching with the M004 (135 ppm). The default for this SP is OFF. [0 to 1 / 0 / 1] [*OFF] [1:ON]

System SP7-nnn Data Logs: 1

7001	Main Motor Operation Time
	Displays the total drum rotation time in minutes.

7401	Total SC Counter
	Displays the total number of SCs logged.

7403	SC History
	Displays the latest 10 service call codes
001	Latest
002	Latest 1
003	Latest 2
004	Latest 3
005	Latest 4
006	Latest 5
007	Latest 6
008	Latest 7
009	Latest 8
010	Latest 9

7502	Total Paper Jam Counter
	Displays the total number of paper jams.

7504	Paper Jam Loc	Main Machine

Displays the list of possible locations where a jam could have occurred. These jams are caused by the failure of a sensor to activate. These are jams when the paper does not activate the sensor.

- Paper late error: Paper failed to arrive at prescribed time.
- Paper lag error: Paper failed to leave at prescribed time.

001	At Power On	
003	1st Tray Feed Sensor: Late Error	
004	2nd Tray Feed Sensor: Late Error	
005	3rd Tray Feed Sensor: Late Error	
006	4th Tray Feed Sensor: Late Error	
007	5th Tray Feed Sensor: Late Error	
008	6th Tray Feed Sensor: Late Error	
009	7th Tray Feed Sensor: Late Error	
010	1st Tray Transport Sensor: Late Error	
011	2nd Tray Transport Sensor: Late Error	
012	3rd Tray Transport Sensor: Late Error	
013	4th Tray Transport Sensor: Late Error	
014	5th Tray Transport Sensor: Late Error	
015	6th Tray Transport Sensor: Late Error	
016	7th Tray Transport Sensor: Late Error	
017	LCIT Relay Sensor: Late Error	
018	LCIT Exit Sensor: Late Error	
019	Paper Bank Relay Sensor: Late Error	
020	Registration Sensor: Late Error	
021	Paper Cooling Pipe Exit Sensor: Late Error	
022	Exit Sensor: Late Error	
023	Duplex Entrance Sensor: Late Error	

024	Duplex Transport Sensor 1: Late Error	
025	Duplex Transport Sensor 2: Late Error	
026	Duplex Transport Sensor 3: Late Error	
027	Duplex Inverter Sensor: Late Error	
028	Duplex Inverter Relay Sensor: Late Error	
053	1st Tray Feed Sensor: Lag Error	
054	2nd Tray Feed Sensor: Lag Error	
055	3rd Tray Feed Sensor: Lag Error	
056	4th Tray Feed Sensor: Lag Error	
057	5th Tray Feed Sensor: Lag Error	
058	6th Tray Feed Sensor: Lag Error	
059	7th Tray Feed Sensor: Lag Error	
060	1st Transport Sensor: Lag Error	
061	2nd Transport Sensor: Lag Error	
062	3rd Transport Sensor: Lag Error	
063	4th Transport Sensor: Lag Error	
064	5th Transport Sensor: Lag Error	
065	6th Transport Sensor: Lag Error	
066	7th Transport Sensor: Lag Error	
067	LCIT Relay Sensor: Lag Error	
068	LCIT Exit Sensor: Lag Error	
069	Paper Bank Relay Sensor: Lag Error	
070	Registration Sensor: Lag Error	
071	Paper Cooling Pipe Exit Sensor: Lag Error	
072	Exit Sensor: Lag Error	
073	Duplex Entrance Sensor: Lag Error	

074	Duplex Transport Sensor 1: Lag Error	
075	Duplex Transport Sensor 2: Lag Error	
076	Duplex Transport Sensor 3: Lag Error	
077	Duplex Inverter Sensor: Lag Error	
078	Duplex Inverter Relay Sensor: Lag Error	
093	Entrance Sensor: Late Error (D457)	
094	Entrance Sensor: Lag Error (D457)	
095	Exit Sensor: Late Error (D457)	
096	Exit Sensor: Lag Error (D457)	
099	Double Feed	

7504	Paper Jam Loc	Finisher (B830)
101	Entrance: Late Error (B830)	
102	Entrance: Lag Error (B830)	
103	Proof Tray Exit: Late Error (B830)	
104	Proof Tray Exit: Lag Error (B830)	
105	Shift Tray Exit: Late Error (B830)	
106	Shift Tray Exit: Lag Error (B830)	
107	Staple Tray Exit: Late Error (B830)	
108	Staple Tray Exit: Lag Error (B830)	
109	Pre-Stack Tray: Late Error (B830)	
110	Pre-Stack Tray: Lag Error (B830)	
111	Output (B830)	
112	Drive Train (B830)	
113	Shift Tray Lift Drive Train (B830)	
114	Jogger Fence Drive Train (B830)	

115	Shift Tray Drive Train (B830)	
116	Stapler Drive Train (B830)	
117	Output Drive Train (B830)	
118	Punch Drive Train (B830)	
119	Z-Fold Drive Train (B830)	
120	Pre-Stacker Drive Train (B830)	
121	Main Machine Setting Incorrect (B830)	

7504	Paper Jam Loc	CIT (B835)
130	1st Feed Sensor: Late Error (B835)	
131	1st Feed Sensor: Lag Error (B835)	
132	2nd Feed Sensor: Late Error (B835)	
133	2nd Feed Sensor: Lag Error (B835)	
134	1st Transport Sensor: Late Error (B835)	
135	1st Transport Sensor: Lag Error (B835)	
136	2nd Transport Sensor: Late Error (B835)	
137	2nd Transport Sensor: Lag Error (B835)	
138	1st Ver. Transport Sn: Late Error (B835)	
139	1st Ver. Transport Sn: Lag Error (B835)	
140	2nd Ver. Transport Sn: Late Error (B835)	
141	2nd Ve. Transport Sn: Lag Error (B835)	
142	Vertical Exit Sensor: Late Error (B835)	
143	Vertical Exit Sensor: Lag Error (B835)	
144	Entrance Sensor: Late Error (B835)	
145	Entrance Sensor: Lag Error (B835)	
146	Interposer Exit Sensor: Late Error (B835)	

147	Interposer Exit Sensor: Lag Error (B835)	
148	1st Lift Motor Drive Train (B835)	
149	2nd Lift Motor Drive Train (B835)	
150	1st Pick-up Motor Drive Train (B835)	
151	2nd Pick-up Motor Drive Train (B835)	

7504	Paper Jam Loc	High Capacity Stacker (D447)
240	Entrance: Late Error (Stacker 1)	
241	Entrance: Lag Error (Stacker 1)	
242	Proof Tray Exit: Late Error (Stacker 1)	
243	Proof Tray Exit: Lag Error (Stacker 1)	
244	Stack Tray Exit: Late Error (Stacker 1)	
245	Stack Tray Exit: Lag Error (Stacker 1)	
246	Relay Path: Late Error (Stacker 1)	
247	Relay Path: Lag Error (Stacker 1)	
248	Straight-Through Exit: Late Error(Stacker 1)	
249	Straight-Through Exit: Lag Error(Stacker 1)	
250	Shift JG Motor (Stacker 1)	
251	Proof Tray JG Motor (Stacker 1)	
252	Shift Motor (Stacker 1)	
253	Front Jogger Fence Motor (Stacker 1)	
254	Rear Jogger Fence Motor (Stacker 1)	
255	Front Jogger Fence Retraction Mtr(Stacker 1)	

7506	Jam Count by Paper Size
	Displays the total number of jams by paper size.

005	A4 LEF	Displays the total number of jams by paper size.
006	A5 LEF	
014	B5 LEF	
038	LT LEF	
044	HLT LEF	
132	A3	
133	A4 SEF	
134	A5 SEF	
141	B4 SEF	
142	B5 SEF	
160	DLT SEF	
164	LG SEF	
166	LT SEF	
172	HLT SEF	
255	Others	

7507	Plotter Jam History

001	Last	Displays the jam history (the most recent 10 jams) Sample Display: CODE:007 SIZE:05h TOTAL:0000334 DATE:Mon Mar 15 11:44:50 2000 where: CODE is the SP7504-* number (see above. SIZE is the ASAP paper size code in hex. TOTAL is the total jam error count DATE is the date the jams occurred.
002	Latest 1	
003	Latest 2	
004	Latest 3	
005	Latest 4	
006	Latest 5	
007	Latest 6	
008	Latest 7	
009	Latest 8	
010	Latest 9	

Size	Code	Size	Code	Size	Code
A4 (S)	05	A3 (L)	84	DLT (L)	A0
A5 (S)	06	A4 (L)	85	LG (L)	A4
B5 (S)	0E	A5 (L)	86	LT (L)	A6
LT (S)	26	B4 (L)	8D	HLT (L)	AC
HLT (S)	2C	B5 (L)	8E	Others	FF

System SP7-nnn Data Logs: 2

7509	Paper Jam Loc	
001	Rear Jogger Fence Retraction Mtr (Stacker 1)	
002	Sub Jogger Motor (Stacker 1)	
003	LE Stopper Motor (Stacker 1)	
004	Tray Lift Motor (Stacker 1)	
005	Main Machine Setting Incorrect (Stacker 1)	
015	Entrance: Late Error (Stacker 2)	
016	Entrance: Lag Error (Stacker 2)	
017	Proof Tray Exit: Late Error (Stacker 2)	
018	Proof Tray Exit: Lag Error (Stacker 2)	
019	Stack Tray Exit: Late Error (Stacker 2)	
020	Stack Tray Exit: Lag Error (Stacker 2)	
021	Relay Path: Late Error (Stacker 2)	
022	Relay Path: Lag Error (Stacker 2)	
023	Straight-Through Path: Late Error(Stacker 2)	
024	Straight-Through Path: Lag Error(Stacker 2)	
025	Shift JG Motor (Stacker 2)	
026	Proof JG Motor (Stacker 2)	
027	Shift Motor (Stacker 2)	
028	Front Jogger Fence Motor (Stacker 2)	
029	Rear Jogger Fence Motor (Stacker 2)	
030	Jogger Front Retraction Motor (Stacker 2)	
031	Jogger Rear Retraction Motor (Stacker 2)	
032	Sub Jogger Motor (Stacker 2)	

033	LE Stopper Motor (Stacker 2)	
034	Tray Lift Motor (Stacker 2)	
035	Main Machine Setting Incorrect (Stacker 2)	
145	Entrance: Late Error (D434)	
146	Entrance: Lag Error (D434)	
147	Proof Tray Exit: Late Error (D434)	
148	Proof Tray Exit: Lag Error (D434)	
149	Shift Tray Exit: Late Error (D434)	
150	Shift Tray Exit: Lag Error (D434)	
151	Staple Tray Exit: Late Error (D434)	
152	Staple Tray Exit: Lag Error (D434)	
153	Pre-Stack Tray: Late Error (D434)	
154	Pre-Stack Tray: Lag Error (D434)	
155	Output (D434)	
156	Booklet Stapler: Late (D434)	
157	Booklet Stapler: Lag (D434)	
158	Booklet Stapler Exit: Late (D434)	
159	Booklet Stapler Exit: Lag (D434)	
160	Paper Path (D434)	
161	Shift Tray Lift Drive Train (D434)	
162	Jogger Fence Drive Train (D434)	
163	Shift Drive Train (D434)	
164	Stapler Drive Train (D434)	
165	Stack Output Drive Train (D434)	
166	Punch Drive Train (D434)	
167	Jogger System (D434)	

168	Pre-Stacker Drive Train(D434)	
169	Booklet Path (D434)	
170	Booklet Stapling System (D434)	
171	Folding System (D434)	
172	For Debugging: Cause Unknown (D434)	
173	Main Machine Setting Incorrect (D434)	
175	Entrance Sensor: Late Error (D447)	
176	Entrance Sensor: Lag Error (D447)	
177	Skew Sensor: Late Error (D447)	
178	Skew Sensor: Lag Error (D447)	
179	Exit Sensor: Late Error (D447)	
180	Exit Sensor: Lag Error (D447)	
181	Trimming Blade Motor Lock (D447)	
182	Cut Position Motor (D447)	
183	Press Roller (D447)	
184	Press/Stopper Roller (D447)	
185	Tray Motor (D447)	
195	Entrance: Late Jam (D454)	
196	Entrance: Lag Jam (D454)	
197	Top Tray Exit: Late Jam (D454)	
198	Top Tray Exit: Lag Jam (D454)	
199	Straight-Through Exit: Late Jam (D454)	
200	Straight-Through Exit: Lag Jam (D454)	
201	1st Stopper: Late Jam (D454)	
202	1st Stopper: Lag Jam (D454)	
203	2nd Stopper: Late Jam (D454)	

204	2nd Stopper: Lag Jam (D454)	
205	3rd Stopper: Late Jam (D454)	
206	3rd Stopper: Lag Jam (D454)	
207	Skew Correction Jam (D454)	
208	Top Tray Transport Jam (D454)	
209	Entrance/Top Tray JG Motor Error (D454)	
210	Entrance/Fold JG Motor Error (D454)	
211	1st Stopper Motor Error (D454)	
212	2nd Stopper Motor Error (D454)	
213	3rd Stopper Motor Error (D454)	
214	Dynamic Roller Transport Motor Error (D454)	
215	Registration Roller Release Motor (D454)	
216	Fold Plate Motor Error (D454)	
217	Jogger Fence Motor Jam (D454)	
218	Positioning Roller Motor Jam (D454)	
219	FM2 Direct Send Motor Error (D454)	
220	FM6 Pawl Motor (D454)	

7617	Parts PM Counter Display **Japan Only**

7618	Parts PM Counter Reset **Japan Only**

7621	Display PM Count
	0 to 9999 9999
7622	Clear PM Count
	This SP clears the PM counts for the components below.
7623	Unit PM Target

	0 to 9999 9999
001	#Development Unit
002	Developer
003	#Drum Unit
004	Drum Pick-off Pawls
005	#Drum Cleaning Unit
006	Cleaning Blade
007	Cleaning Brush
008	Drum Cleaning Unit Filter
009	#Charge Unit
010	Grid Plate
011	Charge Corona Wire
012	Cleaning Pad
013	Cushion
014	#Pre-Charge Unit
015	Pre-Charge Corona Wire
016	Pre-Charge Grid Plate
017	#Fusing Unit
018	Hot Roller Strippers
019	Hot Roller
020	Pressure Roller
021	#Fusing Cleaning Unit
022	Web Roll
023	Web Cleaning Roll
024	Web Brake Pad
025	Toner Suction Bottle

026	Toner Suction Motor
027	Tray 1 Roller Assembly
028	Feed Roller – Tray 1
029	Pick-up Roller – Tray 1
030	Separation Roller – Tray 1
031	Tray 2 Roller Assembly
032	Feed Roller – Tray 2
033	Pick-up Roller – Tray 2
034	Separation Roller – Tray 2
035	Tray 3 Roller Assembly
036	Feed Roller – Tray 3
037	Pick-up Roller – Tray 3
038	Separation Roller – Tray 3
040	Transfer Belt
041	Transfer Belt Cleaning Blade
042	Toner Filter
047	Tray 4 Roller Assembly
048	Feed Roller – Tray 4
049	Pick-up Roller – Tray 4
050	Separation Roller – Tray 4
051	Tray 5 Roller Assembly
052	Feed Roller – Tray 5
053	Pick-up Roller – Tray 5
054	Separation Roller – Tray 5
055	Tray 6 Roller Assembly
056	Feed Roller – Tray 6

057	Pick-up Roller – Tray 6
058	Separation Roller – Tray 6
059	Tray 7 Roller Assembly
060	Feed Roller – Tray 7
061	Pick-up Roller – Tray 7
062	Separation Roller – Tray 7

7624	Part Replacement Operation ON/OFF
001	#Development Unit
002	Developer
003	#Drum Unit
004	Drum Pick-off Pawls
005	#Drum Cleaning Unit
006	Cleaning Blade
007	Cleaning Brush
008	Drum Cleaning Unit Filter
009	#Charge Unit
010	Grid Plate
011	Charge Corona Wire
012	Cleaning Pad
013	Cushion
014	#Pre-Charge Unit
015	Pre-Charge Corona Wire
016	Pre-Charge Grid Plate
017	#Fusing Unit
018	Hot Roller Strippers

019	Hot Roller
020	Pressure Roller
021	#Fusing Cleaning Unit
022	Web Roll
023	Web Cleaning Roll
024	Web Brake Pad
025	Toner Suction Bottle
026	Toner Suction Motor
027	Tray 1 Roller Assembly
028	Feed Roller – Tray 1
029	Pick-up Roller – Tray 1
030	Separation Roller – Tray 1
031	Tray 2 Roller Assembly
032	Feed Roller – Tray 2
033	Pick-up Roller – Tray 2
034	Separation Roller – Tray 2
035	Tray 3 Roller Assembly
036	Feed Roller – Tray 3
037	Pick-up Roller – Tray 3
038	Separation Roller – Tray 3
040	Transfer Belt
041	Transfer Belt Cleaning Blade
042	Toner Filter
047	Tray 4 Roller Assembly
048	Feed Roller – Tray 4
049	Pick-up Roller – Tray 4

050	Separation Roller – Tray 4
051	Tray 5 Roller Assembly
052	Feed Roller – Tray 5
053	Pick-up Roller – Tray 5
054	Separation Roller – Tray 5
055	Tray 6 Roller Assembly
056	Feed Roller – Tray 6
057	Pick-up Roller – Tray 6
058	Separation Roller – Tray 6
059	Tray 7 Roller Assembly
060	Feed Roller – Tray 7
061	Pick-up Roller – Tray 7
062	Separation Roller – Tray 7
063	Toner Collection Unit

System SP7-nnn Data Logs: 3

7625	Pg Counter History Latest 1
	0 to 9999 9999
7626	Pg Count History Latest 2
	0 to 9999 9999
7627	Pg Count History Latest 3
	0 to 9999 9999
001	#Development Unit
002	Developer
003	#Drum Unit
004	Drum Pick-off Pawls
005	#Drum Cleaning Unit
006	Cleaning Blade
007	Cleaning Brush
008	Drum Cleaning Unit Filter
009	#Charge Unit
010	Grid Plate
011	Charge Corona Wire
012	Cleaning Pad
013	Cushion
014	#Pre-Charge Unit
015	Pre-Charge Corona Wire
016	Pre-Charge Grid Plate
017	#Fusing Unit
018	Hot Roller Strippers

019	Hot Roller
020	Pressure Roller
021	#Fusing Cleaning Unit
022	Web Roll
023	Web Cleaning Roll
024	Web Brake Pad
025	Toner Suction Bottle
026	Toner Suction Motor
027	Tray 1 Roller Assembly
028	Feed Roller – Tray 1
029	Pick-up Roller – Tray 1
030	Separation Roller – Tray 1
031	Tray 2 Roller Assembly
032	Feed Roller – Tray 2
033	Pick-up Roller – Tray 2
034	Separation Roller – Tray 2
035	Tray 3 Roller Assembly
036	Feed Roller – Tray 3
037	Pick-up Roller – Tray 3
038	Separation Roller – Tray 3
040	Transfer Belt
041	Transfer Belt Cleaning Blade
042	Toner Filter
047	Tray 4 Roller Assembly
048	Feed Roller – Tray 4
049	Pick-up Roller – Tray 4

050	Separation Roller – Tray 4
051	Tray 5 Roller Assembly
052	Feed Roller – Tray 5
053	Pick-up Roller – Tray 5
054	Separation Roller – Tray 5
055	Tray 6 Roller Assembly
056	Feed Roller – Tray 6
057	Pick-up Roller – Tray 6
058	Separation Roller – Tray 6
059	Tray 7 Roller Assembly
060	Feed Roller – Tray 7
061	Pick-up Roller – Tray 7
062	Separation Roller – Tray 7

7628	Clear PM Count
	Clears counts for all PM parts or on those PM parts whose counts have exceeded their services lives.
001	Clear Exceeded Counts
002	Reset All Counts

7801	ROM No./Firmware Version
	Displays the ROM versions for the items displayed on the operation panel screen.

7803	PM Counter Display
	Displays the PM counter since the last PM.

7804	PM Counter Reset
	Resets the PM counter.

7807	SC/Jam Counter Reset
	Resets the SC and jam counters. To reset, press [1]. This SP does not reset the jam history counters: SP7-507, SP7-508.

7832	Self-Diagnose Result Display
	Push [#] to display a list of error codes. Nothing is displayed if no errors have occurred.

7836	Total Memory Size
	Displays the contents of the memory on the controller board.

7901	Assert Info. **DFU**	
001	Filename	Used for debugging.
002	Number of Lines	
003	Location	

7940	Drive Distance: End Std Value
	Displays the standard value of expected service life measured by distance (meters). Default setting of service life for each component appears on the screen.
7942	Drive Distance % Counter
	Displays expiration of service measured by percent (%).
7944	Drive Distance Counter
	Displays the expiration of service measured by distance (meters).
001	#Development Unit
002	Developer

003	#Drum Unit
004	Drum Pick-off Pawls
005	#Drum Cleaning Unit
006	Cleaning Blade
007	Cleaning Brush
008	Drum Cleaning Unit Filter
009	#Charge Unit
010	Grid Plate
011	Charge Corona Wire
012	Cleaning Pad
013	Cushion
014	#Pre-Charge Unit
015	Pre-Charge Corona Wire
016	Pre-Charge Grid Plate
017	#Fusing Unit
018	Hot Roller Strippers
019	Hot Roller
020	Pressure Roller
039	#Transfer Unit
040	Transfer Belt
041	Transfer Belt Cleaning Blade
042	Toner Filter

7954	Consumption Rate Counter
	Shows the consumption rate, expressed as a percentage (%).
001	#Development Unit

002	Developer
003	#Drum Unit
004	Drum Pick-off Pawls
005	#Drum Cleaning Unit
006	Cleaning Blade
007	Cleaning Brush
008	Drum Cleaning Unit Filter
009	#Charge Unit
010	Grid Plate
011	Charge Corona Wire
012	Cleaning Pad
013	Cushion
014	#Pre-Charge Unit
015	Pre-Charge Corona Wire
016	Pre-Charge Grid Plate
017	#Fusing Unit
018	Hot Roller Strippers
019	Hot Roller
020	Pressure Roller
021	#Fusing Cleaning Unit
022	Web Roll
023	Web Cleaning Roll
024	Web Brake Pad
025	Toner Suction Bottle
026	Toner Suction Motor
027	Tray 1 Roller Assembly

028	Feed Roller – Tray 1
029	Pick-up Roller – Tray 1
030	Separation Roller – Tray 1
031	Tray 2 Roller Assembly
032	Feed Roller – Tray 2
033	Pick-up Roller – Tray 2
034	Separation Roller – Tray 2
035	Tray 3 Roller Assembly
036	Feed Roller – Tray 3
037	Pick-up Roller – Tray 3
038	Separation Roller – Tray 3
040	Transfer Belt
041	Transfer Belt Cleaning Blade
042	Toner Filter
047	Tray 4 Roller Assembly
048	Feed Roller – Tray 4
049	Pick-up Roller – Tray 4
050	Separation Roller – Tray 4
051	Tray 5 Roller Assembly
052	Feed Roller – Tray 5
053	Pick-up Roller – Tray 5
054	Separation Roller – Tray 5
055	Tray 6 Roller Assembly
056	Feed Roller – Tray 6
057	Pick-up Roller – Tray 6
058	Separation Roller – Tray 6

059	Tray 7 Roller Assembly
060	Feed Roller – Tray 7
061	Pick-up Roller – Tray 7
062	Separation Roller – Tray 7

7989	Trim Count (Trimmer)
	Displays the number of cuts performed with the Trimmer Unit (D455) attached to the left side of the Booklet Finisher (D434).

7999	Engine Debug Log Switch **DFU**			
	This SP sets the debug log switch for one of the settings listed below. [0 to 100/0/1]			
	00	Rapi Commands	10	Toner Supply Motor
	01	Queue Check	11	Semiphore
	02	Plotter Queue	12	Registration REP
	03	Scanner Queue	13	Exit REP
	04	Block I/F	14	Transfer SC
	05	IPU I/F	15	Drum Charge SC
	06	ASAP I/F *1	16	Charge Grid SC
	07	Task	17	Development Bias SC
	08	Memory Pool	18	LCT (B832) Tray Lift
	09	Watchdog Cycle	19	Serial Signal Send/Receive

System SP8-nnn: Data Log2

Previx	WHAT IT MEANS	
T:	Total: (Grand Total).	Grand total of the items counted for all applications.
P:	Print application.	Totals (pages, jobs, etc.) executed for each application when the job was not stored on the document server.
O:	Other applications (external network applications, for example)	Refers to network applications such as Web Image Monitor. Utilities developed with the SDK (Software Development Kit) will also be counted with this group in the future.

- The Group 8 SP codes are limited to 17 characters, forced by the necessity of displaying them on the small LCDs of printers and faxes that also use these SPs.
- Read over the list of abbreviations below and refer to it again if you see the name of an SP that you do not understand.

Key for Abbreviations

ABBREVIATION	WHAT IT MEANS
/	"By", e.g. "T:Jobs/Apl" = Total Jobs "by" Application
>	More (2> "2 or more", 4> "4 or more"
AddBook	Address Book
Apl	Application
B/W	Black & White
Bk	Black
C	Cyan
ColCr	Color Create
ColMode	Color Mode
Comb	Combine
Comp	Compression
Deliv	Delivery

ABBREVIATION	WHAT IT MEANS
DesApl	Designated Application. The firmware application used to store the job on the document server, for example.
Dev Counter	Development Count, no. of pages developed.
Dup, Duplex	Duplex, printing on both sides
Emul	Emulation
FC	Full Color
FIN	Post-print processing, i.e. finishing (punching, stapling, etc.)
Full Bleed	No Margins
GenCopy	Generation Copy Mode
GPC	Get Print Counter. For jobs 10 pages or less, this counter does not count up. For jobs larger than 10 pages, this counter counts up by the number that is in excess of 10 (e.g., for an 11-page job, the counter counts up 11-10 =1)
IFax	Internet Fax
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.
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
PJob	Print Jobs
Ppr	Paper

ABBREVIATION	WHAT IT MEANS
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
WSD	Web Services Devices
YMC	Yellow, Magenta, Cyan
YMCK	Yellow, Magenta, Cyan, Black

Note

- All of the Group 8 SPs are reset with SP5 801 1 Memory All Clear, or the Counter Reset SP7 808.

8001	T:Total Jobs	These SPs count the number of times each application is used to do a job. [0 to 9999999/ 0 / 1]
8004	P:Total Jobs	

- These SPs reveal the number of times an application is used, not the number of pages processed.
- When an application is opened for image input or output, this counts as one job.

- Interrupted jobs (paper jams, etc.) are counted, even though they do not finish.
- Only jobs executed by the customer are counted. Jobs executed by the customer engineer using the SP modes are not counted.
- When using secure printing (when a password is required to start the print job), the job is counted at the time when either "Delete Data" or "Specify Output" is specified.
- When the customer prints a report (user code list, for example), the O: counter increments.

8061	T:FIN Jobs	
	[0 to 9999999/ 0 / 1] These SPs total the finishing methods. The finishing method is specified by the application.	
8064	P:FIN Jobs	
	[0 to 9999999/ 0 / 1] These SPs total finishing methods for print jobs only. The finishing method is specified by the application.	
8067	O:FIN Jobs	
	[0 to 9999999/ 0 / 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.
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 6.)
007	Other	Reserved. Not used.

8071	T:Jobs/PGS		
	[0 to 9999999/ 0 / 1] These SPs count the number of jobs broken down by the number of pages in the job, regardless of which application was used.		
8074	P:Jobs/PGS		
	[0 to 9999999/ 0 / 1] These SPs count and calculate the number of print jobs by size based on the number of pages in the job.		
8077	O:Jobs/PGS		
	[0 to 9999999/ 0 / 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.		
001	1 Page	008	21 to 50 Pages
002	2 Pages	009	51 to 100 Pages
003	3 Pages	010	101 to 300 Pages
004	4 Pages	011	301 to 500 Pages
005	5 Pages	012	501 to 700 Pages
006	6 to 10 Pages	013	701 to 1000 Pages
007	11 to 20 Pages	014	1001 to Pages

- 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.
- When printing the first page of a job from within the document server screen, the page is counted.

8381	T: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/ 0 / 1]
8384	P:Total PrtPGS	
8387	O:Total PrtPGS	

- When the A3/DLT double count function is switched on with SP5104, 1 A3/DLT page is counted as 2.
- When several documents are merged for a print job, the number of pages stored 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 copier jam.

8391	LSize PrtPGS
	[0 to 9999999/ 0 / 1] These SPs count pages printed on paper sizes A3/DLT and larger. **Note:** In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the machine.

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/ 0 / 1]

8421	T:PrtPGS/Dup Comb
	[0 to 9999999/ 0 / 1] These SPs count by binding and combine, and n-Up settings the number of pages processed for printing. This is the total for all applications.

8424	P:PrtPGS/Dup Comb	
	[0 to 9999999/ 0 / 1] These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the printer application.	
8427	O:PrtPGS/Dup Comb	
	[0 to 9999999/ 0 / 1] These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by Other applications	
001	Simplex> Duplex	
002	Duplex> Duplex	
003	Book> Duplex	
004	Simplex Combine	
005	Duplex Combine	
006	2>	2 pages on 1 side (2-Up)
007	4>	4 pages on 1 side (4-Up)
008	6>	6 pages on 1 side (6-Up)
009	8>	8 pages on 1 side (8-Up)
010	9>	9 pages on 1 side (9-Up)
011	16>	16 pages on 1 side (16-Up)
012	Booklet	
013	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/ 0 / 1] These SPs count the total number of pages output with the three features below, regardless of which application was used.	
8434	P:PrtPGS/ImgEdt	
	[0 to 9999999/ 0 / 1] These SPs count the total number of pages output with the three features below with the print application.	
8437	O:PrtPGS/ImgEdt	
	[0 to 9999999/ 0 / 1] These SPs count the total number of pages output with the three features below with Other applications.	
001	Cover/Slip Sheet	Total number of covers or slip sheets inserted. The count for a cover printed on both sides counts 2.
002	Series/Book	The number of pages printed in series (one side) or printed as a book with booklet right/left pagination.
003	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 SPs count by print paper size the number of pages printed by all applications.
8444	P:PrtPGS/Ppr Size
	[0 to 9999999/ 0 / 1] These SPs count by print paper size the number of pages printed by the printer application.
8447	O:PrtPGS/Ppr Size
	[0 to 9999999/ 0 / 1] These SPs count by print paper size the number of pages printed by other applications.
001	A3
002	A4
003	A5
004	B4
005	B5
006	DLT
007	LG
008	LT
009	HLT
010	Full Bleed
254	Other (Standard)
255	Other (Custom)

- These counters do not distinguish between LEF and SEF.

8451	PrtPGS/Ppr Tray	
	[0 to 9999999/ 0 / 1] These SPs count the number of sheets fed from each paper feed station.	
001	Bypass	Not used for this machine

002	Tray 1	Main machine
003	Tray 2	Main machine
004	Tray 3	Main machine
005	Tray 4	LCIT (Top)
006	Tray 5	LCIT (Middle)
007	Tray 6	LCIT (Bottom)
008	Tray 7	LCIT Bypass Option
009 to 016	Tray 8	Not used

8461	T:PrtPGS/Ppr Type
	[0 to 9999999/ 0 / 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.
8464	P:PrtPGS/Ppr Type
	[0 to 9999999/ 0 / 1] These SPs count by paper type the number pages printed by the printer application.
001	Normal
002	Recycled
003	Special
004	Thick
005	Normal (Back)
006	Thick (Back)
007	OHP

008	Other

8471	PrtPGS/Mag
	[0 to 9999999/ 0 / 1] These SPs count by magnification rate the number of pages printed.
001	- 49%
002	50% to 99%
003	100%
004	101% to 200%
005	201% -

- 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.
- 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. **Note:** These SPs return the same results as this SP is limited to the Print application. [0 to 9999999/ 0 / 1]

8511	T:PrtPGS/Emul	[0 to 9999999/ 0 / 1]
	These SPs count by printer emulation mode the total number of pages printed.	

8514	P:PrtPGS/Emul	[0 to 9999999/ 0 / 1]
	These SPs count by printer emulation mode the total number of pages printed.	
001	RPCS	
002	RPDL	
003	PS3	
004	R98	
005	R16	
006	GL/GL2	
007	R55	
008	RTIFF	
009	PDF	
010	PCL5e/5c	
011	PCL XL	
012	IPDL-C	
013	BM-Links	**Japan Only**
014	Other	
015	IPDS	IPDS Option

- 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/ 0 / 1] These SPs count by finishing mode the total number of pages printed by all applications.
8524	P:PrtPGS/FIN
	[0 to 9999999/ 0 / 1] These SPs count by finishing mode the total number of pages printed by the Print application.
001	Sort

002	Stack		
003	Staple		
004	Booklet		
005	Z-Fold		
006	Punch		
007	Other		
008	Inside Fold	FM2	Half Fold-
009	Three-In-Fold	FM4	Letter Fold-out
010	Three-Out-Fold	FM3	Letter Fold-in
011	Four-Fold	FM5	Double Parallel Fold
012	KANNON-Fold	FM6	Gate Fold

Note

- If stapling is selected for finishing and the stack is too large for stapling, the unstapled pages are still counted.
- The counts for staple finishing are based on output to the staple tray, so jam recoveries are counted.

8531	Staples	This SP counts the amount of staples used by the machine. [0 to 9999999/ 0 / 1]

8541	T: GPC Counter	**Japan Only**
8542	C: GPC Counter	
8544	P: GPC Counter	

8581	T:Counter
	[0 to 9999999/ 0 / 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 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/ 0 / 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

8601	Coverage Counter
	These counts correspond to the total counts recorded with the mechanical counter.
001	B/W
011	B/W Printed Pages

8617	SDK Apli Counter
	These SPs count the total printout pages for each SDK application.
001	SDK-1
002	SDK-2
003	SDK-3
004	SDK-4
005	SDK-5
006	SDK-6

8621	Func Use Counter NIA	
	001 to 064	Function 001 to 064

8771	Dev Counter
	[0 to 9999999/ 0 / 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	Pixel Coverage Ratio
	This SP displays the number of toner bottles used. The count is done based on the equivalent of 1,000 pages per bottle.

8801	Toner Remain	This SP displays the percent of toner remaining for each color. This SP allows the user to check the toner supply at any time. [0 to 100/ 0 / 1]

Note

- This precise method of measuring remaining toner supply (1% steps) is better than other machines in the market that can only measure in increments of 10 (10% steps).
- This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only

8851	Cvr Cnt 0-10%
	[0 to 9999999] These SPs count the percentage of dot coverage for black and other color toners.
011	0 to 2%: BK
021	3 to 4%: BK
031	5 to 7%: BK
041	8 to 10%: BK

8861	Toner Coverage 11-20%

8871	Toner Coverage 21-30%
8881	Toner Coverage 31 -%
	These SPs count the percentage of dot coverage. [0 to 9999999]

8891	Page/Toner Bottle
8901	Page/Toner_Prev 1 **DFU**
8911	Page/Toner_Prev 1 **DFU**
	Total number of pages per toner bottle.

8921	Cvr Cnt/Total
	Displays the total coverage and total printout number.
001	Coverage (%) : BK
011	Coverage/P: BK

8941	Machine Status	
	[0 to 9999999/ 0 / 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.	
001	Operation Time	Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).
002	Standby Time	Engine not operating. Includes time while controller saves data to HDD. Does not include time spent in Energy Save, Low Power, or Off modes.
003	Energy Save Time	Includes time while the machine is performing background printing.
004	Low Power Time	Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.

005	Off Mode Time	Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.
006	SC	Total down time due to SC errors.
007	PrtJam	Total down time due to paper jams during printing.
009	Supply PM Wait End	Total down time due to toner end.

8999	Admin Counter List
	Displays the total coverage and total printout number.
001	Total
007	Printer BW
012	A3/DLT
013	Duplex
015	Coverage: BW (%)
017	Coverage: BW Print Page
018	GPC
019	GPC Printer

User Service Program Mode Tables

Adjustment Settings for Operators, Skilled Operators

There are two procedures for opening the adjustment settings menus, one for Operators and one for Skilled Operators. The number of items displayed for selection is determined by which method you use.

Operators

1. Push [User Tools].
2. Touch [Adjustment Settings for Operators] (36 selections are displayed).

Adjustment Settings for Skilled Operators

The user name for Administrator Authentication Management is assigned by the system administrator. For more details, please refer to the TCRU "Adjustment Item Menu Guide: TCRU"

1. Push [User Tools] on the operation panel.
2. Touch [Adjustment Settings for Skilled Operators].
3. When you are prompted to log in, touch [Login]. The soft keyboard appears on the display.
4. Enter the login user name. If one has not been assigned yet, enter "admin" and touch [OK].
5. When the soft keyboard reappears, touch [OK] again (60 selections are displayed: 36 Operators menu selections plus 26 additional selections for Skilled Operators.

Operator, Skilled Operator Adjustment Settings

This table below lists all the settings available in the menus for Operators and

Skilled Operators. There are 60 adjustments in total, but only 34 appear in the Operators menu. An additional 26 items (in addition to the 34 items of the Operators menu) are available for the Skilled Operators.

In the table below:

- The first column ("1") lists the menu items of the Operators' menu. The "---" mark in the first column means this item does NOT appear on the Operators' menu.
- The second column ("2") lists all the items. A number with the "---" mark to the left of it in column 1 means this item appears in the Skilled Operators' menu only.
- The "Title" column is the title of the item as it appears in the menus.

- The "SP" column lists numbers of corresponding SP codes in the Service Mode when they exist. Not all the menu items in the operator menus have corresponding SP codes.

1	2	Title	SP
0101	0101	Adjust Image Position Across Feed Direction	---
0102	0102	Adjust Image Position with Feed Direction	---
---	0103	Correct Image Skew	---
0104	0104	Adjust Magnification Across Feed Direction	---
0105	0105	Adjust Magnification with Feed Direction	---
0106	0106	Select Test Pattern for Image Position Adjustment	---
0107	0107	Adjust Toner Fusing Temperature	---
0108	0108	Adjust Feed Speed	5160-001
0109	0109	Double Feed Detect	---
0110	0110	After Double Feed Paper is Automatically Ejected	5897-001
0111	0111	Auto Image Position Adjustment Across Feed Detection	---
---	0112	Adjust Paper Feed Separation Time	1917-001 to 007
---	0113	Adjust Wide LCT Fan Level	1920-001 to 003
0114	0114	Adjust Wide LCT Fan Timer	1921-001 to 003
---	0115	Adjust Image Density	---
0116	0116	Adjust Image Quality	---
---	0117	Sensor Information	---
0118	0118	Temperature/Humidity Around the Machine	---
---	0119	Reset Replaceable Parts Counter	2970, 7622
---	0120	Replaceable Parts Counter	7621
---	0121	Target Value for Replaceable Parts	7623
---	0122	Remove Toner Cartridge	5804-041, 042
0201	0201	Adjust Staple Position/Finisher	---

1	2	Title	SP
0202	0202	Adjust Punch Position With Feed Dir./Finisher	---
---	0203	Paper Alignment for Stapling Across Feed Dir./Finisher	---
---	0204	Paper Alignment for Stapling With Feed Direction/Finisher	---
---	0205	Paper Alignment in Shift Tray Across Feed Dir./Finisher	---
0301	0301	Adjust Staple Position for Booklet	---
0302	0302	Adjust Folding Position for Booklet	---
0303	0303	Adjust Staple Position/Booklet Finisher	---
0304	0304	Adjust Punch Position Across Feed Dir./Booklet Finisher	---
0305	0305	Adjust Punch Position With Feed Dir./Booklet Finisher	---
---	0306	Paper Alignment for Booklet Across Feed Direction	---
---	0307	Set Number of Folds for Booklet	---
---	0308	Paper Alignment for Booklet with Feed Dir.	---
---	0309	Ppr.Alignmnt for Stapling Acros Feed Dir./Booklet Finisher	---
---	0310	Ppr. Alignment in Shift Tray Across Feed Dir./Bklet Finisher	---
---	0311	Ppr.Alignment for Stapling With Feed Dir./Booklet Finisher	---
---	0312	Punch Skew Correction	---
---	0313	Correct Punch Skew	---
---	0401	Paper Alignment in Stacker Tray Across Feed Direction 1	---
---	0402	Paper Alignment in Stacker Tray With Feed Direction	---
---	0403	Paper Alignment in Stacker Across Feed Direction 2	---
---	0404	Paper Alignment in 2nd Stacker Tray Across Feed Dir. 1	---
---	0405	Paper Alignment in 2nd Stacker Tray With Feed Direction	---
---	0406	Paper Alignment in 2nd Stacker Tray Across Feed Dir. 2	---
0407	0407	Maximum Stack Quantity in Stacker Tray	---
0501	0501	Adjust Z-fold Position 1	6750-001 to 019

1	2	Title	SP
0502	0502	Adjust Z-fold Position 2	6751-001 to 019
0503	0503	Adjust Half Fold Position	6752-001 to 019
0504	0504	Adjust Letter Fold-out Position 1	6753-001 to 019
0505	0505	Adjust Letter Fold-out Position 2	6754-001 to 019
0506	0506	Adjust Letter Fold-in Position 1	6755-001 to 019
0507	0507	Adjust Letter Fold-in Position 2	6756-001 to 019
0508	0508	Adjust Double Parallel Fold Position 1	6757-001 to 019
0509	0509	Adjust Double Parallel Fold Position 2	6758-001 to 019
0510	0510	Adjust Gate Fold Position 1	6759-001 to 019
0511	0511	Adjust Gate Fold Position 2	6760-001 to 019
0512	0512	Adjust Gate Fold Position 3	6761-001 to 019
0901	0901	Reset All Adjustment Settings.	---

- There are three additional selections available for item [0116] on the Skilled Operators menu.

Operators' Menu	Skilled Operators' Menu
[Reduce White Spots]	[Front Side Adjust Level] [Back Side Adjust Level] [Reduce Streaks] [Reduce White Spots]

- Items [0119], [0120], [0121] appear in the Skilled Operators menu only after SP5185 has been switched ON and the machine has been rebooted. These items are not displayed in the Operators' menu.
- Items [0119], [012o], [0121] list TCRU items only. Their corresponding SP codes (SP7622, SP7621, SP7623) list all replacement parts, both TCRU and non-TCRU components. These are the SP codes that you should use to manage components that are not TCRU parts.
- Where corresponding SP codes exist for items in the operator menus, changes done in the Operators' menu, Skilled Operators' menu, or in the SP mode have equal weight. Any changes made in either menu or in the SP table are reflected in the Operators' menu, Skilled Operators' menu, and SP mode.

Input Check

Main Machine Input Check: SP5803

This procedure allows you to test sensors and other components of the machine. After you select one of the categories below by number, you will see a small 8-bit table with the number of the bit and its current setting (0 or 1). The bits are numbered from 0 to 7, reading from right to left.

1. Enter the SP mode and select SP5803.
2. Enter the class 3 number for the item that you want to check. A small box will be displayed on the SP mode screen with a series of 0's and 1's where "0" means "Off" and "1" means "On". The bits are arrayed as shown below.

Bit	7 6 5 4 3 2 1 0
Setting	1 1 0 0 1 0 1 0

3. Check the status of each item against the corresponding bit numbers listed in the table below.

[1]		[2]		[3]	
bit-7	Exit Unit Set Sensor	bit-7	Cleaning Unit Set	bit-7	-
bit-6	Exit Sensor	bit-6	Pre-Charge Grid	bit-6	-
bit-5	Job Time Sensor	bit-5	Pre-Charge Corona	bit-5	-
bit-4	Exit Junction Gate HP Sensor	bit-4	Total Counter Set	bit-4	-
bit-3	Abnormal Development Bias	bit-3	Polygon Mirror Motor Cooling Fan	bit-3	-
bit-2	Abnormal Charge Grid	bit-2	-	bit-2	-
bit-1	Abnormal Charge Corona	bit-1	-	bit-1	-
bit-0	Drum Motor Overload	bit-0	-	bit-0	Front Door Safety Switch
[4]		[5]		[6]	
bit-7	-	bit-7	Fusing Exit Sensor	bit-7	-

bit-6	-	bit-6	Fusing Unit Set (Lower Drawer)	bit-6	Paper Remains: 2nd Tray 2
bit-5	-				
bit-4	Fusing Unit Set: D103	bit-4	Original Set	bit-4	Development Toner Bottle Set Sensor
bit-3	Fusing Unit Set: D101/ D102	bit-3	Key Counter Set	bit-3	Paper Remains: 3rd Tray 2
bit-2	Toner Collection Coils Sensor	bit-2	-	bit-2	Paper Remains: 3rd Tray 1
bit-1	Cleaning Web End Sensor	bit-1	-	bit-1	Lower Limit Sensor
bit-0	Fusing Motor Overload	bit-0	-	bit-0	-
[7]		[8]		[9]	
bit-7	Tray 3 Paper Size Detection 1	bit-7	Paper Remains: 1st Tray 4	bit-7	Rear Fence Return Sensor
bit-6	Tray 3 Paper Size Detection 2	bit-6	Paper Remains: 1st Tray 2	bit-6	Left Tandem Tray Paper Sensor
bit-5	Tray 3 Paper Size Detection 3	bit-5	Paper Remains: 1st Tray 3	bit-5	Upper Toner Bottle Sensor
bit-4	Tray 3 Paper Size Detection 4	bit-4	Paper Remains: 1st Tray 4	bit-4	Toner Collection Bottle Agitator Sensor
bit-3	Tray 3 Paper Size Detection 5	bit-3	Rear Side Fence Closed Sensor	bit-3	Upper Toner Bottle Inner Cap Sensor
bit-2	Front Side Fence Open Sensor	bit-2	Right Tandem Tray Paper Sensor	bit-2	Toner Bank TE Sensor
bit-1	Front Side Fence Closed Sensor	bit-1	Tandem Left Tray Set Sensor	bit-1	Toner Collection Bottle Set Sensor

bit-0	Rear Side Fence Open Sensor	bit-0	Rear Fence HP Sensor	bit-0	Toner Collection Bottle Overflow Sensor
[10]		**[11]**		**[12]**	
bit-7	Lower Toner Bottle Sensor	bit-7	-	bit-7	Right Tandem Tray Set Sensor
bit-6	Toner Bank Motor Solenoid Overload	bit-6	-	bit-6	-
bit-5	Lower Toner Bottle Inner Cap Sensor	bit-5	-	bit-5	-
bit-4	-	bit-4	-	bit-4	-
bit-3	-	bit-3	Toner Collection Bottle Near Full Sensor	bit-3	-
bit-2	-	bit-2	-	bit-2	-
bit-1	-	bit-1	-	bit-1	Key Card Set
bit-0	-	bit-0	-	bit-0	-
[13]		**[14]**		**[15]**	
bit-7	-	bit-7	Duplex Transport Sensor 3	bit-7	-
bit-6	-	bit-6	Duplex Inverter Relay Sensor 2	bit-6	-
bit-5	-	bit-5	Duplex Entrance Sensor	bit-5	Guide Plate Open Sensor
bit-4	-	bit-4	Duplex Transport Sensor 1	bit-4	IOB Board Type 1
bit-3	-	bit-3	Duplex Inverter Relay Sensor 1	bit-3	IOB Board Type 2
bit-2	-	bit-2	Model Detect 2	bit-2	IOB Board Type 3
bit-1	-	bit-1	Model Detect 1	bit-1	Drum Unit Set

bit-0	Duplex Transport Sensor 2	bit-0	Duplex Unit Set	bit-0	-
[16]		**[17]**		**[18]**	
bit-7	DIP SW1	bit-7	Exit Motor OL	bit-7	-
bit-6	DIP SW2	bit-6	-	bit-6	-
bit-5	DIP SW3	bit-5	-	bit-5	-
bit-4	DIP SW4	bit-4	-	bit-4	-
bit-3	DIP SW5	bit-3	-	bit-3	-
bit-2	DIP SW6	bit-2	-	bit-2	Toner End Sensor
bit-1	DIP SW7	bit-1	-	bit-1	Development Unit Set
bit-0	DIP SW8	bit-0	-	bit-0	Toner Suction Motor Sensor
[19]		**[20]**		**[21]**	
bit-7	Toner Pump Motor Sensor	bit-7	-	bit-7	3rd Tray Lift Sensor
bit-6	Toner Cylinder TE Sensor	bit-6	-	bit-6	2nd Tray Lift Sensor
bit-5	Development Motor Overload	bit-5	-	bit-5	Vertical Transport Sensor 2
bit-4	1st Paper Feed Sensor	bit-4	-	bit-4	3rd Paper End Sensor
bit-3	1st Paper End Sensor	bit-3	-	bit-3	3rd Paper Feed Sensor
bit-2	1st Tray Lift Sensor	bit-2	-	bit-2	-
bit-1	Vertical Transport Sensor 1	bit-1	-	bit-1	-
bit-0	-	bit-0	-	bit-0	-

[22]		[23]	-	[24]	-
bit-7	-	bit-7	-	bit-7	-
bit-6	Tray 2 Paper Size Detection 5	bit-6	-	bit-6	-
bit-5	Tray 2 Paper Size Detection 4	bit-5	-	bit-5	-
bit-4	Tray 2 Paper Size Detection 3	bit-4	-	bit-4	-
bit-3	Tray 2 Paper Size Detection 2	bit-3	-	bit-3	-
bit-2	Tray 2 Paper Size Detection 1	bit-2	-	bit-2	-
bit-1	-	bit-1	-	bit-1	-
bit-0	-	bit-0	-	bit-0	-
[35]		[36]		[37]	
bit-7	-	bit-7	3rd Vertical Transport Sensor 1 (LCT)	bit-7	1st Paper Width Sensor 1 (LCT)
bit-6	-	bit-6	1st Vertical Transport Sensor 2 (LCT)	bit-6	1st Paper Width Sensor 2 (LCT)
bit-5	-	bit-5	1st Vertical Transport Sensor 1 (LCT)	bit-5	1st Paper Width Sensor 3 (LCT)
bit-4	LCT Front Door Safety Switch	bit-4	-	bit-4	1st Paper Length Sensor (LCT)
bit-3	-	bit-3	-	bit-3	1st Paper Feed Sensor (LCT)
bit-2	-	bit-2	-	bit-2	1s Paper End Sensor (LCT)
bit-1	2nd Vertical Transport Sensor 1 (LCT)	bit-1	-	bit-1	1st Tray Lift Sensor (LCT)
bit-0	LCT Exit Sensor	bit-0	-	bit-0	1st Transport Sensor (LCT)

[38]		[39]		[40]	
bit-7	1st Paper Height Sensor 1 (LCT)	bit-7	2nd Paper Width Sensor 1 (LCT)	bit-7	2nd Paper Height Sensor 1 (LCT)
bit-6	1st Paper Height Sensor 2 (LCT)	bit-6	2nd Paper Width Sensor 2 (LCT)	bit-6	2nd Paper Height Sensor 2 (LCT)
bit-5	1st Paper Height Sensor 3 (LCT)	bit-5	2nd Paper Width Sensor 3 (LCT)	bit-5	2nd Paper Height Sensor 3 (LCT)
bit-4	1st Paper Height Sensor 4 (LCT)	bit-4	2nd Paper Length Sensor (LCT)	bit-4	2nd Paper Height Sensor 4 (LCT)
bit-3	-	bit-3	2nd Paper Feed Sensor (LCT)	bit-3	-
bit-2	-	bit-2	2nd Paper End Sensor (LCT)	bit-2	-
bit-1	-	bit-1	2nd Tray Lift Sensor (LCT)	bit-1	-
bit-0	-	bit-0	2nd Transport Sensor (LCT)	bit-0	-
[41]		[42]		[43]	
bit-7	3rd Paper Width Sensor 1 (LCT)	bit-7	3rd Paper Height Sensor 1 (LCT)	bit-7	Bypass Paper Width Sensor 1
bit-6	3rd Paper Width Sensor 2 (LCT)	bit-6	3rd Paper Height Sensor 2 (LCT)	bit-6	Bypass Paper Width Sensor 2
bit-5	3rd Paper Width Sensor 3 (LCT)	bit-5	3rd Paper Height Sensor 3 (LCT)	bit-5	Bypass Paper Width Sensor 3
bit-4	3rd Paper Length Sensor (LCT)	bit-4	3rd Paper Height Sensor 4 (LCT)	bit-4	Bypass Paper Width Sensor 4
bit-3	3rd Paper Feed Sensor (LCT)	bit-3	-	bit-3	Bypass Paper Width Sensor 5

bit-2	3rd Paper End Sensor (LCT)	bit-2	-	bit-2	Bypass Paper Length Sensor
bit-1	3rd Tray Lift Sensor (LCT)	bit-1	-	bit-1	-
bit-0	3rd Transport Sensor (LCT)	bit-0	-	bit-0	-
[44]		**[45]**		**[46]**	**-**
bit-7	-	bit-7	Bypass Paper Height Sensor 1	bit-7	-
bit-6	-	bit-6	Bypass Height Sensor 2	bit-6	-
bit-5	-	bit-5	-	bit-5	-
bit-4	-	bit-4	Bypass Lower Limit Sensor	bit-4	-
bit-3	Bypass Paper Feed Sensor	bit-3	Bypass Tray Lift	bit-3	-
bit-2	Bypass Paper End Sensor	bit-2	-	bit-2	-
bit-1	Bypass Tray Lift Sensor	bit-1	Bypass Connection Detection	bit-1	-
bit-0	Bypass Transport Sensor	bit-0	Bypass Slide Open	bit-0	-

Other Input Checks

Unit	SP No.
3000-Sheet Finisher (B830)	6112
Booklet Finisher (D434)	6218
Cover Interposer Tray (B835)	6400
Decurl Unit (D455)	5803
Main Machine (see above)	5803
Multi Folder Unit (D454)	6309

Output Checks

Important

- **Motors keep turning in output check mode regardless of upper or lower limit sensor signals. To prevent mechanical or electrical damage, do not keep an electrical component on for a long time.**

1. Open SP mode.
2. Select the SP number that corresponds to the component you wish to check. (Refer to the table below.)
3. Press On to test the selected item then press Off.

Units	SP No.
3000-Sheet Finisher (B830)	6113
Booklet Finisher (D434)	6219
Cover Interposer Tray (B835)	6401
Decurl Unit	5804
High Capacity Stacker 1 (D447)	6601
High Capacity Stacker 2 (D447)	6607
Main Machine	5804
Multi Folder (D454)	6310
Trimmer Unit (D455)	6651

Other Operations

NVRAM Data Upload/Download

Uploading Content of NVRAM to an SD card

Follow this procedure to upload SP code settings from NVRAM to an SD card.

Note

- This data should always be uploaded to an SD card before the NVRAM is replaced.

1. Before switching the machine off, execute SP5990 001 (SMC Print). You will need a record of the NVRAM settings if the upload fails.
2. Switch the main power switch off.
3. Insert the SD card into service slot (lower slot), then switch the machine on.
4. Open SP5824 001 (NVRAM Data Upload) then press the "Execute" key.

   The files are coped to an NVRAM folder on the SD card:

   NVRAM\<serial number>.nv
5. In order to prevent an error during the download, be sure to mark the SD card that holds the uploaded data with the number of the machine from which the data was uploaded.

Note

- NVRAM data from more than one machine can be uploaded to the same SD card.

Downloading an SD Card to NVRAM

Follow this procedure to download SP data from an SD card to the NVRAM in the machine.

- If the SD card with the NVRAM data is damaged, or if the connection between the controller and BICU is defective, the NVRAM data down load may fail.
- If the download fails, repeat the download procedure.
- If the second attempt fails, enter the NVRAM data manually using the SMC print you created before uploading the NVRAM data.

1. Switch the main power switch off.
2. Insert the SD card with the NVRAM data into service slot (lower slot).
3. Switch the main power switch on.
4. Execute SP5825 001 (NVRAM Data Download) and press the "Execute" key.

Note

- In order for the NVRAM data to download successfully, the serial number of the file on the SD card must match the serial number of the machine. If the serial numbers do not match, the download will fail.

This procedure downloads the following data to the NVRAM:

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

SMC Lists

The SMC list prints system parameters and report data.

1. Access the SP mode corresponding to the list that you wish to print.

SP5-990-1	All (Data List)
SP5-990-2	SP (Mode Data List)
SP5-990-3	User Program
SP5-990-4	Logging Data
SP5-990-5	Diagnostic Report
SP5-990-6	Non-Default (Prints only SPs set to values other than defaults.)
SP5-990-7	NIB Summary

2. Touch "APL Window" key to display the main menu.
3. Select the paper size and touch "Back to Settings" to return the SP mode.
4. Press the "Execute" key to print the list.
5. Exit SP mode.

Memory All Clear: SP5801

As a rule, you should always print an SMC Report before initializing or adjusting the SP settings. The SMC Report provides a concise list of all the SP commands and their current settings. The report can be used for reference if the service manual is not available.

Execution of "Memory All Clear" resets all the settings stored in the NVRAM to their default settings except the following:

SP5-811-1	Machine Serial

SP5-907	Plug & Play Brand Maker/Model Name

1. Execute SP5990 to print out all SMC Data Lists.
2. Open SP5801.
3. Press the number for the item that you want to initialize. The number you select determines which application is initialized. For example, press 1 if you want to initialize all modules.

No.	What It Initializes	Comments
1	All Clear	Initializes items 2 to 15 below.
2	Engine Clear	Initializes all registration settings for the engine.
3	SCS	System Control Service. Initializes default system settings, CSS settings, operation display coordinates.
4	IMH Memory Clr	Initializes the image file system.
5	MCS	Memory Control Service. Initializes the automatic delete time setting for stored documents.
8	Printer application	Initializes the printer defaults, programs registered, the printer SP bit switches, and the printer CSS counter.
10	Web Service/ Network application	Initializes all service-mode settings about access to the document server from the Desk Top Binder software on a PC. For example, initializes the resolution of images the PC gets using the image converter board option.
11	NCS	Network Control Service. Initializes the system defaults and interface settings (IP addresses also), the SmartNetMonitor for Admin settings, WebStatusMonitor settings, and the TELNET settings.
14	Clear DCS Setting	Initializes the DCS (Delivery & Receive Control Server) settings.
15	Clear UCS Setting	Initializes the UCS (User Directory Control Server) settings.
16	MIRS Setting	Machine Information Report Service. Clears the information that notifies the System Administrators via e-mail to keep them informed about machine status (errors, etc.)
17	CCS	Certification Control Service. Clears the functions to operate external counter devices (key cards, etc.)

No.	What It Initializes	Comments
18	SRM Memory Clear	Service Resource Manager memory clear.
19	LCS	Log Control Service. Clears the logging information from each module.
21	ECS	Engine Control Service. Clears settings that configure jobs into units for data handling.

4. Press Execute, then follow the prompts on the display to complete the procedure.
5. Make sure that you perform the following settings:
    - Execute SP2115 – Main Scan Beam Pitch Adjustment
    - Do the touch screen calibration (☛ Touch Screen Calibration).
    - Referring to the SMC data lists, re-enter any values, which had been changed from their factory settings.
    - Execute SP 3001 002 – ID Sensor Initial Setting
    - Switch SP 3901 001 (Auto Process Control Setting) to 1 (On), if you wish auto process control to be used.
6. Check the print quality and the paper path, and do any necessary adjustments.

Software Reset

Software Reset

The software can be rebooted when the machine hangs up. Use the following procedure.

Turn the main power switch off and on.

-or-

1. Press and hold down [./*] and [#] together for more than 10 seconds.
2. When the screen goes blank, release both buttons.

   The machine will display "Please wait" then "Now loading". When the initial screen appears, the machine is read for normal operation.

Resetting the System

The system settings in the UP mode can be reset to their defaults using the following procedure.

1. Make sure that the machine is in the standby mode.
2. Press [User Tools] key. The User Tools initial screen appears.

3. Hold down the [#] key and touch the "System Setting" on the display.
4. When you see the confirmation message, touch "Yes".

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.

To capture this debug information, the Save Debug Log feature provides two main features:

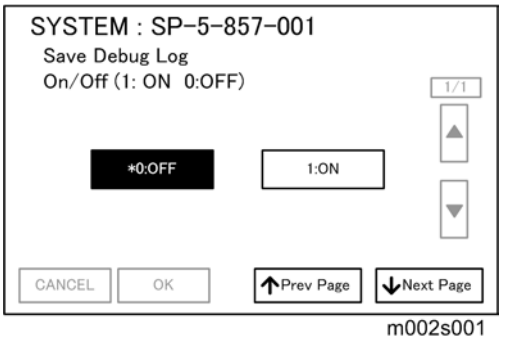
- Switching on the debug feature so error information is saved directly to the HDD for later retrieval.
- Copying the error information from the HDD to an SD card.

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. Then ask the user to reproduce the problem.

Switching On and Setting Up Save Debug Log

The debug information cannot be saved until the "Save Debug Log" function has been switched on and a target has been selected.

1. Enter the SP mode.
2. Do SP5857 and touch [1]



m002s001

3. Touch [1:ON] then press [OK]. 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". 
5. The default is HDD. If you want to save to SD card, touch [3:SD] then touch [OK].

Note

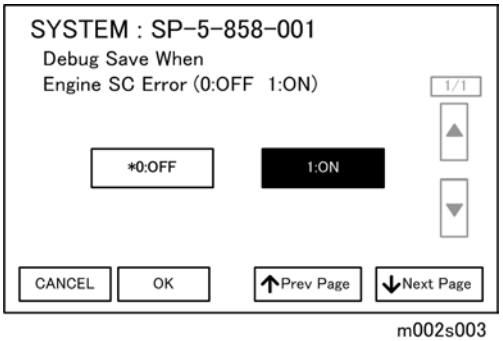
- The SD card must be inserted in the service slot (bottom SD card slot).

6. 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. (You can select more than one.)

1	Engine SC Error (0:OFF 1:ON)	Saves data when an engine-related SC code is generated.
2	Controller SC Error (0:OFF 1:ON)	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 (0:OFF 1:ON)	Saves data for jams.

Example 1: To Select Items 1, 2, 4

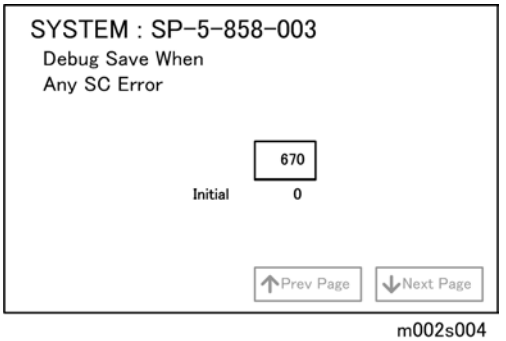
Touch the appropriate items(s). Press "ON" for each selection. This example shows "Engine SC Error" selected.



m002s003

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 [#] on the operation panel. This example shows an entry for SC670.



m002s004

Note

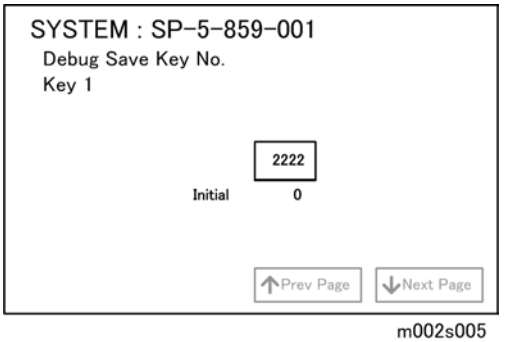
- For details about SC code numbers, please refer to the SC tables in Section "4. Troubleshooting"

7. 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 the 4-digit number with the operation panel number keys, then press [#] on the operation panel.

Note

- 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.



m002s005

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	Copy	Printer	Web
1	2222 (SCS) 2223 (SRM)	256 (IMH)	1025 (MCS)
2			

Key	Copy	Printer	Web
3			
4			
5			
7	2224 (BICU)	4500 (PDL)	6600 (WebDB)
8		4600 (GPS-PM)	3300 (PTS)
9		2000 (NCS)	6666 (WebSys)
10		2224 (BCU)	2000 (NCS)

Note

- 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 SP5-857-002) for the events that you selected SP5-858and the memory modules selected with SP5-859.

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 Printer 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 006to010. 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

1. Insert the SD card into service slot (SD card Slot 2).
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.

   Note

   - The SD card can hold up to 4MB of data. If the debugging data is larger than 4MB, you can switch to another SD card.
3. Use a card reader to copy the file and send it for analysis to your local Ricoh representative 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.

Note

- 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).

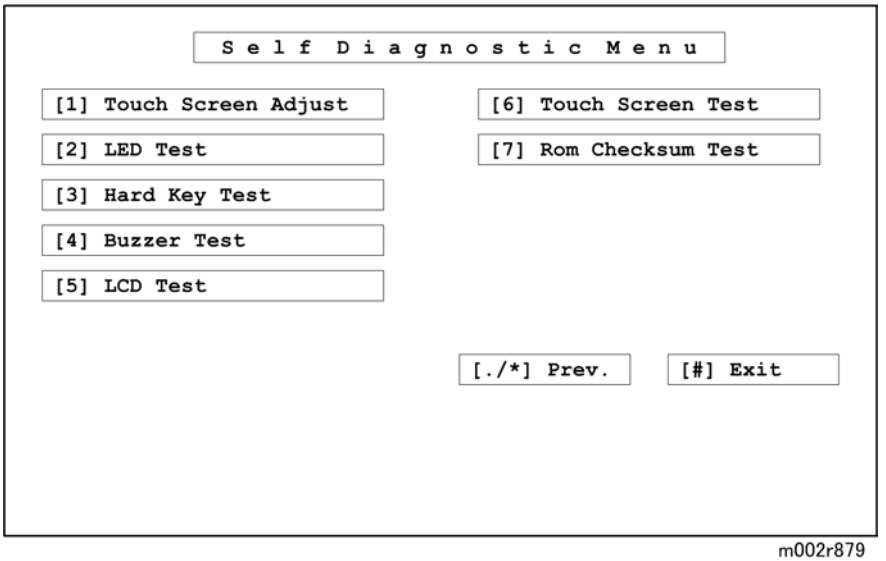
SP5857-017: Create a File on SD Card to Store a Log

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).

Touch Screen Calibration

When the touch panel detection mechanism is not working properly, calibrate the touch screen as follows:

1. Push [Clear]
2. Push [1] [9] [9] [3]
3. [C] (Clear) 5 times.



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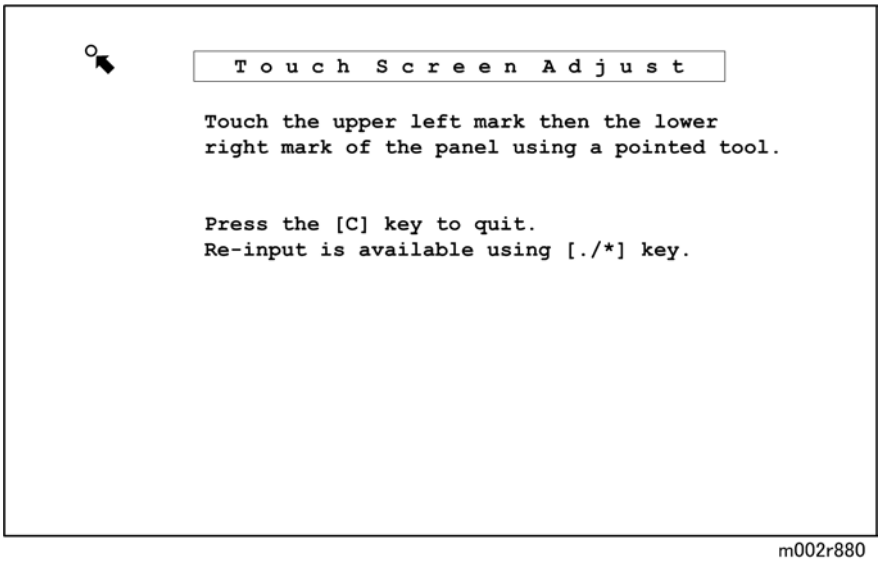
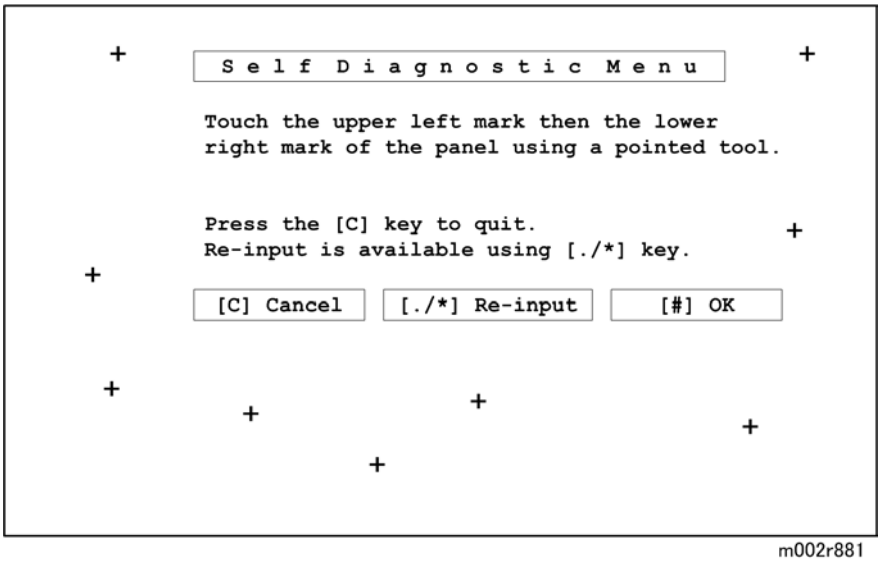
4. Select "[1] Touch Screen Adjust".



m002r880

5. The "Touch Screen Adjustment" calibration screen will appear. Use the blunt end of a pointer (not a sharp tool) to touch the icon in the upper left corner.
6. Touch the icon in the lower right corner of the screen after it appears.



m002r881

7. Touch several spots on the LED touch panel. A plus sign (+) will appear (as shown above) where you touch the screen.
8. Confirm that the + marker appears at every point you touch.
9. If the + marks do not appear exactly where you touch the screen, touch [Re-input] on the screen and repeat the procedure.
10. When you are finished, touch "OK" on the adjustment screen.
11. Touch "Exit" to exit the self diagnostic mode.

Important

- **The other options on the Self Diagnostic Menu are for factory use only.**
- **Do not attempt to use these options unless directed to do so by senior technical staff.**

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