RICOH UNIVERSITY
Learning ◆ Knowledge ◆ Performance



D131/D132/D133
SERVICE MANUAL

LANIER RICOH savin

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Ricoh Americas Corporation

LEGEND

PRODUCT CODE	COMPANY		
	LANIER	RICOH	SAVIN
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READ THIS FIRST

Safety, Conventions, Trademarks

Safety

Prevention of Physical Injury

1. Before disassembling or assembling parts of the machine and peripherals, make sure that they are unplugged.
2. The plug should be near the machine and easily accessible.
3. Note that some components of the machine and the paper tray unit are supplied with electrical voltage even if the main power switch is turned off.
4. If any adjustment or operation check has to be made with exterior covers off or open while the main switch is turned on, keep hands away from electrified or mechanically driven components.
5. If the [Start] key is pressed before the machine completes the warm-up period (the [Start] key starts blinking red and green), keep hands away from the mechanical and the electrical components as the machine starts making copies as soon as the warm-up period is completed.
6. The inside and the metal parts of the fusing unit become extremely hot while the machine is operating. Be careful to avoid touching those components with your bare hands.
7. Always connect the power cord directly into a wall outlet. Never use an extension cord.
8. Inspect the power cord for damage. Never cut or attempt to modify the power cord in any way.
9. Keep the machine away from dust and high humidity. Never expose the machine to corrosive gases.
10. Never use flammable liquids or aerosols around the machine.
11. Never handle the power cord or plug with wet hands.

Health Safety Conditions

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

   Important

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

Observance of Electrical Safety Standards

1. The machine and its peripherals must be installed and maintained by a customer service representative who has completed the training course on those models.
2. 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.

Laser Safety

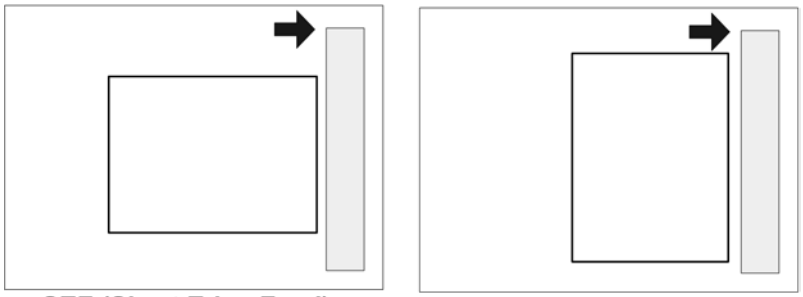
The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser-based optical units in the field. The optical housing unit can only be repaired in a factory or at a location with the requisite equipment. The laser subsystem is replaceable in the field by a qualified Customer Engineer.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

⚠**WARNING**
Use of controls, or adjustment, or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. **WARNING:** Turn off the main switch before attempting any of the procedures in the Laser Unit section. Laser beams can seriously damage your eyes. **CAUTION MARKING:**  Laser_decal_MT

Conventions and Trademarks

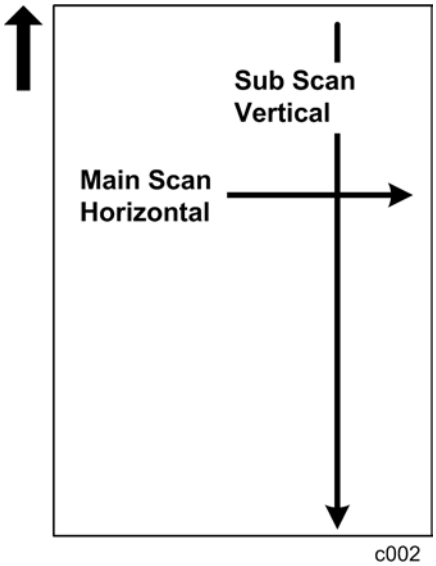
Conventions

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



C001

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

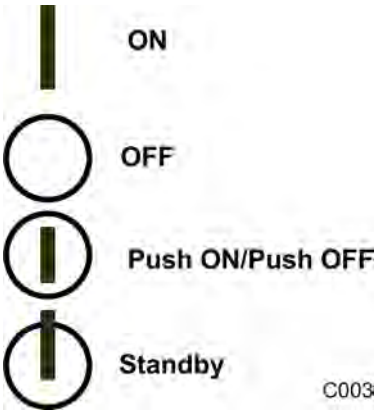


c002

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.

Trademarks

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

PRODUCT INFORMATION

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

1. PRODUCT INFORMATION

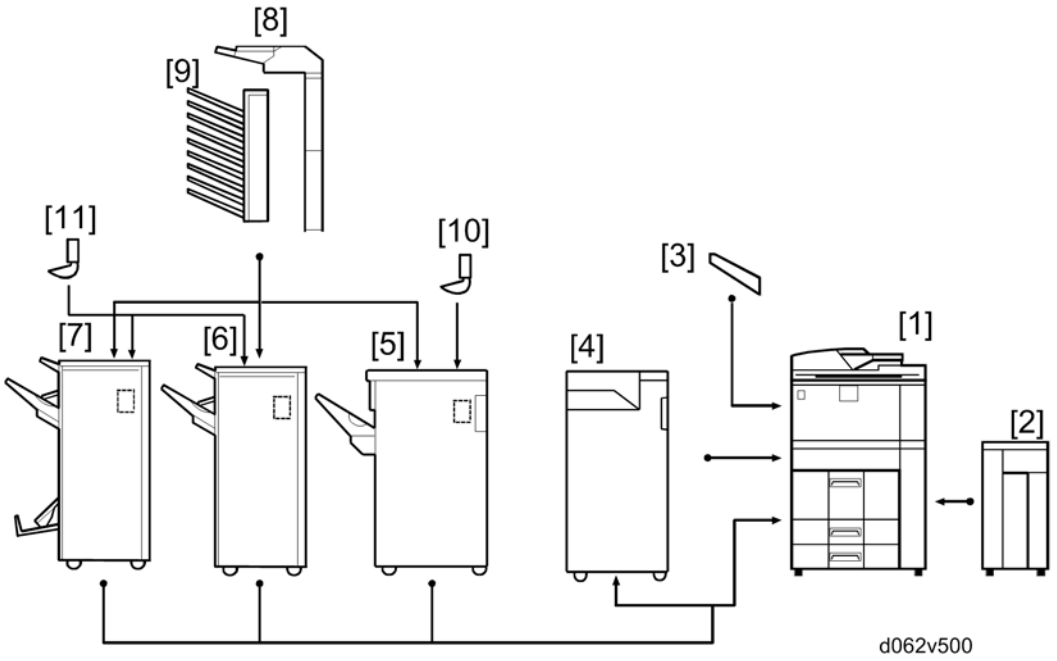
1.1 SPECIFICATIONS

See "Appendices" for the following information:

- General Specifications
- Peripheral Specifications

1.2 MACHINE CONFIGURATION

1.2.1 PERIPHERAL UNITS



No.	Item	Code
1	Mainframe	D131/D132/D133
	A3/11" x 17" Tray Type 9001	D482
	Tab Sheet Holder Type 3260	B499
2	LCIT RT4010	D613
	8 1/2"x14" Paper Size Tray Type 9002	B474
3	Copy Tray Type 9002	B756
4	Multi Folding Unit FD4000	D615
5	Finisher SR4080	D610
	Output Jogger Unit Type 9002B	B513
	Punch Unit Type 850 SC	A812
	Punch Unit Type 1075 3/2	B531

No.	Item	Code
	Punch Unit Type 1075 EU 2/4	B531
6	Finisher SR4060	D611
7	Finisher SR4070	D612
	Punch Unit Type 3260 SC	B702
	Punch Unit Type 3260 2/4 EU	B702
	Punch Unit Type 3260 NA 3/2	B702
8	Cover Interposer Tray CI4000	D614
9	Mailbox CS4000	D616
10	Output Jogger Unit Type 9002B	B513 for SR4080
11	Output Jogger Unit Type 9002A	B703 for SR4030/4040

1.2.2 OTHER OPTIONS

Mainframe Options: External

Item	Code	Comment
Card Reader Bracket	B498	On mainframe
Key Counter Bracket Type1027	B452	On mainframe
USB2.0/SD Slot Type C	D464	On mainframe

Mainframe Options: Internal

Item	Code	Comment
Copy Connector Type 3260	B328	Connect to Slot B
Copy Data Security Unit Type F	B829	Connect to IPU
Gigabit Ethernet Type B	D377	Connect to CTL
Optional Counter Interface Unit Type A	B879	Connect to IPU

Controller Options: I/F Slots

Item	Code	Comment*[1]
Bluetooth Interface Unit Type D	D566	USB Host
File Format Converter Type E	D377	I/F Slot A
IEEE 1284 Interface Board Type A	B679	I/F Slot A
IEEE 802.11a/g Interface Unit Type J	D377	I/F Slot A
IEEE 802.11g Interface Unit Type K	D377	I/F Slot A

Note: An IEEE 802.11 interface unit and Bluetooth interface unit cannot be installed and used together.

Controller Options: SD Cards

Item	Code	Comment
Browser Unit Type J	D620	SD Card Slot 2
Data Overwrite Security Unit Type H	D377	Built-in
HDD Encryption Unit Type A	D377	Built-in
PostScript3 Unit Type 9002	D620	SD Card Slot 2
Printer/Scanner Unit Type 9002	D620	SD Card Slot 1
VM Card Type U	D640	SD Card Slot 2
IPDS Unit Type 9002	D620	SD Card Slot 2
Netware	D620	SD Card Slot 2

Fax Options

Item	Code
Fax Option Type 9002	D619
G3 Interface Unit Type 9002	D619
Fax Connection Unit Type E	D621

1.3 GUIDANCE FOR THOSE WHO ARE FAMILIAR WITH PREDECESSOR PRODUCTS

The D131/D132/D133 series succeeds the D062/D063/D065/D066 series. If you have experience with the predecessor products, the following information will be of help when you read this manual.

1.3.1 DIFFERENCES FROM PREDECESSOR PRODUCTS

	D062/D063/D065/D066	D131/D132/D133
SD Slot	2 slots	
I/F Slot	2 slots	
Model Line Up	**Four Models**	**Three Models**
	D062 60 ppm	D131 60 ppm
	D063 70 ppm	---
	D065 80 ppm	D132 75 ppm
	D066 90 ppm	D133 90 ppm

Hot Roller Dia.	D062/063/065	D066	D131/132	D133
	40 mm	50 mm	40 mm	50 mm
Pressure Roller Dia.	**D062/063/065**	**D066**	**D131/132**	**D133**
	40 mm	50 mm	40 mm	50 mm

Here is a summary of some other differences:

- **ADF**. The speed of scanning originals has been improved..

Mode	Previous (mm/s)	New (mm/s)
BW	426.5	472

Mode	Previous (mm/s)	New (mm/s)
FC	310.5	708

- **ADF Cable**. The relay connector has been discarded to prevent noise.
- **Exposure Unit.** The exposure lamp has been upgraded. The 3-beam APS sensors have been replaced with a 2-beam + 1-beam configuration. The exposure unit is spot welded (two screws have been eliminated).
- **Web Motor Lock Detection**. Three new SC codes (SC540-02, -03, -04) have been added to detect web motor lock.
- **Development unit**. The color of the pressure release filter has been changed from white to gray.
- **Paper Feed**. Paper feed has been upgraded. There is no change in the removal or replacement of the paper feed units.
- **Controller**. The GW controller has been upgraded to the GW+ Controller.
- **MFP Options**. DOS (Data Overwrite Security), Data Encryption, and Scan-to-Media are now provided as standard.
- **USB/SD Slots.** A USB slot and SD card slot is provided on the right side of the operation panel. Installation of a device for these slots is no longer required.



d131f101

- **Safe Shutdown**. After the main power switch of the machine has been turned off, the machine will not shut down immediately. A message states that shutting down may require up to two minutes to complete. The SDB (a new board) keeps the power supply to the controller until the HDD unit has been shutdown safely. When shutting down from normal stand-by mode, if the safe shutdown takes more than 2 minutes, there is a problem with the controller board and it may need to be replaced.
- **Fax Unit.** The MBU and FCU are combined on one board. After replacing the FCU, the SRAM data from the old FCU must be transferred to the new FCU. The following data are transferred: TTI, RTI, CSI, bit switch settings, RAM address settings, and NCU parameter settings. For more, see the fax installation manual.

1.3.2 UNIT AND OPTION NAME AND NUMBER CHANGES

The main peripherals and other options are essentially the same as the same items for the predecessor machines. However, some of the item names and codes have changed due to changes in the shapes of external covers, cover colors, etc.

Main Machine and Peripheral Units

Note

- Changes are marked in **bold** in the right column.

D062/D063/D065/D066	D131/D132/D133
Item	**Item**
Mainframe (D062/D064)	Mainframe (D131)
Mainframe (D065)	Mainframe (D132)
Mainframe (D066)	Mainframe (D133)
LG Size Tray Type 1075 (B474)	**8 1/2"x14" Paper Size Tray Type 9002** (B474)
---	**ADF Handle C (D593)**
Copy Tray Type 2075 (B756)	Copy Tray Type **9002** (B756)
Cover Interposer Tray Type 3260 (B704)	Cover Interposer Tray **CI4000** (**D614**)
Finisher SR4030 (D374)	Finisher **SR4060** (**D611**)
Finisher SR4040 (D373)	Finisher **SR4070** (**D612**
Punch Unit Type 3260 SC (B702	Punch Unit Type 3260 SC (B702)
Output Jogger Unit Type 3260 (B703)	Output Jogger Unit Type **9002A** (B703)
Finisher SR4050 (D460)	Finisher **SR4080 (D610)**
Punch Unit Type 850 SC (A812)	Punch Unit Type 850 SC (A812)
Output Jogger Unit Type 1075 (513)	Output Jogger Unit Type **9002B** (513)
Key Counter Bracket Type 1027 (B452)	Key Counter Bracket Type 1027 (B452)
RT43 (LCT) (B473)	**LCIT RT4010 (D613)**

D062/D063/D065/D066	D131/D132/D133
Item	**Item**
Mailbox CS391 (B762)	Mailbox **CS4000 (D616)**
Memory Unit Type B 32MB (G578)	Memory Unit Type B 32MB (G578)
Multi Folding Unit FD5000 (D454)	Multi Folding Unit **FD4000 (D615)**
Optional Counter Interface Unit Type A (B870)	Optional Counter Interface Unit Type A (B870)
Tab Sheet Holder Type 9002 (B499)	Tab Sheet Holder Type 3260 (B499)
Punch Unit Type 3260 2/4 EU (B702)	Punch Unit Type 3260 2/4 EU (B702)
Punch Unit Type 1075 EU 2/4 (B531)	Punch Unit Type 1075 EU 2/4 (B531)
Punch Unit Type 3260 NA 3/2 (B702)	Punch Unit Type 3260 NA 3/2 (B702)
Punch Unit Type 1075 3/2 (B531)	Punch Unit Type 1075 3/2 (B531)
A3/11"x17" Tray Type 9001 (D482)	A3/11"x17" Tray Type 9001 (D482)

Controller Options

Note

- Changes are marked in **bold** in the right column.

D062/D063/D065/D066	D131/D132/D133
Item	**Item**
Bluetooth Interface Unit Type 3245 (B826)	Bluetooth Interface Unit Type **D (D566)**
Browser Unit Type E (D430)	Browser Unit Type **J** (**D620**)
Card Reader Bracket (B498)	Card Reader Bracket (B498)
Copy Connector Type 3260 (B328)	Copy Connector Type 3260 (B328)
Copy Data Security Unit Type F (B829)	Copy Data Security Unit Type F (B829)

D062/D063/D065/D066	D131/D132/D133
Item	**Item**
Data Overwrite Security Unit Type H (D377)	Data Overwrite Security Unit Type H (D377)
File Format Converter Type E (D377)	File Format Converter Type E (D377)
Gigabit Ethernet Type B (D377)	Gigabit Ethernet Type B (D377)
IEEE 1284 Interface Unit Board Type A (B679)	IEEE 1284 Interface Unit Board Type A (B679)
IEEE 802.11g Interface Unit Type K (D377)	IEEE 802.11g Interface Unit Type K (D377)
IEEE 802.11a/g Interface Type J (D377)	IEEE 802.11a/g Interface Type J (D377)
PostScript3 Unit Type 9001 (D462)	PostScript3 Unit Type **9002 (D620)**
Printer/Scanner Unit Type 9001 (D462)	Printer/Scanner Unit Type 9002 (D620)
USB 2.0/SD Slot Type C (D464)	
VM Card Type J (D463)	VM Card Type **U (D640)**

Fax Options

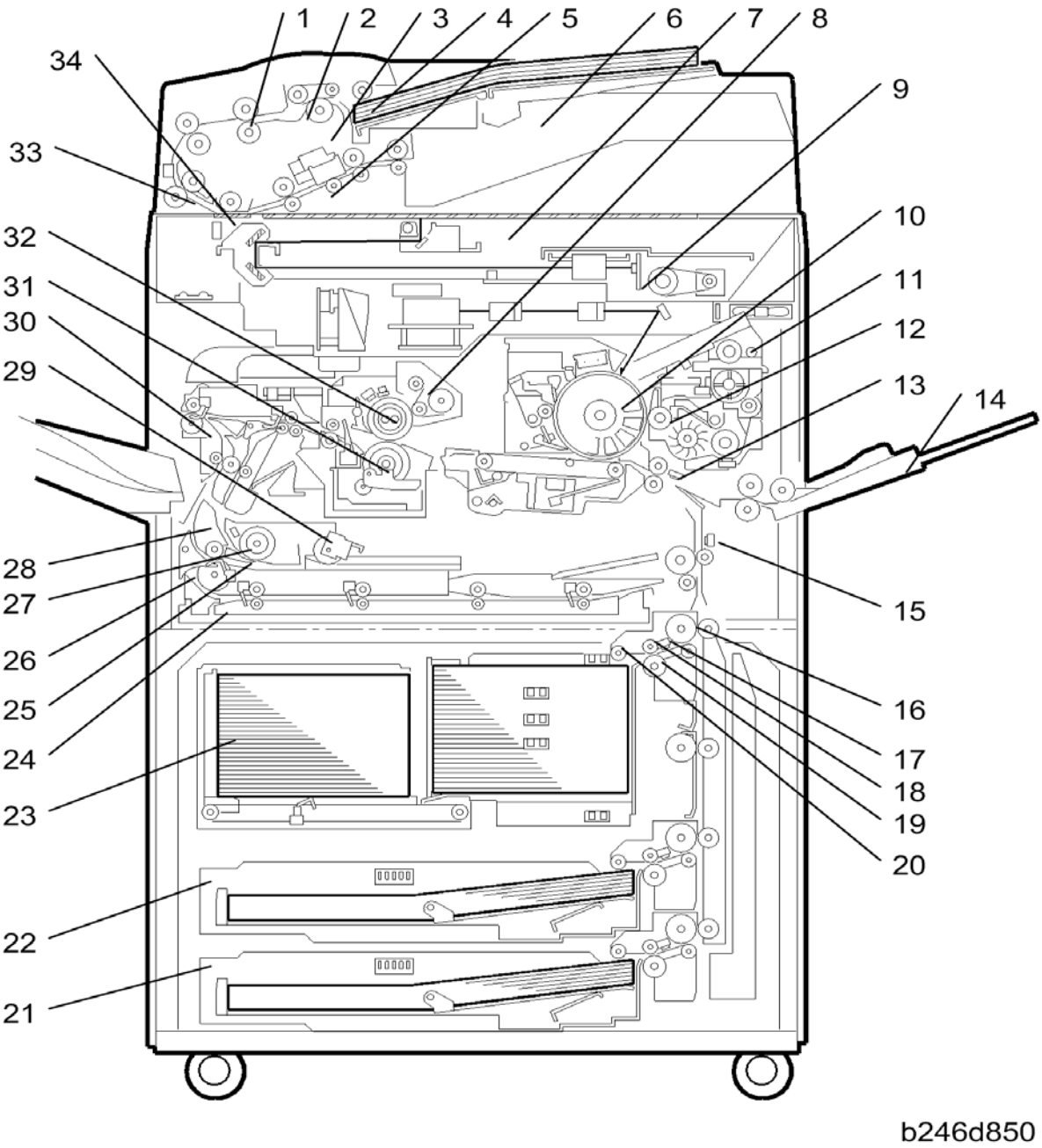
Note

- Changes are marked in **bold** in the right column.

D062/D063/D065/D066	D131/D132/D133
Item	**Item**
Fax Option Type 9001 (D418)	Fax Option Type **9002 (D619)**
G3 Interface Unit Type 9001 (D418)	G3 Interface Unit Type **9002 (D619)**
Memory Unit Type B 32MB (G578)	
	Fax Connection Unit Type E (D621)

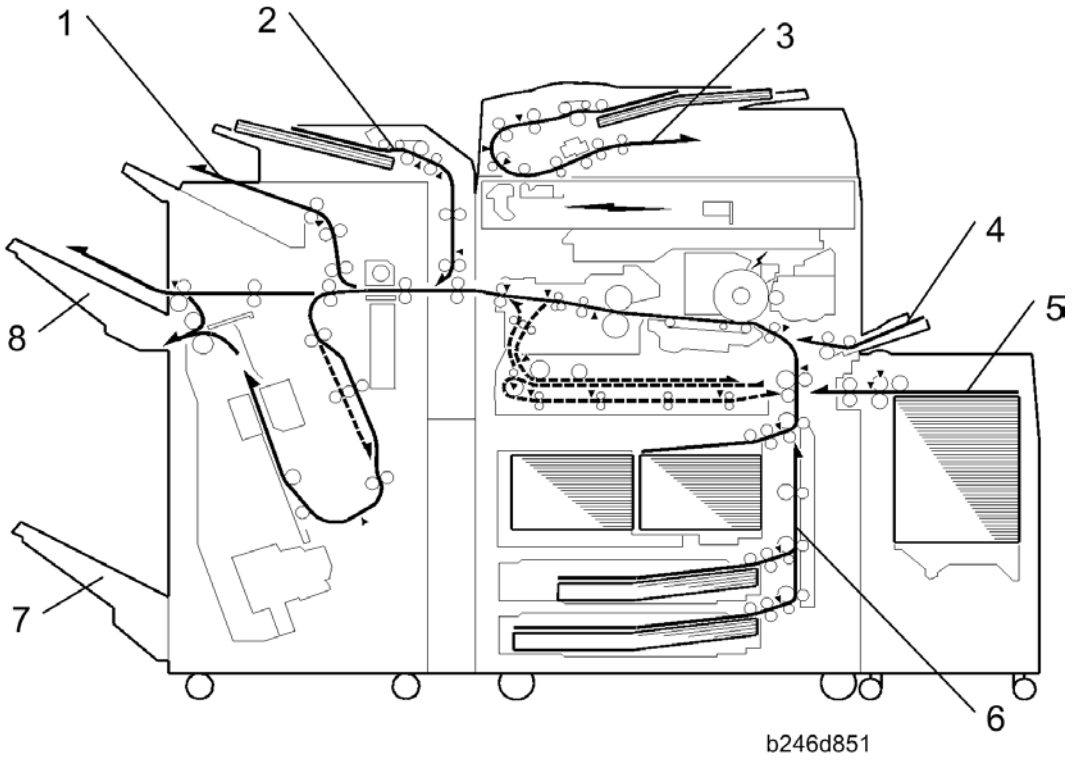
1.4 OVERVIEW

1.4.1 MECHANICAL COMPONENT LAYOUT



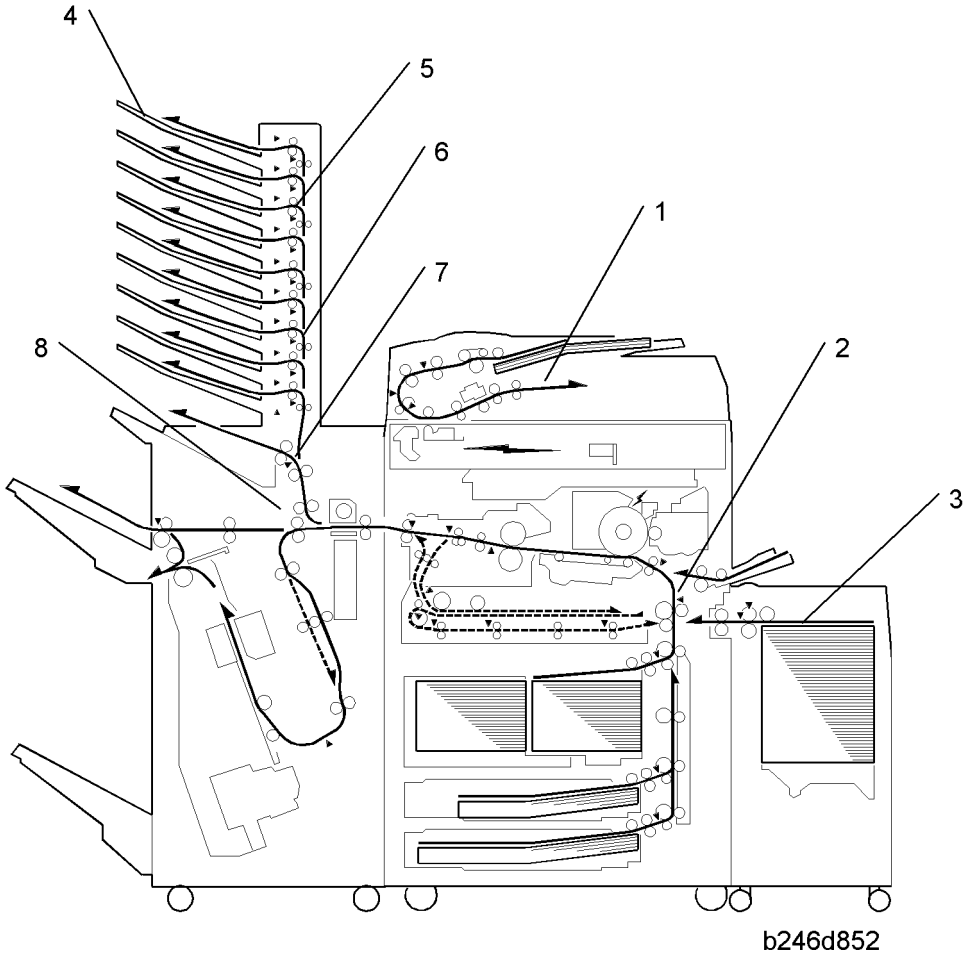
1. Entrance Roller (ADF)	2. Feed Belt (ADF)
3. Separation Roller (ADF)	4. Pick-up Roller (ADF)
5. CIS (Contact Image Sensor)	6. Original Feed-in Tray
7. Exposure Glass	8. Fusing Unit
9. CCD	10. OPC Drum
11. Development Unit	12. Development Roller
13. Registration Sensor	14. By-pass Tray
15. Relay Sensor	16. Grip Roller
17. Feed Sensor (Paper Tray)	18. Feed Roller (Paper Tray)
19. Separation Roller (Paper Tray)	20. Pick-up Roller (Paper Tray)
21. Universal Tray (Tray 3)	22. Universal Tray (Tray 2)
23. Tandem Tray (Tray 1)	24. Duplex Unit
25. Inverter	26. Inverter Exit Roller
27. Inverter Entrance Roller	28. Duplex Junction Gate
29. Reverse Trigger Roller	30. Exit Unit
31. Pressure Roller	32. Hot Roller
33. Scanning (ADF)	34. Exposure (ADF)

1.4.2 PAPER PATH (WITH COVER INTERPOSER TRAY)



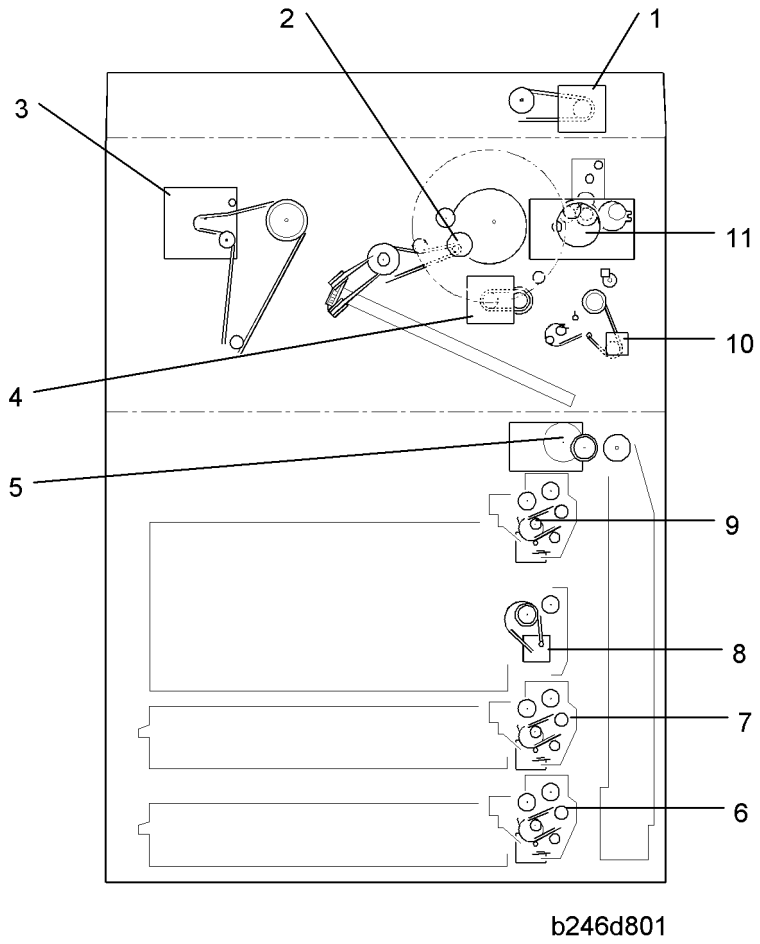
1. Proof Exit Tray	2. Cover Sheet Path
3. Original Path	4. By-pass Tray
5. LCT Feed	6. Vertical Transport Path
7. Finisher Exit Tray 2	8. Finisher Exit Tray 1

1.4.3 PAPER PATH (WITH 9-BIN MAILBOX)



1. Original Paper Path	2. Vertical Transport Path
3. LCT Feed	4. Selected Trays
5. Turn Gates	6. Mailbox Paper Path
7. Junction Gate (paper goes either up to the mailbox or out to the finisher's proof tray)	8. Junction Gates (two junction gates control the paper path inside the finisher)

1.4.4 DRIVE LAYOUT



1. Scanner Motor	2. Drum Motor
3. Fusing/Exit Motor	4. Registration Motor
5. Toner Collection Motor	6. Paper Feed Motor 3
7. Paper Feed Motor 2	8. Lower Relay Motor
9. Paper Feed Motor 1	10. By-pass Motor
11. Development Motor	

INSTALLATION

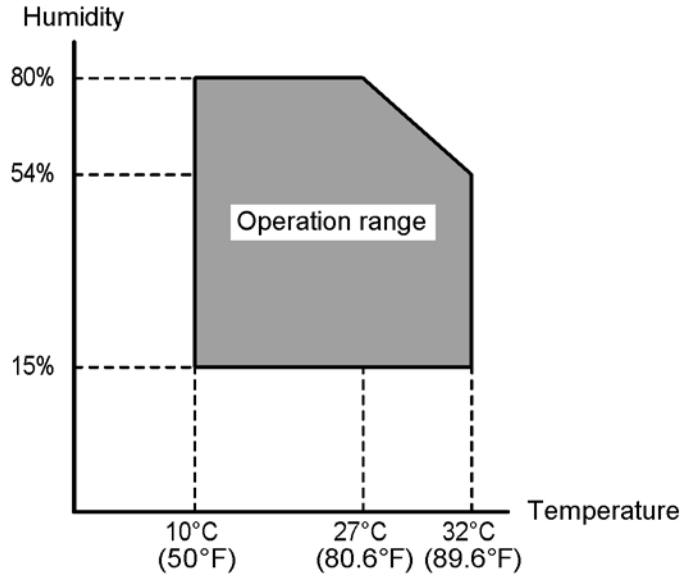
REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
6	08/30/2012	Updated Power Requirements for D133 machine
114	09/05/2012	Correct the Data OverWrite Security Installation instructions
94 ~ 96	09/06/2012	Added Key Counter Interface Unit 20 Pin (B870)
97 ~ 125	09/06/2012	Page number change only

2. INSTALLATION

2.1 INSTALLATION REQUIREMENTS

2.1.1 OPERATING ENVIRONMENT

1. Temperature Range
   - Recommended: 15 °C to 25 °C (59 °F to 77 °F)
   - Possible: 10 °C to 32 °C (50 °F to 90 °F)
2. Humidity Range:
   - Recommended: 30% to 70 %RH
   - Possible: 15% to 80% RH (27 °C 80%, 32 °C 54%)
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
5. Ambient Dust: Less than 0.10 mg/m^3



b064i502

6. If the place of installation is air-conditioned or heated, do not place the machine where it will be:
   - Subjected to sudden temperature changes
   - Directly exposed to cool air from an air-conditioner
   - 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 copier on a strong and level base with the front and back of the machine within ±5 mm (0.2") of level.

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 electromagnetic field which could interfere with radio or television reception.

2.1.2 MACHINE LEVEL

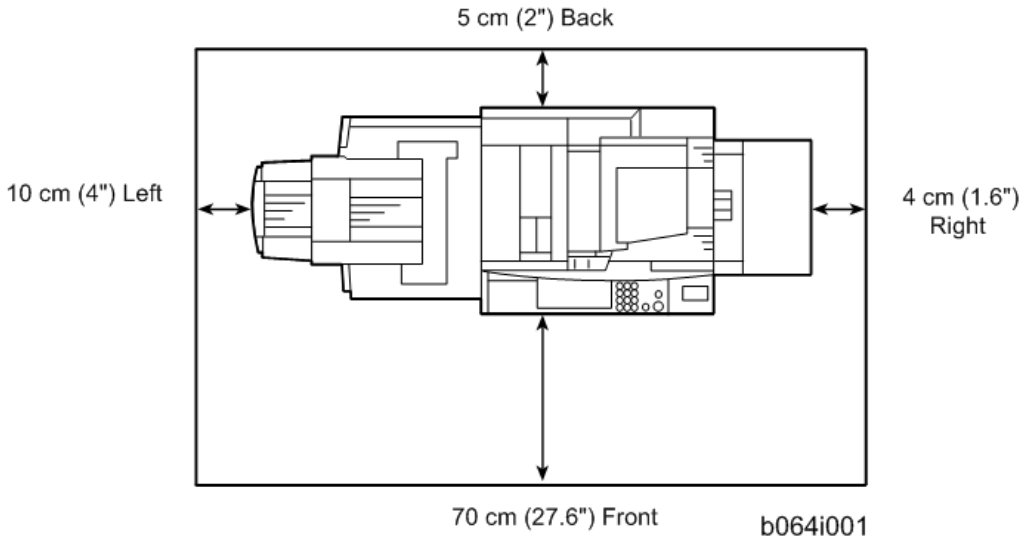
Front to back: Within ±5 mm (0.2") of level

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

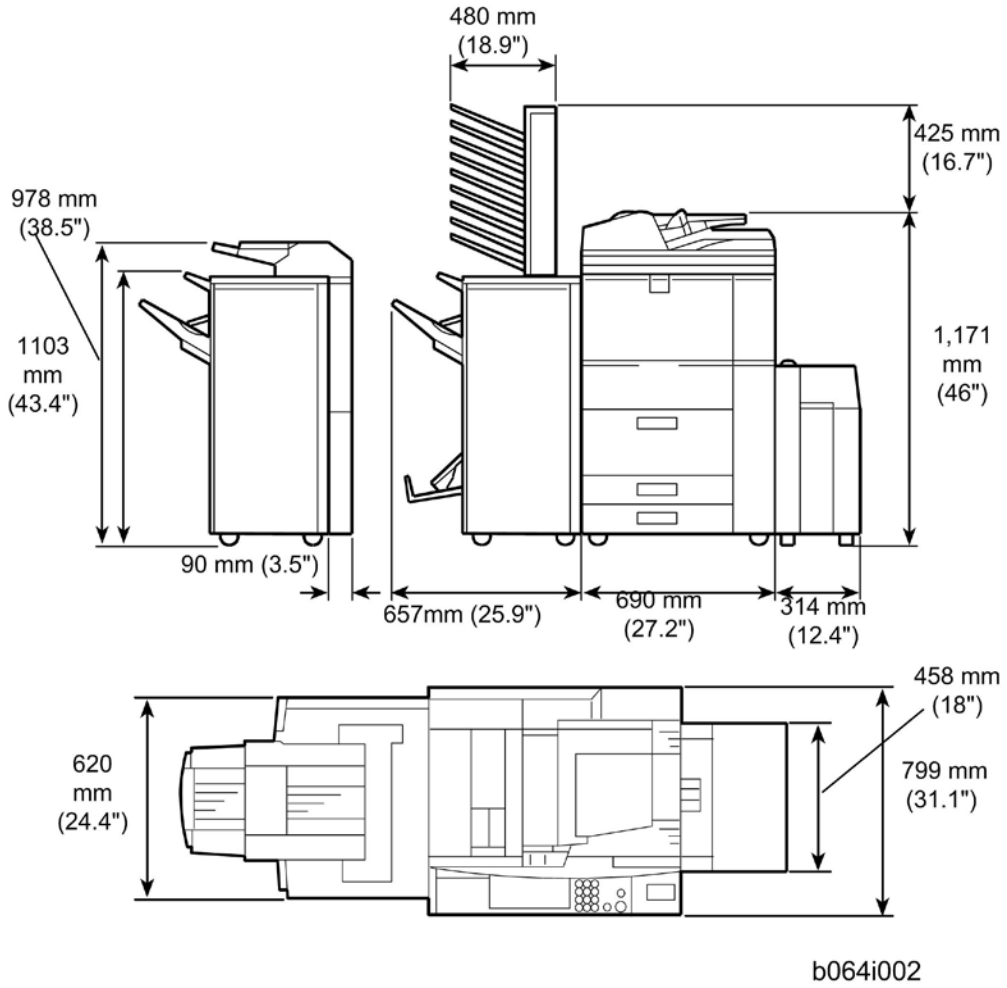
The machine legs may be screwed up or down in order to level the machine. Set a carpenter's level on the exposure glass.

2.1.3 MINIMUM SPACE REQUIREMENTS

Place the copier near the power source, providing minimum clearance as shown below. The same amount of clearance is necessary when optional peripheral devices are installed.



2.1.4 DIMENSIONS



2.1.5 PERIPHERAL/OPTION SUMMARY TABLE

The table below summarizes all the peripheral devices and controller options.

	Name	Class*1	Comment
B498	Card Reader Bracket	1	Connected directly to the mainframe
B328	Copy Connector Type 3260	1	Links two mainframes
B756	Copy Tray Type 9002	1	Small output tray for mainframe
D619	Fax Option Type 9002	1	Board
D611	Finisher SR4060 (D611)	1	Punching, sorting, shifting, corner/booklet stapling

	Name	Class*1	Comment
D612	Finisher SR4070	1	Punching, sorting, shifting, corner stapling only
D610	Finisher SR4080 (D610)	1	Punching, sorting, shifting, corner stapling only
D619	G3 Interface Unit Type 9002 (D619)	1	Board
B452	Key Counter Bracket Type 1027	1	Common option
D613	LCIT RT4010	1	Paper bank for LT/A4 paper
D615	Multi Folding Unit FD4000	1	
B474	8 1/2"x14" Paper Size Tray Type 9002	1	Paper bank for LG paper
D482	A3/11" x 17" Tray Type 9001	1	Installed in Tray 1 (Tandem Tray)
D614	Cover Interposer Tray CI4000	2	Installed on the D610, D611, D612
D616	Mailbox CS4000	2	Installed on D611, D612
B703	Output Jogger Unit Type 9002A	2	Installed on D611, D612
B513	Output Jogger Unit Type 9002B	2	Finisher SR4080 (D610)
B513	Output Jogger Unit Type 9002B	2	Installed on D610
A812	Punch Unit Type 850 SC	2	Installed in D610
B499	Tab Sheet Holder Type 3260	2	Installed in Tray 1 (Tandem Tray)
B702-17	Punch Unit Type 3260 NA 2/3	2	Installed in D611, D612
B531-27	Punch Unit Type 1075 EU 2/4	2	Finisher SR4080 (D610)
B702-27	Punch Unit Type 3260 EU 2/4	2	Installed in D611, D612
B531-17	Punch Unit Type 1075 NA 3/2	2	Finisher SR4080 (D610)

	Name	Class*1	Comment
D566	Bluetooth Interface Unit Type D (D566)	3	USB Host
D620	Browser Unit Type J	3	SD card
B829	Copy Data Security Unit Type F	3	IPU Board
D377-06	Data Overwrite Security Unit Type H	3	SD card (pre-installed)
D377	File Format Converter Type E	3	Board
D377	Gigabit Ethernet Type B	3	Board
B679	IEEE1284 Interface Board Type A	3	Board
D620	PostScript3 Unit Type 9002 (D620)	3	SD card
D620	Printer/Scanner Unit Type 9002 (D620)	3	SD Card
D640	VM Card Type U (D640)	3	SD card
D377	IEEE 802.11a/g, /g Interface Unit Type K/J	3	Board
D464	USB2.0/SD Slot Type B	3	Installed in mainframe

*1 Key:

- Class 1: Peripheral units connected directly to the mainframe
- Class 2: Components installed on or in peripheral units (punches, etc.)
- Class 3: MFP controller options (SD cards, boards)

2.1.6 POWER REQUIREMENTS

⚠CAUTION

- Make sure that the wall outlet is near the main machine and easily accessible. Make sure the plug is firmly inserted in the outlet.
- Avoid multi-wiring.
- Be sure to ground the machine.
- Never set anything on the power cord.

Input voltage level	North America 120 V, 60 Hz: 20 A or more (D131/D132) 208-240, 60Hz, 12A (D133)
	Europe/Asia 220 V to 240 V, 50 Hz/60 Hz: 10 A or more
Permissible voltage fluctuation	±10%

⚠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 platen cover or ADF is open
- 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.

2.2 MAIN MACHINE

2.2.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

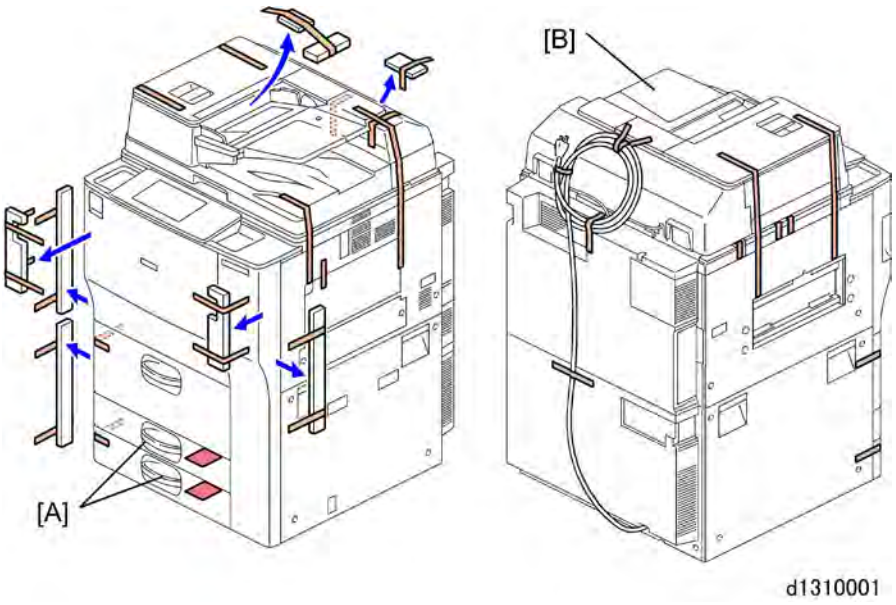
No.	Description	Q'ty
1.	Model Name Decal (-29 Only)	1
2.	Operation Instructions (-17, -19, -21, -29, -57 Only)	2
3.	Support	2
4.	Decal – Paper Size	1
5.	Decal: Caution Chart: Paper Set: Direction	1
6.	Leveling Shoe	2
7.	Operating Instructions Holder	2
8.	Decal – Cleaning - Multiple	1
9.	Cloth – DF Exposure Glass	1
10.	Cloth Holder	1
11.	Decal – Toner Supply - Multiple	1
12.	Decal: Power Source: Off	1
13.	Decal Exposure Glass: Multiple	1
14.	Decal – D1/E1 Multiple	1
15.	EU Safety Sheet (-27, -67 only)	1
16.	Ferrite Core (RFC-13)	1
17.	EULA Sheet: 18 languages (-28, -57, -67 only)	1
18.	Decal: License Agreement 18 Languages (-28, -57, -67 only)	1
19.	TEL Name Sheet (-21 only)	1

2.2.2 INSTALLATION PROCEDURE

Removing Tapes and Retainers

⚠CAUTION

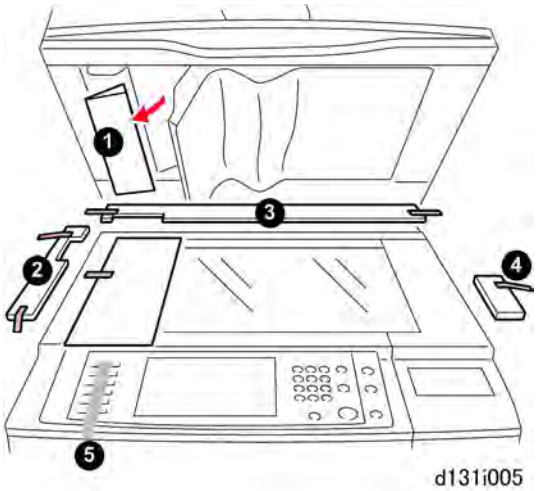
- To avoid serious injury, do not connect the power plug to the machine until you are instructed to do so.



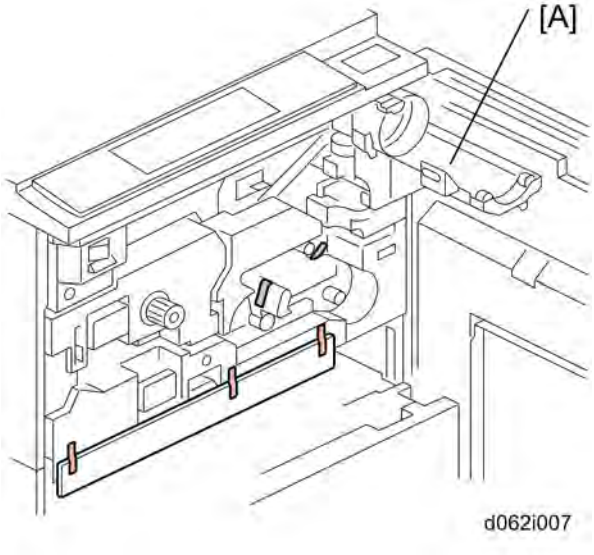
1. Unpack the machine and remove all the wrapping.
2. Remove all filament tape from the front of the machine.
3. Open the lower trays [A] and remove the operating instructions holder, red tabs, and wires (x2)..
4. Open the ADF [B] and remove all shipping material.
5. Remove the tape from the back of the machine.

Note

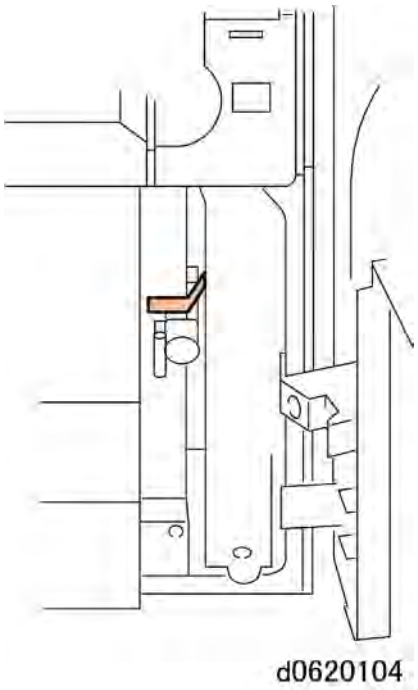
- Save the filament tape and shipping retainers to prepare the machine for shipping in the future.



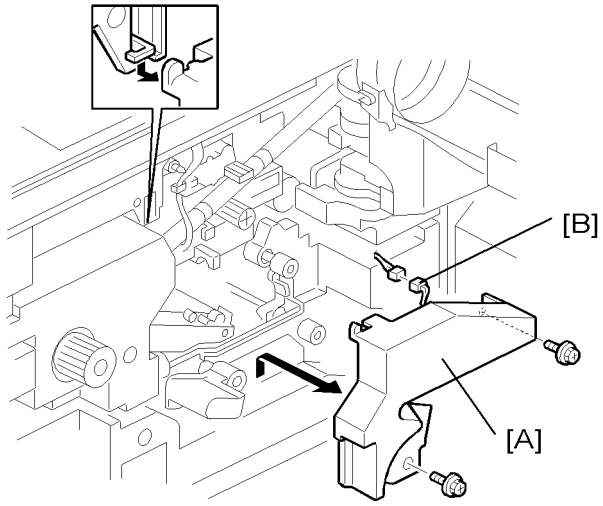
6. Raise the ADF and remove all the tapes and shipping retainers around the ADF, exposure glass, and operation panel.
7. Remove the shipping retaining sheet [B] under the white pad.



8. Open the front door, open the toner bottle holder [A], then remove all tape and shipping retainers.

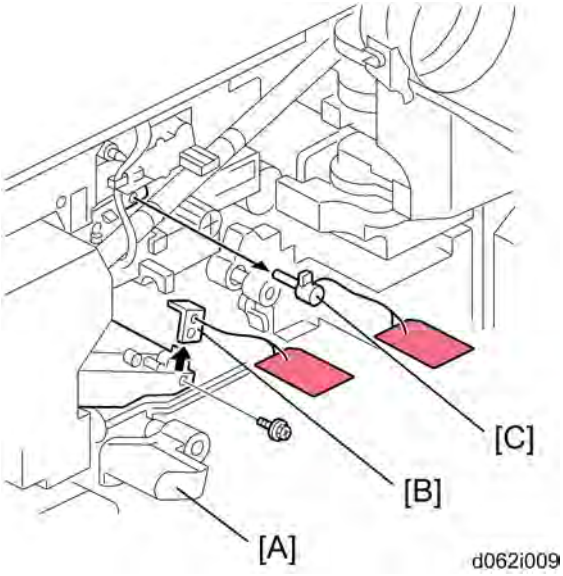


9. Open the right door and remove the tape from the vertical transport plate.



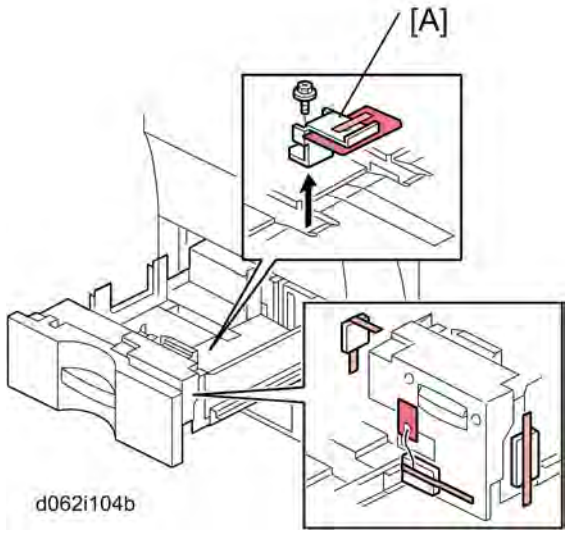
b064i008

10. Remove the PCU inner cover [A] (x 2) and disconnect the fan motor [B] (x 1).



d062i009

11. Lower the transfer unit by turning its knob [A].
12. Remove the bracket [B], and the red tag from the transfer belt (x 1).
13. Remove the pin [C], and the red tag from the cleaning plate.

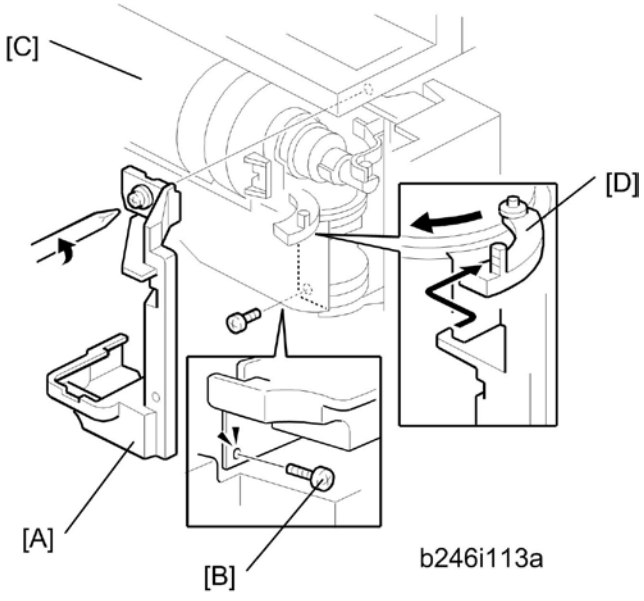


14. Open the tandem tray (top paper tray) and remove the metal retainer bracket [A] (x 1) and wire, then the red tags (x2) and all tape.

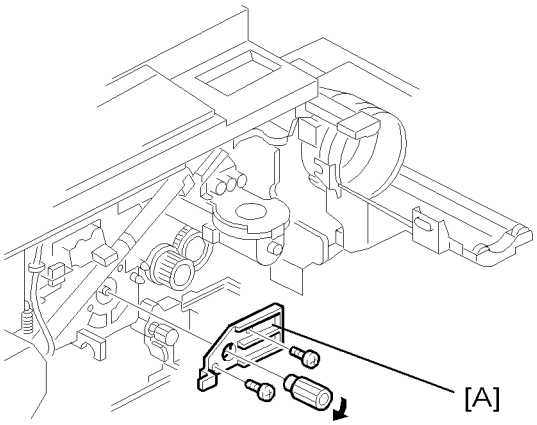
Removing and Filling the Development Unit

Important

- Before you begin, remove the toner bottle if it is installed.
- The toner bottle holder can be damaged if it is in the machine when you do the procedure below.

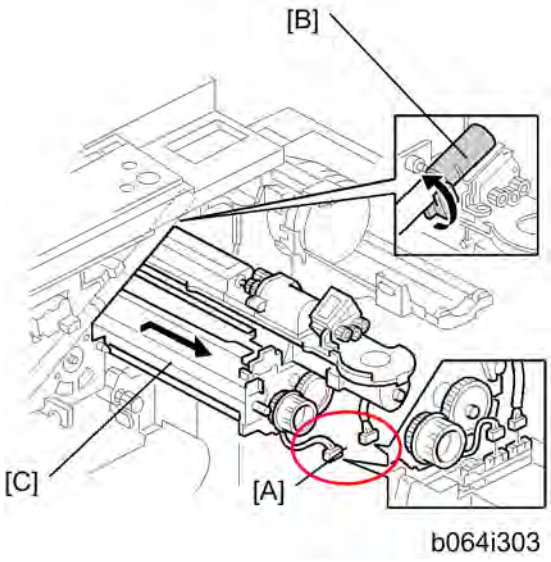


1. Open the front door.
2. Remove the shutter cover [A] (x 1).
3. Remove the lock screw [B].
4. Remove any remaining shipping tape [C].
5. Swing the bottle holder [D] to the left.



b064i302

6. Remove the face plate [A] of the development unit (knob x 1, x 2).



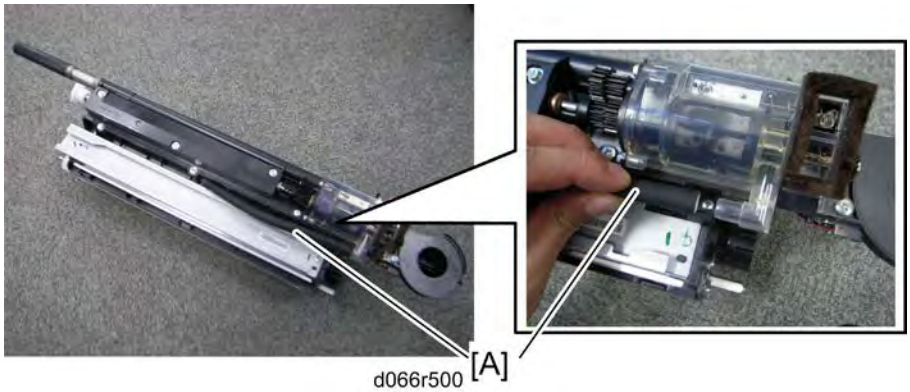
b064i303

7. Disconnect the development unit [A] (x 2).

Note

- If the LCT is installed, disconnect it. This lets the front door open far enough for development unit removal.

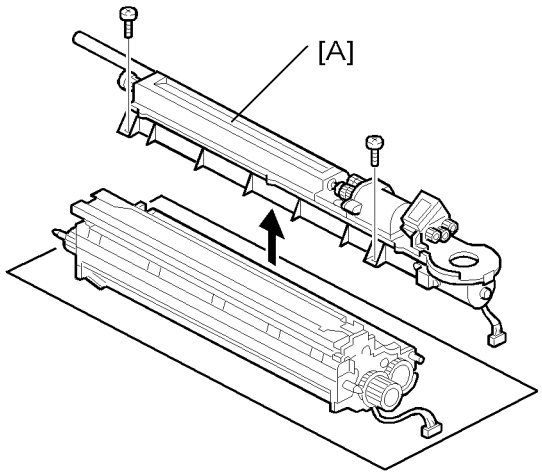
8. Close the supply pipe shutter [B].
9. While allowing the development unit [C] to slip to the right, slowly pull it out of the machine.



d066r500

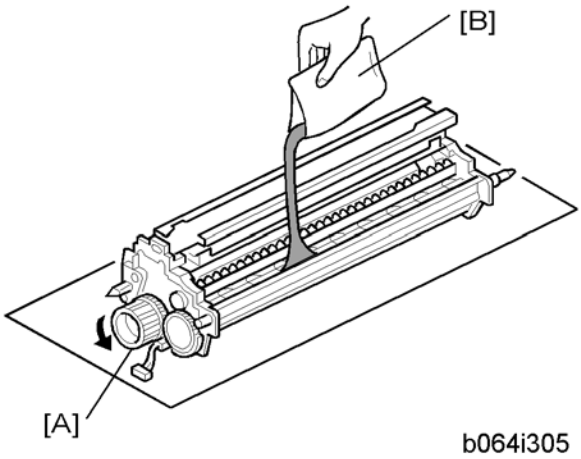
D133 Only

10. Remove the pressure release tube [A].



b064i304

11. Toner hopper [A]☛ Developer Replacement
12. Rotate the toner hopper slightly 10° to 20° as you slide it up to remove it.



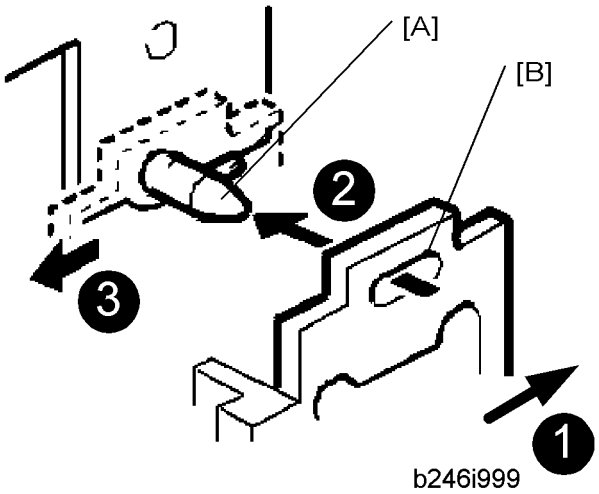
b064i305

13. While turning the knob [A] slowly, pour in one pack of developer [B] from one end of the development unit to the other.
14. Make sure that the developer is evenly distributed. Note the developer lot number printed on the top edge of the bag. You will need the lot number when you execute SP2963 (Installation Mode).
15. Assemble the development unit, then re-install it in the machine.
16. Follow the instructions printed on the inside of the front door to install the toner bottle.

Note

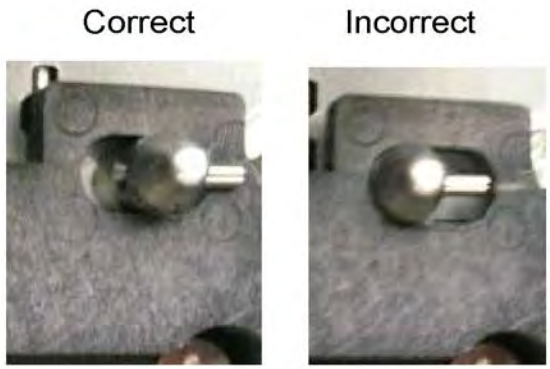
- If the door does not close, make sure that the pipe line shutter is rotated down. (See Step 8 above.)

Re-installing the Development Unit



b246i999

1. Push the development unit to the right ❶.
2. While continuing to hold the unit to the right, push it into the machine.
3. Confirm that the pin [A] goes into the left side of the oval hole [B] in the development unit plate.
4. Push the development unit in completely ❷ until it stops, then push it to the left ❸.
5. Make sure you can see the horizontal pin in front of the plate as shown below.



b246i999a

Note

- If you cannot move the development unit plate behind the horizontal pin, turn the front gear of the unit to the left and try again.

6. Make sure the pipeline shutter is rotated down to the open position.
7. Reattach all removed parts.

Initializing the Drum Settings

You must do SP2963 (Installation Mode) to 1) Initialize the developer and do a forced toner supply to the development unit, and 2) Initialize the auto process control settings.

- You must open the front door before you switch the machine on. If you do this, the machine does not do the short automatic process control procedure, which is usually done after the machine power is turned on.
- SP2963 must be done before you do sample copying or test printing.
- If you do not press “Execute” in Step 6, the auto process control items (potential sensor calibration, Vsg, Vref, etc.) will not initialize correctly.

1. Open the front door.
2. Connect the power cord.
3. Turn the main power switch on.
4. Ignore the "Cover Open" message. **Do not close the door**.
5. Go into the SP mode.
6. Close the front door.
7. Enter SP2963-002, then enter the lot number of the developer.
   - The lot number should be seven digits.
   - If seven digits are not entered before you do SP2963-001, the LCD shows error messages.
8. Do SP2963-001.

   Note

   - It will take 3 or 4 minutes to initialize toner supply and the auto process control settings.
9. When you see the "Completed" message box, touch "Exit" in the box.
10. Press “Exit” twice to go out of the SP mode.
11. Attach the applicable decals (supplied with the machine) to the paper trays.
12. Check the copy quality and machine operation.

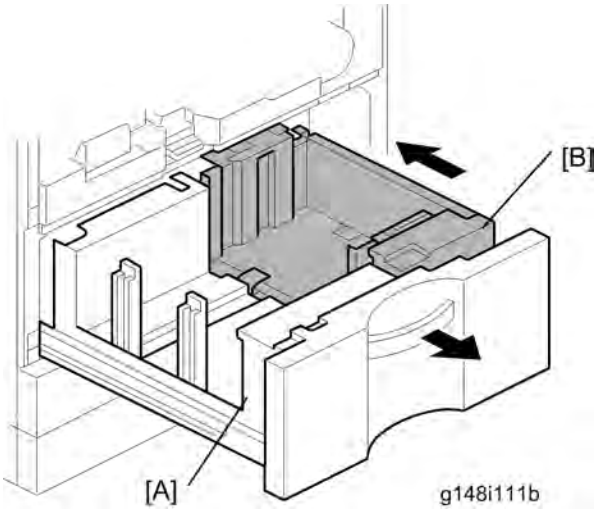
Important

- At installation, use SP2963 to enter the lot number, initialize the developer, and to force toner supply to the toner hopper.
- After you replace developer in a machine that has been already installed, do not use SP2963; use SP2801 (TD Sensor Initial Setting) instead to enter the lot number and initialize the TD sensor.☛ p.4-54

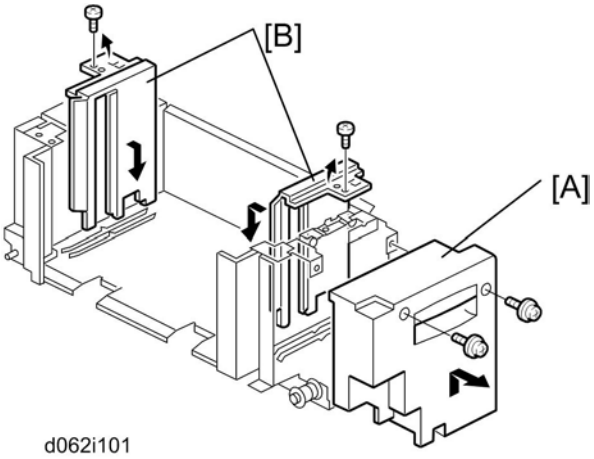
Tandem Tray

Before shipping the machine, the tandem tray is set for A4 or LT LEF and must be adjusted if the customer wants to use the tandem tray for another paper size.

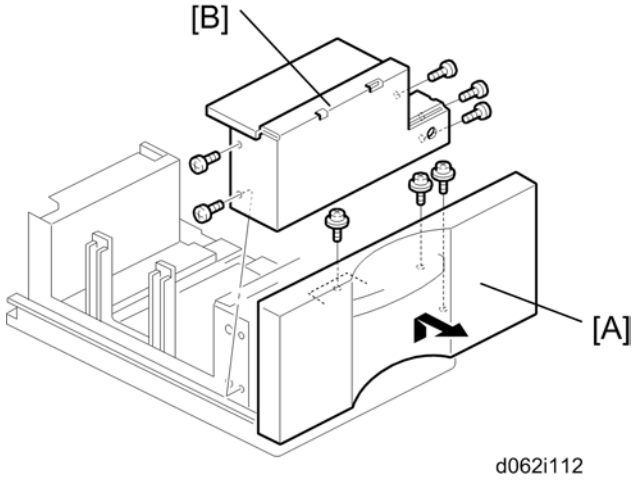
Feed Station	Allowed Size
Tandem Tray (Tray 1)	A4 LEF, LT LEF



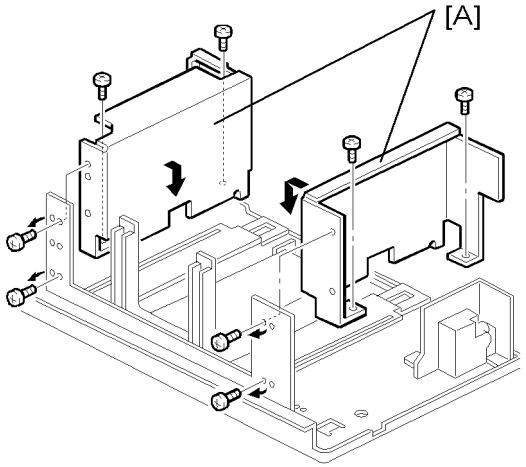
1. Open the front cover.
2. Completely pull out the tandem feed tray [A] so that the right tandem tray [B] separates from the left tandem tray.



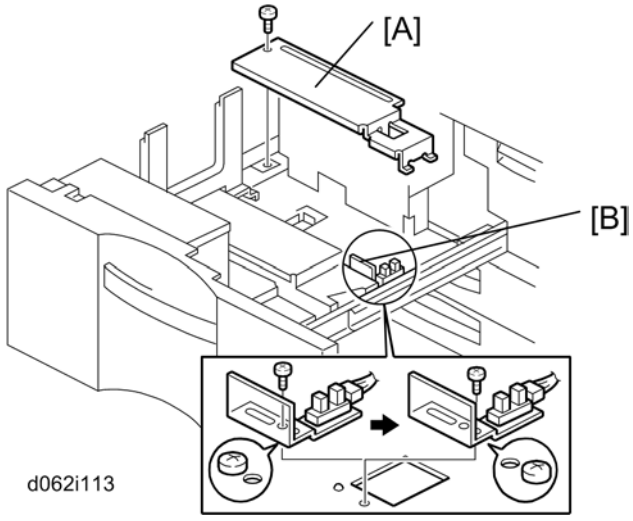
3. Remove the right tandem inner cover [A].
4. Re-position the side fences [B] (x 2). The outer slot position is used when loading A4 size paper.
5. Re-install the right tandem inner cover [A].



6. Remove the tray cover [A] (x 3).
7. Remove the motor cover [B] (x 5).

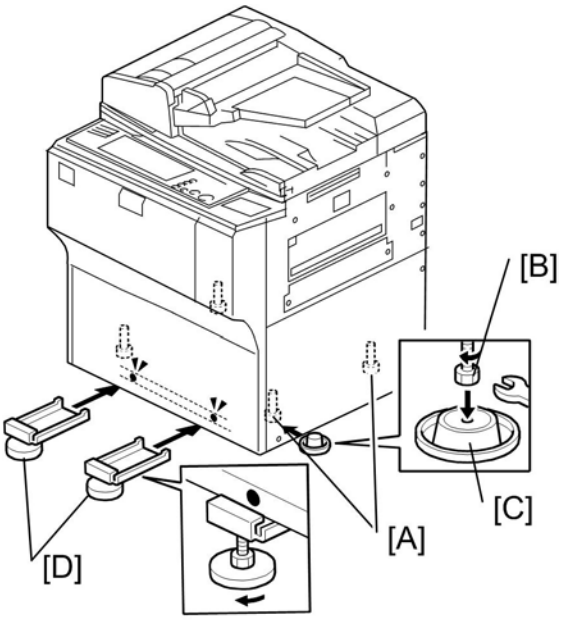


8. Re-position the side fences [A] (x 8). The outer slot position is used when loading A4 size paper.
9. Re-install the motor cover and the tray cover.



10. Remove the rear bottom plate [A] (x 1).
11. 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 as shown. (For LT size, the screw should be placed on the right.)
12. Re-install the rear bottom plate.
13. Change the paper size using SP5959-001 (Paper Size – Tray 1). For details, see SP5959 in "Service Tables".

Machine Level



d062i010

1. Set a stand [A] at two front foot of the machine.
2. Set the leveling shoes [C] (x2) under the feet [B], then level the machine.
   - Two leveling shoes should be installed at the front side.
3. Install two supports [D] at the front side of the machine.
4. Check the machine operation. With the customer, determine the best place to attach the cleaning reminder decal.

Date/Time Setting

Use the User Tools menu to set the current date and time.

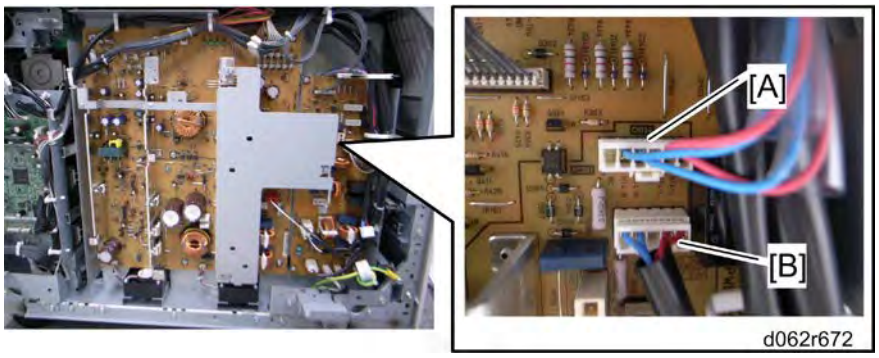
- On the operation panel, press the User Tools key.
- On the touch-panel, press "System Settings".
- Press the "Timer Setting" tab.
- Press "Set Date" to enter the date.
- Press "Set Time" to enter the time.

SP Codes

SP5812-001	Service Telephone Number Settings	Enter the contact number of the customer engineer. This is the number displayed when a service call is issued.
SP5841-001	Supply Name Setting – Toner Name Setting: Black	This name appears when the user presses the Inquiry on the User Tools screen.
SP5853	Stamp Data Download	Do SP 5853 to copy stamp data to the hard disk, then turn the power off/on.

Connecting the Drum Heater Connector and the Tray Heater Connector.

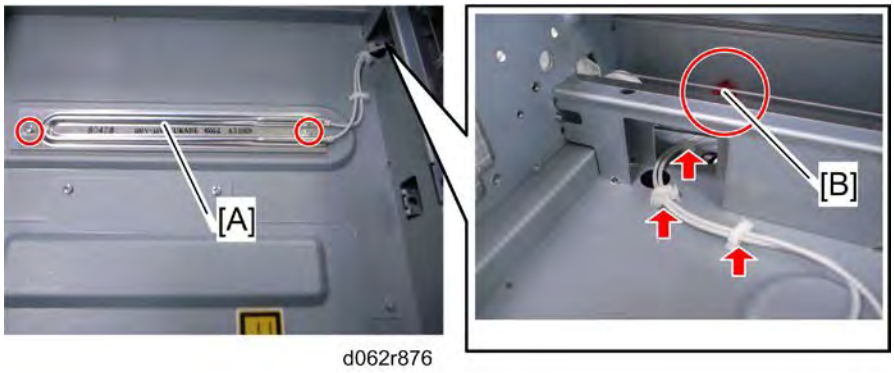
1. Open the rear upper cover and the rear lower cover.



2. Connect the tray heater connector to the CN104 connector [A].
3. Connect the drum heater connector to the CN103 connector [B].

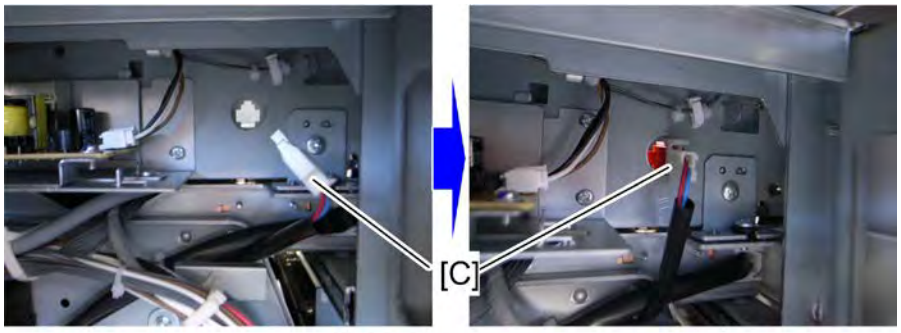
Installing the Scanner Heater

1. Rear upper cover ☛ Rear Covers
2. Exposure glass ☛ Exposure Glass
3. Operation panel ☛ Operation Panel
4. Left stay ☛ Scanner Wire Replacement



d062r876

5. Install the scanner heater [A] (x 2)
6. Fasten the cable with the harness clamps (x 3).
7. Fasten the connector [B] on the rear side of the machine (x 1).



d062r874

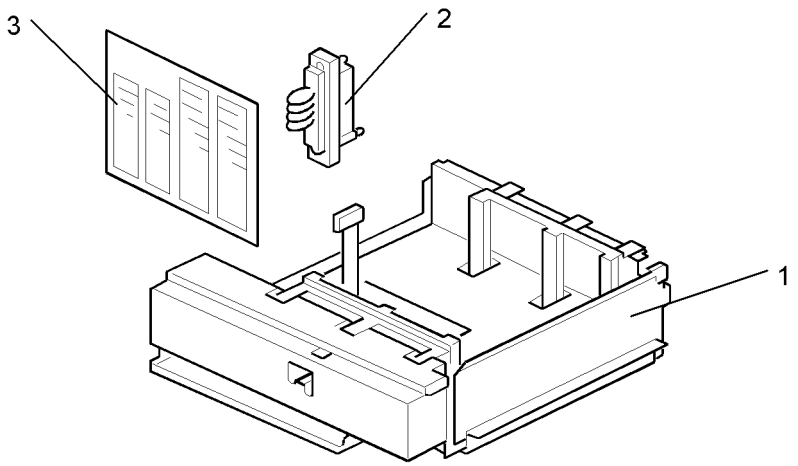
8. Connect the harness [C] to the connector [B] on the rear side of the machine.

2.3 A3/11"X17" TRAY TYPE 9001 (D482)

2.3.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

No.	Description	Q'ty
1.	A3/DLT Tray	1
2.	Short connector	1
3.	Page size decals	1

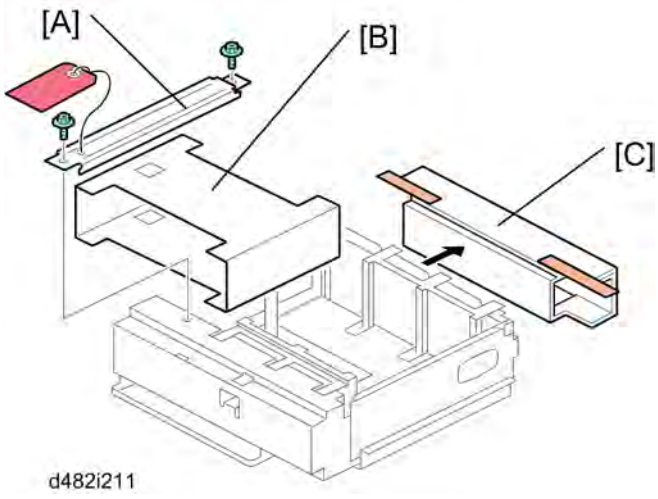


b475i001

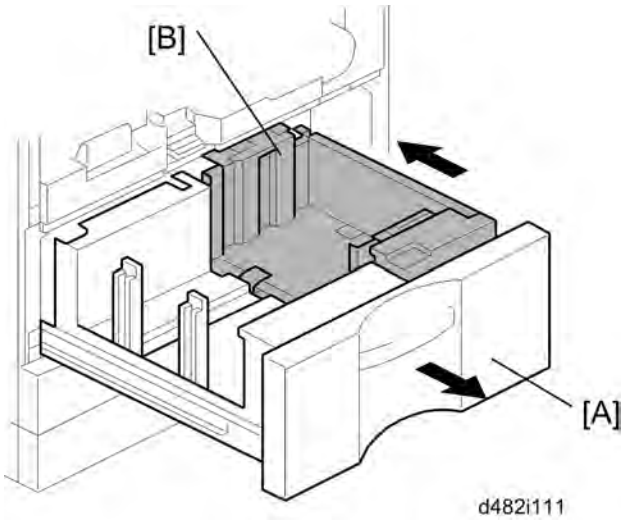
2.3.2 INSTALLATION PROCEDURE

⚠CAUTION

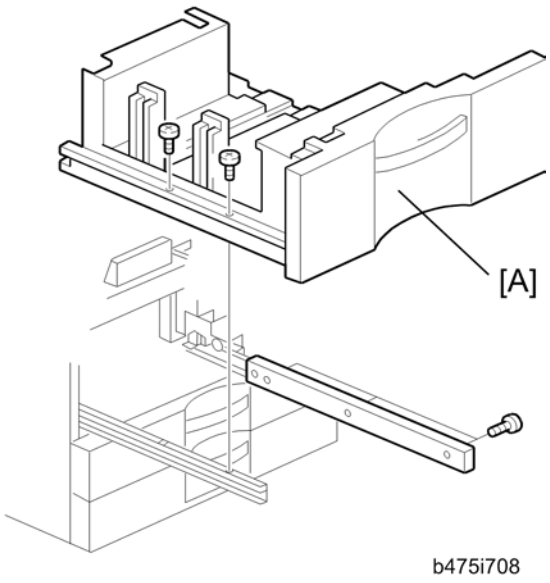
- Switch the machine off and unplug the machine before starting the following procedure.



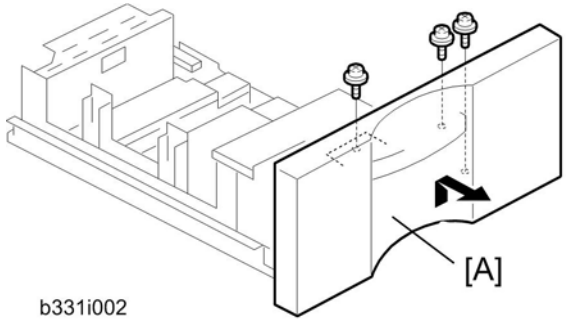
1. Remove the stay [A] (🔩 x 2).
2. Remove the retainers [B] [C].



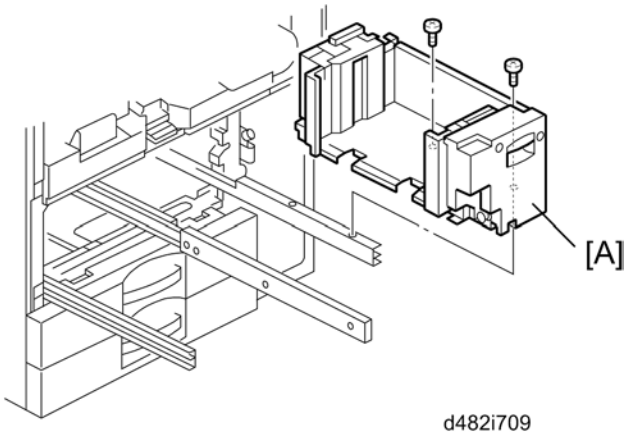
3. Draw out the tandem tray [A] completely to separate the left and right sides of the tray.
4. Push in the right tandem tray [B].



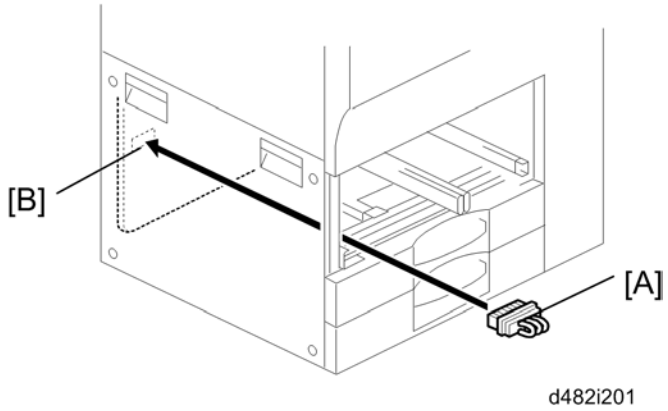
5. Remove the left tandem tray [A] (x 5). Keep these screws.



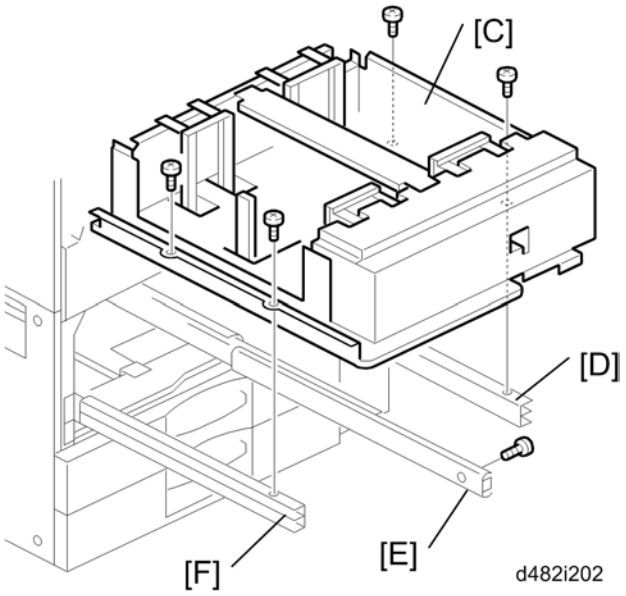
6. Remove the front cover [A] (x 3).



7. Remove the right tandem tray [A] (x 2). Keep these screws.



8. Connect the short connector [A] to the left tandem tray terminal [B].



9. Install the A3/DLT tray [C] on the right rail [D], center rail [E], and left rail [F]. Use the screws that you removed in Steps 3 and 4.

Note

- You must use the short, silver screws on the left and right rails. If you use one of the longer screws, it will stop the movement of the tray on the rails.

10. .Re-install the front cover.
11. Switch the machine on, enter the SP mode and select the paper size for Tray 1 with SP5959-001 (Paper Size – Tray 1). For details, see SP5959 in “Service Tables”.
12. Attach the appropriate decal for the selected paper size.

2.4 LCIT RT4010 (D613)

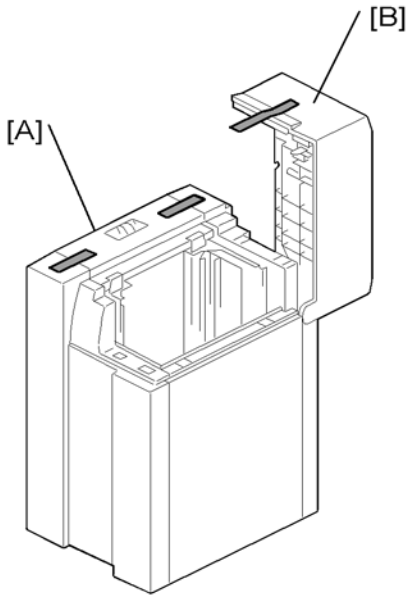
2.4.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

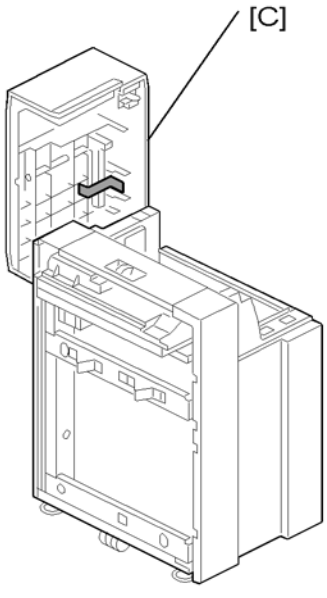
No.	Description	Q'ty
1.	Flat-head shoulder screw - M4 x 6	1
2.	Upper docking pins (grooved)	2
3.	Lower docking pin (not grooved)	1
4.	Installation Instructions	1
5.	Paper Set Decal	1

2.4.2 INSTALLATION PROCEDURE

Removing Tape



b473i001



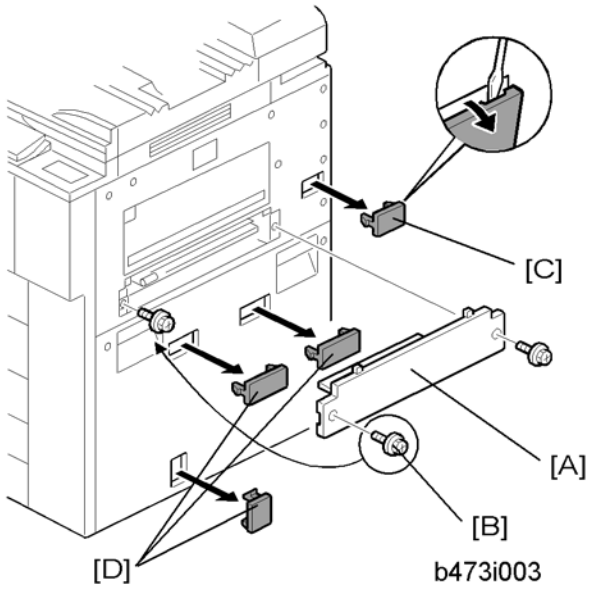
b473i002

1. Remove the filament tape from the body [A] and top cover [B] of the LCT.
2. Remove the tape under the lid [C] of the LCT.

Preparing the Main Machine

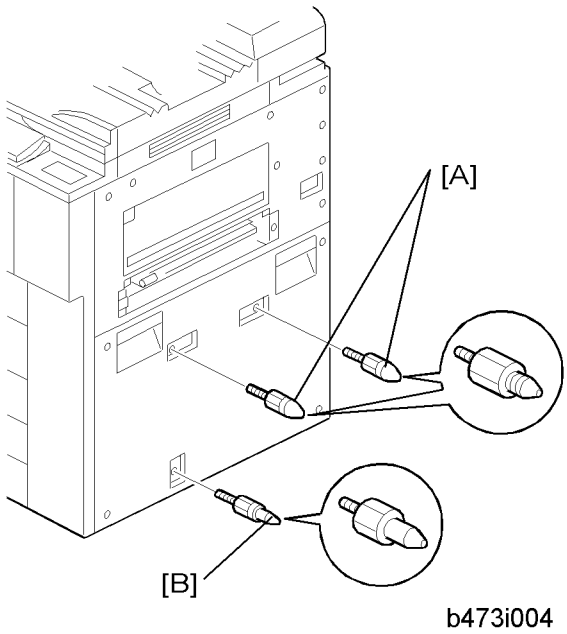
⚠CAUTION

- Switch the machine off and unplug the machine before starting the following procedure.

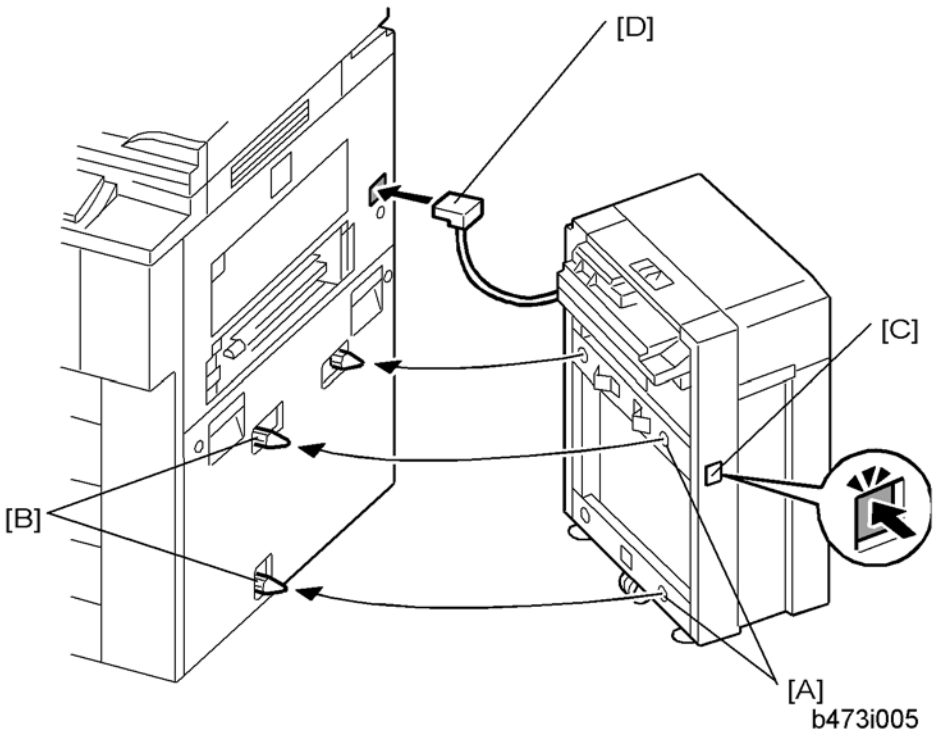


1. Remove the LCT installation cover [A] from the right side of the machine (x 2).
2. Save the screw on the left [B]. You will need it to install the LCT.
3. Remove the LCT connector cover [C] (x 1) and the covers over the holes for the docking pins [D]. (x 3)

Installing the LCT



1. Insert the two upper docking pins (grooved) [A] into the upper slots and the lower docking pin [B] into the lower slot.

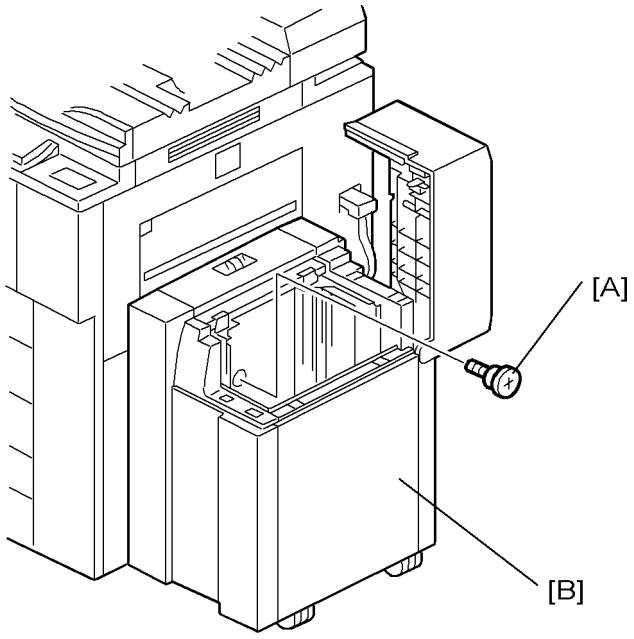


2. Align the holes on the side of the LCT [A] with the docking pins on the side of the machine [B], then slowly push the LCT onto the pins.

Note

- The release button [C] is used to unlock the LCT so it can be disconnected from the machine.

3. Connect the plug [D] of the LCT power cord to the side of the machine.



b473i006

4. Insert the flat-head shoulder screw [A] into the hole and fasten it to lock the release lever in

place.

Note

- For easier access to the hole for the screw [A], you can remove the right panel [B] (x 2).

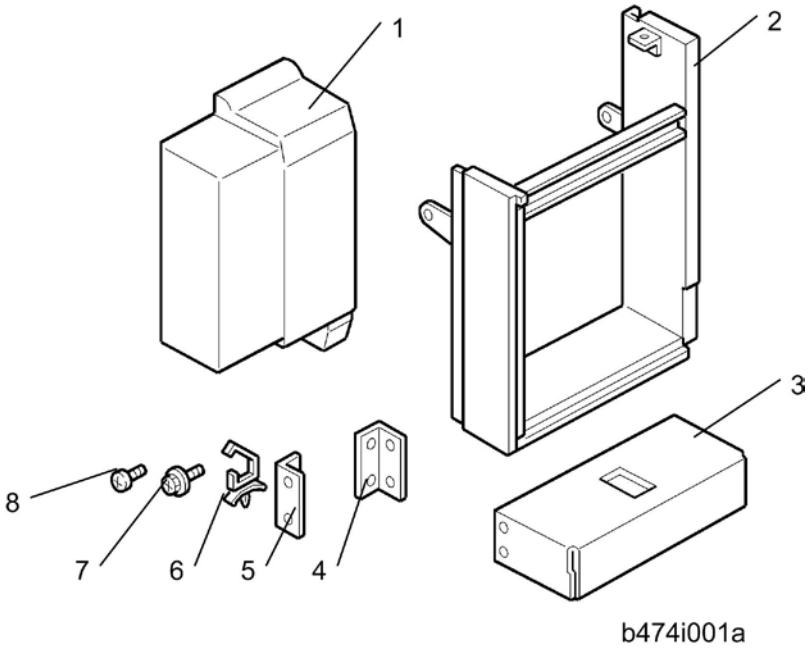
5. Switch the machine on and execute SP5959 005 (Paper Size – Tray 4 (LCT)) to select the paper size. For details, see SP5959 in “Service Tables.”

2.5 8 1/2"X14" PAPER SIZE TRAY TYPE 9002 (B474)

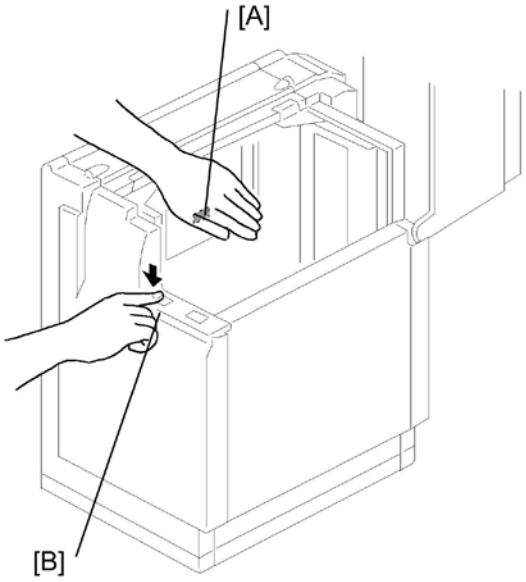
2.5.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

No.	Description	Q"ty
1.	Cover	1
2.	B4/LG frame	1
3.	Bottom plate extension	1
4.	Rear bracket	1
5.	Front bracket	1
6.	Harness clamp	1
7.	Tapping hex screws - M4 x 8	6
8.	Tapping screws - M4 x 8	4



2.5.2 INSTALLATION PROCEDURE



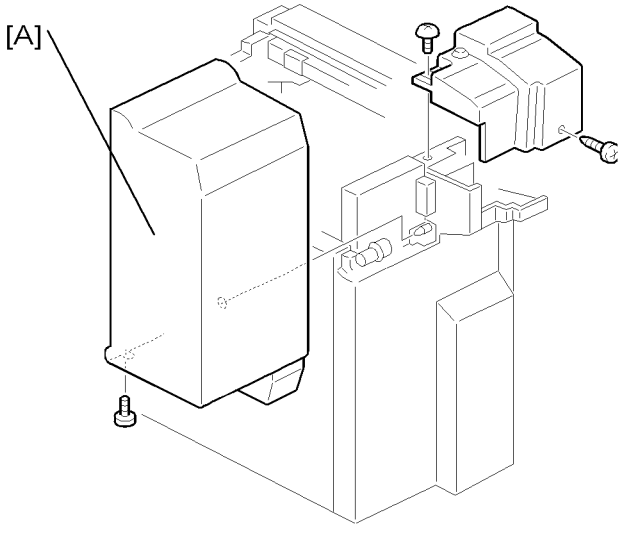
b474i507

1. If the LCT is connected to the machine, open the cover and remove the paper.
2. Lower the LCT tray. Cover the near end sensor [A], then press the tray down button [B] to lower the tray bottom plate.

⚠CAUTION

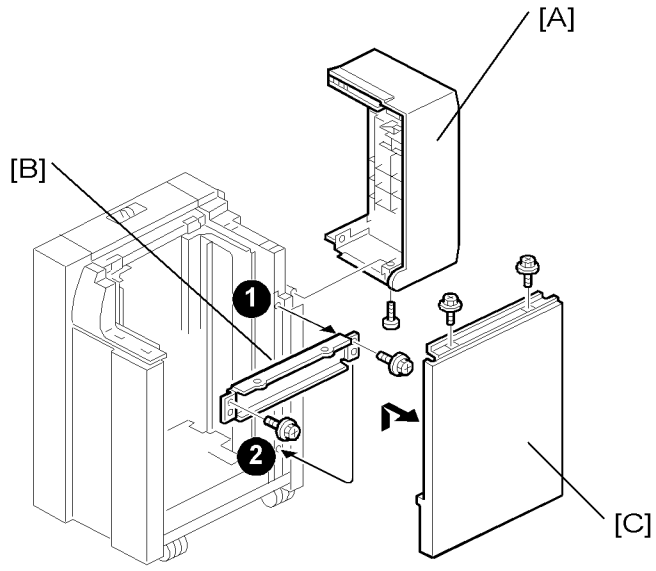
- Switch the machine off and unplug the machine before starting the following procedure.

3. Disconnect the LCT from the machine.



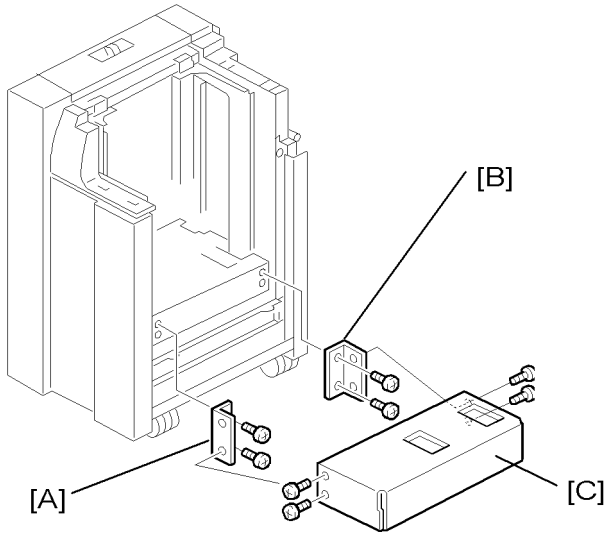
b474i504

4. Remove the LCT upper cover [A].



b474i001

5. Remove the LCT cover [A] (x 1).
6. Remove the right stay [B] at ❶ and re-attach it below at ❷ (x 2).
7. Remove the right cover [C] (x 2).



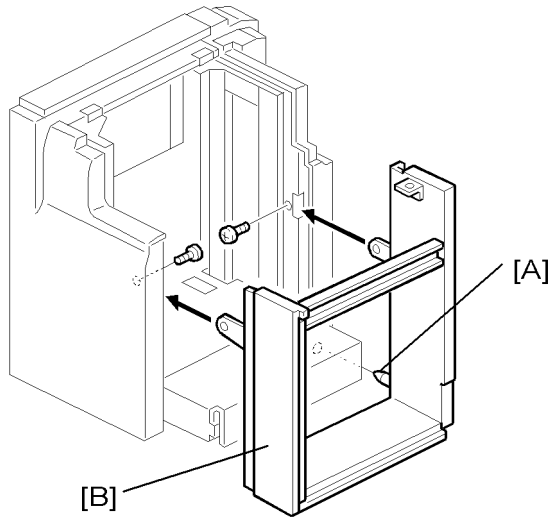
b474i502

8. Attach the front bracket [A] with the beveled corner down (x 2).

Note

- If the brackets are difficult to install, raise the bottom plate with your hand.

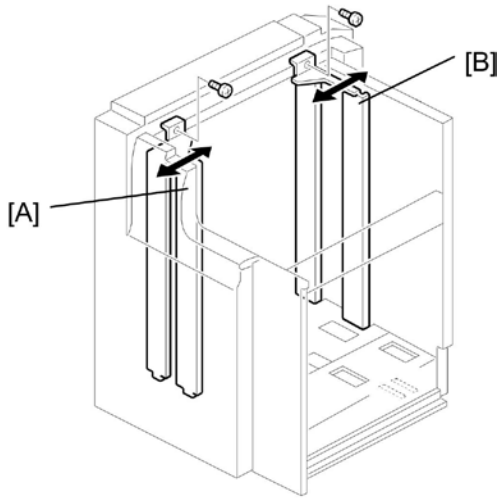
9. Attach the rear bracket [B] with the beveled corner down (x 2).
10. Attach the bottom plate extension [C] with the hex nuts (x 4).



b474i553

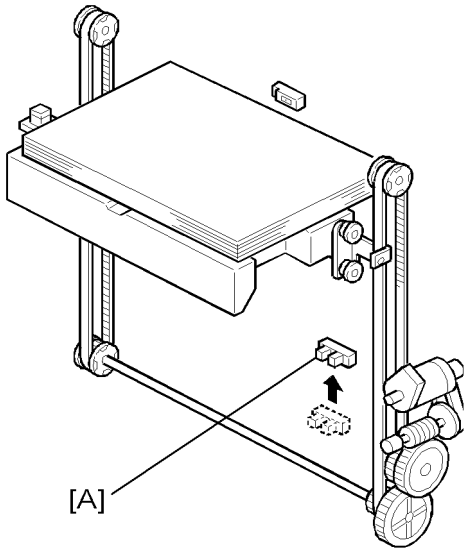
11. Align the positioning pin [A].
12. Attach the B4/LG frame [B] with the hex nuts (x 2).

The kit is set for B4. If you need to change the paper size to LG, do the following steps.



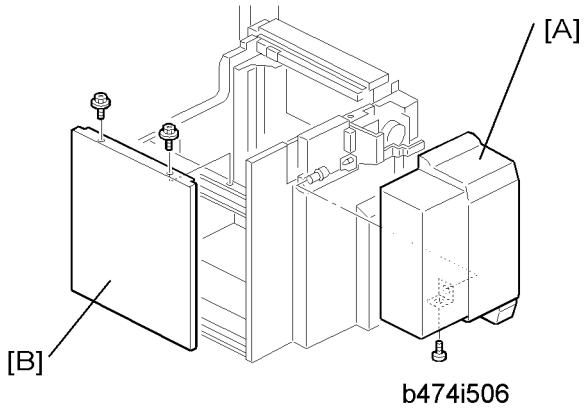
b474i555

13. Move the front side fence [A] to the LG position and fasten (x 1).
14. Move the rear side fence [B] to the LG position and fasten (x 1).



b474i508

15. Change the position of the lower limit sensor [A] (x 1).
16. Attach the harness (not shown) to the back of the plate and secure the sensor connector wire.



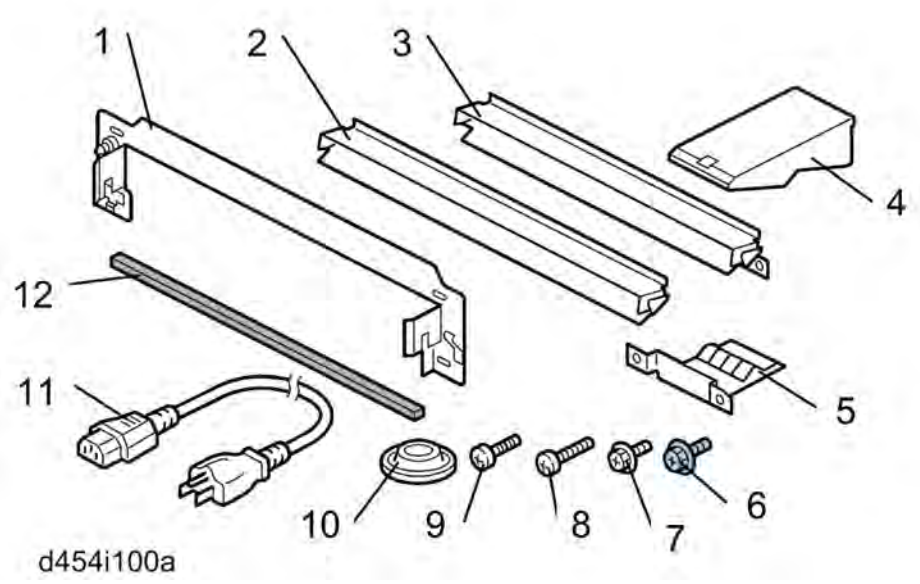
b474i506

17. Attach the LCT cover [A] provided with the kit (x 1).
18. Re-attach the right cover [B] (x 2).
19. Connect the LCT to the machine.
20. Switch the machine on, enter the SP mode, then use SP5959 005 (Paper Size – Tray 4 (LCT) to select the new paper size. For details, see SP5959 in "Service Tables".

2.6 MULTI-FOLDING UNIT FD4000 (D615)

2.6.1 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	1
3.	Paper Guide – Short (D131/D132/D133)	1
4.	Proof Tray Auxiliary Plate - Bottom	1
5.	Ground Plate	1
6.	Screws M3x6	2
7.	Screws M3x6	2
8.	Screws M4x20	4
9.	Screws M4x14	4
10.	Leveling Shoes	5

No.	Description	Q'ty
11.	Power Cord*1	1
12.	Sponge Strip	1

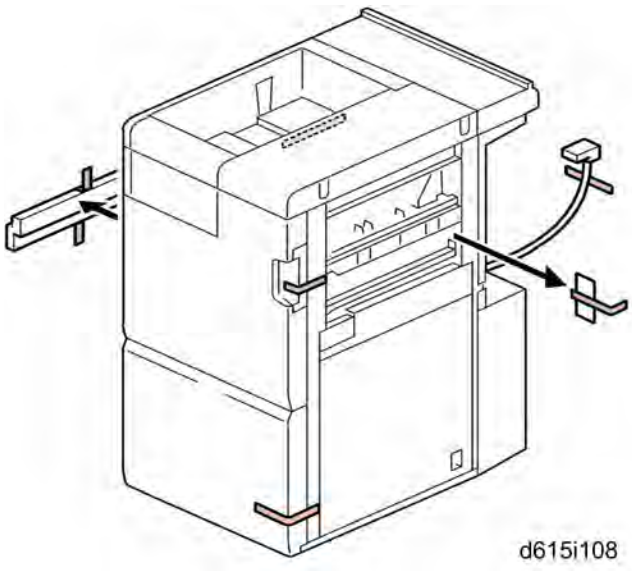
*1: In China, do not use the power cord provided with this unit. Contact your supervisor and use the power cord specified for use in China.

2.6.2 INSTALLATION

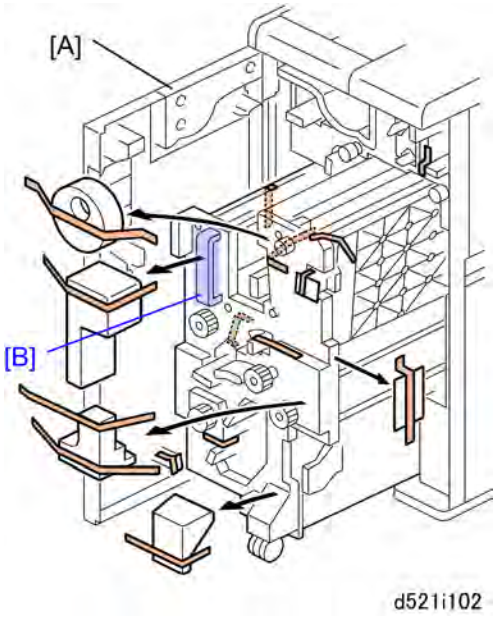
⚠CAUTION

- 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 procedures.

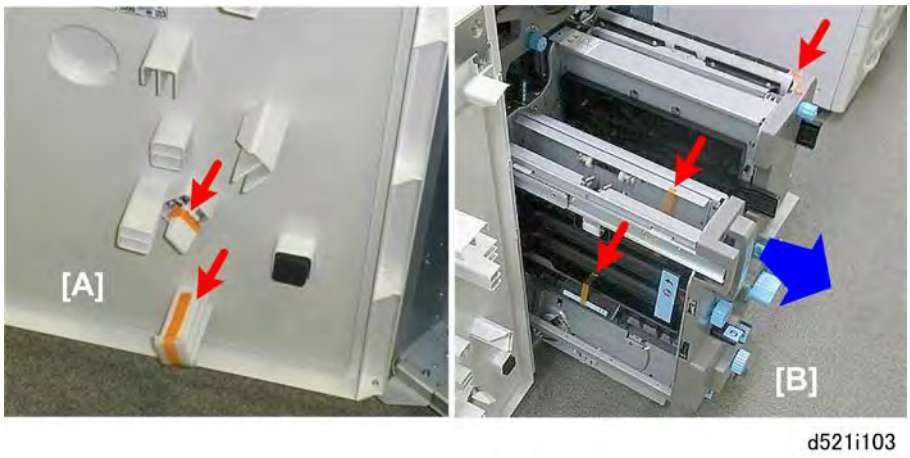
Tapes



1. Remove all tape and packing material from the front, left, rear, and right sides.

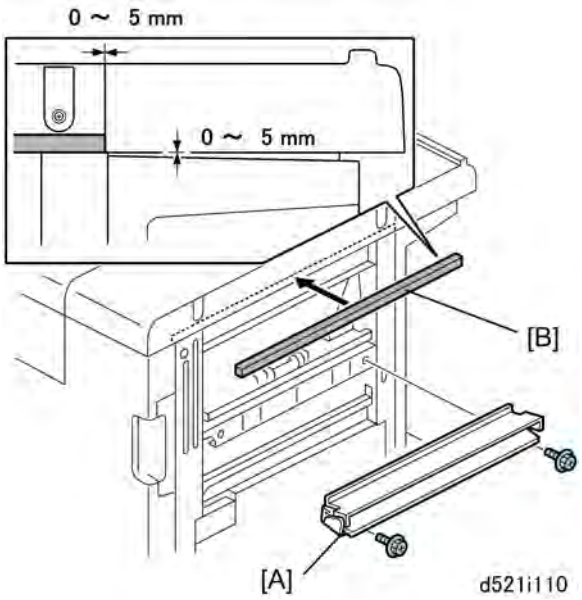


2. Open the front door [A].
3. Grip handle [B] and slowly pull the fold unit out of the machine.
4. Remove all tape and packing material from inside.



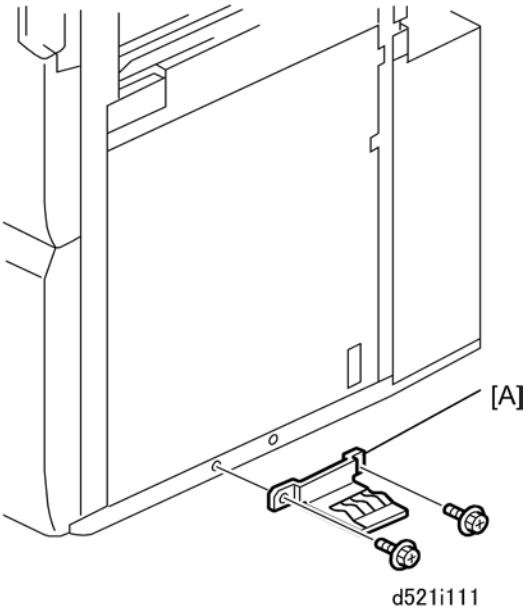
5. Remove the tape from the bottom of the door [A].
6. Pull out the folding unit [B] and remove the tapes.

Paper Guide, Sponge Strips



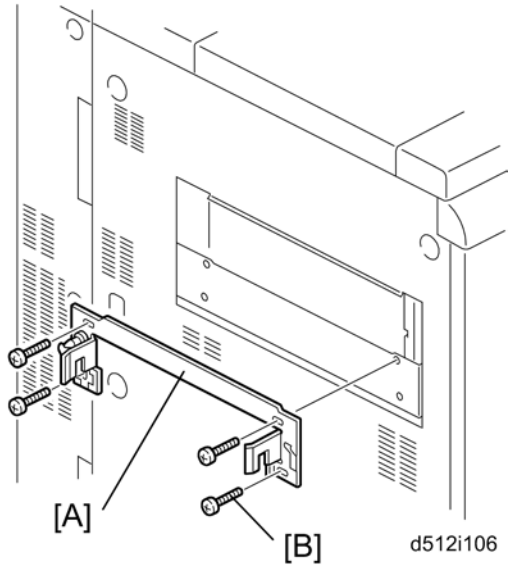
1. Select the short paper guide [A] and attach it (x2 M3x6).
2. Peel the tape from the sponge strip [B] and attach the strip to the top right edge of the unit.

Ground Plate

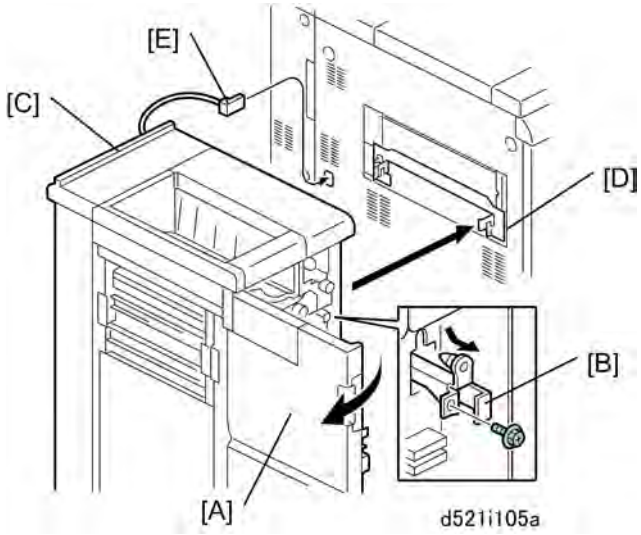


1. Attach the ground plate [A] to the lower right edge of the unit (x2 M3x6).

Docking



1. Fasten the joint bracket [A] to the left side of the upstream unit (x4 M4x20).



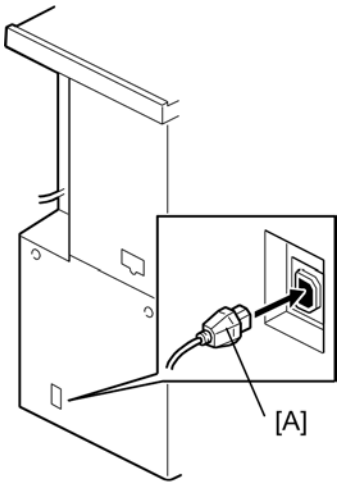
2. Open the front door [A].
3. At the front right corner, remove the screw of the lock bar [B] (x1 M3x6). **Keep this screw.**
4. Pull out the lock bar.

Note

- If you are docking to the main machine, you must first remove the plastic cap at the I/F cable connection point.

5. Slowly push the unit [C] against the left side of the upstream unit (or main machine) so that the lock bar is directly and squarely under the arms of the joint bracket.
6. Push in 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 (or main machine).

Power Cord



d521i107

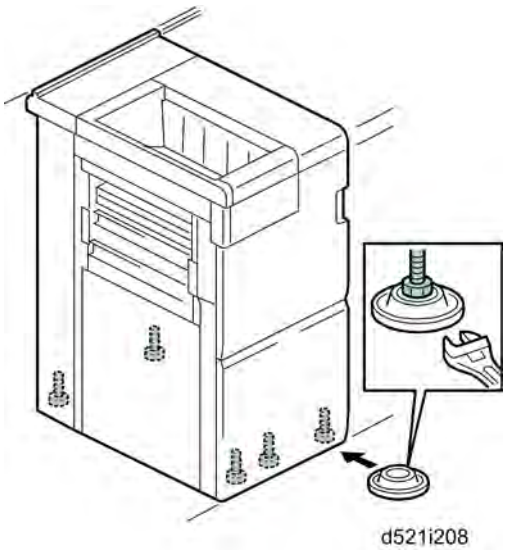
1. Insert the power cord socket [A] into the power connection point.

Important

- In China, do not use this power cord provided with this unit. Contact your supervisor and use the power cord specified for use in China.

2. Connect the power supply cord plug to a power outlet.

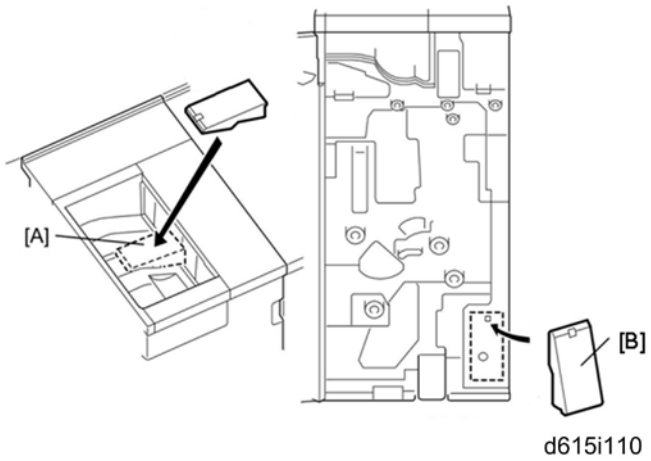
Finishing the Installation



d521i208

1. Set the leveling shoes and adjust the height of the unit.
2. Load some B4 paper in the 2nd tray of the main machine, and make several copies.
3. Check paper skew and side-to-side registration and correct if necessary.

Proof Tray Auxiliary Plate



d615i110

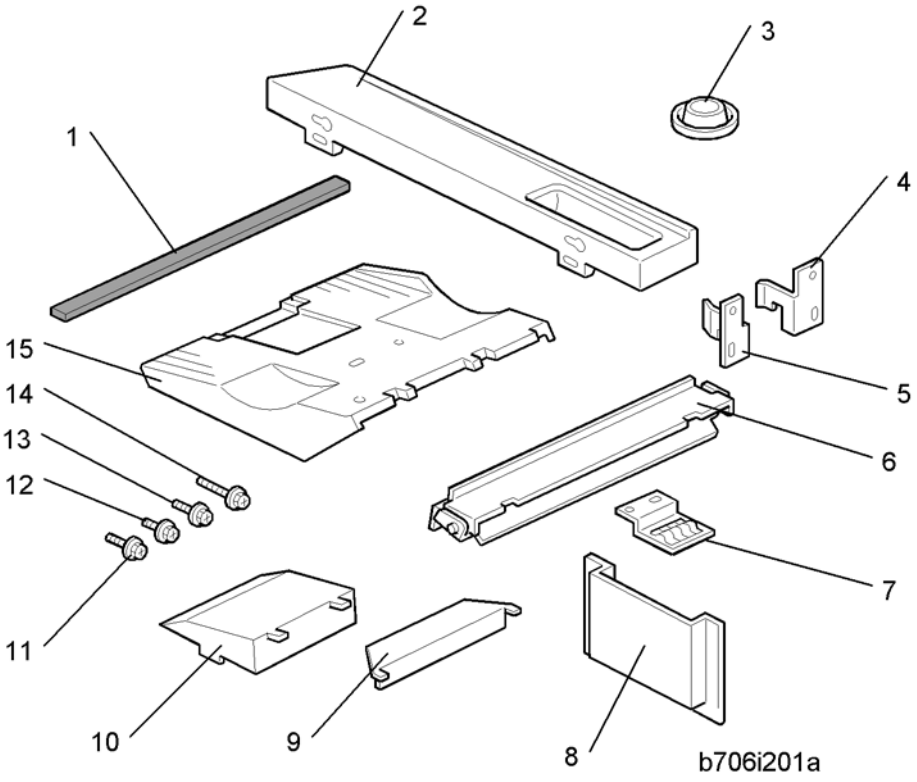
1. Install the proof tray auxiliary plate.
   - Set the plate [A] in the center aligned with the diagonal groove.
   - The back should be flat against the end fence.
2. When the plate is not being used, open the front door and store the plate at [B] inside the inner cover.
   - The plate should be used 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.

2.7 FINISHER SR4080 (D610)

2.7.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

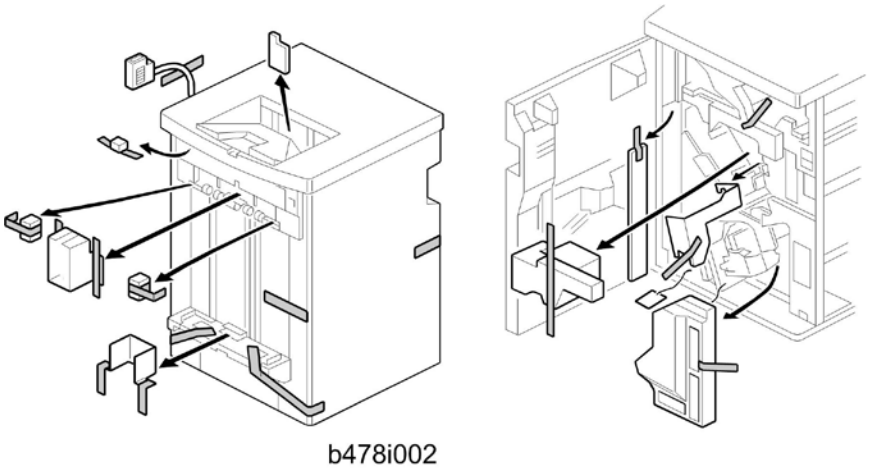
No.	Description	Q"ty
1.	Cushion	1
2.	Table Extension	1
3.	Leveling Shoes	1
4.	Rear Joint Bracket	1
5.	Front Joint Bracket	1
6.	Entrance Guide Plate	1
7.	Grounding Plate	1
8.	Auxiliary Tray Holder	2
9.	Auxiliary Tray - Proof	2
10.	Auxiliary Tray - Shift	2
11.	Tapping Screws - M4 x 8	2
12.	Tapping Screws - M3 x 6	4
13.	Tapping Screws - M3 x 8	4
14.	Phillips Screws w/washer - M4 x 14	4
15.	Shift Tray	4



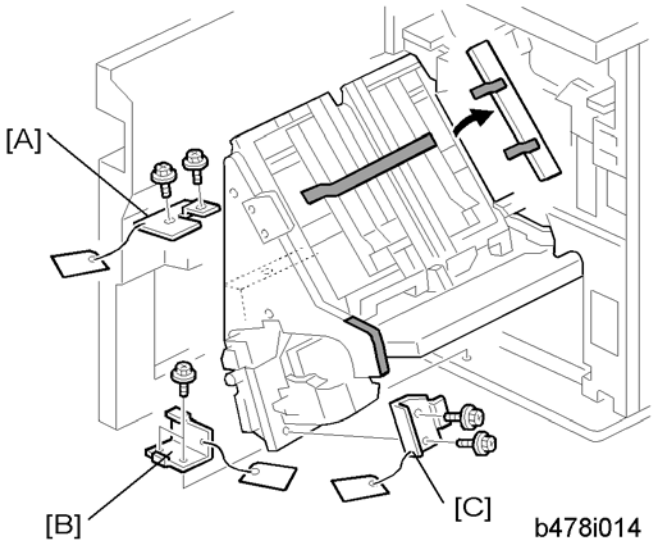
2.7.2 INSTALLATION

⚠CAUTION

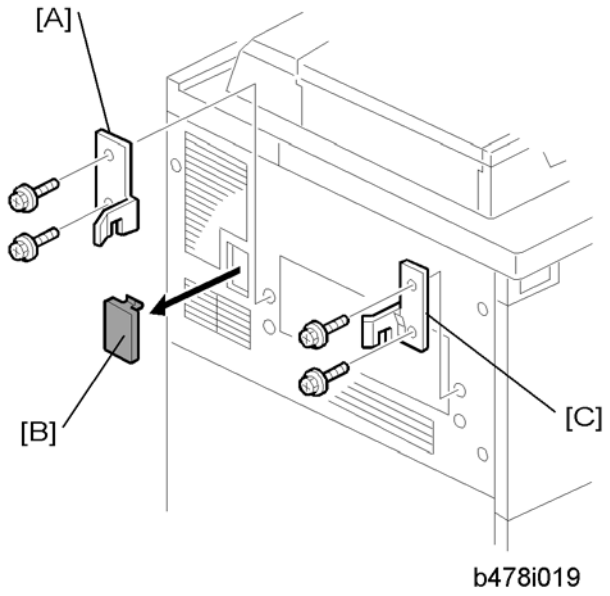
- Unplug the machine power cord before starting the following procedure.



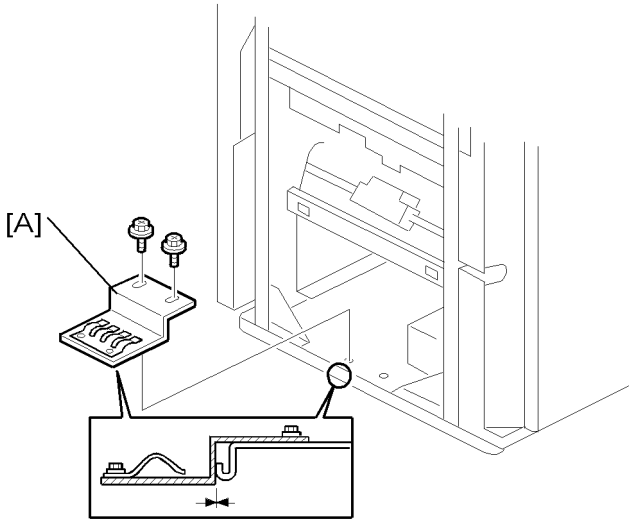
1. Unpack the finisher and remove all tapes and shipping retainers.



2. Open the front door and remove the shipping retainers. Remove brackets [A], [B], and [C] (x 2 each).



3. Install the front rear bracket [A] and front joint bracket [B] (x 2 each) (M4 x 14) on the left side of the copier.
4. Remove the connector cover [C].

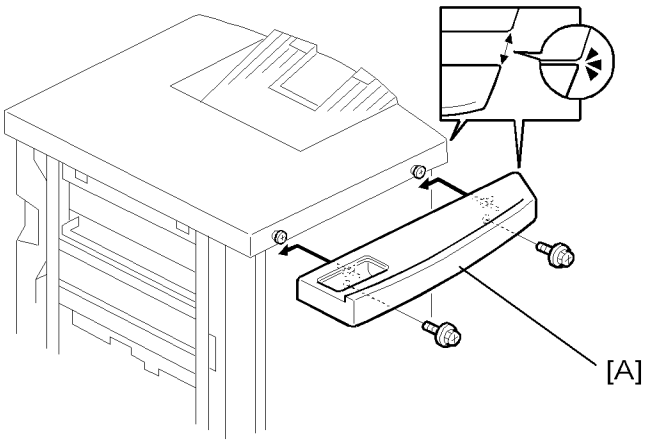


b478i004

5. Install the grounding plate [A] (x 2) (M3 x 6).

Note

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

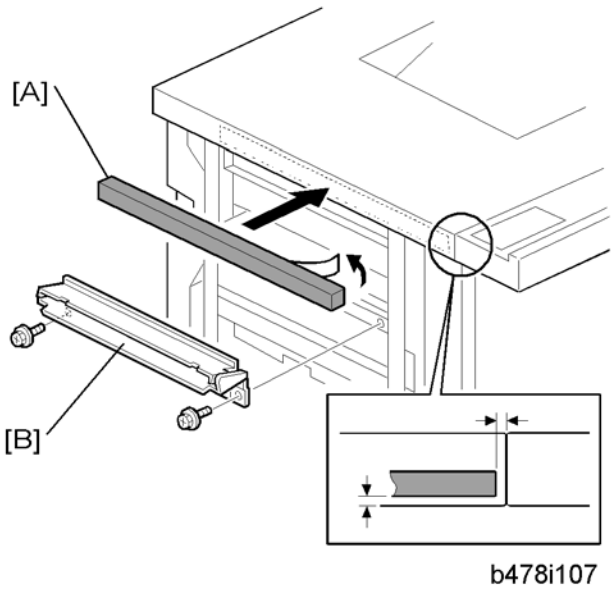


b478i005

6. Install the table extension [A] as shown (x 2) (M4 x 8).

Note

- The edge of the table extension should be aligned with the edge of the finisher (as shown).



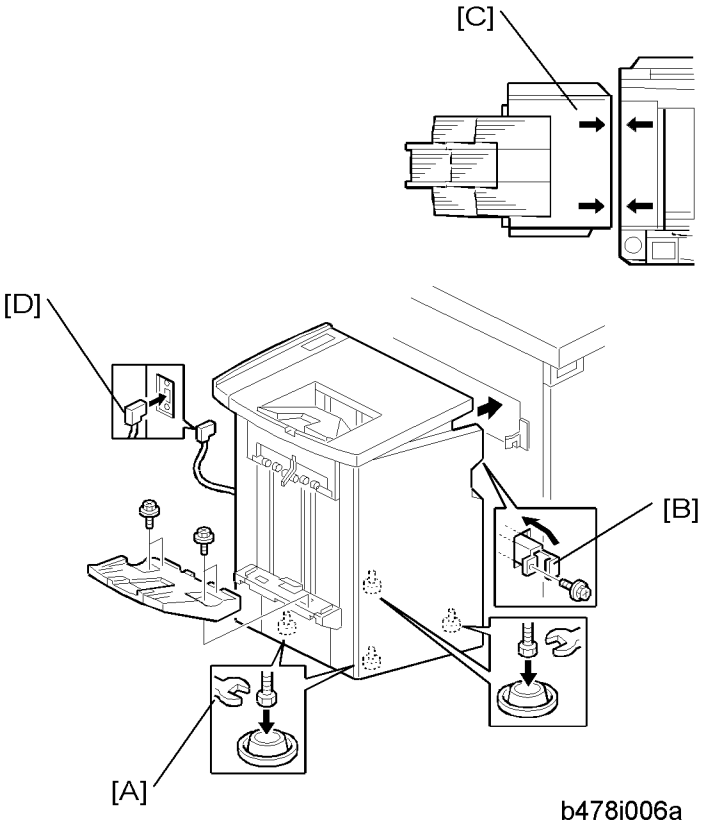
b478i107

7. Attach the cushion [A] to the right side of the upper cover.

Note

- If you are installing the cover interposer tray, do not attach the cushion here. Attach it to the cover interposer tray. The Cover Interposer Tray D614 must be installed before you dock the finisher and tray with the main machine.

8. Install the entrance guide plate [B] (x 2) (M3 x 6).



b478i006a

9. Attach the shift tray [A] (x 4) (M3 x 8).

10. Open the front door of the finisher, and remove the screw from the locking lever, then pull out the locking lever [B].
11. Align the finisher on the joint brackets, and lock it in place by pushing in the locking lever [B].

Note

- Before securing the locking lever, make sure that the top edges of the finisher and the copier are parallel from front to rear as shown [C].

12. Secure the locking lever [B] (x 1) and close the front door.
13. Connect the finisher cable [D] to the copier.
14. Set the leveling shoes (x 4) under the feet and level the machine.

2.8 PUNCH UNITS (B531/A812)

This procedure describes installation of these punch units in the Finisher SR4080.:

- Punch Unit Type 1075 3/2 (B531)
- Punch Unit Type 1075 EU 2/4 (B531)
- Punch Unit Type 850 SC (A812)

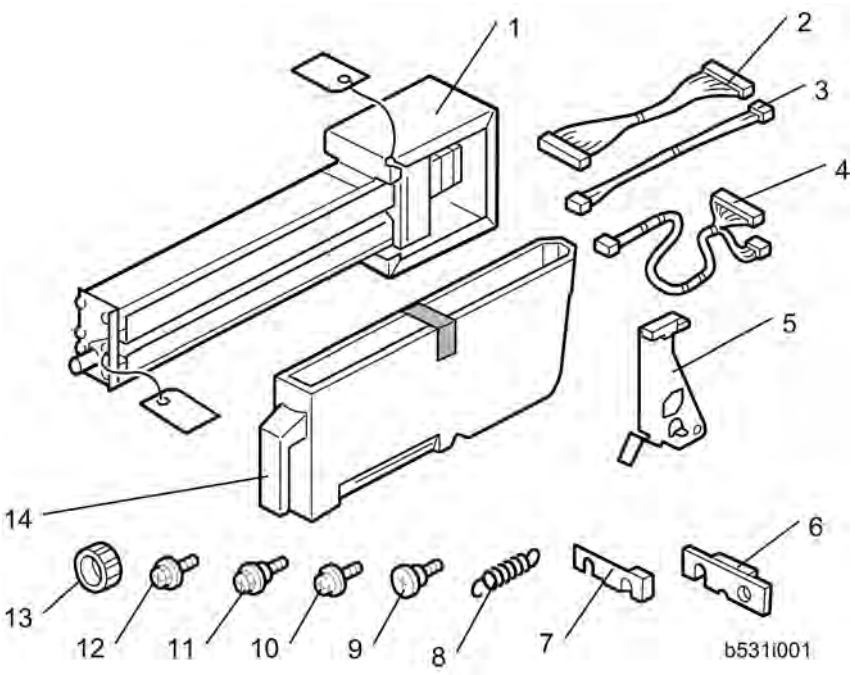
Important

- These punch units can be installed and used with the Finisher SR4080 only.

2.8.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

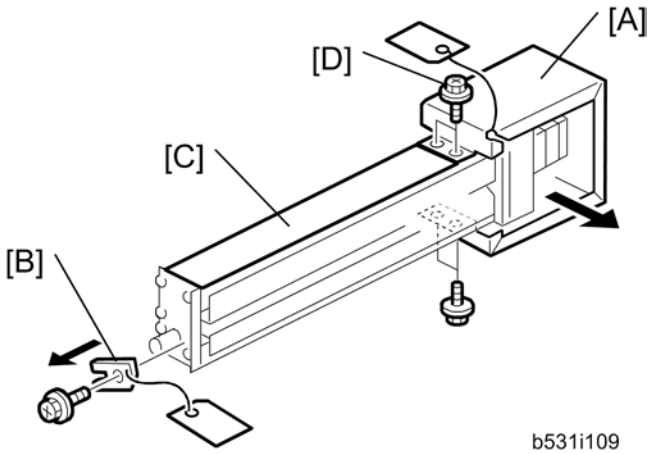
No.	Description	Q"ty
1.	Punch unit	1
2.	Harness Connector Cable - PCB	1
3.	Harness Connector Cable - HP Sensor 2	1
4.	Harness Connector Cable - HP Sensor 1, Hopper Full	1
5.	Sensor Arm and Sensor	1
6.	Spacer (2 mm)	1
7.	Spacer (1 mm)	2
8.	Spring	1
9.	Step Screw (large) (M4 x 11)	1
10.	Tapping Screw (M4 x 10)	2
11.	Step Screw (small) (M3 x 4)	1
12.	Machine Screw, Washer (M4 x 6)	1
13.	Knob	1
14.	Punch Waste Hopper	1



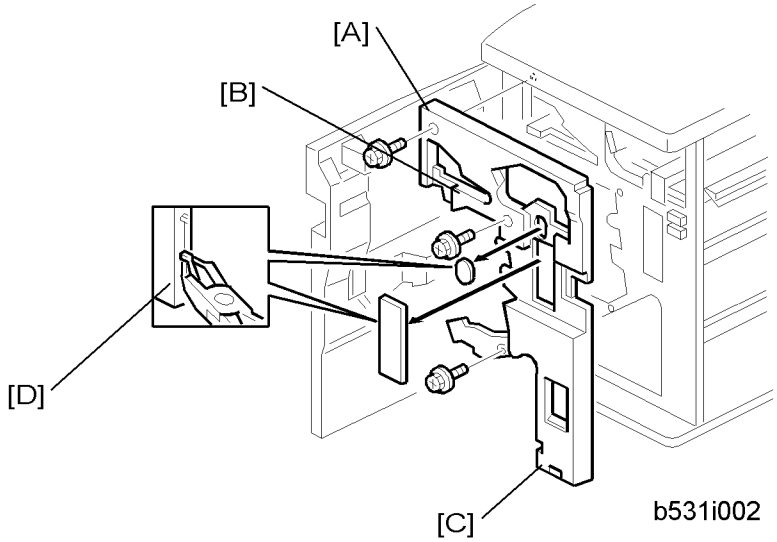
2.8.2 INSTALLATION

⚠CAUTION

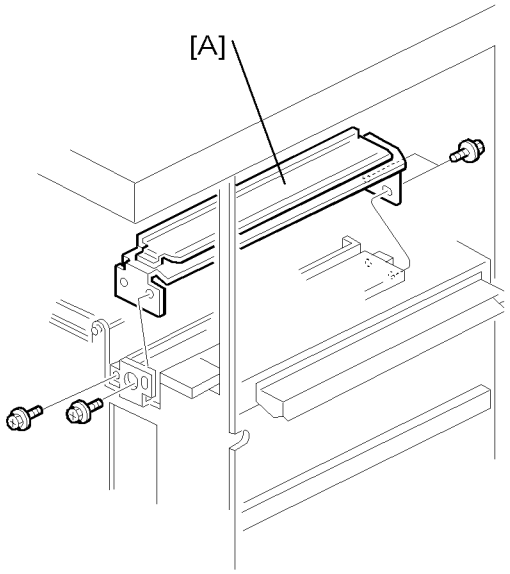
- Switch the machine off and unplug the machine before starting the following procedure.



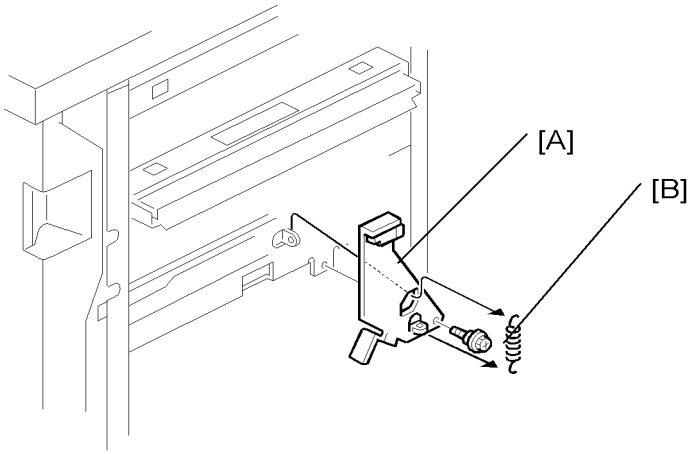
1. If the finisher is connected to the machine, disconnect it.
2. Open the front door and remove the rear cover (x 2).
3. Unpack the punch unit and remove the motor protector plate [A] (x 4) and the cam lock plate [B] (x 1).
4. Reattach the cover bracket [C] ([D] x 2).



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].



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



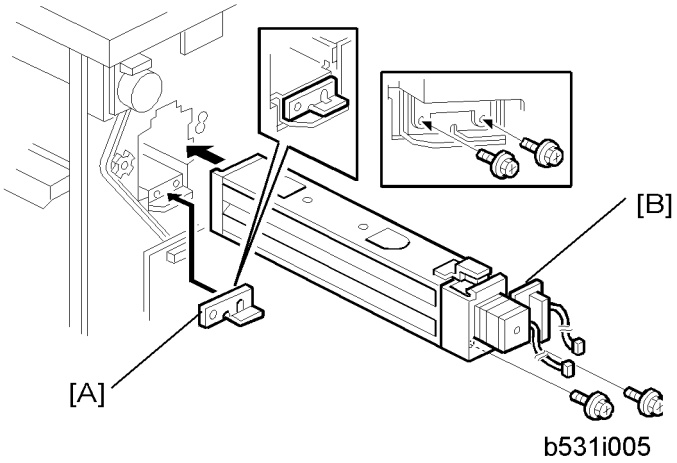
b531i004

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].

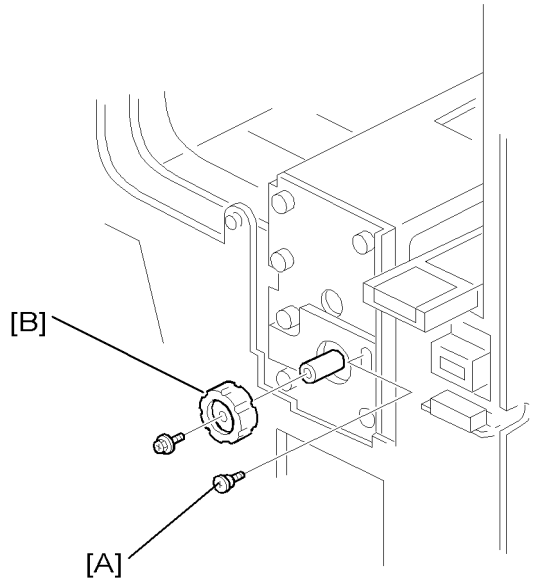


b531i005

11. At the rear, position the 2 mm spacer [A] and attach the punch unit [B] (x 2, M4 x 10).

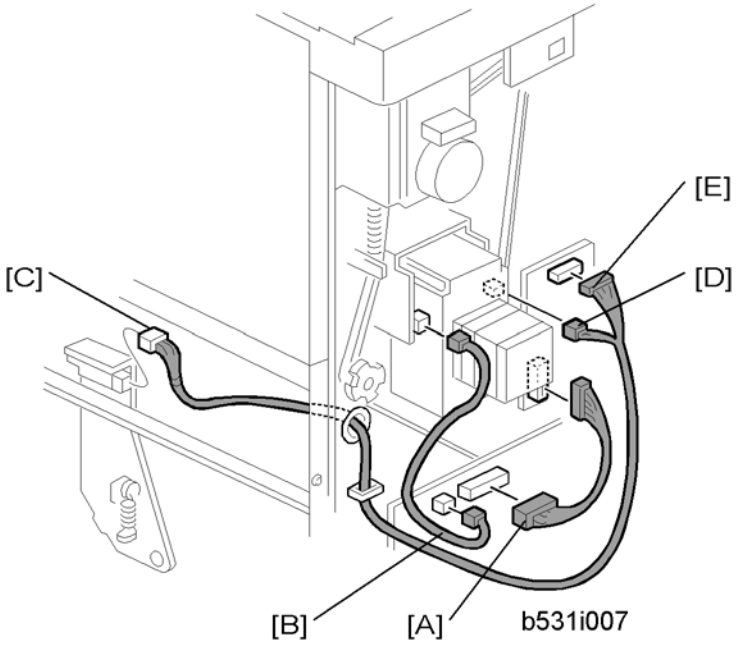
Important

- At the hole just above the lock lever, use one of the screws from the paper guide removed above to fasten the remaining two spacers to the frame.
- These extra spacers are used to adjust the horizontal position of the punch holes.



b531i006

12. At the front, secure the punch unit [A] with the large step screw (x 1, M4 x 10).
13. Attach the punch unit knob [B] (x 1).

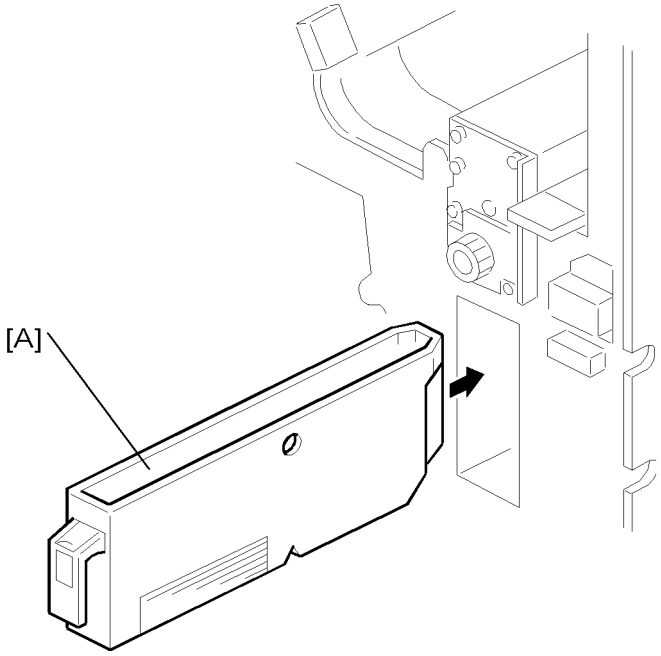


b531i007

14. Connect the PCB harness connector [A] to CN129 of the finisher PCB and to CN600 of the punch unit PCB.
15. Connect the HP Sensor 2 harness connector [B] to CN130 of the finisher PCB and to HP Sensor 2.
16. Connect the single end of the hopper full sensor connector cable [C] to the hopper full sensor on the arm (x 1, x 1), then connect the other two connectors to HP Sensor 1 [D] and CN620 [E] of the punch PCB.

Note

- No special DIP switch settings are required for this punch unit. The punch unit sends an identification signal to the machine, so it knows what type of punch unit has been installed.



b531i008

17. Slide the 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.

2.9 OUTPUT JOGGER UNIT TYPE 9002B (B513)

2.9.1 ACCESSORY CHECK

Check the accessories and their quantities against this list:

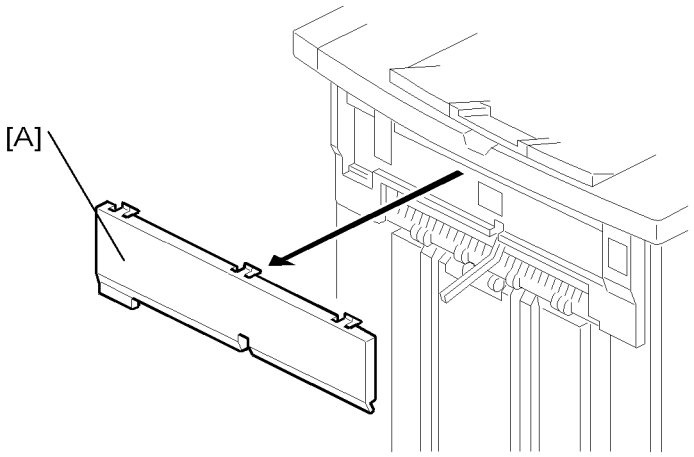
No.	Description	Q'ty
1.	Jogger Unit B513	1
2.	Tapping Screws - M3 x 6	2
3.	Installation Procedure	1

2.9.2 INSTALLATION PROCEDURE

Important

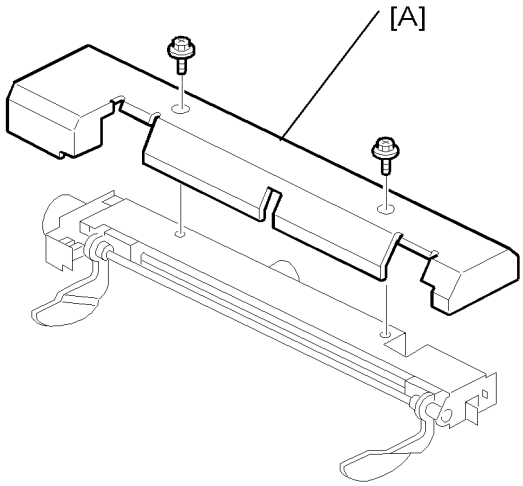
- This jogger unit can be installed and used with the Finisher SR4080 only.

1. Turn the main machine switch off and disconnect the finisher from the main frame.



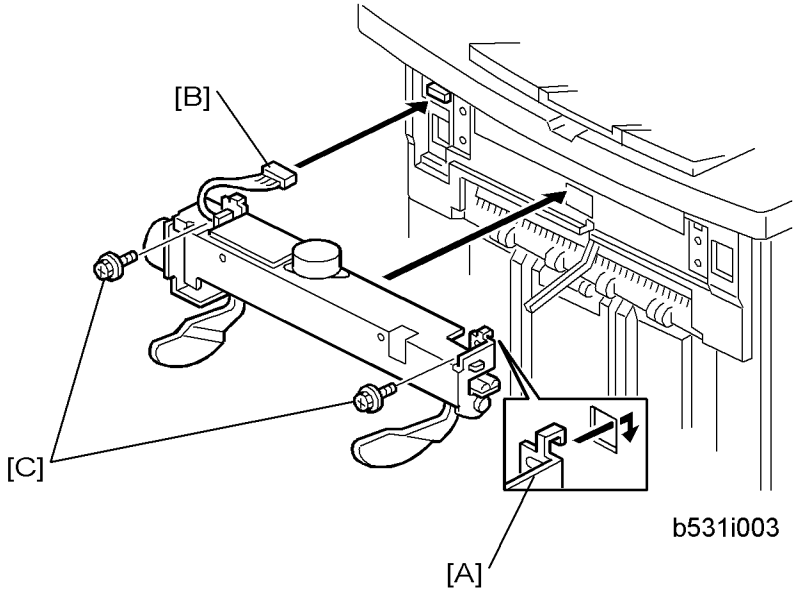
b513i001

2. Use the flat head of a screwdriver to remove the left upper cover [A] from the finisher and discard it.



b531i002

3. Remove the cover plate [A] from the jogger unit (x 2). Keep the screws.



b531i003

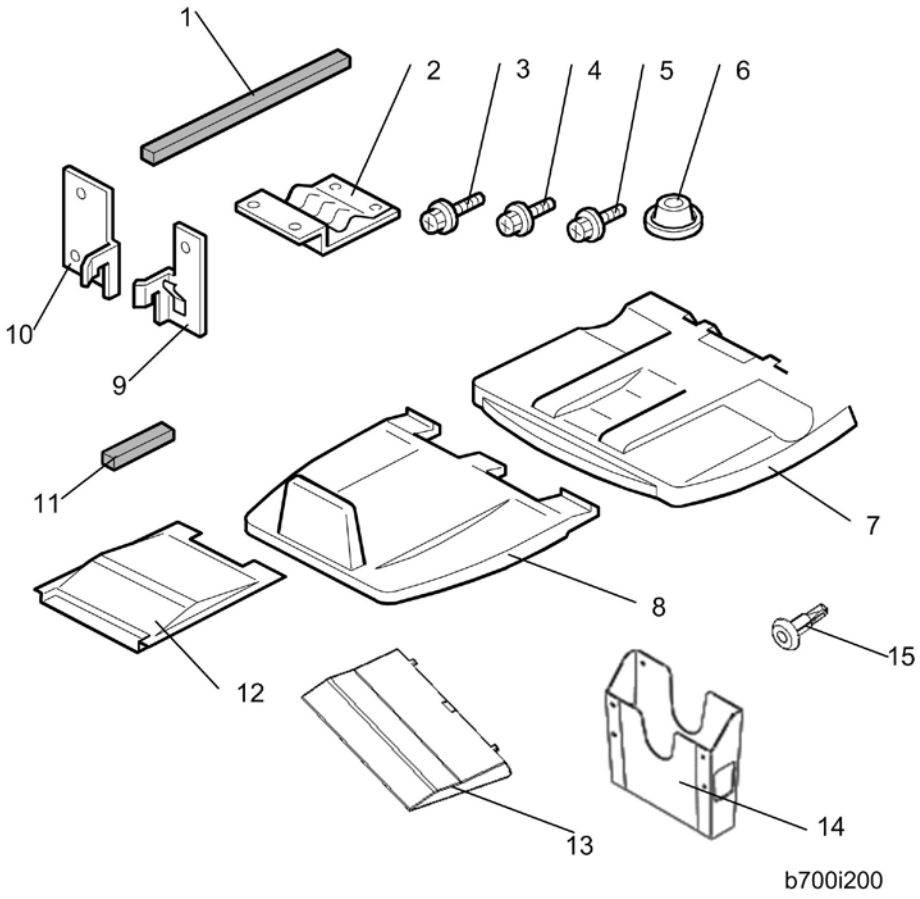
4. With the jogger unit connector on the left side, hook the frame of the jogger unit [A] into the holes on the left and right side of the finisher frame.
5. On the left side, fasten the connector [B] to the socket (x 1).
6. On the left and right side, attach the jogger unit frame to the side of the finisher with the screws [C] provided (x 2).
7. Re-attach the jogger unit cover to its frame with the screws removed in step 2 (x 2).

2.10 FINISHERS SR4060/SR4070 (D611/D612)

2.10.1 ACCESSORIES

Check the accessories from the box against the following list.

No.	Description	Q'ty
1.	Cushion (with double-sided tape)	1
2.	Ground (earth) plate	1
3.	Tapping screws - M4 x14	4
4.	Tapping screws - M3 x 8	1
5.	Tapping Screws M3 x 6	2
6.	Leveling Shoes	3
7	Upper output tray	1
8.	Lower output tray (D612 Only)	1
9.	Front joint bracket	1
10.	Rear joint bracket	1
11.	Gasket Seal	1
12.	Auxiliary Tray-Proof	1
13.	Auxiliary Tray-Shift (D612 only)	1
14.	Auxiliary Pocket (D612 only)	1
15	Rivet DIA5 (D612 only)	2



2.10.2 INSTALLATION PROCEDURE

This section describes the common installation instructions for two peripheral devices:

- **Finisher SR4070 (D612)**. Does punching, shifting, corner stapling, and booklet (saddle-stitch) stapling.
- **Finisher SR4060 (D611)**. Does punching, shifting, and corner stapling but no booklet (saddle-stitch) stapling.

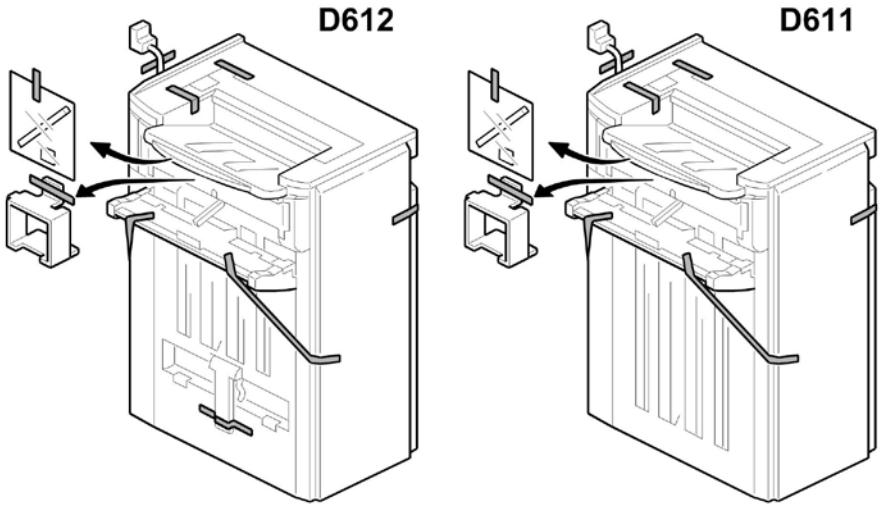
Note

- Differences in the installation procedures are noted as “D611” or “D612”.

Removing Tapes and Retainers

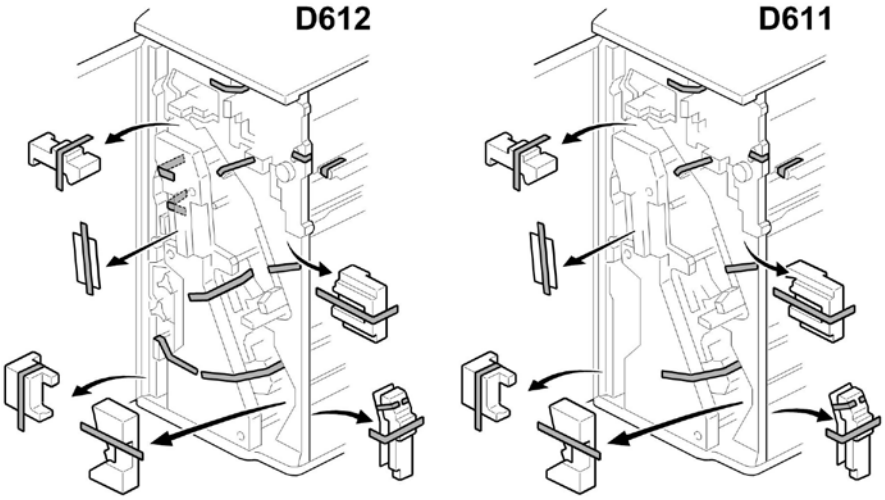
⚠WARNING

- Always turn the machine off and unplug the machine before doing any of the following procedures.



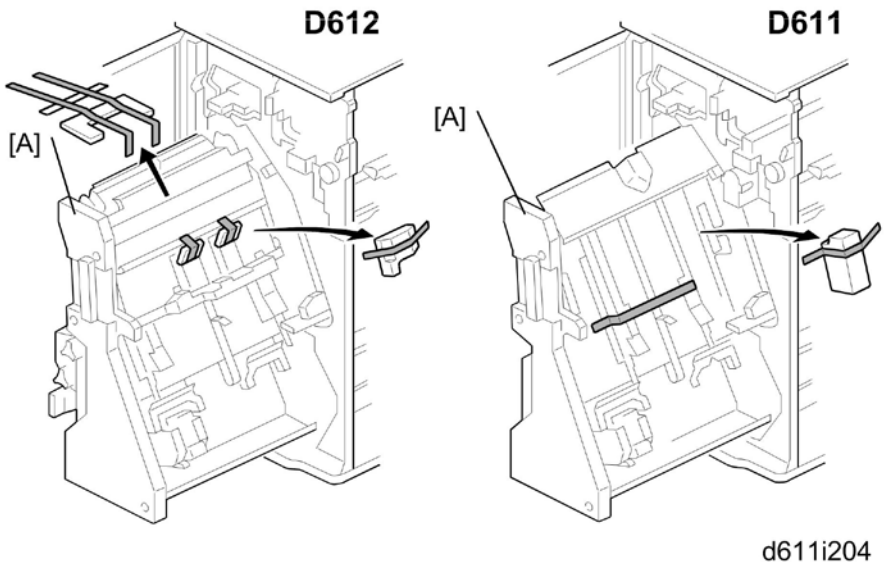
d611i102

1. Unpack the machine and remove all the wrapping.
2. Remove all filament tape and shipping retainers from the finisher.



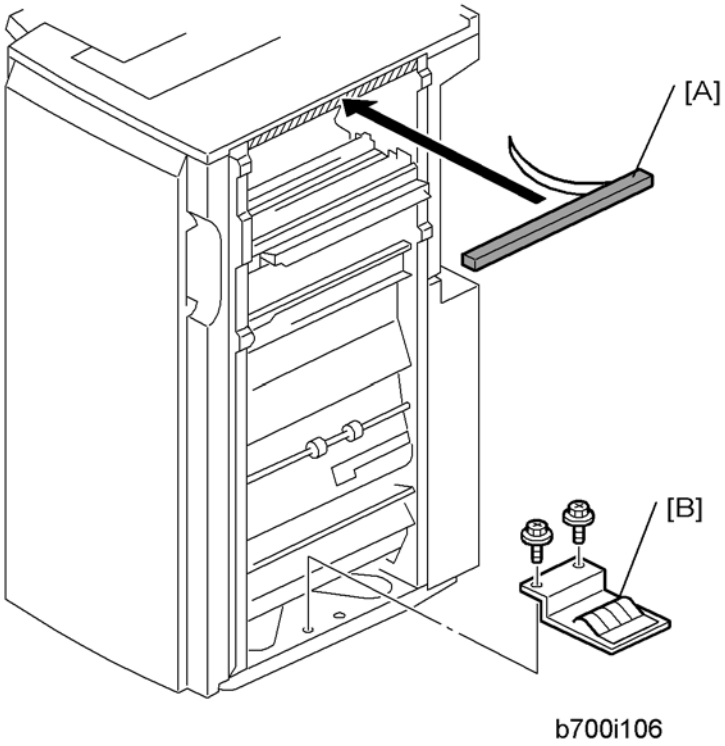
d611i202

3. Open the front door.
4. Remove all tapes and shipping retainers inside the finisher.



5. Pull out the jogger unit [A].
6. Remove the tapes and retainers.

Docking the Finisher



If you are not installing the Cover Interposer (D614):

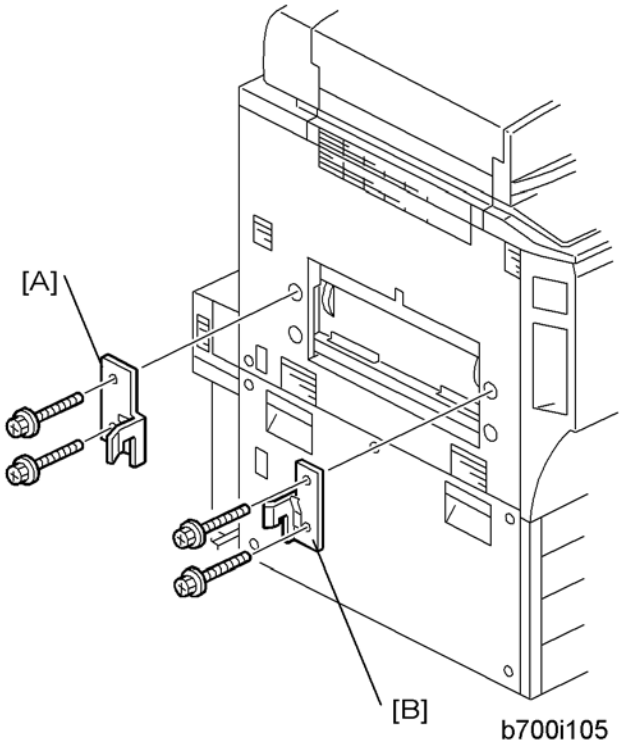
- Peel the strip from the sponge cushion [A] and attach it to the finisher then go to the next step.

If you are installing the Cover Interposer (D614):

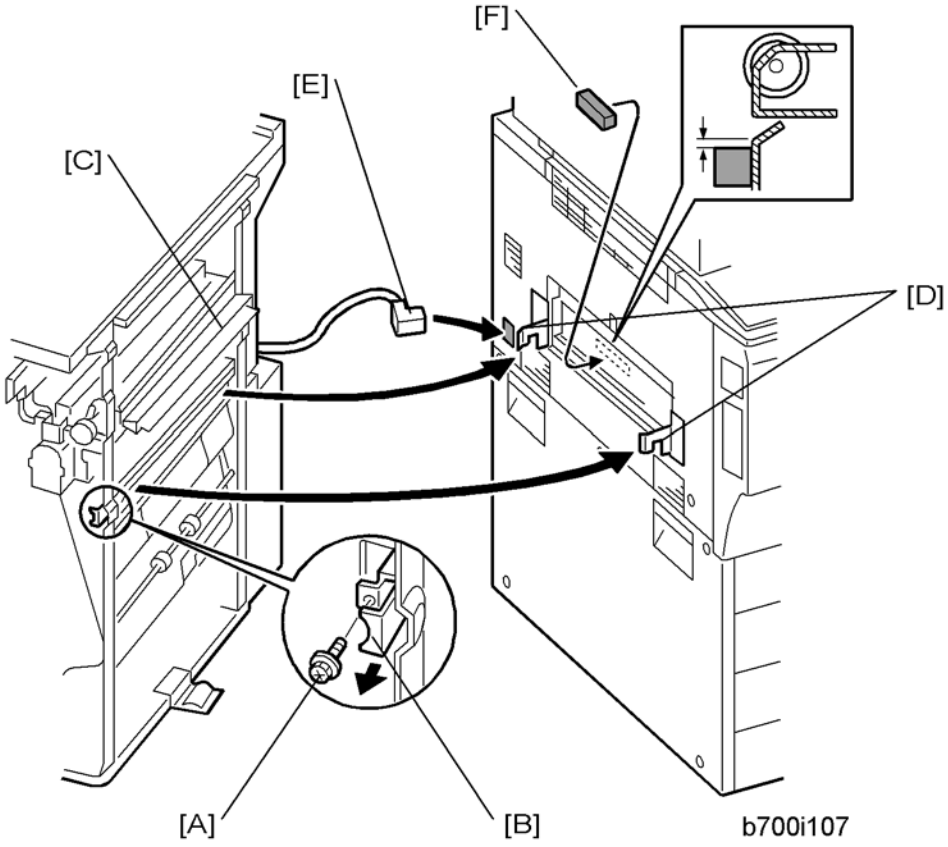
- Do not attach the sponge cushion to the finisher. It must be attached to the cover interposer.
- Do not attach the grounding plate [B] to the finisher. It must be attached to the cover interposer.

- Install the interposer now. The cover interposer must be installed before you dock the finisher to the copier.

1. Use a short screwdriver to attach the grounding plate [B] (x 2, M3 x 6).

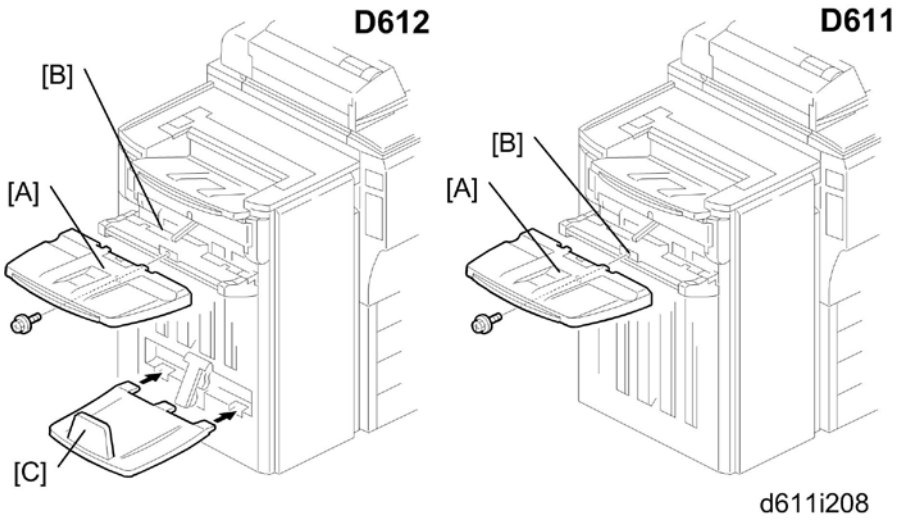


2. Attach the rear bracket [A] (x 2, M4 x 14).
3. Attach the front bracket [B] (x 2, M4 x 14).



4. Remove the screw [A] to release the lock lever [B] (x 1).
5. To avoid bending and damaging the paper entrance guide plates [C], slowly push the finisher against the side of the machine until the brackets [D] enter their slots.
6. Connect connector [E] to the main frame.
7. Attach the gasket seal [F] as shown.
8. Push the finisher against the machine.
9. Push in lock lever [B] then reattach the screw [A].

Attaching the Trays



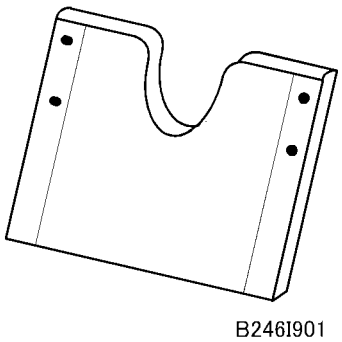
D612

1. Attach the upper output tray [A] (x 1, M3 x 8).

Note

- Make sure the metal plate [B] overlaps the tray.

2. Attach the lower output tray [C].



3. Use the round-head rivet (provided accessory) to fasten the auxiliary tray storage pocket to rear cover of the finisher.
4. Place the auxiliary trays for the shift tray and proof tray in the pocket.

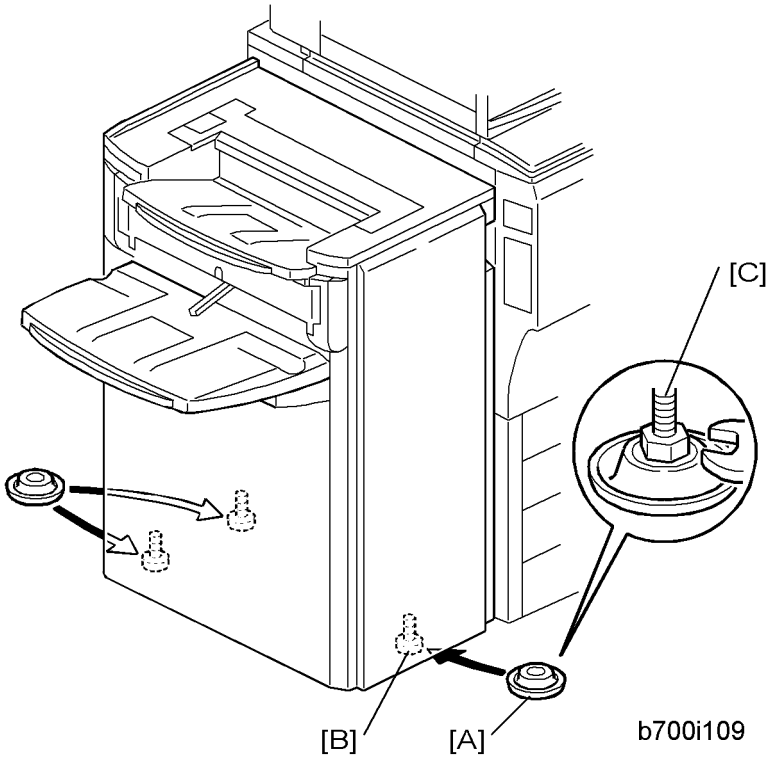
D611

1. Attach the output tray [A].

Note

- Make sure the metal plate [B] overlaps the tray.

Leveling the Finisher



1. Set the leveling shoes [A] (x 3) under the feet [B].
2. Use a wrench to adjust the height of the screws [C] to level the machine.

Selecting the Staple Supply Name

Enter the SP mode and execute the following information.

5841	Supply Name Setting	These names appear when the user prints the Inquiry List. Press the Counter key, then press 'Print Inquiry List'. Press the Inquiry button on the initial User Tools screen.
013	Staple Std	Enter the name of the staples in use for normal stapling (not booklet stapling). This setting should be done for both the D611 and D612.
022	Staple Bind	Enter the name of the staples in use for booklet stapling (saddle-stitching). This setting is required only for the D612.

Enabling Booklet Binding (D612 Only)

To enable booklet binding (saddle-stitching) for the D612, you must make sure that the center-position stapling option is displayed.

1. Press the User Tools key.
2. Touch “Copier/Document Server Features”.
3. Touch the “Input/Output” tab, then touch “Stapling Position”.
4. Touch any “Stapling Position” button and touch the center (saddle-stitch) stapling symbol.
5. Exit the User Tools mode. Specify the number of copies, touch the center stapling symbol on the operation panel, then start the print job.

Auxiliary Trays

The auxiliary trays are stored in the auxiliary tray storage pocket mounted on the back cover of the finisher.

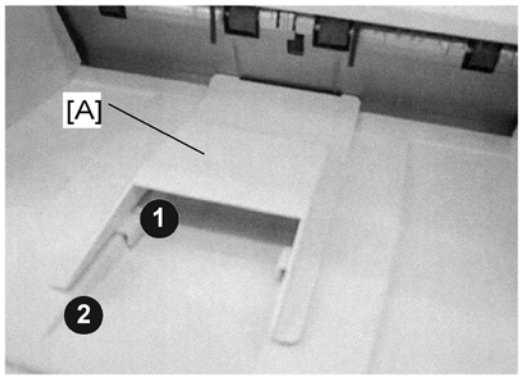
Make sure that the customer understands the following points about these auxiliary trays:

- The trailing edges of excessively curled or Z-folded paper can activate the tray full sensors before the tray is actually full.
- Once the "Exit Tray Full" message displays, the job cannot continue until some sheets are removed from the tray which is only partially full. The trays are designed to prevent this problem.
- The auxiliary tray for the shift tray should be installed for Z-folding jobs.
- The auxiliary tray for the proof tray should be installed only when excessively curled paper is triggering early "Exit Tray Full" alerts.
- Normally, both auxiliary trays should be placed in the pocket mounted on the back of the finisher.

Proof Exit Auxiliary Tray

Follow the procedures below to install the auxiliary tray for the proof tray.

1. First, remove the paper from the paper feed tray, turn it upside down, and continue printing. This may solve the problem.

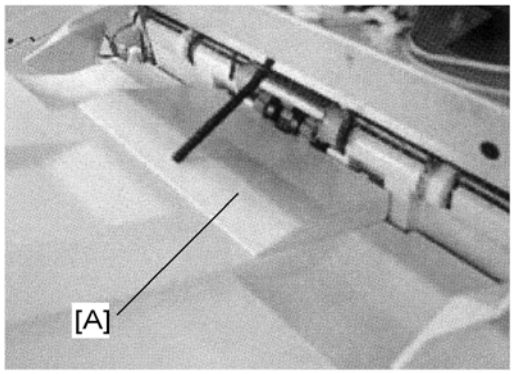


B246I903

2. If the "Exit Tray Full" alerts continue, set the proof auxiliary tray [A] on the proof tray on the top of the finisher.
3. Make sure that the arms ❶ of the auxiliary tray fit tightly over the ridges ❷ of the proof tray below.

Shift Auxiliary Tray

1. Open and close the front door of the finisher. This initializes the finisher and moves the shift tray to the standby position.
2. Open the front door again and leave it open.



B246I902

3. Set the shift auxiliary tray [A] on the shift tray as shown.
4. Close the front door. This initializes the finisher again and moves the shift tray to the new standby position with the auxiliary tray installed.
5. After the Z-folding job is finished, remove the tray and store it in the auxiliary tray storage pocket on the back of the finisher.
6. Open and close the front door to re-initialize the finisher and reset the standby position of the shift tray.

2.11 PUNCH UNITS (B702)

These instructions describe installation of the following punch units for the Finisher SR4060/SR4070:

- Punch Unit Type 3260 SC (B702)
- Punch Unit Type 3260 2/4 EU (B702)
- Punch Unit Type 3260 NA 3/2 (B702)

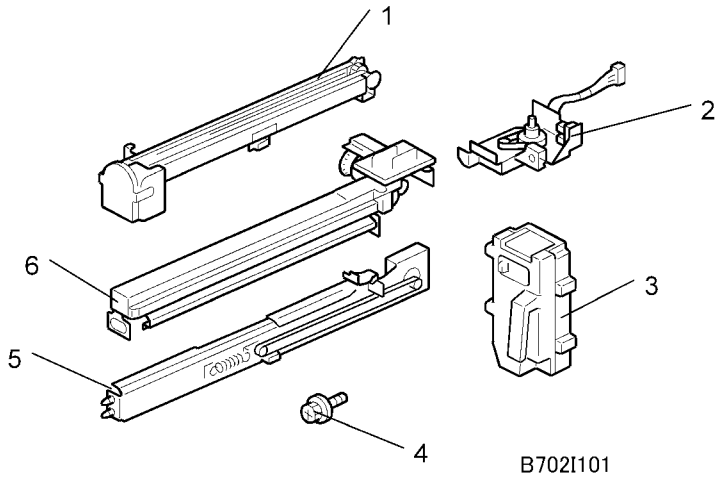
Important

- These punch units can be installed and used with the Finishers SR4060 and SR4070 only.

2.11.1 ACCESSORIES

Check the accessories and their quantities against the following list.

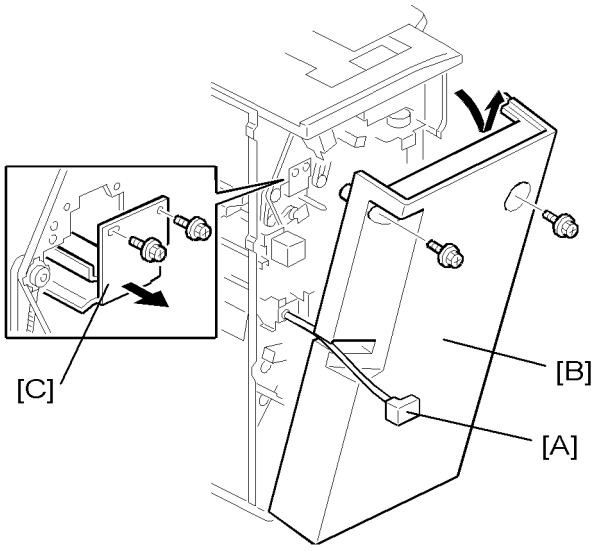
No.	Description	Q'ty
1.	Punchout Waste Unit	1
2.	Slide Drive Unit	1
3.	Punch Waste Hopper	1
4.	Screws (M3 x 6)	5
5.	Side-to-Side Detection Unit	1
6.	Punching Unit	1



2.11.2 INSTALLATION PROCEDURE

⚠WARNING

- Always turn the machine off and unplug the machine before doing any of the following procedures.



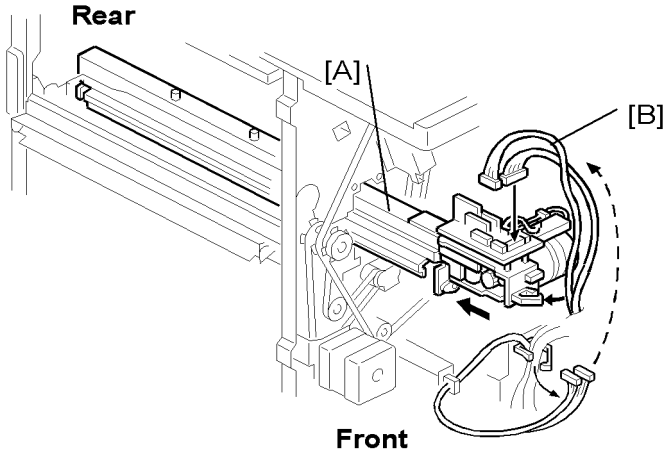
B702I102

1. If the finisher is connected to the copier, disconnect the power connector [A] and separate the finisher from the copier.
2. Remove the rear cover [B] (x 2) and open the front door.

Note

- At the base of the back cover, be sure to disconnect the tabs that fasten the cover to the frame.

3. Remove the guide plate [C] (x 2).

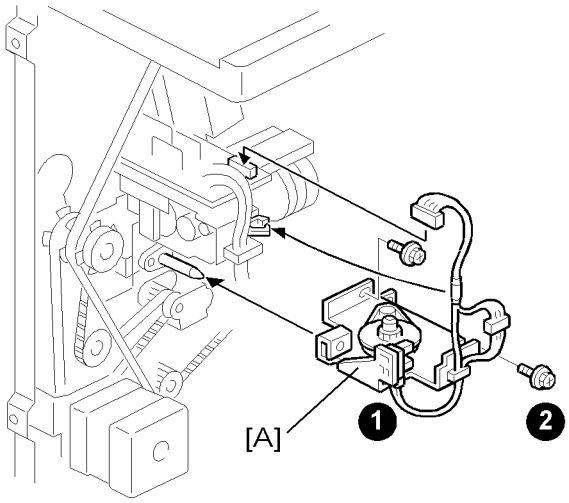


B702I103

4. Slide the punch unit [A] along its rails into the finisher. Make sure that pin engages correctly at the front and rear.
5. Connect and fasten the punch unit [B] (x 2, x 1).

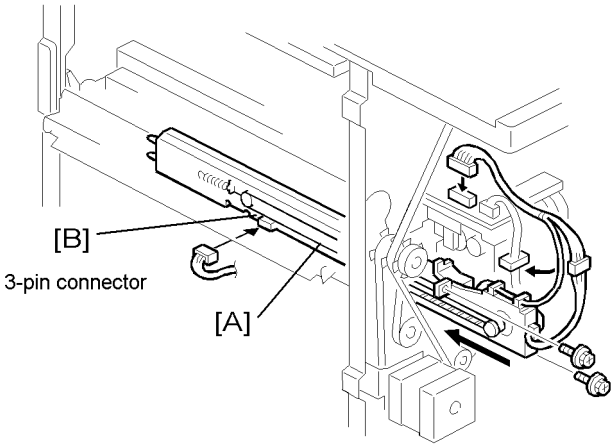
Note

- The connectors are coiled and tied above the PCB on the right.



B702I104

6. Fasten the slide drive unit [A] to finisher and connect it to the punch unit (x 2, x 1). Press in on the slide drive unit at ❶ when you attach screw ❷.
7. Make sure that the punch unit moves freely and is not blocked by the screws.

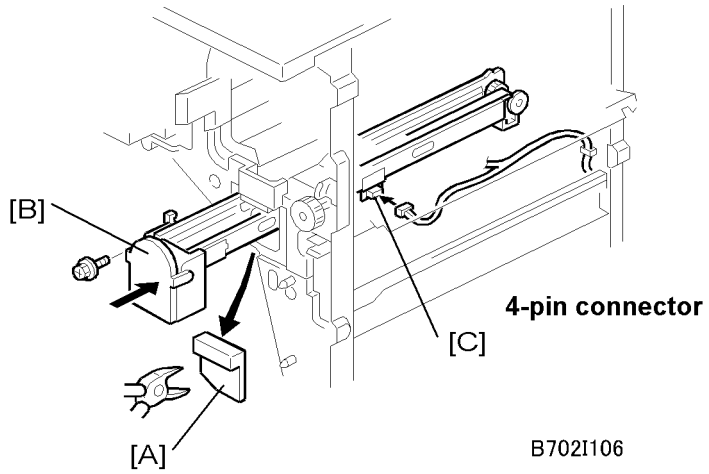


B702I105

8. Insert the side-to-side detection unit [A]. Make sure that the two pins are engaged correctly at the front.
9. Confirm that the side-to-side detection slides smoothly on its rails. If it does not, make sure that the rails are aligned with their grooves.
10. Fasten the side-to-side detection unit and connect it at the rear (x 2, x 1, x 1).
11. Pull the short connector out of the connector [B] then connect it (x 1).

Note

- This is the 3-pin connector.



12. At the front, use a pair of nippers to remove the knockout [A]
13. Insert the punch waste transport unit [B] into the finisher.

Note

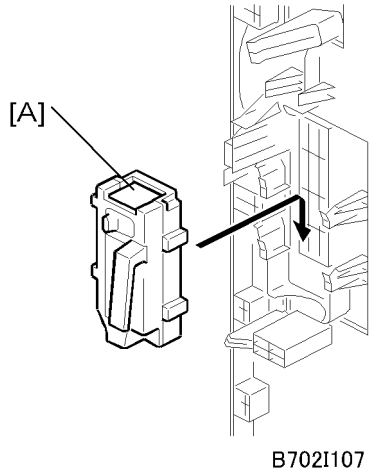
- Make sure that the punch waste transport unit slides smoothly on its rails. If it does not, make sure that the rails are aligned with the grooves.

14. Remove the short connector from the connector [C].

Note

- This is the 4-pin connector.

15. Connect connector and fasten the punch waste transport unit (x 1, x 1, x 1).



16. Set the hopper [A] in its holder.

2.12 OUTPUT JOGGER UNIT TYPE 9002A (B703)

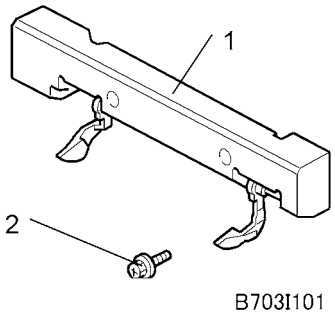
Important

- This jogger unit can be installed and used with the Finishers SR4060/SR4070 only

2.12.1 ACCESSORIES

Check the accessories and their quantities against the following list.

No.	Description	Q'ty
1.	Jogger Unit	1
2.	Tapping Screws - M3 x 6	2

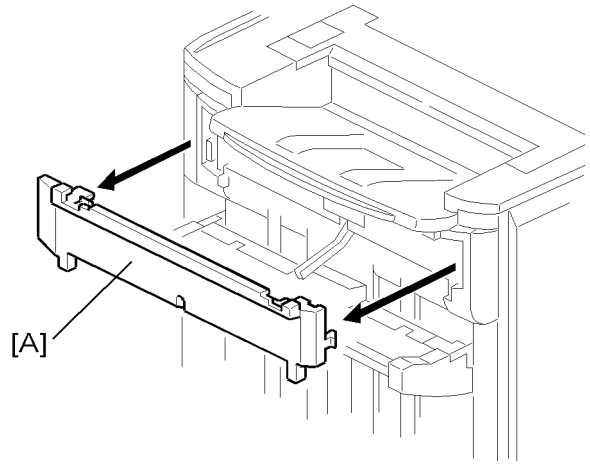


2.12.2 INSTALLATION PROCEDURE

⚠WARNING

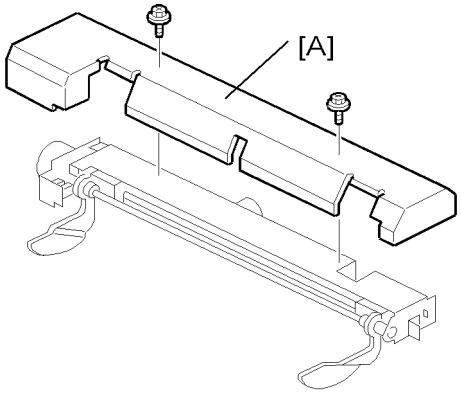
- Always switch the machine off and unplug the machine before doing any of the following procedures.

1. Turn the main machine switch off.
2. Disconnect the finisher from the main frame.



B703I103

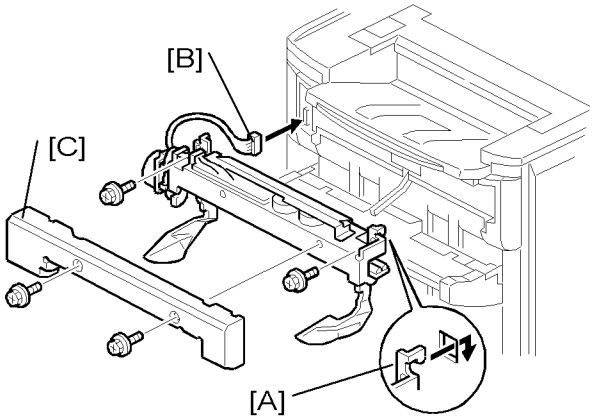
3. Use the flat head of a screwdriver to remove the left upper cover [A].



B703I102

4. Remove the cover plate [A] (x 2). Keep the screws.

5.



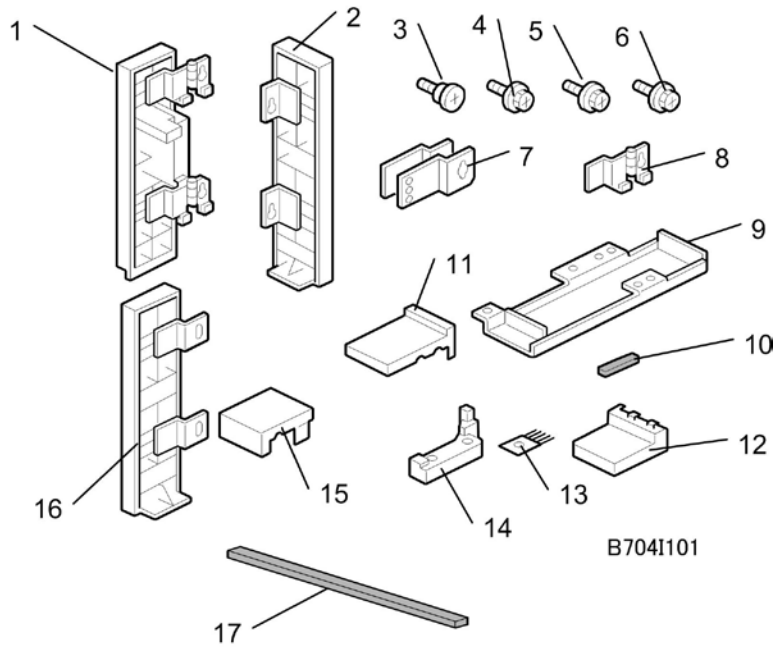
6. While you hold the jogger unit with the connector on the left, put the hooks of the frame of the jogger unit [A] into the holes in the left and right side of the finisher frame.
7. Fasten connector [B] to the socket (x 1).
8. Attach the jogger unit to the finisher (x 2).
9. Reattach the jogger unit cover [C] to the jogger unit (x 2).
10. Set SP6118 to 1 after you install the jogger unit.

2.13 COVER INTERPOSER TRAY CI4000 (D614)

2.13.1 ACCESSORIES

Check the accessories and their quantities against the following list.

No.	Description	Q'ty
1.	Front door extension (top)	1
2.	Rear cover extension (bottom)	1
3.	Shoulder screws	3
4.	Tapping screws – M4 x 8	9
5.	Tapping screws – M3 x 8	2
6.	Tapping screws – M3 x 6	5
7.	Adjuster plates	2
8.	Hinge Bracket	1
9.	Plate Extension (bottom)	1
10.	Gasket Seals	2
11.	Right Rear Cover Plate (D610 only)	1
12.	Spacer	1
13.	Anti-Static Brush	1
14.	Spacer (D610 only)	1
15.	Right front corner plate (D610 only)	2
16.	Front door extension (bottom)	1
17.	Sponge Strip	1



2.13.2 INSTALLATION PROCEDURE

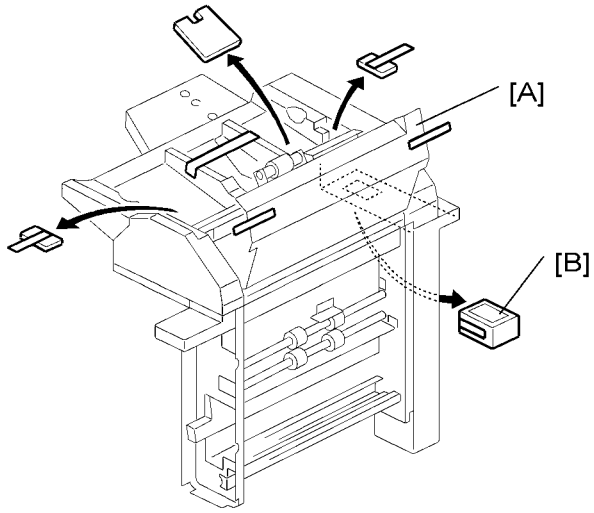
The Cover Interposer Tray must be installed with one of the following finishers:

- Finisher SR4060 (D611)
- Finisher SR4070 (D612)
- Finisher SR4080 (D610)

Removing Tapes and Retainers

⚠WARNING

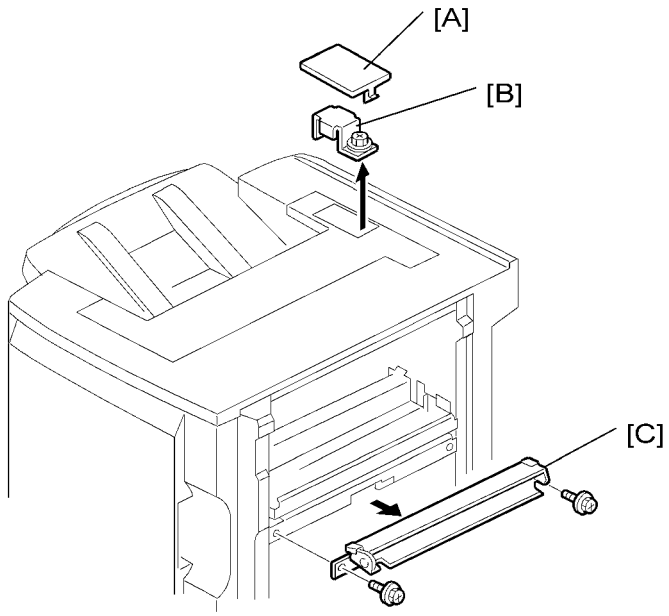
- Make sure that the finisher is disconnected from the main machine and that the copier is switched off and unplugged before starting the following procedure.



B704I102

1. If the finisher is connected to the machine, disconnect it.
2. Remove all tape and retainers from the cover interposer tray [A].
3. Remove the tape and cardboard [B] from the ground connector.

Preparing the Finisher



B704I103

1. Remove the cover [A] of the relay connector.
2. Loosen the screw of the bracket [B] (x 1) then remove the bracket.
3. Remove the guide plate [C]. (This guide plate will be attached to the cover interposer; do not discard it.)

   Important

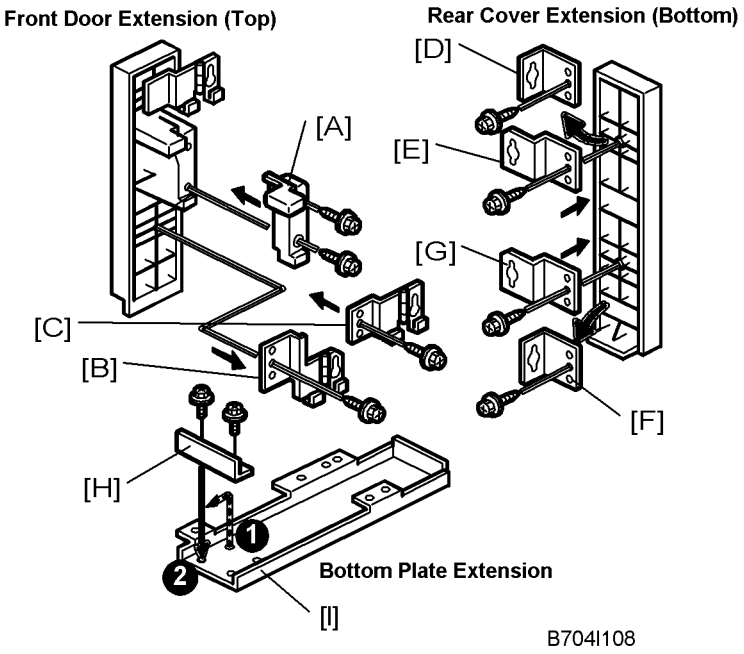
   - If you are installing the cover interposer tray with a previously installed finisher, remove the sponge strip from the finisher and save it for re-attachment to the interposer tray.
4. Either:
   - If you are installing the D611/D612, attach the extensions to the finisher without modification. Go to "Attaching the Extensions for the D611/D612".
   - If you are installing the D610, modify the extensions and attach them to the finisher. Go to "Attaching the Extensions for the D610".

Attaching the Extensions for the D610

Important

- The procedures in this section are for installation of the cover interposer with the D610 only.
- If you are installing the cover interposer with the D611/D612, go to the next section.

Modify the Attachments for the D610



Front Door Extension:

1. Attach spacer [A] to the front door extension (top) (x 2).
2. Remove the lower hinge [B] and replace it with [C] (x 2).

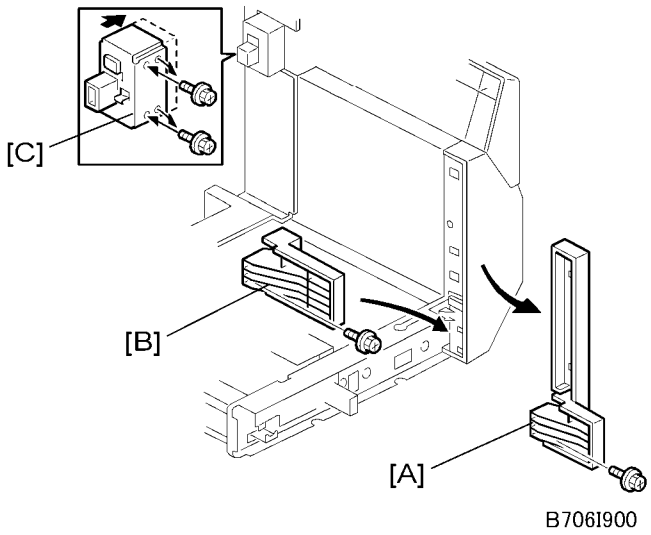
Rear Cover Extension (Bottom):

1. Remove [D] and replace it with [E] (x 1).
2. Remove [F] and replace it with [G] (x 1).

Plate Extension (Bottom):

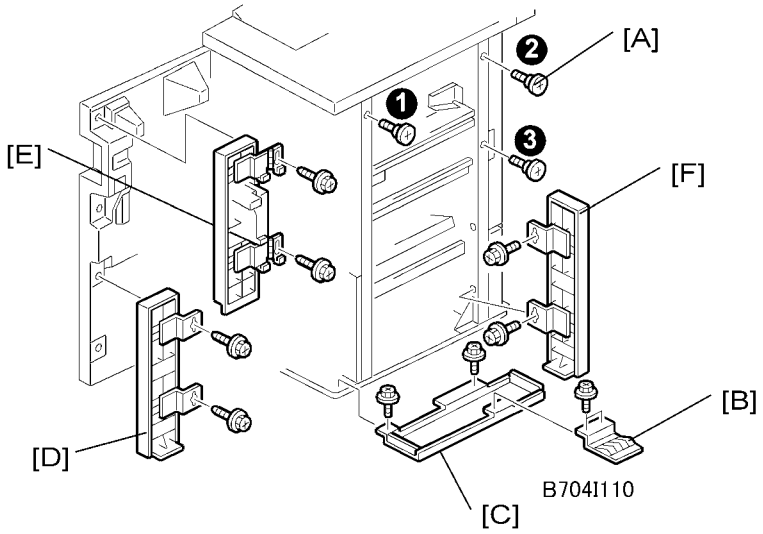
1. Remove bracket [H] from ❶ and attach it to ❷ at the end of the bottom plate extension (x 2).

Prepare the Cover Interposer for the D610



1. Remove spacer [A] (x 1).
2. Attach spacer [B] (x 1).
3. Remove the screws from the connector case [C] (x 2).
4. Push the connector case in the direction of the arrow until the second set of holes is aligned with the holes below, then attach the screws.

Attach the Extensions to the D610



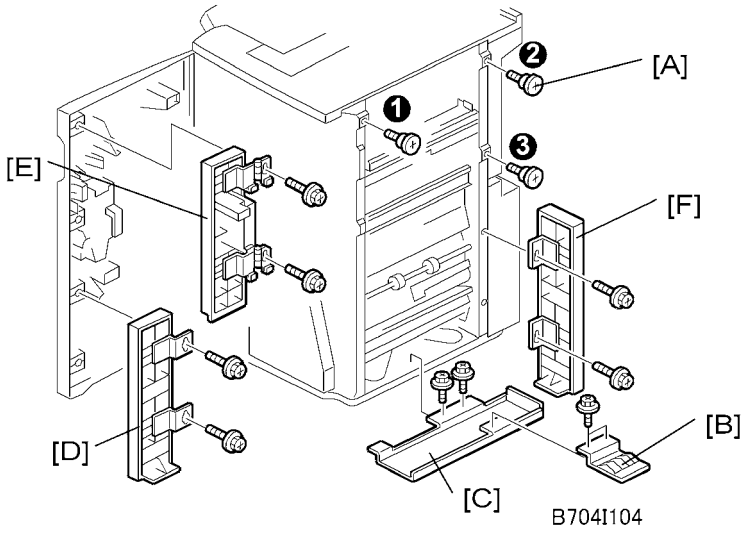
1. Attach the three shoulder screws [A] ❶❷❸ (x 3).
2. If the finisher has been previously installed, remove the ground plate [B] from the finisher and keep the screws.
3. Attach the bottom plate [C] (x 2, M3 x 6).
4. Attach the ground plate to the bottom plate (x 2).
5. Attach the bottom front cover extension [D] (x 2, M4 x 8).

Note

- Attach this cover first.

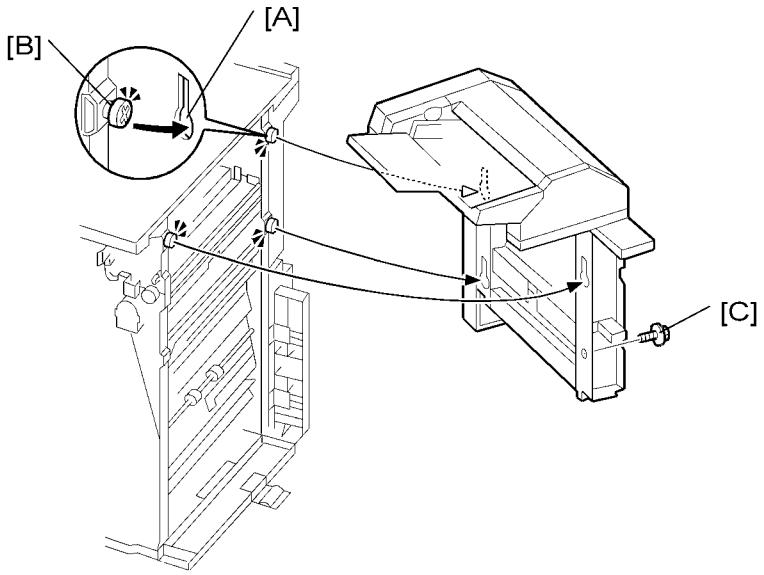
6. Attach the top front cover extension [E] (x 2, M4 x 8).
7. Set two screws into the holes provided for the rear cover extension [F] (x 2, M3 x 6).
8. Set the keyholes of the rear cover extension over of the heads of the screws.
9. Press up on the bottom of the rear cover extension to close the gap at the top of the cover, then tighten the screws.

Attaching the Extensions for the D611/D612



1. Attach the three shoulder screws [A] ❶❷❸ (x 3).
2. If the finisher has been previously installed, remove the ground plate [B] from the finisher and save the screws
3. Attach the bottom plate [C] (x 2, M3 x 6) then attach the ground plate to the bottom plate (x 2).
4. Attach the bottom front cover extension [D] (x 2, M4 x 8).
5. Attach the top front cover extension [E] (x 2, M4 x 8).
6. Attach the rear cover extension [F] (x 2, M3 x 6).

Attaching the Interposer Tray (D610/D611/D612)



B704I105

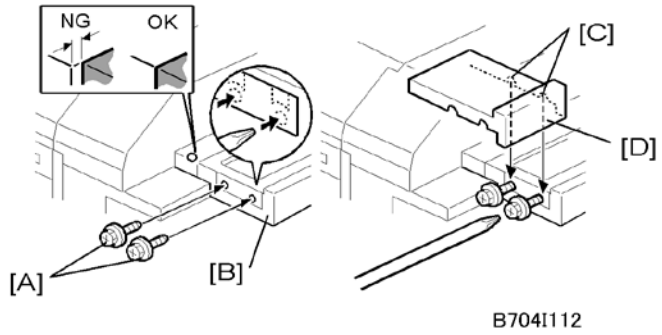
1. Pick up the cover interposer tray, align the keyholes [A] with the shoulder screws [B], then slide the cover interposer down onto the screws.
2. Secure the cover interposer with the screw [C] (x 1, M3 x 6).
3. Either:
   - If you are installing the cover interposer tray on the D611/D612, skip the next section and go directly to “Docking the Finisher and Interposer to the Machine”.
   - If you are installing the cover interposer tray on the D610, go to the next section, install the corner plates on the D610, then go to “Docking the Finisher and Interposer to the Machine”.

Attaching the Corner Plates for the D610

Important

- The corner plates are installed on the D610 only.

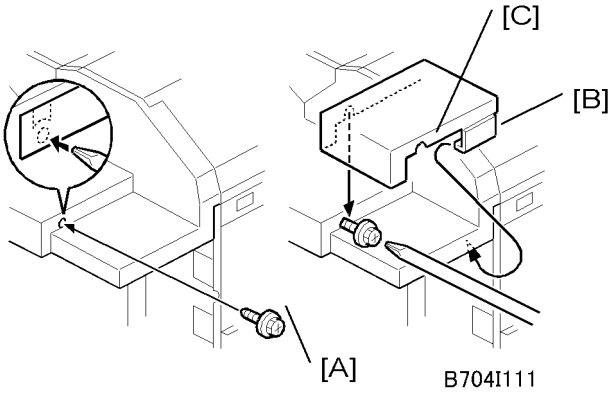
Right Rear Corner Plate (D610 only)



1. Temporarily attach the screws [A] (with about two turns) to the right end of the finisher extension table [B] (x 2, tapping M4 x 8)

   Note

   - The holes are not visible because they are covered with tape. Just punch the screws through the holes.
2. Align the cutouts [C] of the right rear corner plate [D] with the screws and attach the plate.
3. With a long screw driver inserted through the cutouts in the right rear corner plate [D], tighten the screws to fasten the right rear corner plate to the table extension [B].



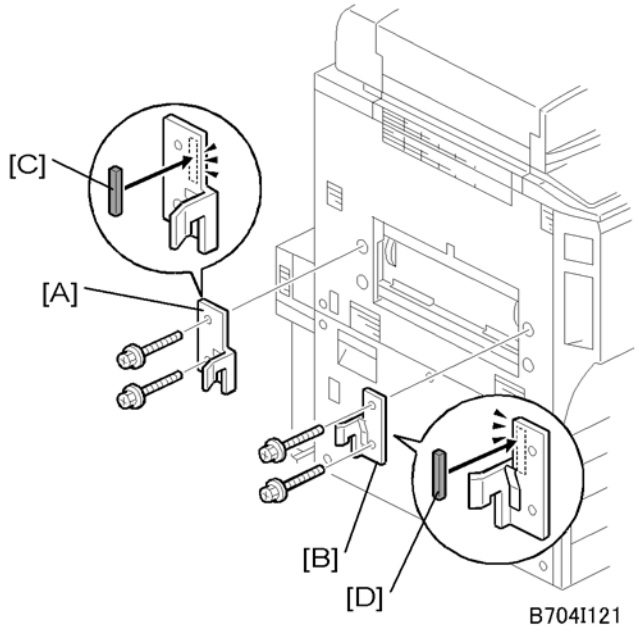
4. Temporarily attach the screw [A] (M4 x 8) with about two turns to fasten to the panel at the right front corner.

Note

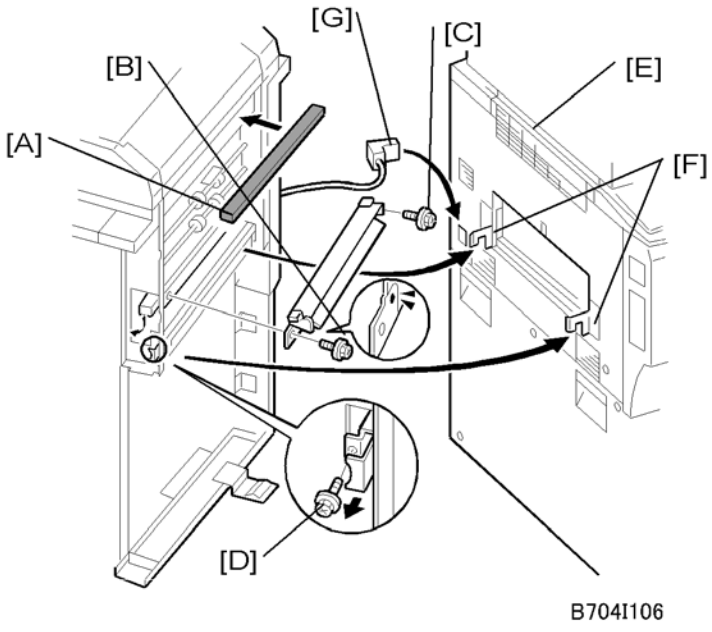
- The hole is not visible because it is covered with tape. Just punch the screw through the hole.

5. With the clamp [B] under the edge of the corner, align the cutout [C] in the right front corner plate with the screw, then snap it into position.
6. With a long screwdriver inserted into the plate cutout [C], tighten the screw to fasten the right front corner plate.

Docking the Finisher and Interposer to the Machine (D610/D611/D612)



1. Attach the rear bracket [A] (x 2, M4 x14).
2. Attach the front bracket [B] (x 2, M4 x14).
3. Attach the gasket seals [C] and [D].



4. Attach the sponge strip [A] that is supplied with the finisher.
5. Attach the guide plate (removed from the finisher) to the cover interposer.
   - Attach the front end [B] of the plate (x 1).
   - Attach the rear end of the plate with the anti-static brush [C] (x 1).

Important

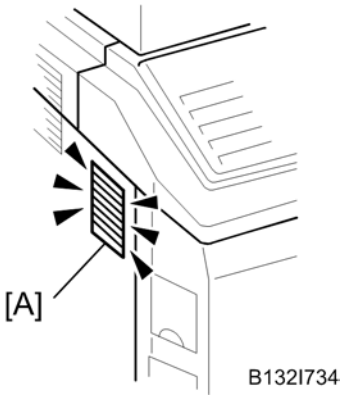
- Use the two small tapping screws that are supplied, and not the machine screws removed from the finisher guide plate.

6. Release the lock lever [D] (x 1).
7. Attach the pad [E]. (This pad is provided with the finisher.)
8. Slowly push the finisher against the side of the machine until the brackets [F] go into the slots.

Important

- Move the finisher carefully, or you will bend the entrance guide plates.

9. Attach the lock lever [D] (x 1).
10. Connect the connector [G] to the copier.



Important

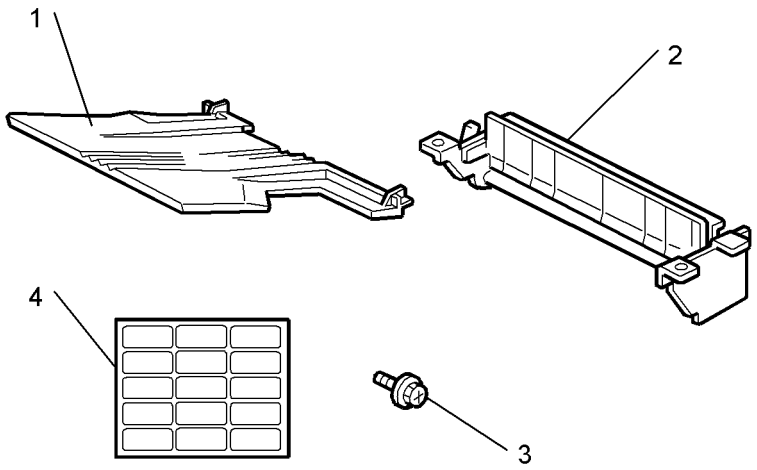
- Check the duct [A] on the left side of the machine.
- Make sure that the sponge does not prevent air flow through this duct.

2.14 MAILBOX CS4000 (D616)

2.14.1 ACCESSORY CHECK

Check the accessories and their quantities against the following list.

No.	Description	Q'ty
1.	Trays	9
2.	Guide plate	1
3.	Tapping screws - M3x8	6
4.	Decals (bin display)	1



b762i001a

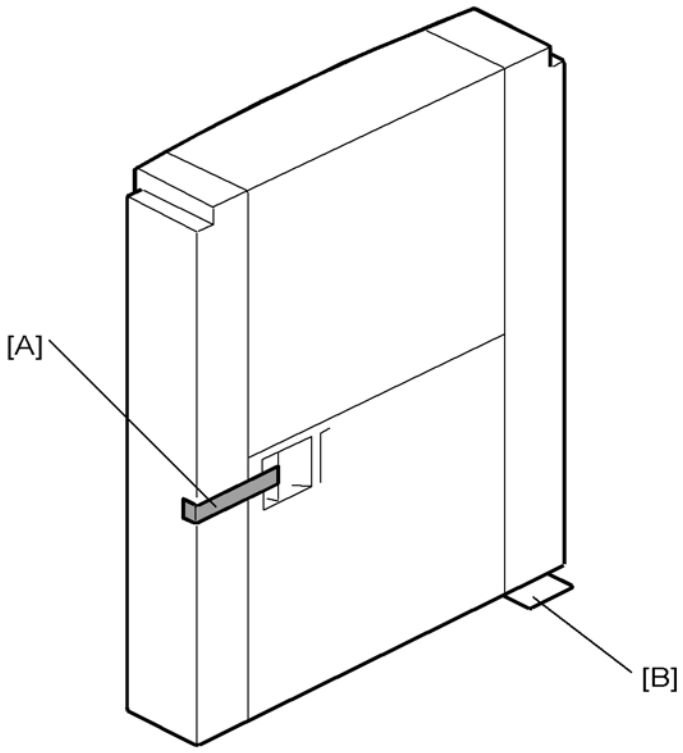
2.14.2 INSTALLATION PROCEDURE

Important

- The Mail Box can be installed only in SR4060 (D611) or SR4070 (D612).
- The Mail Box and Cover Interposer tray cannot be installed together.

⚠WARNING

- Switch the machine off and unplug the machine before starting the following procedure.

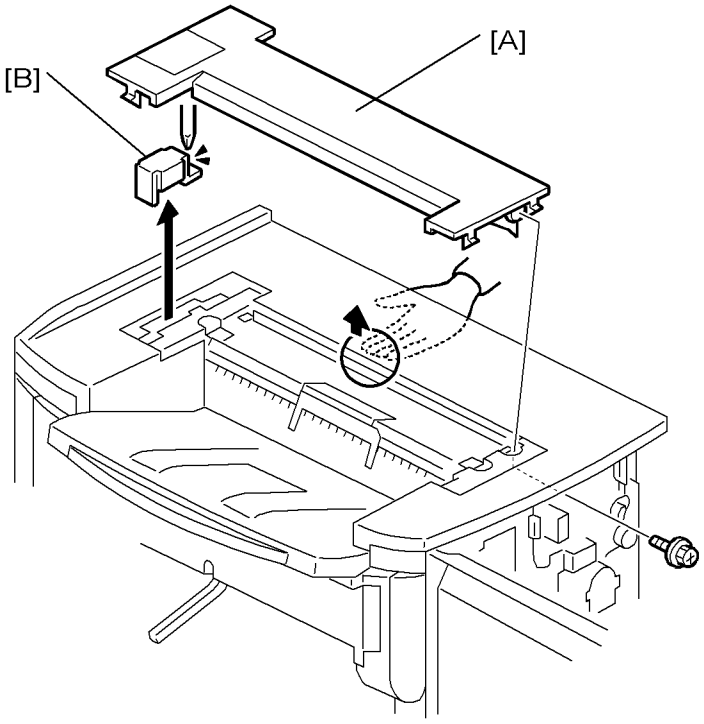


b762i101

1. Remove the filament tape [A].

Important

- Handle the mailbox carefully. The corner leaf [B] can be damaged easily.



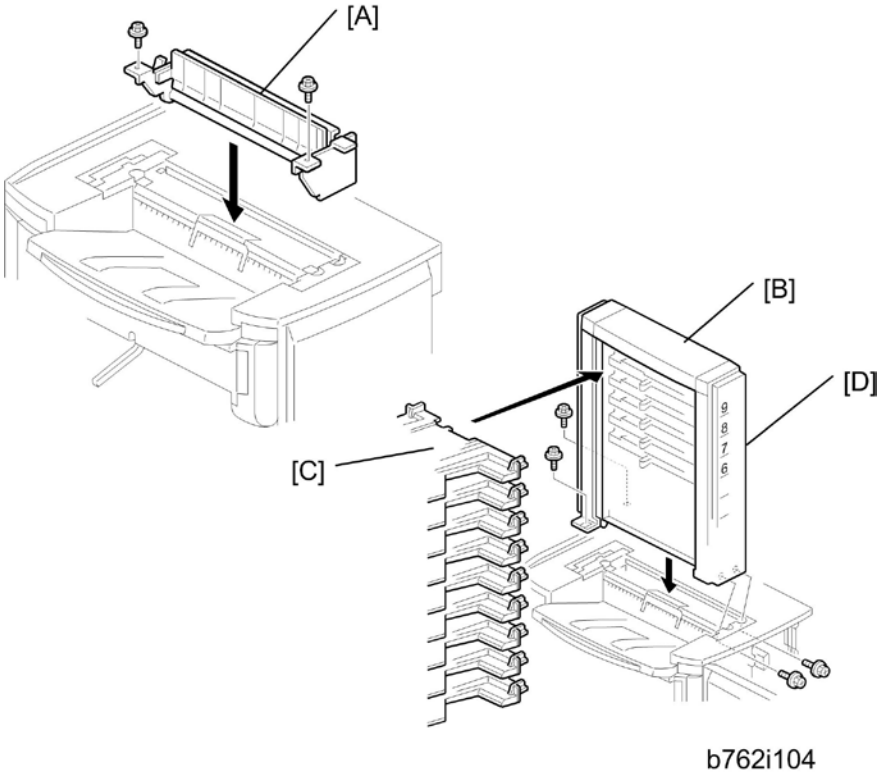
b762i102

2. If the Cover Interposer Tray (D614) is installed on the finisher, remove it.

Note

- The cover interposer tray and mailbox cannot be installed on the finisher at the same time.

3. Remove the top cover [A] of the finisher (x 1).
4. Remove the bracket [B] (x 1).



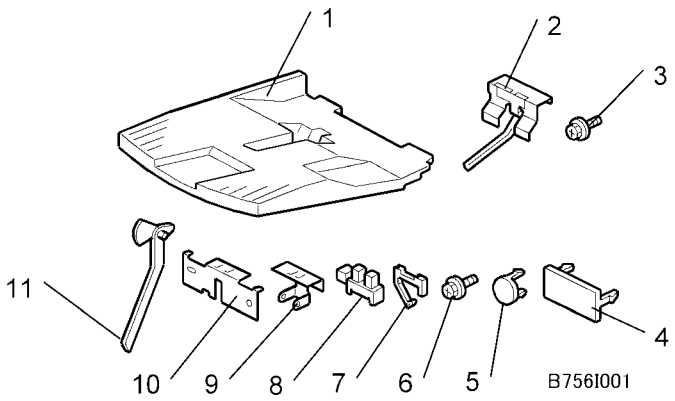
5. Attach the guide plate [A] to the top of the finisher (x 2, M3x8).
6. Attach the mailbox [B] to the top of the finisher (x 4, M3x8).
7. Attach the 9 trays [C] to the mailbox.
8. Give the decals [D] to the customer for notation and attaching at the correct location.

2.15 COPY TRAY TYPE 9002 (B756)

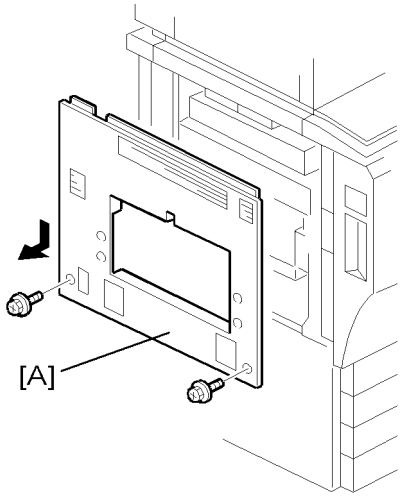
2.15.1 ACCESSORIES

Check the accessories and their quantities against the following list.

No.	Description	Q'ty
1.	Copy Tray	1
2.	Actuator Arm and Bracket (not used)	1
3.	Tapping Screw (not used)	2
4.	Large Cap	1
5.	Small Cap	4
6.	Tapping Screw (M4 x 8)	1
7.	Harness Clamp	1
8.	Paper Height Sensor	1
9.	Actuator Arm Bracket	1
10.	Sensor Bracket	1
11.	Actuator Arm	1

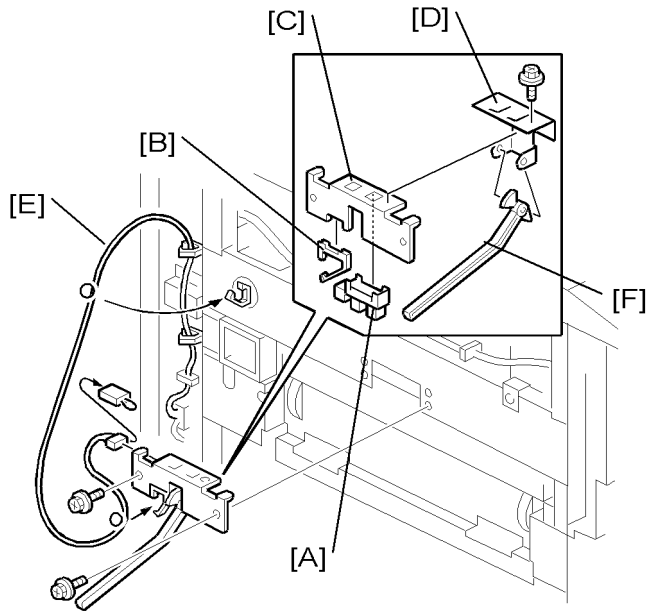


2.15.2 INSTALLATION



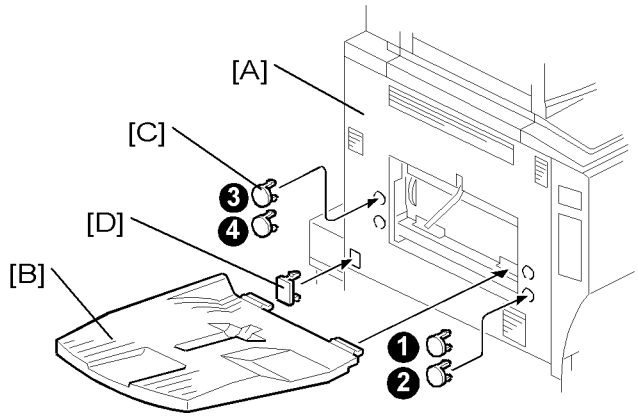
B756I101

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



B756I003

2. Attach the paper height sensor [A] and harness clamp [B] to the sensor bracket [C].
3. Attach the sensor bracket and actuator arm bracket [D] to the copier (x 3).
4. Attach the sensor harness [E] (x 1, x 4).
5. Attach the actuator [F] to the arms of the actuator arm bracket.



B756I002

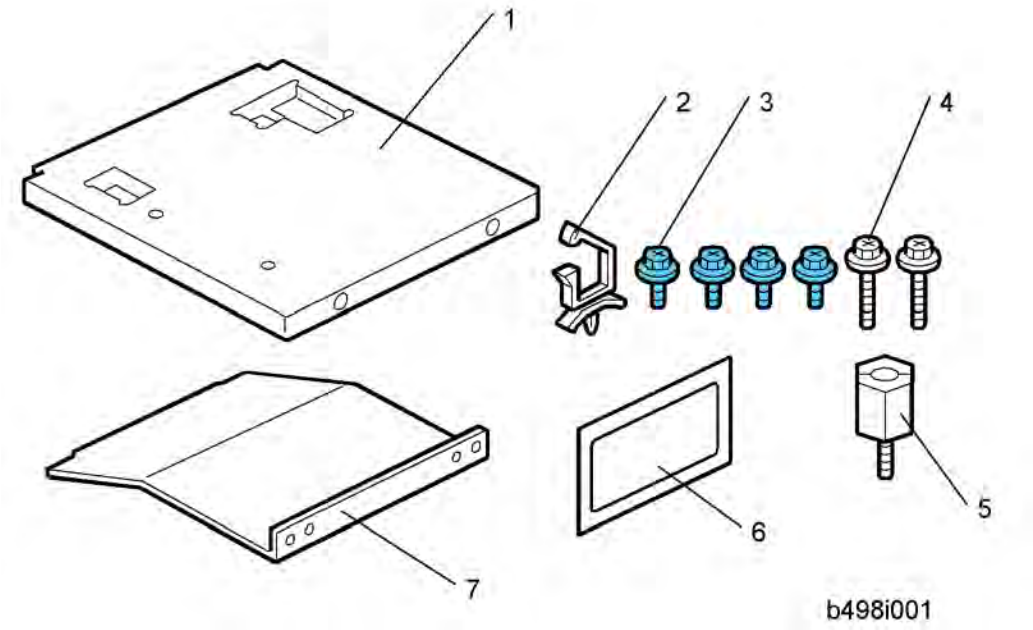
6. Reattach the left upper cover [A] (x 2).
7. Attach the tray [B].
8. Attach the small caps [C] to the holes ❶, ❷, ❸, ❹.
9. Attach the large cap [D] to cover the finisher power connection point.

2.16 CARD READER BRACKET (B498), KEY COUNTER BRACKET (B452)

2.16.1 KEY CARD BRACKET B498 ACCESSORIES

Check the accessories and their quantities against this list.

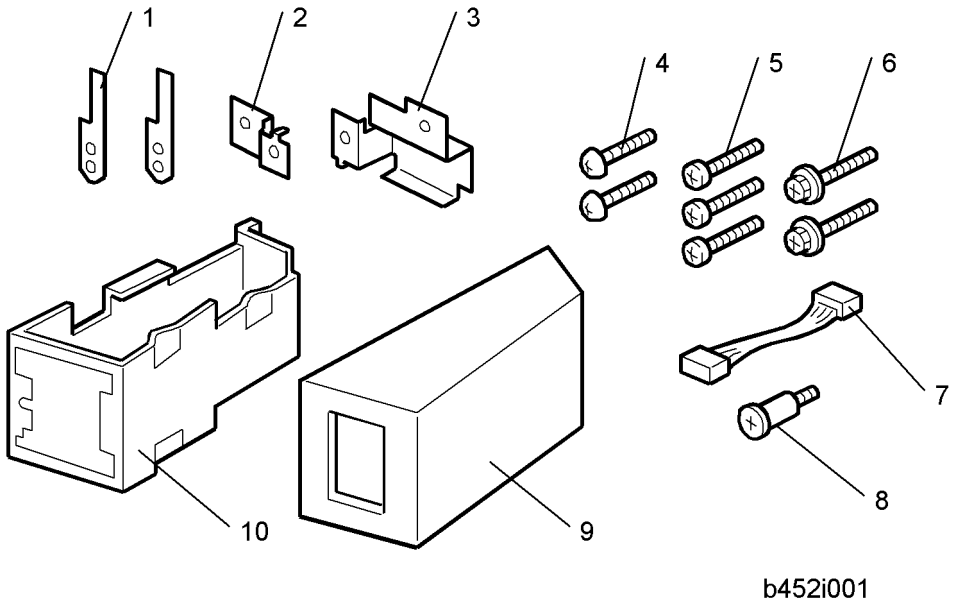
No.	Description	Qty
1.	Key Card Table	1
2.	Harness Clamp	1
3.	Tapping Screws (M3 x 8)	4
4.	Tapping Screws (M4 x 14)	2
5.	Stud	1
6	Decal	1
7.	Key Card Table Support	1



2.16.2 KEY COUNTER BRACKET B452 ACCESSORIES

Check the accessories and their quantities against this list.

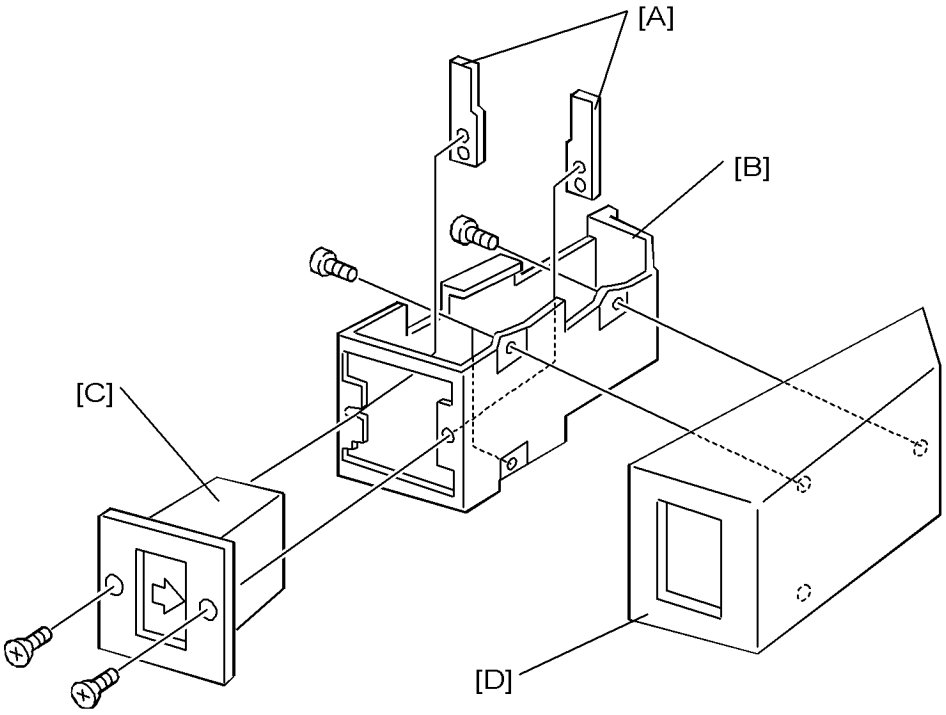
No.	Description	Qty
1.	Plate nuts	2
2.	Rear Bracket	1
3.	Front Bracket	1
4.	Tapping Screws (M3 x 6)	2
5.	Tapping Screws (M4 x 8)	3
6.	Tapping Screws (M4 x 16)	2
7.	Harness	1
8.	Shoulder Screw	1
9.	Key Counter Bracket Cover	1
10.	Key Counter Bracket	1



b452i001

2.16.3 INSTALLATION

Assemble the Key Counter Bracket



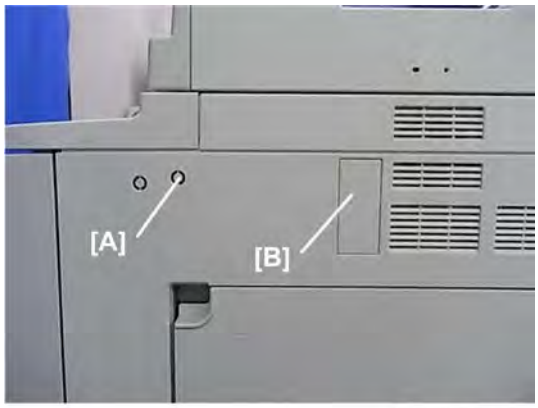
b452i002

1. Hold the key counter plate nuts [A] on the inner surface of the key counter bracket [B].
2. Attach the key counter holder [C] to the key counter bracket (x2).
3. Attach the key counter bracket cover [D] (x2).

Install the Key Card Bracket and Assembled Key Counter

⚠WARNING

- Make sure that the machine is turned off and unplugged from its power source before you do this procedure.



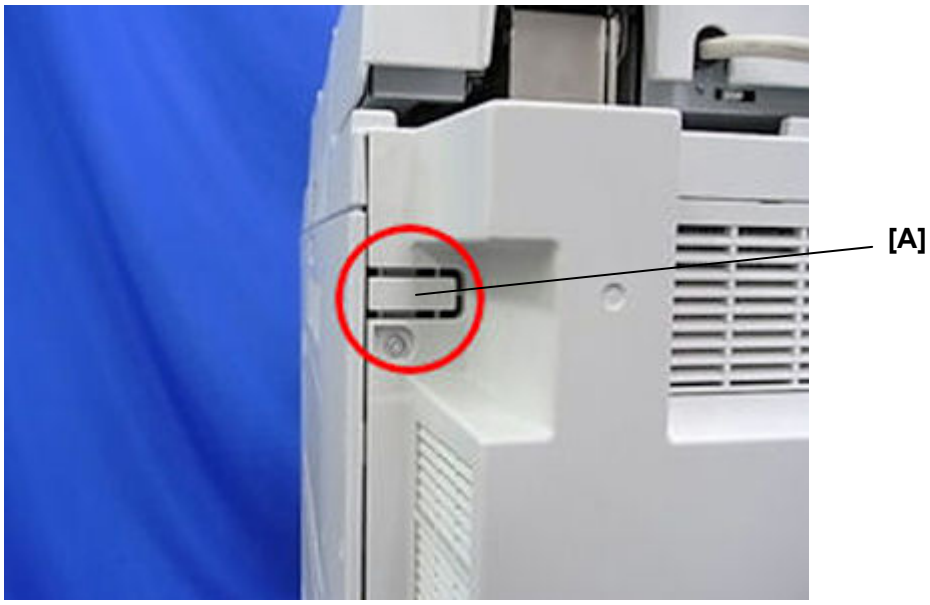
b498i005.vsd

1. Use a pair of nippers to remove the screw hole cover [A].
2. Use the tip of a small screwdriver to remove plate [B].
3. Attach the assembled key counter to the side of the machine at [A] (x1 Stepped) and [B] (x1, x1)

⇒2.17 KEY COUNTER INTERFACE UNIT 20 PIN (B870)

2.17.1 INSTALLATION PROCEDURE

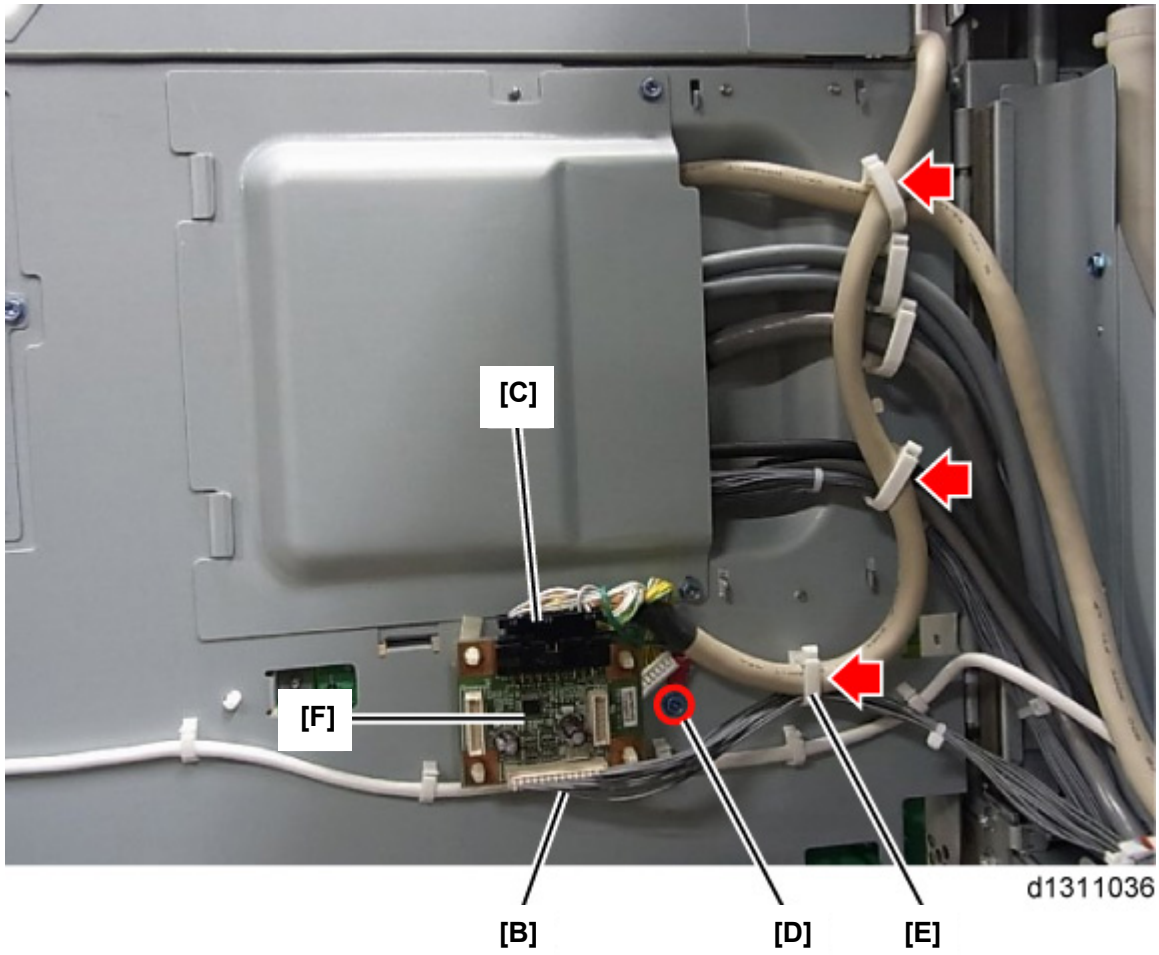
1. Remove the rear cover, and then cut the small plate [A] to remove it.



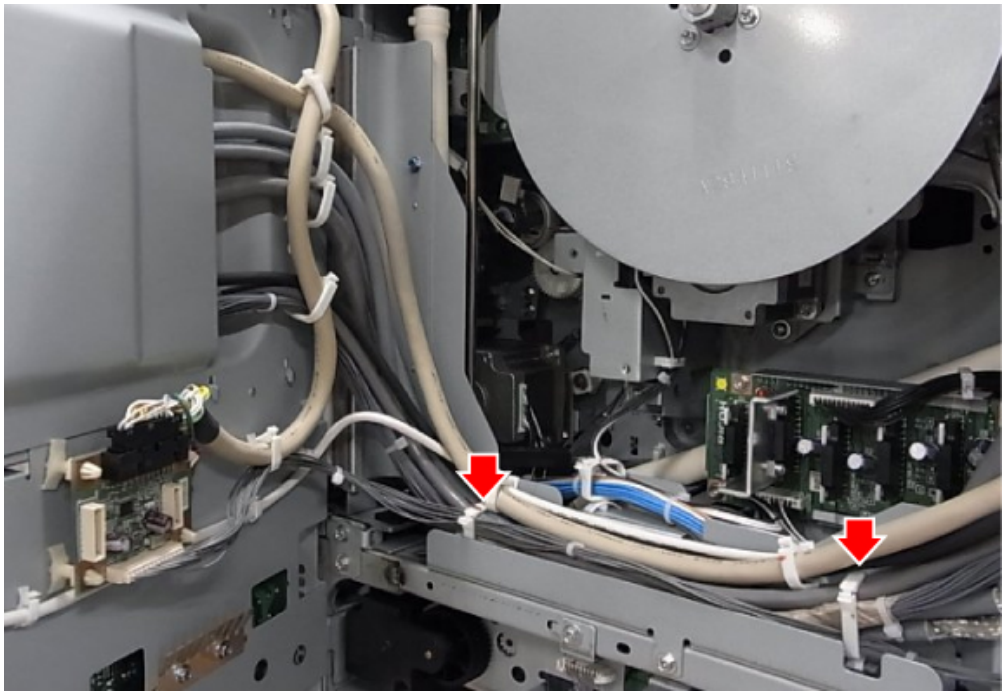
2. Open the controller box.
3. Attach the board [F].
4. Connect the connecter [B] to CN003.

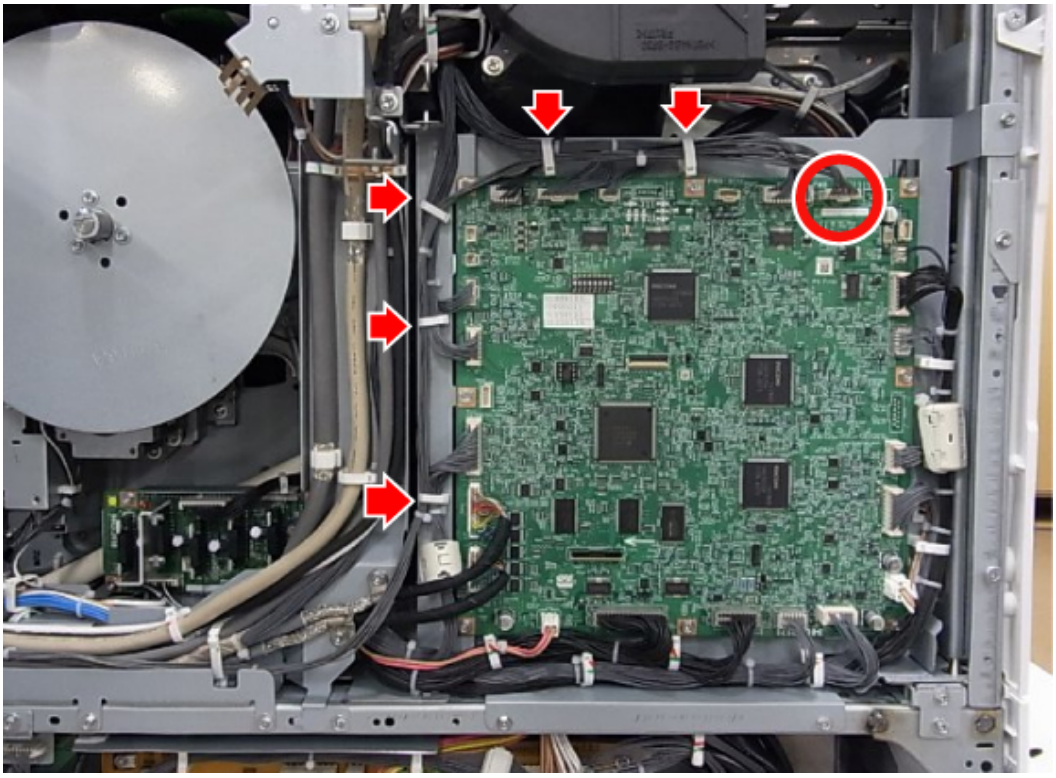
   Note: The harness with connector [B] is located inside mainframe paper tray 3.
5. Connect the key counter harness[C] to CN004.
6. Attach the ground wire [D].
7. Clamp the harness at the three points marked by the red arrows in the photo.

   Note: Key counter harness: three points, Harness in the tray 3: 1 point

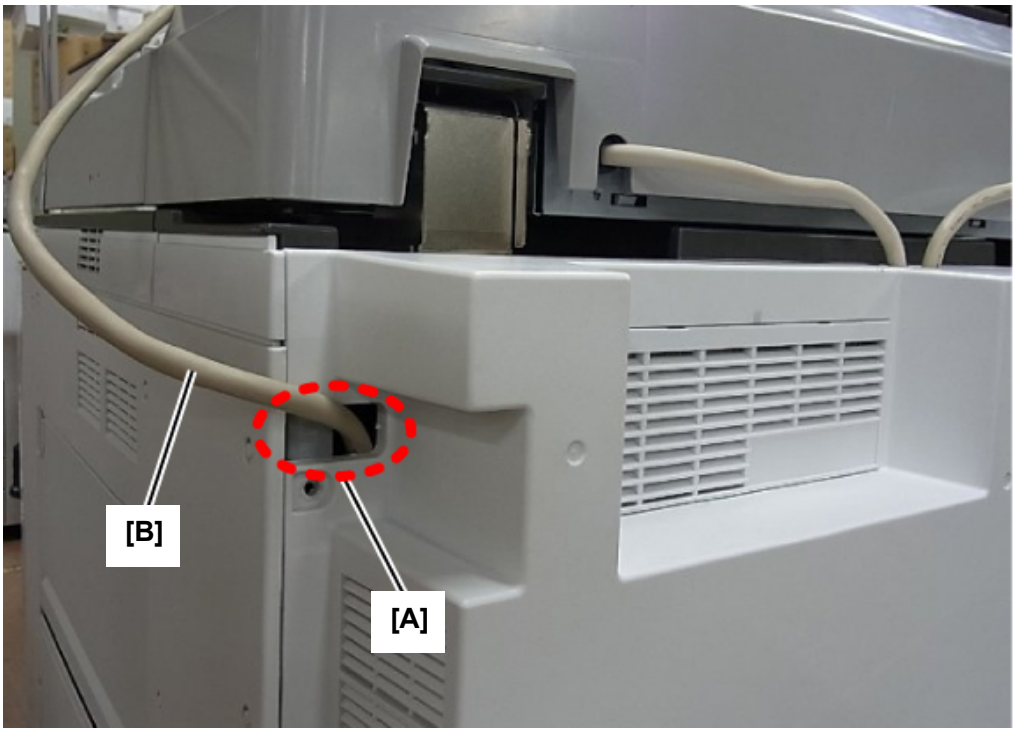


8. Clamp the harness at the seven points marked by the red arrows in the photo.
9. Connect the harness to the connector on the board circled in red in the photo.





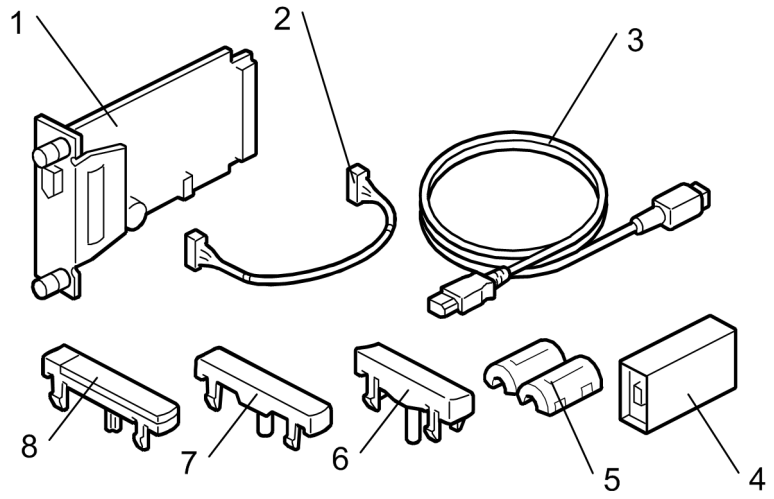
10. Close the cover of the controller box.
11. Lead the harness [B] for the key counter through the opening [A], and then reattach the rear cover.



2.18 COPY CONNECTOR TYPE 3260 (B328)

2.18.1 ACCESSORIES

No.	Description	Q'ty
1.	Copy Connector Board B328	2
2.	Power Repeater Cable	2
3.	Coupling Interface Cable 1394	3
4.	Repeater Hub 1394	2
5.	Ferrite Core	2
6.	Keytop for B-C3 (Not used)	4
7	Keytop (Not Used)	4
8	Keytop for V-C1 (Not used)	8



b328i101a

2.18.2 PREPARATION

Before you begin the installation procedure:

- Measure the distance between the machines to be connected.
- Confirm that the printer/scanner option is installed on the machines.

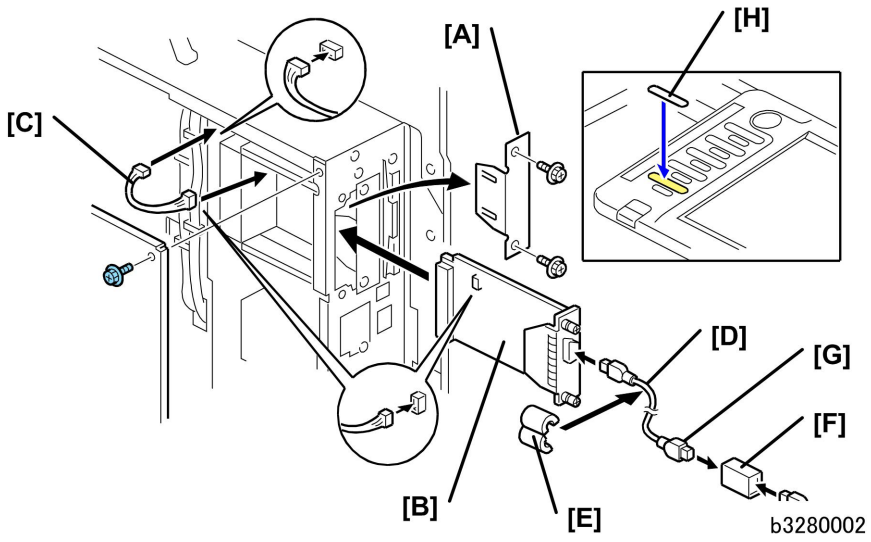
Determine the number of cables and repeater hubs that are necessary based on the distance measured between the machines.

Distance	Power Repeater Hubs Required	Interface Cables Required
Up to 4.5 m (14.8 ft.)	None	1
4.5 to 9.0 m (14.8 to 29.5 ft)	1	2
9.0 to 13.5 m (29.5 to 112.5 ft.)	2	3

- Install the key labeled “Printer/Other Function + Scanner” (or its equivalent symbol key-top for EU) on a machine with the printer/scanner option installed.
- Install the key labeled “Other Function” (or its equivalent symbol key-top for EU) on a machine without the printer/scanner option.

2.18.3 INSTALLATION

1. Remove these parts:
   - Rear upper cover (x2)
   - Rear lower cover (x2)
   - Controller box cover (x 13)



2. Remove the cover [A] of Slot B (x 2).
3. Install the Copier Connection Kit Board B328 [B] in Slot B and fasten it (x 2).
4. Connect the power repeater cable [C] to:
   - CN32 on the controller board
   - CN4 on the copy connector board
5. Reattach the controller box cover, rear upper and lower cover.

   Repeat Steps 1 to 5 to install the connector kit on the second machine.
6. Connect the end of the interface cable [D] to the copy connector board.
7. Attach the ferrite cores [E] to both ends of the interface cable.
8. If and additional cable is required, connect the repeater hub [F] and cable [G].
9. Attach the appropriate decal [H] to each machine.
10. Attach the "Printer/Other Function" decal (or its equivalent symbol for EU) if the printer/scanner option is installed.

    -or-

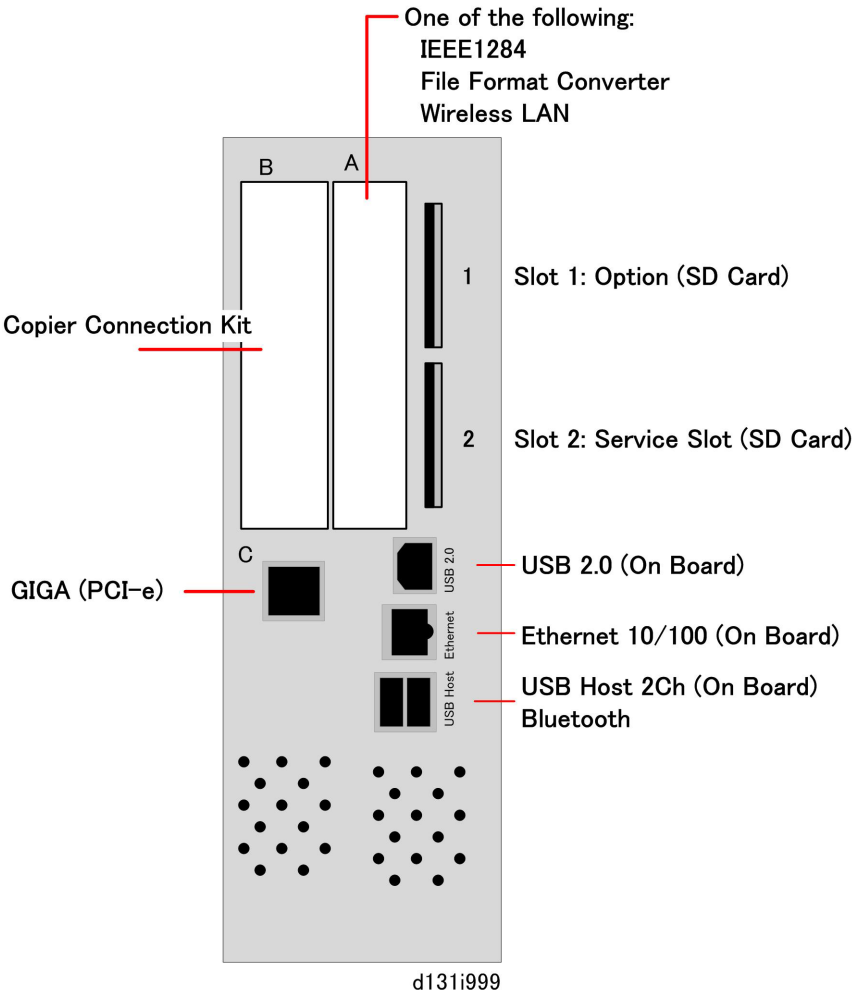
    Attach the "Other Function" decal (or its equivalent symbol for EU) if the printer/scanner option is not installed.
11. Attach the other end of the connection cable to the copy connector board installed in the other machine.

2.19 MFP OPTIONS

2.19.1 MERGING APPLICATIONS ON ONE SD CARD

Overview

Two slots for boards and two slots for SD cards are provided on the controller box. Each board or SC card must be inserted into its assigned slot. The slot assignment of each item is listed in the table below.



Note

- If the customer wants to use more than one application on SD cards, applications must be merged on the same SD card.

Important

- The data necessary for 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 service technician may occasionally need to check the SD card and its data to solve problems. For these reasons SD cards must be stored with the machine.
- After an SD card has been used to move other applications onto that card, that SD card cannot be used for a different function.
- Never remove the System SD Card from Slot 1
- 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 (x 1).
3. Put the Source SD card in Slot 2 (service slot). This card contains the application that you want to copy.

   Note

   - The PS3 SD card cannot be the source card (it cannot be copied).
4. Check the target SD card and confirm that its write-protect switch is OFF.
5. Insert the Target SD card into the SD card Slot 1.
6. Open the front door.
7. Turn the main machine on.
8. Do SP5873 001.
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. Leave the target SD card in Slot 1.
14. Turn the main machine on.
15. Go into the User Tools mode and check that all the applications on the SD card in Slot 1 are enabled:

User Tools> System Settings> Administrator Tools> Firmware Version

1. Turn the main machine off again.

2. Reattach the SD card slot cover.
3. Return copied SD cards to the customer for safekeeping, or tape the copied SD cards to the inside of the front door.

Important

- Do not remove copied SD cards from the machine site.

Important

- After an SD card has been copied, it can no longer 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 002). 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

Do this procedure if you moved an option from the original SD card to another card by mistake and you need to restore the original SD card.

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

Note

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

4. Turn the main switch ON.
5. Do SP5873-002 (Undo Exec).
6. Follow the instructions of the operation panel messages.
7. Turn the main switch OFF.
8. Remove the SD cards from the slots.
9. Turn the main switch ON.

2.19.2 COMMON PROCEDURES

Inserting SD Cards

Insert SD cards with the notched corner down.

The insertion point for the SD cards are offset slightly to the left. Make sure the SD card is inserted correctly before you push it into the slot.

Pushing in the SD Card also 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.

Storing Copied SD Cards

Copied SD cards cannot be used. However, they must be stored at the site to server as proof of purchase by the customer.

Return copied SD cards to the customer for safekeeping, or tape the copied SD cards to the inside of the front door.

Do not remove copied SD cards from the machine site.

2.19.3 PRINTER/SCANNER UNIT TYPE 9002 (D620)

Accessories

No.	Description	Q'ty
1.	Caution Decal	1
2.	Printer/Scanner SD Card	1
3.	EULA Sheet	1
4.	FCC Decal	1
5.	Memory DIMM 0.5 GB	1

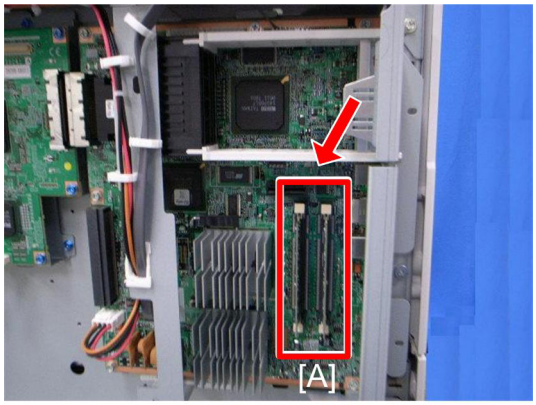
Important

- Only one Slot 1 is available for applications on SD cards. If more than one application is will be used, the applications must be moved onto one SD card with SP5873 -1.

Installation

⚠CAUTION

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

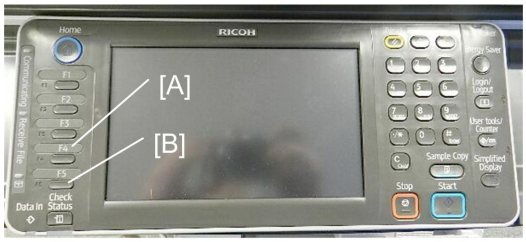


d062r681b

1. Switch the machine off.
2. Remove the controller box cover ☛ p.4-122
3. Insert the memory DIMM in either slot [A].
4. Re-attach the controller box cover.
5. Insert the SD Card into Slot 1.

Important

- 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.



d131i018

6. On the operation panel, attach the "Printer" keytop [A] and the "Scanner" keytop [B]. Select either the English set or Symbol set for installation.
7. Plug in the power cable and turn the main power switch on.
8. Change **SP5985 -1** and **-2** from "0" to "1".
9. Turn the main power switch off and on.
10. Follow the procedures in the Operation Instructions to complete the installation for the printer/scanner option.

2.19.4 POSTSCRIPT3 UNIT TYPE 9002 (D620)

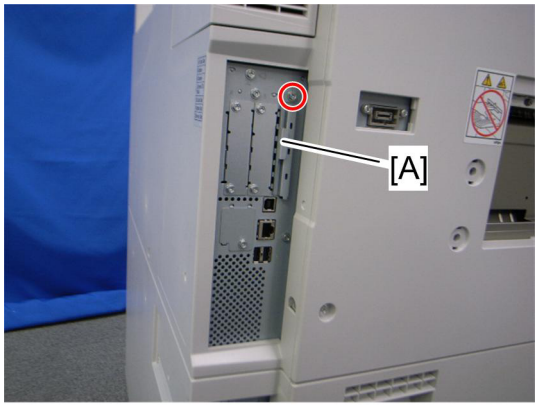
Accessories

No.	Description	Q'ty
1.	PostScript3 Emulation SD Card	1
2.	Decal	1

Important

- Only Slot 1 is available for applications on SD cards. If more than one application will be used, the applications must be merged onto one SD card with SP5873 -1.

Installation



d063i500

1. Switch the machine off.
2. Remove the SD card slot cover [A] (x 1).
3. Insert the PS3 SD Card [B] into Slot 1.
4. Switch the machine on.

2.19.5 IEEE802.11 INTERFACE UNIT (D377)

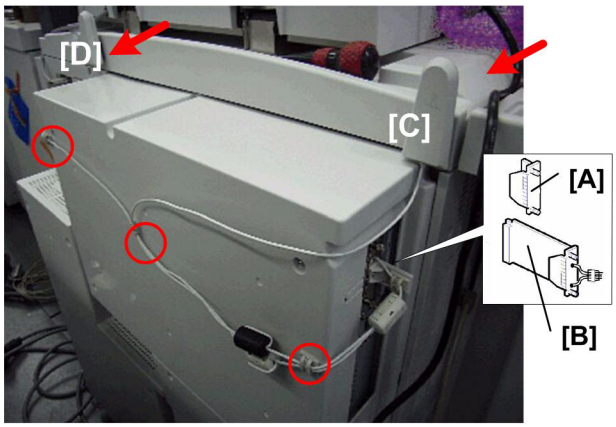
This procedure describes installation of the wireless LAN for:

- IEEE802.11a/g Interface Unit Type J (D377)
- IEEE 802.11g Interface Unit Type K (D377)

Accessories

No.	Description	Q'ty
1.	Wireless LAN PCB (GW-WLAN)	1
2.	Clamps	8
3.	Velcro Fasteners	2
4.	Wireless LAN Instructions	1

Installation



d377i001

1. Remove the cover of the interface slot A [A] (x 2).
2. Touch a metal surface to discharge any static electricity from your hands.
3. Put the Wireless LAN board [B] in Slot A.
4. Confirm that the board is inserted completely, then fasten it (x 2).
5. Pull the antennas away from machine and make sure that they are not tangled.
6. Look at the markings on the antenna bracket.
   - **ANT1**. Antenna 1 transmits and receives. The ferrite core on the Antenna 1 cable is black. It must be installed on the left rear corner of the main machine where it will not be obstructed by the operation panel.
   - **ANT2**. Antenna 2 only receives. The ferrite core on the Antenna 2 cable is white. It is installed on the right rear corner of the machine.
7. Attach ANT1 [C] to the left rear corner.
8. Attach ANT2 [D] to the right rear corner.
9. Route the cables and use the clamps to attach them as shown.

User Tool Settings for Wireless LAN

Do the procedure below to perform the initial interface settings for IEEE 802.11 a/g.

Note

- You cannot use the wireless LAN if you use Ethernet.
- The Bluetooth interface unit and the Wireless LAN interface unit can not be used simultaneously.

1. Press the "User Tools/Counter" key.
2. On the touch panel, press "System Settings".

   Note

   - The Network I/F (default: Ethernet) must be set for either Ethernet or wireless LAN.
3. Select "Interface Settings".
4. Press "Wireless LAN". Only the wireless LAN options show.
5. Communication Mode. Select either "802.11 Ad hoc" or "Infrastructure".
6. SSID Setting. Enter the SSID setting. (The setting is case sensitive.)
7. Channel. You need this setting when Ad Hoc Mode is selected.

   Region A (mainly Europe and Asia)

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

   Region B (mainly North America)

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

   - Range: 1-11 channels (default: 11)
   - In some countries, only the following channels are available:

   Note

   - The allowed range for the channel settings may vary for different countries.
8. WEP (Encryption) Setting. The WEP (Wired Equivalent Privacy) setting is designed to protect wireless data transmission. The same WEP key is required on the receiving side in order to unlock encoded data. There are 64 bit and 128 bit WEP keys.

   WEP:

   Selects "Active" or "Inactive" ("Inactive" is default.).

   Range of Allowed Settings:

   - 64 bit: 10 characters
   - 128 bit: 26 characters

9. Press "Return to Default" to initialize the wireless LAN settings.
   Press "Yes" to initialize the following settings:
   - Transmission mode
   - Channel
   - Transmission Speed
   - WEP
   - SSID
   - WEP Key

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

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

SP No.	Name	Function
5840-008	Transmission speed	Sets the transmission speed Auto, 54 Mbps, 48 Mbps, 36 Mbps, 24 Mbps, 18 Mbps, 12 Mbps, 9 Mbps, 6 Mbps, 11 Mbps, 5.5 Mbps, 2 Mbps, 1 Mbps (default: Auto)
5840-011	WEP Key Select	Used to select the WEP key (Default: 00).
UP mode	Name	Function
	SSID	Used to confirm the current SSID setting.
	WEP Key	Used to confirm the current WEP key setting.
	WEP Mode	Used to show the maximum length of the string that can be used for the WEP Key entry.

2.19.6 BLUETOOTH INTERFACE UNIT TYPE D (D566)

Accessories

Check the quantity and condition of the accessories.



d566i001

No.	Description	Q'ty
1.	Bluetooth USB Module	1

Note

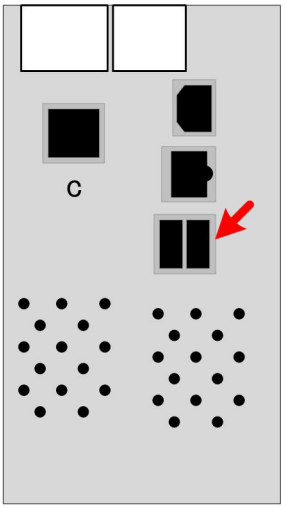
- An IEEE 802.11 interface unit and Bluetooth interface unit cannot be installed and used together.

Installation

⚠CAUTION

- Switch the machine off and unplug it before you do this procedure.

1. Turn off the machine and unplug it.



d566i002

2. Insert the Bluetooth USB module into the USB slot on the controller faceplate.
3. Plug the power plug in and turn the machine on.
4. Confirm that Bluetooth is installed correctly:
   User Tools> Printer Features> List/Test Print> Configuration Page

2.19.7 FILE FORMAT CONVERTER TYPE E (D377)

Accessory Check

Check the accessories and their quantities against this list:

No.	Description	Q'ty
1.	File Format Converter (MLB: Media Link Board)	1

Installation

1. Switch the machine off.
2. Remove the cover of Slot A (x 2).
3. Insert the file format converter board into Slot A and fasten it with the screws.
4. Switch the machine on.
5. Set **SP5836-3** to "1" to enable the print backup feature.
6. Confirm or set the following SP codes with the values in the table listed below.

SP No.	Setting	SP No.	Setting
5-836-1	1	5-836-73	0
5-836-2	0	5-836-85	1
5-836-3	1	5-836-86	2
5-836-72	0	5-836-91	50

7. Set the following SP codes according to the customer's needs.

SP No.	Setting	Comment
SP5-836-94	2	Selects JPEG2000 file format for documents copied from the document server to Palm2. **Note:** Files backed up to Palm2 in J2K format cannot be edited by other software applications.

SP No.	Setting	Comment
SP-5836-98	0	Selects the TIFF file format for documents copied from the document server to Palm2. **Note:** Select this so the backed up files can be used with other software applications (editing, OCR, etc.) with only slight loss in image quality.
	1	Applies dot correction and eliminates ghost images transferred from the back sides of double-sided originals when files are copied to Palm2. This selection also reduces the size of the file. **Note:** This function is applied to both J2K and TIFF files and is particularly useful for copying large J2K documents quickly with only a slight loss in image quality.
	0	Does not apply the features of the "1" setting when files are copied to Palm2. **Note:** This setting preserves the quality of the original image, especially with J2K files, but also requires more time for copying and requires more disk space to store the larger files.

2.19.8 HDD ENCRYPTION UNIT TYPE A (D377)

Before You Begin the Procedure

1. 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 encryption option can be installed.
2. 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.
3. Confirm that "Administrator Tools" is selected and enabled:
   [User Tools]> "System Settings"> "Administrator Tools"> "Administrator Authentication Management"> "Available Settings

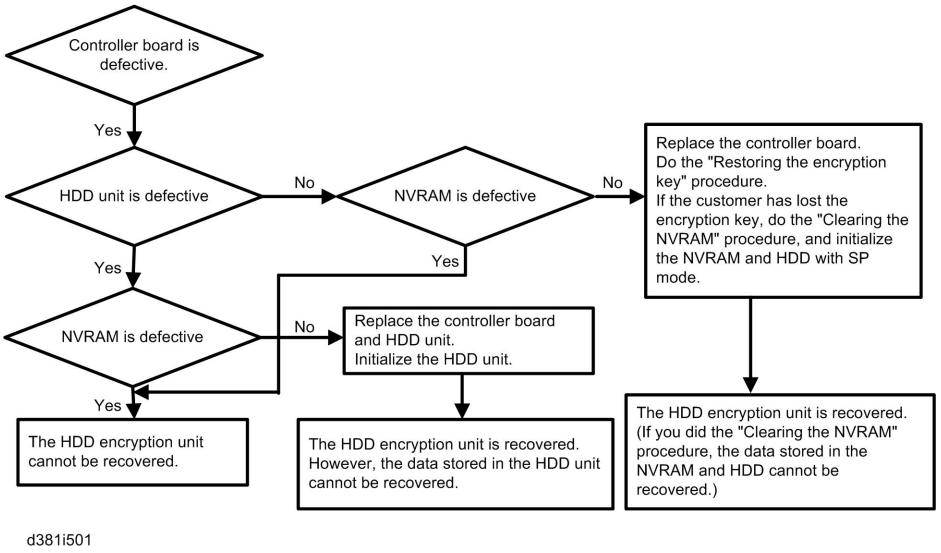
   Note
   - "Available Settings" is not displayed until "Admin. Authentication" is switched on.

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

Enabling Encryption

1. Turn on the main power switch.
2. Enter the SP mode.
3. Select **SP5878-2** (Option Setup – Encryption Option), and then touch [Execute].
4. Turn off the main power switch.
5. Remove the SD card.
6. Attach the slot cover [A] (x 1).
7. Switch the machine on.

Recovery from a Device Problem



Restoring the encryption key

When replacing the controller board for a model in which the HDD encryption unit has been installed, updating the encryption key is required.

1. Prepare an SD card which is initialized.
2. Make the "restore_key" folder in the SD card.
3. Make an "nvram_key.txt" file in the "restore_key" folder in the SD card.
4. Ask an administrator to input the encryption key (this has been printed out earlier by the user) into the "nvram_key.txt" file.
5. Remove only the HDD unit.
6. Turn on the main power switch.
7. Confirm that the prompt on the LCD tells you to install the SD card (storing the encryption key) in the machine.
8. Turn off the main power switch.
9. Insert the SD card that contains the encryption key into slot 2.
10. Turn on the main power switch, and the machine automatically restores the encryption key in the flash memory on the controller board.
11. Turn off the main power switch after the machine has returned to normal status.
12. Remove the SD card from slot 2.
13. Reinstall the HDD unit.

Clearing the NVRAM

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

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

2.19.9 DATA OVERWRITE SECURITY UNIT TYPE H (D377)

Before You Begin…

1. The SD card for this feature is inserted at the factory and shipped with the machine
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.

Installation

Important

- The DOS SD card must be inserted in SD card Slot 1. If another SD card option is installed, the contents of the DOS SD card must be moved to the SC card in SD card Slot 1 with SP5873-1.

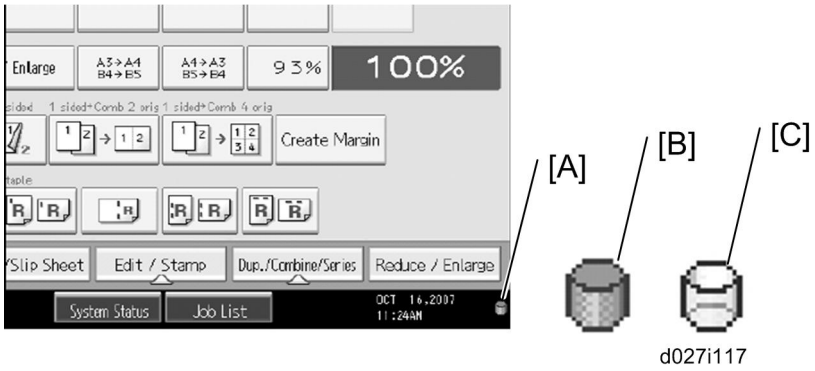
⇒ 1. If the machine is OFF, turn ON the Main Power Switch.
2. Do **SP5878-001** and push [EXECUTE].
3. Go out of the SP mode.
4. Turn the Operation Switch OFF, then turn the Main Power Switch OFF.
5. Turn ON the Main Power Switch.
6. Do **SP5990-5** to print an SMC report.
7. Make sure the ROM number 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]
Data Overwrite Security Unit	HDD Format Option: **D3775902A / 1.01x**	**GW4a_zoffyx: D3775902A / 1.01x**

Important

- The numbers in the table above may be different for your installation. But the same two numbers must be listed in both sections of the SMC report.

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



d027i117

10. Check the display and make sure that the overwrite erase icon [A] is displayed.
11. Make a Sample Copy.
12. Check the overwrite erase icon [A].
    - The icon [B]: This icon is lit when there is temporary data to be overwritten, and blinks during overwriting.
    - The icon [C]: This icon is lit when there is no temporary data to be overwritten.

2.19.10 BROWSER UNIT TYPE J (D620)

Accessories

No.	Description	Q'ty
1.	Browser Unit SD Card	1

Installation

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

Note

- Pushing in the SD Card also 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. Turn the machine on.
5. Push [User Tools].
6. Push [Login/Logout] on the operation panel
7. Login with the administrator user name and password.
8. Touch "Extended Feature Settings".
9. Touch "Extended Feature Settings" again.
10. Touch "SD Card".

11. Touch the "Browser" line.
12. Under "Install to:" touch "Machine HDD" and touch "Next"
13. When you see "Ready to Install" check the information on the screen to confirm you previous selection.
14. Touch "OK". You will see "Installing…" then "Completed".
15. Touch "Exit" twice to return to the copy screen.
16. Switch the machine off.
17. Replace the 6th key slot cover with the "Other Function" key cover.
18. Switch the machine on.
19. After the Copy screen appears, wait 30 sec. then press the "Other Function" key.
20. When you see this message: "The MFP Browser was successfully installed", switch the machine off and remove the SD card.

2.19.11 COPY DATA SECURITY UNIT TYPE F (B829)

Accessories

No.	Description	Q'ty
1.	PCB IPU Option	1

Installation

In a new machine, the IPU does not have this application. You must always install a new IPU board when you install the Copy Data Security Unit option.

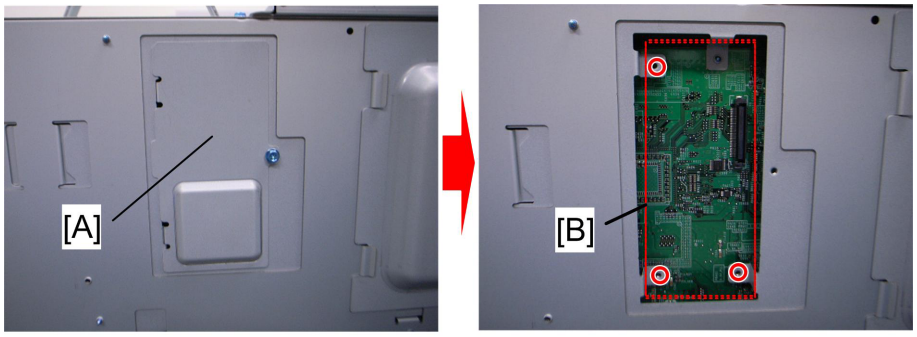
IPU

Remove:

- Rear upper cover (x2)
- Rear lower cover (x2)

Remove:

- Screws and swing open the controller box (x 3).



d062r709a

- IPU left cover [A] (x1)

Install:

- Copy Data Security Unit Type C [B] (x 3)

After Replacing the Copy Data Security Unit.

1. Switch the machine on.
2. Login in as the System Administrator.
3. Push [User Tools].
4. Touch "System Settings".
5. Touch "Administrator Tools".
6. Touch next 2 or 3 times until you see "Data Security for Copying".
7. Touch "ON".
8. Touch "OK" to enable the setting.

2.19.12 VM CARD TYPE U (D640)

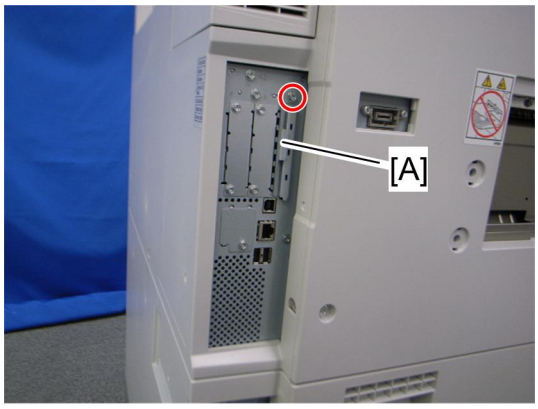
Accessories

No.	Description	Q'ty
1.	VM Card D463 SD Card	1
2.	Decal	1

Important

- Only one slot (SD card slot 2) is available for applications on SD cards. If more than one application is will be used, the applications must be merged onto one SD card with SP5873 001.

Installation



d063i500

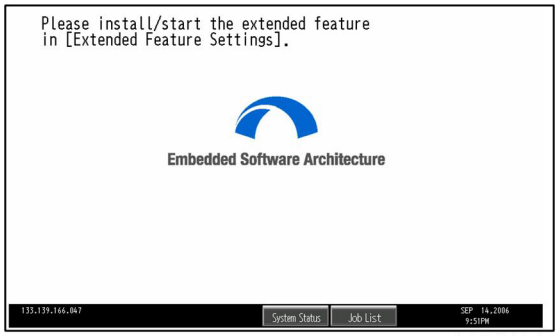
1. Switch the machine off.
2. Remove the SD card slot cover [A] (x1).

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



b861i101

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

2.19.13 IEEE 1284 INTERFACE BOARD TYPE A (B679)

Accessories

No.	Description	Q'ty
1.	IEEE 1284 Centronics Board	1

Only one PCI slot (A) is available for one of these options:

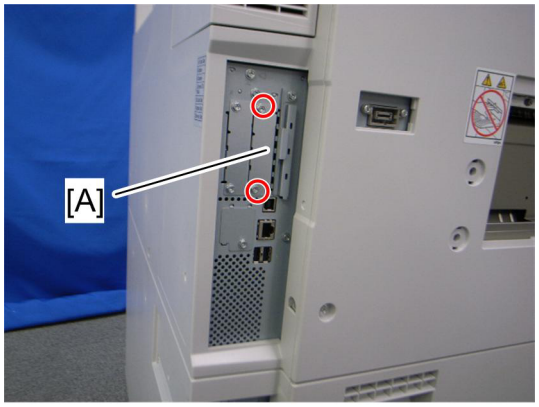
- Centronics 1284
- IEEE 802.11a/g, 11g (Wireless LAN)
- File Format Converter

Important

- If another card is installed in A, you must remove it before installing this card.

Installation

1. Switch the machine off.



d063i501

2. Remove the cover [A] of Slot A (x 2).
3. Insert the 1284 Centronics board [B] into Slot A and fasten it with the screws.

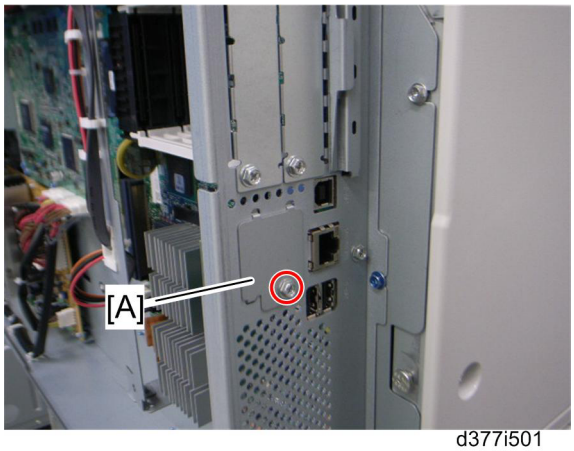
2.19.14 GIGABIT ETHERNET TYPE B (D377)

Accessories

No.	Description	Q'ty
1.	Gigabit Ethernet	1
2.	Ferrite Core	1
3.	Screw	2
4.	Cap for Network Slot	1

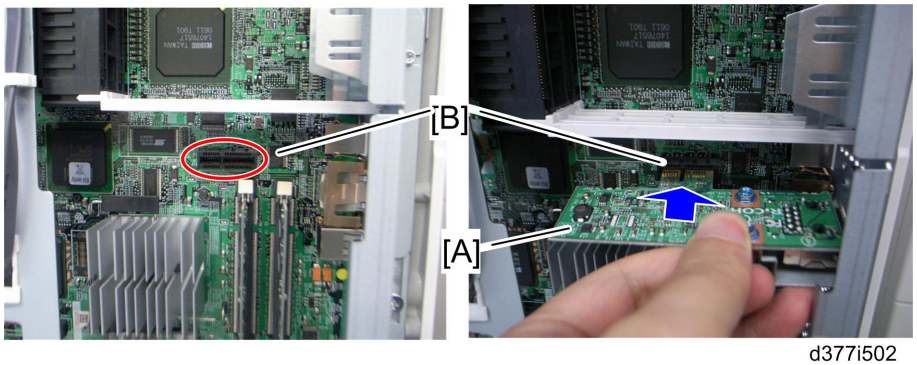
Installation

1. Switch the machine off.
2. Remove the controller box cover ☛ p.4-122



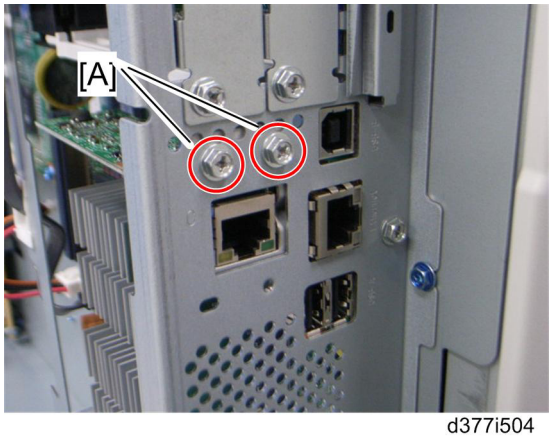
d377i501

3. Remove the Gigabit Ethernet slot cover [A] (x 1).



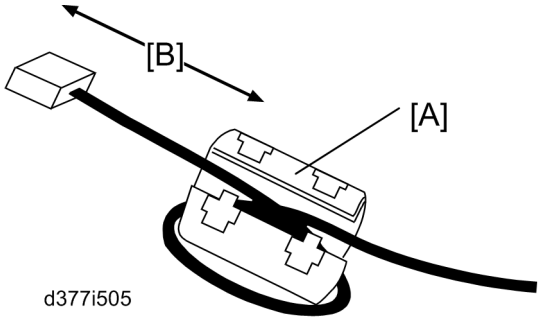
d377i502

4. Insert the Gigabit Ethernet board [A] in the slot [B] on the controller board.



d377i504

5. Fasten it with the screws [A].
6. Install the Ethernet connector cover (Cap for Network Slot) included in the Gigabit Ethernet board kit on the 100M bit LAN connector.
7. Reassemble the machine.



d377i505

8. Attach the ferrite core [A] to the network cable. ([B]: 30 mm or more.)
9. Connect the network cable to the slot for Gigabit Ethernet.
10. Print a configuration page to confirm that the machine recognizes the installed board for USB2.0: User Tools > Printer Features > List/Test Print > Configuration Page

PREVENTIVE MAINTENANCE

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

3. PREVENTIVE MAINTENANCE

3.1 PM TABLES

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

Symbol key: **C**: Clean, **R**: Replace, **L**: Lubricate, **I**: Inspect, **EM**: Emergency Maintenance, **AN**: As necessary, **Exp.**: Expected Life (K)

⚠WARNING

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

3.1.1 MAIN MACHINE

Scanner Optics

	300K	450K	600K	AN	Exp.	Note
1st, 2nd, 3rd Mirror				C		Optics cloth
Exposure Glass	C			C		Damp cloth
Scanner Guide Rails				C/L		After cleaning with alcohol, lubricate scanner guide rails with Launa Oil.
Toner Shield Glass	C			C		Optics cloth
Reflector				C		Optics cloth
Dust Filters				C		Blower brush

Around the Drum

	300K	450K	600K	AN	Exp.	Note
Charge Corona Grid	R				300	
Charge Corona Wire	R			C	450	Alcohol cloth
Charge Wire Cleaning Pad	R				450	
Cleaning Blade	R				500	
Cleaning Brush	R					
Charge Corona Casing	C			C		Damp cloth
Internal Dust Filter				C		Blower brush
ID Sensor	C			C		Blower brush. Do SP 3001 002 after cleaning.
Pick-off Pawls	I			I		Replace if necessary.
Potential Sensor	C			C		Blower brush
OPC Drum					1,200	Replace when an image problem occurs.
Quenching Lamp	C			C		Dry cloth
Transfer Entrance Stay	C			C		Dry cloth
Ozone Filter					4,500	
Cleaning Filter	R					
Cleaning Side Seal				C		Dry cloth
Cleaning Entrance Seal				C		Dry cloth
PTL	C			C		Dry cloth
Toner Collection Bottle				I	1,500	
Toner Pan	C			C		Dry cloth

Development Unit

	300K	450K	600K	AN	Exp.	Note
Developer	R					PM cycle is 350K.
Development Filter	R			I		
Development Roller	C					Dry cloth
Side Seals	C			C		Blower brush, dry cloth
Entrance Seal	C			C		Blower brush, dry cloth
Toner Hopper	C			C		Dry cloth
Toner Bottle Holder	C			C		Dry cloth
Toner Trap	C			C		Dry cloth
Drive Gears	C			C		Blower brush.
Development Roller Drive Shaft	C			C		Clean with blower brush and dry cloth every time the developer is replaced.
Paddle Roller Shaft	C			C		Blower brush, dry cloth.
Used Toner Separation Unit	I		R			

Paper Feed

	300K	600K	1000K	AN	Exp.	Note
Registration Rollers	C					Alcohol
Relay Rollers	C					Alcohol
Paper Dust Mylar	C			C		Dry cloth
Registration Sensor	C					Blower brush
Relay Sensor	C					Blower brush
Bypass Paper End Sensor	C					Blower brush
Grip Rollers	C					Dry cloth, blower brush
Vertical Guide Plate	C					Dry cloth
Paper Feed Guide Plate	C					Dry cloth
Vertical Transport Rollers	C	C				Alcohol
Paper Feed Sensors	C	C				Blower brush
Paper End Sensors	C	C				Blower brush
Feed Rollers			R		1000	See **Notes** below this table.
Pick-up Rollers			R		1000	
Separation Rollers			R		1000	

Notes:

- Always replace pick-up, feed and separation rollers as a set.
- The target service life of the feed, pick-up, and separation rollers is 1000 K. However, they should be replaced sooner if the machine begins to jam or double-feed.

Transfer Belt Unit

	300K	450K	600K	AN	Exp.	Note
Transfer Belt			R		750	Use dry cloth to clean transfer belt. Always replace transfer belt and transfer roller cleaning blade together.
Transfer Roller Cleaning Blade			R		750	
Transfer Entrance Guide Plate	C					Dry cloth
Transfer Drive Roller	C					Dry cloth
Transfer Idle Roller	C					Dry cloth
Transfer Bias Roller	C					Dry cloth
Transfer Exit Guide Plate	C					Dry cloth
Discharge Plate	R					
Transfer Belt Unit Casing	C					Dry cloth
Slide Rail Bracket	C					

Fusing Unit and Paper Exit

	300K	450K	900K	AN	Exp.	Note
Fusing Entrance Guide Plate	C					Dry cloth
Fusing Exit Guide Plate	C					Dry cloth
Fusing Lamps	I					
Hot Roller		R			450	
Hot Roller Bearings		R			450	
Pressure Roller		R			450	
Pressure Roller Bearings		R			450	
Pressure Cleaning Roller		R			450	Replace as a set.
Pressure Cleaning Roller Bearings		R			450	
Hot Roller Strippers		R			450	
Thermistors x2		R				
Cleaning Web		R				
Cleaning Web Pressure Roller		R				Replace roller and bushings together.
Cleaning Web Pressure Roller Bearings			R		900	
De-Curler Rollers	C					Alcohol
Exit Static Discharge Brush	I					
Exit Rollers (Top, Bottom)	C					Alcohol
Transport Rollers	C					Alcohol

Duplex

	300K	450K	600K	AN	Exp.	Note
Entrance Sensor	C			C		Blower brush
Inverter Exit Rollers	C					Alcohol
Reverse Trigger Rollers	C					Dry cloth
Transport Rollers	C					Dry cloth
Inverter Entrance Roller	C					Dry cloth
Entrance Anti-Static Brush	C					Dry cloth
Reverse Junction Gate	C					Dry cloth

ADF

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

	300K	400K	600K	AN	Exp.	Note
Pick-up Roller			R			Alcohol, belt cleaner to clean paper feed belt. Replace these items together.
Separation Roller			R			
Paper Feed Belt			R			
ADF Transport Belt			R			
CIS Glass	C	C	C			Dry cloth
White Guide Plate		R		C		Alcohol or dry cloth
Sensors	C	C	C			Blower brush.
Platen Cover Sheet	C	C	C			Water or alcohol
Drive Gears	L	L	L			Grease G501.
Transport Belt	C	C	C			Water or alcohol

	300K	400K	600K	AN	Exp.	Note
Entrance Roller	C	C	C			
White Platen Roller	C	C	C			
Pre-Scanning Roller	C	C	C			
Scanning Roller	C	C	C			
Exit Roller	C	C	C			

3.1.2 OPTIONAL PERIPHERAL DEVICES

LCIT RT4010 (D613)

	300K	450K	1000K	Exp.	Note
Pick-up Roller			R	1000	Always replace these rollers as a set. The target service life of the feed, pick-up, and separation rollers is 1000 K. However, they should be replaced sooner if the machine begins to jam or double-feed
Feed Roller			R	1000	
Separation Roller			R	1000	

Cover Interposer Tray CI4000 (D614)

The cover interposer tray can be used with the Finisher SR4030 (D374), SR4040 (D373) or Finisher SR4050 (D460). The interposer tray is installed between the main machine and the finisher.

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

	60K	120K	180K	Exp.	Note
Feed Belt	R	R	R		Replace as a set.
Pick-up Roller	R	R	R		
Separation Roller	R	R	R		
Driver Rollers	C	C	C		Damp clean cloth.
Idle Rollers	C	C	C		Damp clean cloth.
Discharge Brush	C	C	C		Damp clean cloth.
Sensors	C	C	C		Blower brush.

Finisher SR4080 (D610)

	350K	700K	1050K	Exp.	Note
Drive rollers	I	I	I		Alcohol
Idle rollers	I	I	I		
Discharge brush	I	I	I		
Bushings	I	I	I		Lubricate with silicone oil if noisy.
Sensors	I	I	I		Blow brush.
Jogger fences	I	I	I		Make sure screws are tight.
Staple waste hopper	C	C	C		Empty staple waste.

Finisher SR4060/SR4070 (D611/D612)

	2400K	3000K	4000K	Exp.	Note
Covers				I/C	Alcohol or water, dry cloth
Drive Rollers				C	Damp cloth, dry cloth
Idle Rollers				C	Damp cloth, dry cloth
Anti-Static Brush				C	Dry cloth
Sensors				C	Blower brush
Corner Stapler			R		Print an SMC report with SP5990. Replace the unit if the staple count is 500K.
Booklet Stapler			R		Print an SMC report with SP5990. Replace the unit if the staple count is 200K.

Punch Unit Type 3260 (B702) for Finisher SR4060/SR4070 (D611/D612)

	2400K	3000K	4000K	EM	Note
Punch Waste Hopper	I	I	I	I	Remove and empty
Punch Unit				C	Replace after 1000k punches.

Multi Folding Unit FD4000 (D615)

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

Related SP Codes

This is a list of the PM related SP codes. For details, refer to "Service Tables" in the "Appendices".

SP7803	PM Counter Display	Displays the PM count since the last PM.
SP7804	PM Counter Reset	Resets the PM count.

REPLACEMENT AND ADJUSTMENT

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

4. REPLACEMENT AND ADJUSTMENT

4.1 GENERAL CAUTIONS

⚠CAUTION

- Never turn off the power switch while the machine is operating.
- If the machine is switched off during operation, the transfer belt, drum, or development unit could be damaged when it is removed or reinstalled in the machine.

4.1.1 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 as 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 machine. Doing so 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 (Adjustment of Drum Conditions).

4.1.2 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.

4.1.3 TRANSFER BELT UNIT

1. Never touch the transfer belt surface with bare hands.
2. Take care not to scratch the transfer belt, as 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.

4.1.4 SCANNER UNIT

1. When installing the exposure glass, make sure that the white paint is at the rear left corner.
2. Clean the exposure glass with alcohol or glass cleaner to reduce the amount of static electricity on the glass surface.
3. Use a cotton pad with water or a blower brush to clean the mirrors and lens.
4. Do not bend or crease the exposure lamp cable.
5. Do not disassemble the lens unit. Doing so will throw the lens and the copy image out of focus.
6. Do not turn any of the CCD positioning screws. Doing so will throw the CCD out of position.

4.1.5 LASER UNIT

1. Do not loosen the screws that secure the LD drive board to the laser diode casing. Doing so would throw the LD unit out of adjustment.
2. Do not adjust the variable resistors on the LD unit, as 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.

4.1.6 CHARGE CORONA

1. Clean the corona wires with a dry cloth. Do not 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 copies.
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.

4.1.7 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 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 copy 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 machine. Do not perform the TD sensor initial setting with used developer. Do not make any copies 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. When replacing the TD sensor, replace the developer, then execute SP2801 (TD Sensor Initialization) and SP2962 (Adjustment of Drum Conditions).

4.1.8 CLEANING

1. When servicing the cleaning section, be careful not to damage the edge of the 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.

4.1.9 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.

4.1.10 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.

4.1.11 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, for toner dust may ignite.

4.2 SPECIAL TOOLS AND LUBRICANTS

4.2.1 SPECIAL TOOLS

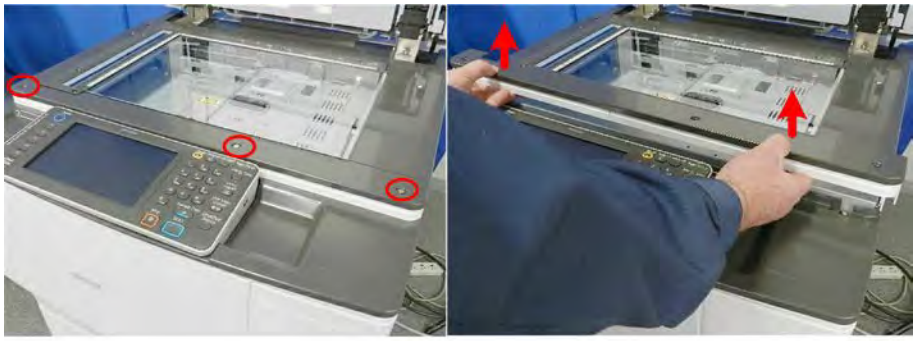
Part No.	Description
A0069104	Scanner Positioning Pin (4 pcs./set)
A2929500	Test Chart – S5S (10 pcs./set)
A0299387	Digital Multimeter – FLUKE 87
VSST9500	Test Chart – S5S – DF (10 Sheets/Set)
G0219350	Loop Back Connector
B6455010	SD (Secure Digital) Card – 64 MB

4.2.2 LUBRICANTS

Part No.	Description
A2579300	Grease Barrierta – JFE 5 5/2
52039502	Silicon Grease G-501
54429101	Setting Powder

4.3 OPERATION PANEL AND EXTERNAL COVERS

4.3.1 OPERATION PANEL



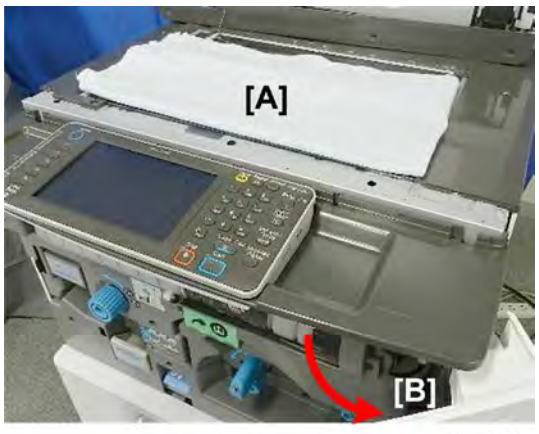
d131r001

1. Raise the ADF.
2. Remove the edge bracket (x3).



d131r002

3. Disconnect the operation panel (x3).



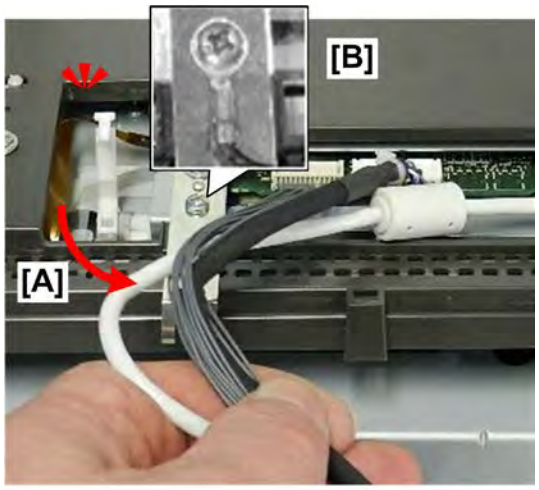
d131r003

4. Cover the exposure glass with a cloth [A].
5. Open the front door [B].



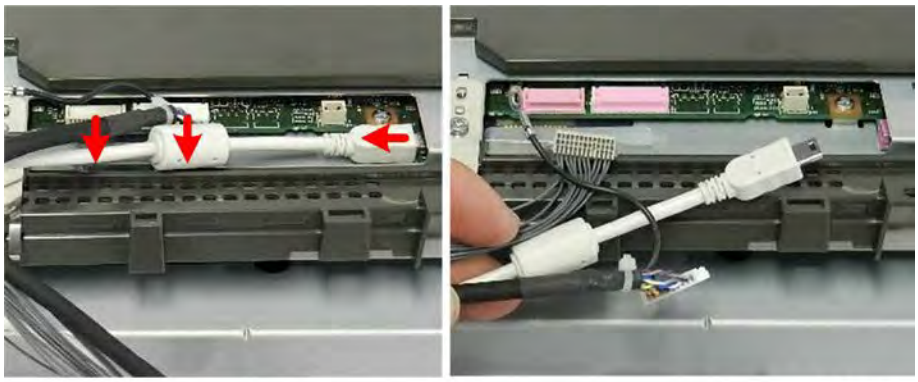
d131r004

6. Raise the operation panel and lay it on the top of the machine.



d131r005

7. Free the harnesses [A] (x1).
8. Disconnect the ground wire [B] (x1).



d131r006

9. Disconnect the operation panel (x3).



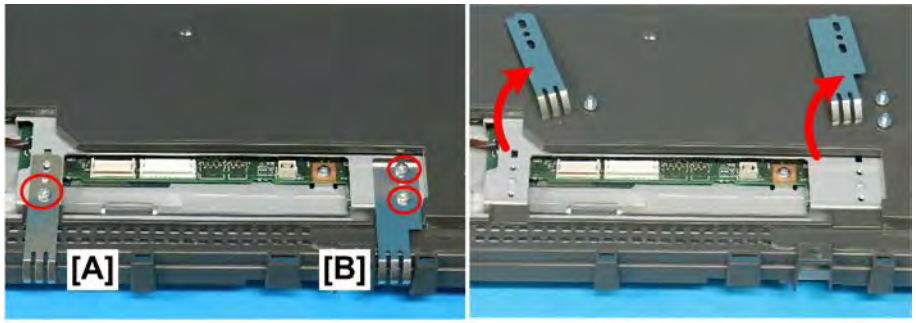
d131r007

10. Lay the operation panel on a flat clean surface.



d131r008

11. Remove screws (x4).



d131r009

12. Remove ground plate [A] (x1).
13. Remove ground plate [B] (x1).



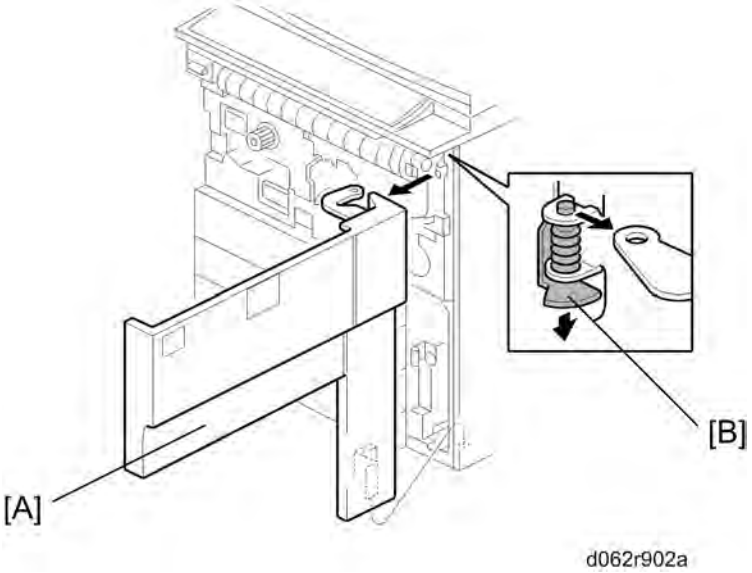
d131r010

14. Separate the plate and operation panel.



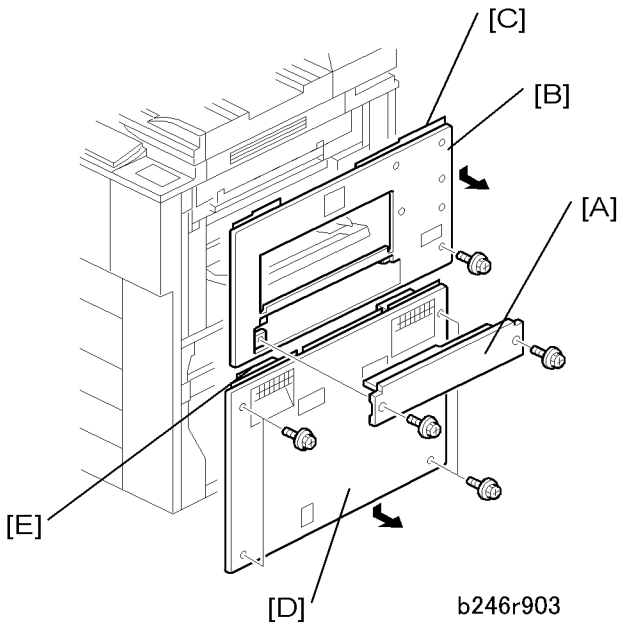
d131r011

4.3.2 FRONT DOOR



1. While supporting the front door [A] with one hand.
2. Press down on the hinge bracket [B], and then raise the door slightly to remove it.

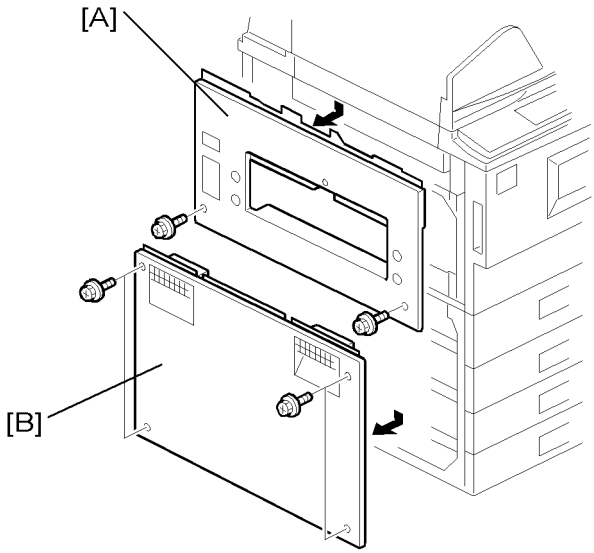
4.3.3 RIGHT COVERS



1. LCT entrance guide cover [A] (x 2)
2. Right upper cover [B] (x 2)
   - To remove the right cover, remove the LCT entrance guide plate, open the by-pass tray, then slide the right upper cover down to remove it.
   - Before tightening the screws when re-attaching, make sure that 1) the tabs [C] on the cover are engaged with the grooves on the machine, and 2) the catches on the cover are engaged with the shoulder screws.

3. Right lower cover [D] (x 2)
   - After removing the screws, slide the cover down to remove it.
   - When re-attaching, before tightening the screws make sure that the tabs [E] on the cover are engaged with the grooves on the machine.

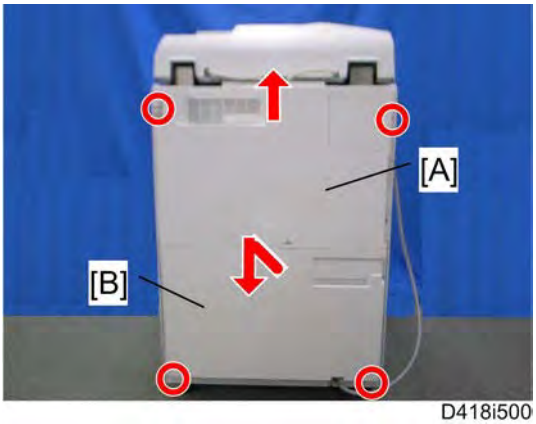
4.3.4 LEFT COVERS



b246r904

1. Left upper cover [A] (x 2)
   - Slide down to remove.
   - When re-attaching, before tightening the screws make sure that 1) the tabs on the cover are engaged with the grooves on the machine, and 2) the catches on the cover are engaged with the shoulder screws.
2. Left lower cover [B] (x 2)
   - Slide down to remove.
   - When re-attaching, before tightening the screws make sure that the tabs on the cover are engaged with the grooves on the machine.

4.3.5 REAR COVERS



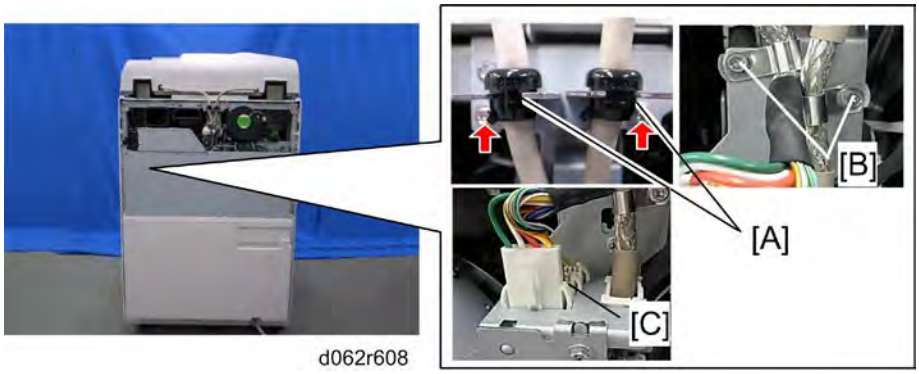
1. Rear upper cover [A] (x 2)
   - Slide down to remove.
   - When re-attaching, before tightening the screws make sure that the tabs on the cover are engaged with the shoulder screws.
2. Rear lower cover [B] (x 2)
   - When re-attaching, before tightening the screws make sure that the tabs on the cover are engaged with the shoulder screws.

4.4 SCANNER

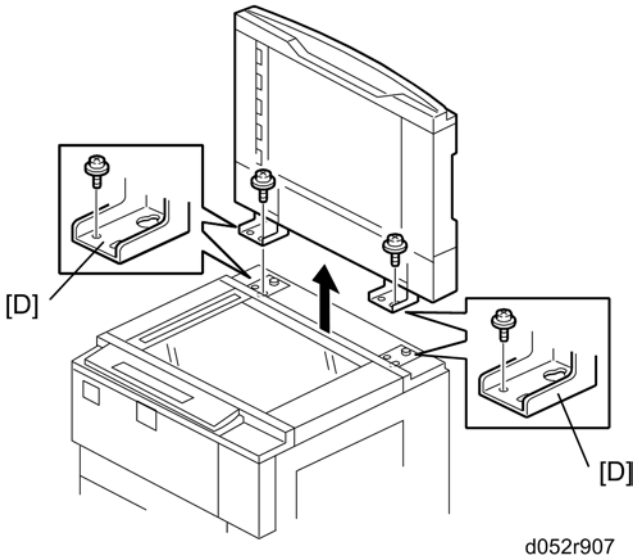
4.4.1 ADF

Remove the following parts:

1. Rear upper cover and rear lower cover ☛ p.4-11



2. Cable brackets [A] (each x 1)
3. Nylon clamps [B] (each x 1)
4. Connectors [C] (x 3)



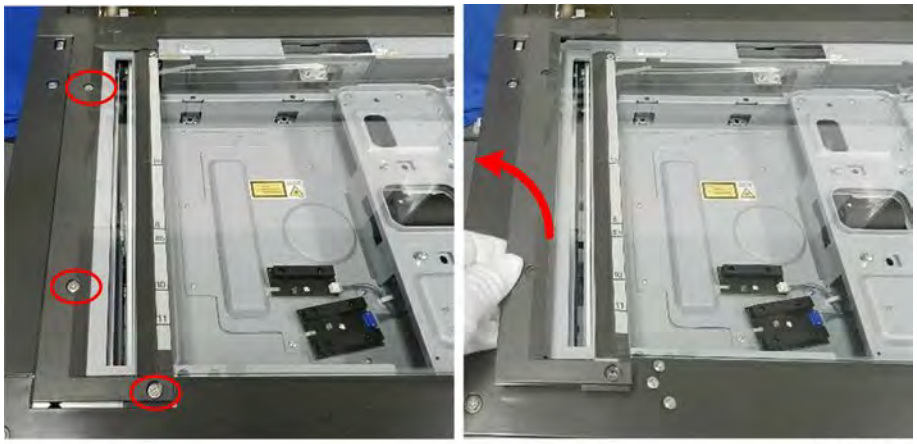
5. ADF base left and right plates [D] (x 2)
   - While holding the ADF firmly, slide the ADF back and lift the large end of the keyholes over the shoulder screws.

4.4.2 EXPOSURE GLASS



d131r101

1. Rear scale (x 3)



d131r102

2. Left cover (x 3)



d131r103

3. Exposure glass

Note

- Lift out the exposure glass and left scale together.
- The left scale is permanently attached to the exposure glass with double-sided tape. Do not separate the left scale and the exposure glass.

When re-installing the exposure glass:

- Set the exposure glass first with the arrow mark in the upper left corner.
- When re-installing the right cover, make sure it is seated correctly at the right upper corner of the exposure glass.

4.4.3 SCANNER ORIGINAL SIZE SENSORS

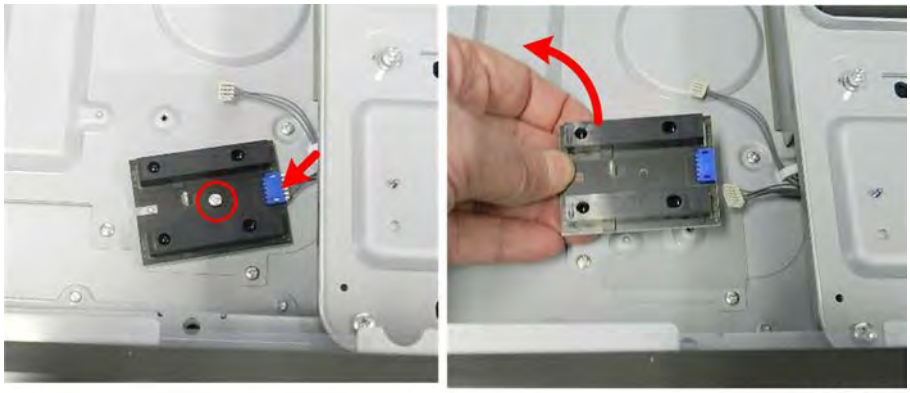
Original Width Sensors

1. Exposure glass ☛ Exposure Glass



d131r104

2. Original width sensor (one-beam) (x1, x1)



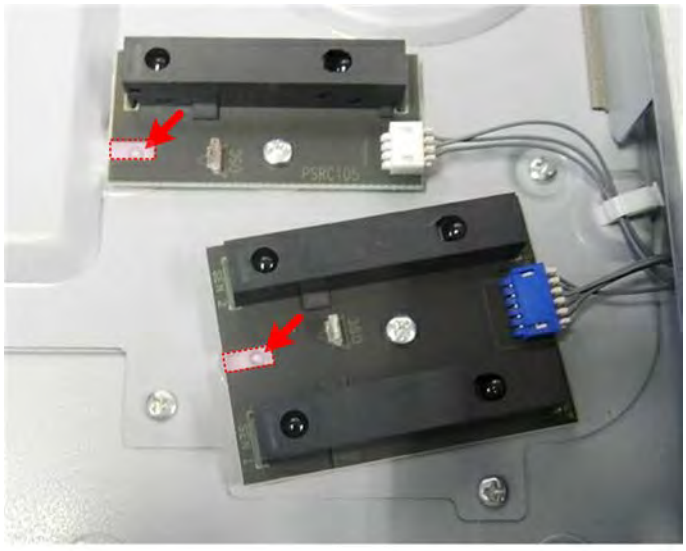
d131r105

3. Original width sensor (two-beam) (x1, x1)



d131r106

Re-installation



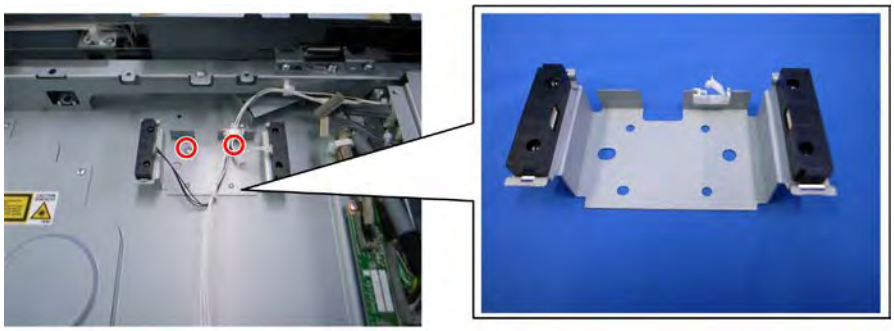
d131r107

1. Make sure that the bosses on the frame fit into the slots as shown. These bosses position the sensors correctly for accurate detection.

Original Length Sensors

These sensors are under the lens block.

1. Lens block ☛ Lens Block



d062r807

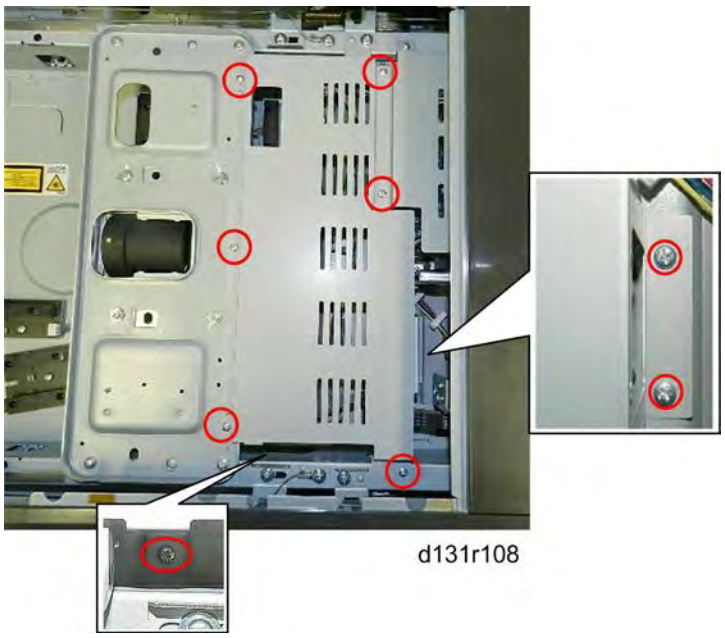
2. Original length sensor bracket (x 2, x 2)

Note

- For EU: Length sensor x 1
- For NA: Length sensor x 2

4.4.4 LENS BLOCK

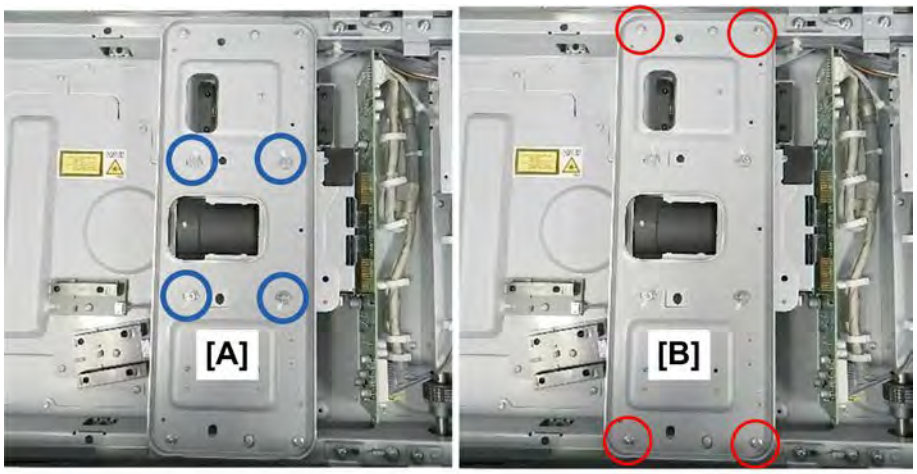
1. Exposure glass ☛ p.4-13



2. SIOB cover screws (x9)



3. SIOB cover.



d131r110

Important

- Never loosen or attempt to remove the four paint-locked screws [A] around the top of the lens.

4. Disconnect the lens block [B] at the front and rear (d131r113x4).



d131r111

5. Disconnect the right side of the lens block (x4).



d131r112

6. Remove the lens block carefully. Avoid snagging the front ground spring [A] with sensor harnesses and rear ground spring [B] with the scanner wire.



d131r113

Note

- To avoid damaging the lens block, lay it down as shown above.
- Never lay the lens block down with the PCB on the bottom.

7. After you re-assemble the machine, be sure to do the scanner and printer adjustments.

☛ p.4-155

4.4.5 EXPOSURE LAMP

1. Exposure glass ☛ p.4-13
2. Operation panel ☛ p.4-6
3. Push the 1st scanner [B] to the cutout [A] in the scanner frame.
4. Exposure lamp [C] (x 1, x 1, x 1)

Note

- Never touch the surface of the exposure lamp with bare fingers.

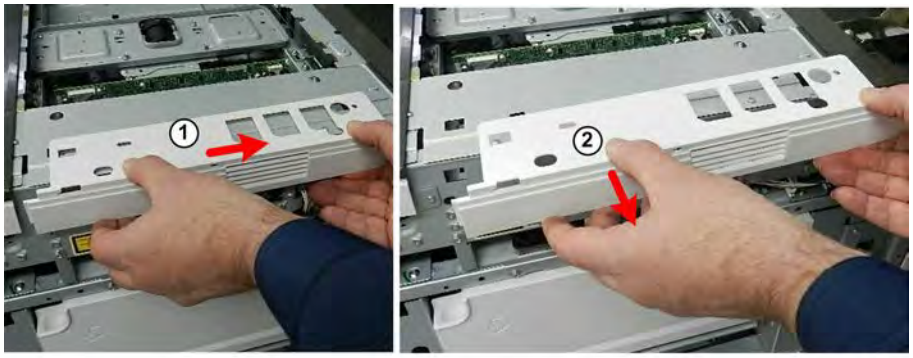
4.4.6 SIOB

1. Exposure glass ☛ p.4-13



d131r114

2. Right flat plate (x1)



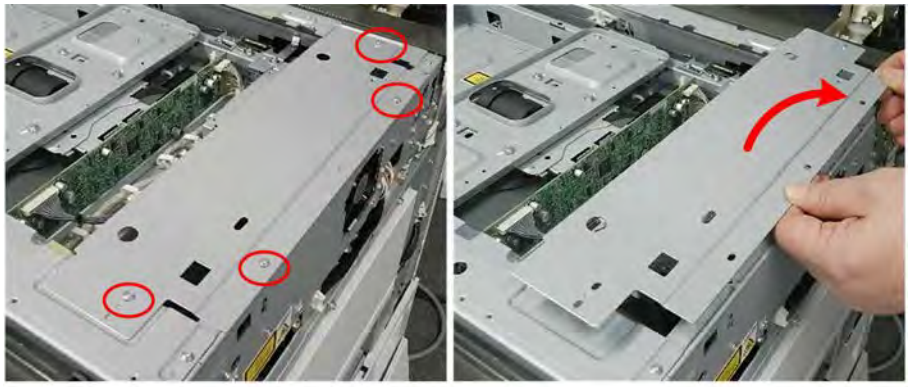
d131r115

3. Grip the right edge plate firmly, push it to the rear ① and then pull it away ②.



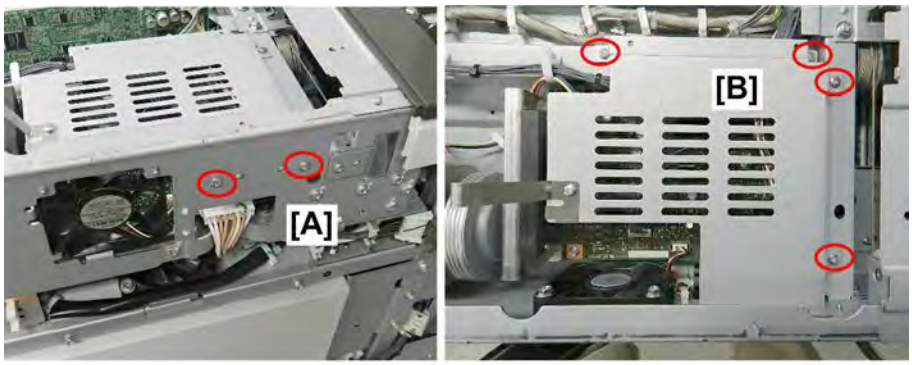
d131r116

4. Front strip (x3)



d131r117

5. Right plate (x4)



d131r118

6. Right side of SIOB cover [A] (x2)
7. Top of SIOB cover [B] (x2).

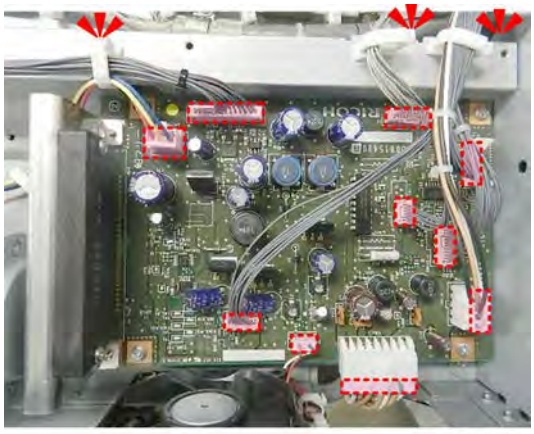


d131r119

8. Remove the SIOB cover.

⚠CAUTION

- Never remove any of the white paint-locked screws around the frame.



d131r120

9. Disconnect the SIOB (x3, x10)



d131r121

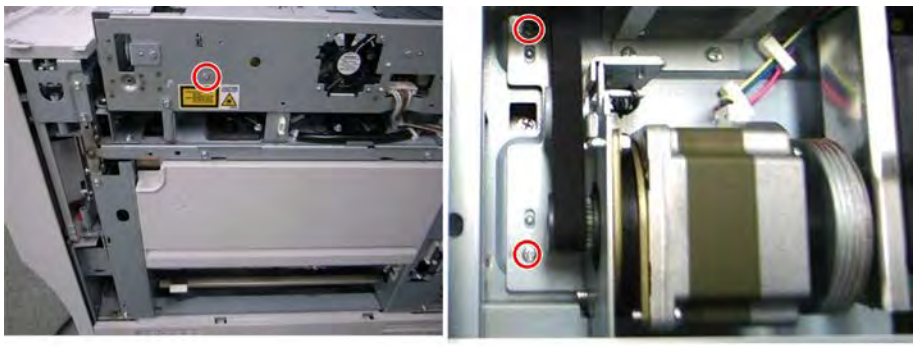
10. Remove the SIOB board (x4)



d131r122

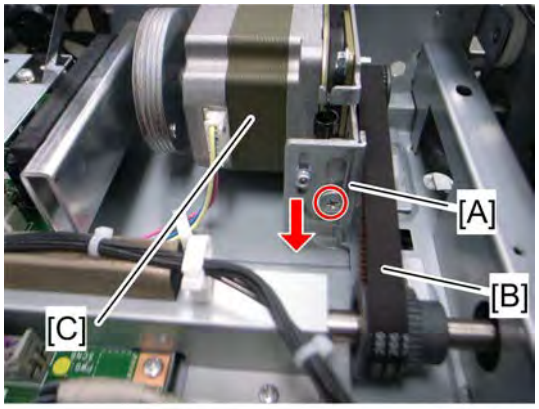
4.4.7 SCANNER MOTOR

1. SIOB cover ☛ p.4-20



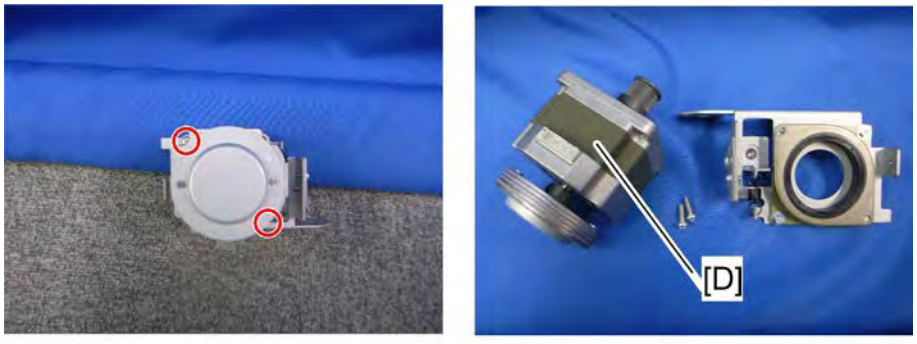
d062r884

2. Remove three screws.



d062r880

3. Release a screw, move down the bracket [A], release the timing belt [B] and then remove the scanner motor bracket [C] (x 1).

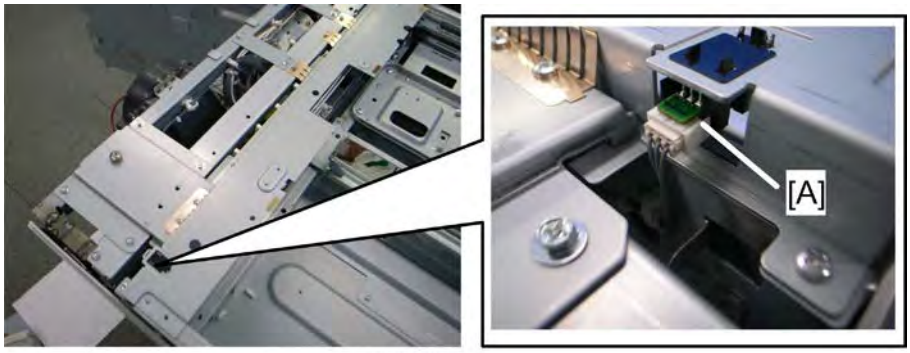


d062r882

4. Scanner motor [D] (x 2).

4.4.8 SCANNER HP SENSOR

1. ADF ☛ p.4-12

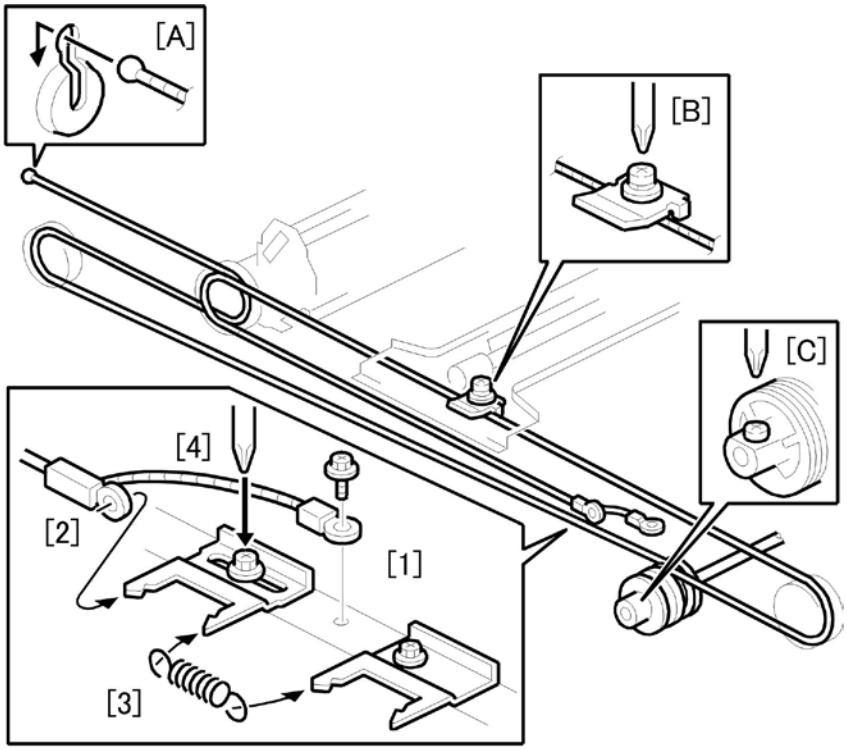


d066r600

2. Scanner HP Sensor [A] (x 1, all hooks)

4.4.9 SCANNER WIRE REPLACEMENT

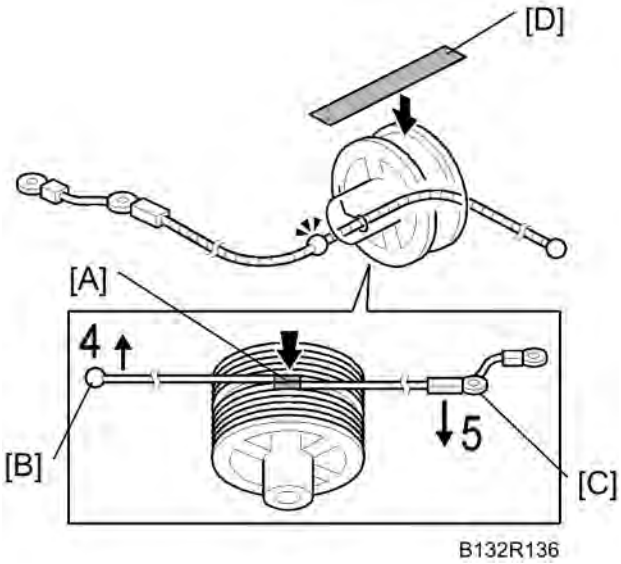
Scanner Wire Removal



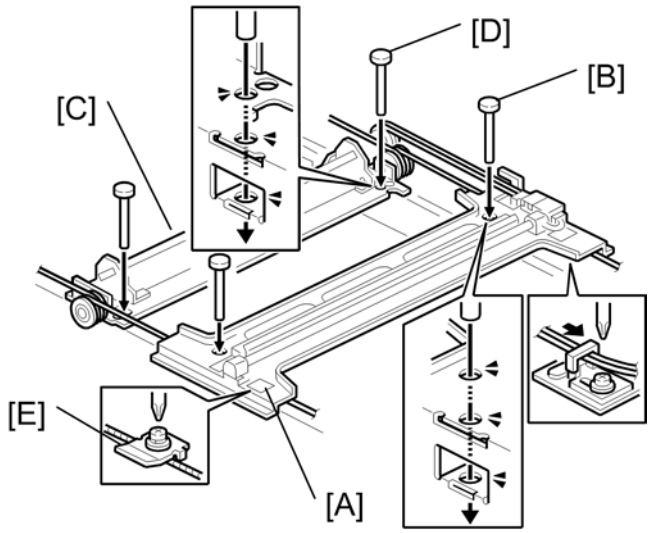
B132R137.WMF

1. Disconnect ground wire [1] (x1)
2. Disconnect the head of the wire [2] from tension bracket 1.
3. Remove spring [3].
4. Loosen the screw [4] of tension bracket 1.
5. Disconnect the end of the wire at [A].
6. Remove lock bracket [B] of the 1st scanner (x1).
7. Disconnect the wire from the pulley [C] (x1).
8. Remove the wire from the scanner.

Scanner Wire Reinstallation and Scanner Position Adjustment



1. Place the beads [A] on the middle of the wire in the openings in the pulley.
2. Wind the ball end of the wire [B] 4 times.
3. Wind the other end of the wire [C] 5 times.
4. Attach tape [D] across the pulley to temporarily hold the wires in place.



5. Position the 1st scanner [A] so that the holes are aligned, and insert the positioning pins [B] (x4).
6. Position the 2nd scanner [C] so that its holes are aligned, and insert the positioning pins [D].
7. Attach the lock bracket [E] to fasten the wire to the 1st scanner.
8. Tighten the screw of the tension bracket.
9. Attach the pulley and tighten its lock screw.
10. Remove the positioning pins (x4).
11. Remove the tape from the pulley.
12. Slowly push the scanner left and right to confirm that the wires are engaged correctly. The 1st and 2nd scanners should move smoothly.

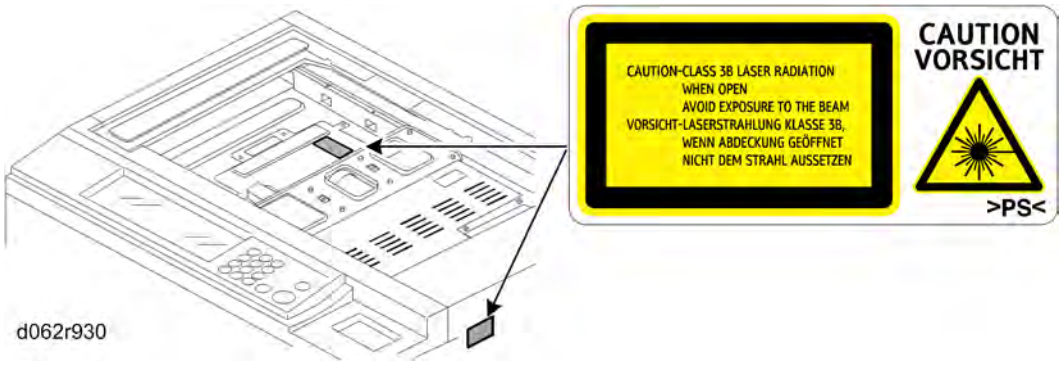
4.5 LASER UNIT

⚠WARNING

- Turn off the machine and unplug its power cord before performing any procedure in this section. Laser beams can seriously damage the eyes.
- This laser unit uses four laser beams produced by a Class IIIb LDA with a wavelength of 660 nm and intensity of 15 mW. Direct exposure to the eyes could cause permanent blindness.
- Before performing any replacement or adjustment of the laser unit, push the machine power switch to switch the machine off. Then unplug the machine from the power source.
- Do not touch the machine for 10 minutes. This allows enough time for the fusing unit to cool and for the polygon motor to stop rotating.
- Never power on the machine with any of these components removed: 1) LD unit, 2) polygon motor cover, 3) synchronization detector.

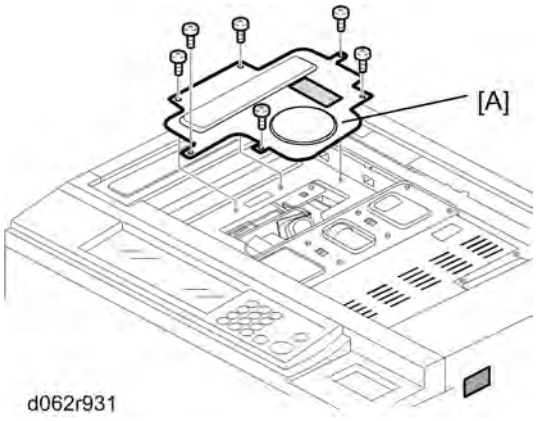
4.5.1 CAUTION DECALS

Two caution decals are provided for the laser section.



4.5.2 LD UNIT, POLYGON MOTOR AND POLYGON MOTOR DRIVE BOARD

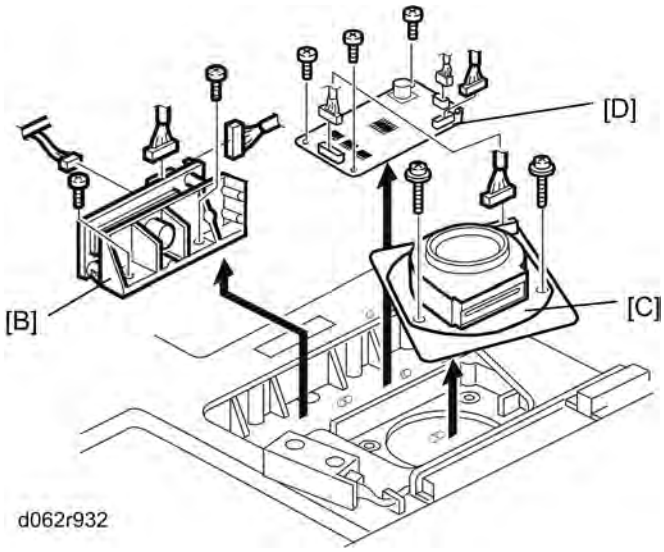
1. Exposure glass ☛ p.4-13



2. Polygon motor cover [A] (x 6)

⚠CAUTION

- An accidental static discharge could damage the LDB (Laser Diode Board). Touch a metal surface to discharge any static electricity from your hands.
- The polygon motor rotates at extremely high speed and continues to rotate after switching the machine off. To avoid damaging the motor, never remove the polygon motor within three minutes of switching off the machine and disconnecting its power plug.



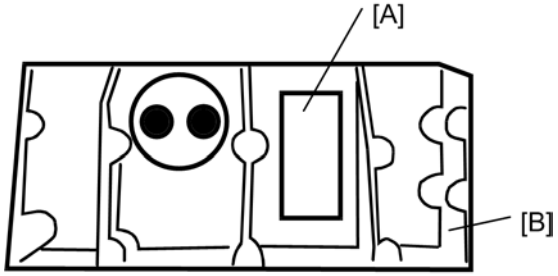
3. Remove;
   - LD unit [B] (x 2, x 3)
   - Polygon motor [C] (x 3, x 1)
   - Polygon motor drive board [D] (x 3, x 3)

⚠CAUTION

- Before fastening the polygon motor in place (x 3, x 1), make sure that the glass panel of the laser port is facing to the right (toward the mirrors in the optical path).

SP Adjustments

1. Execute SP2962 (Automatic Adjustment of Drum Conditions) after replacing the LD unit, but only if SP3901 - Auto Process Control - is on.
2. Read the label [A] attached to the LD unit [B]. Execute SP2115 (Main Scan Beam Pitch Adjustment) and enter the numbers printed on the label.



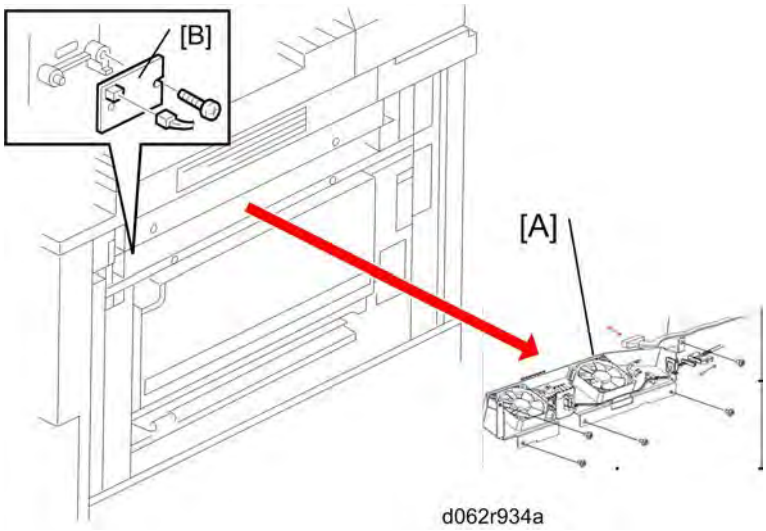
d062r933

- The first line on the label is the machine number.
- The second line on the label includes three numbers separated by slashes. Reading from left to right, these are the correct settings for SP2115 (Main Scan Beam Pitch Adjustment) 001 to 005.
- Do not remove this label and make sure it is flat against the side of the LD unit.

3. Perform the printer adjustments. See "Print Image Adjustment"

4.5.3 LASER SYNCHRONIZATION DETECTOR REPLACEMENT

1. Right side cover ☛ p.4-9
2. If the optional LCT is installed, disconnect it (x 1).



3. Development unit fans [A] (x 5, x 2)
4. Synchronization detector [B] (x 1, x 1)
5. After replacement, set SP1002-001 to 007 (Side-to-Side Registration) to the defaults.

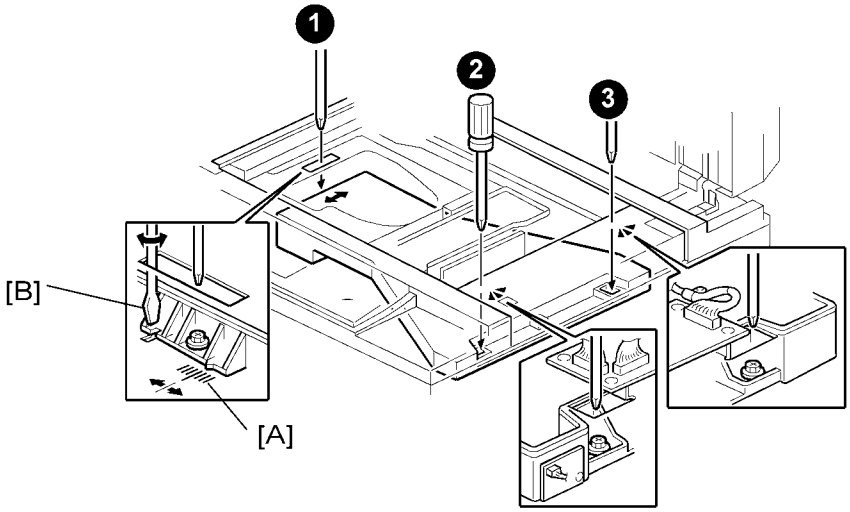
4.5.4 LASER UNIT ALIGNMENT

⚠WARNING

- If you have just disassembled the LD unit, to avoid serious damage to the eyes from accidental exposure to laser beams you must confirm that the machine has been re-assembled completely before operation.

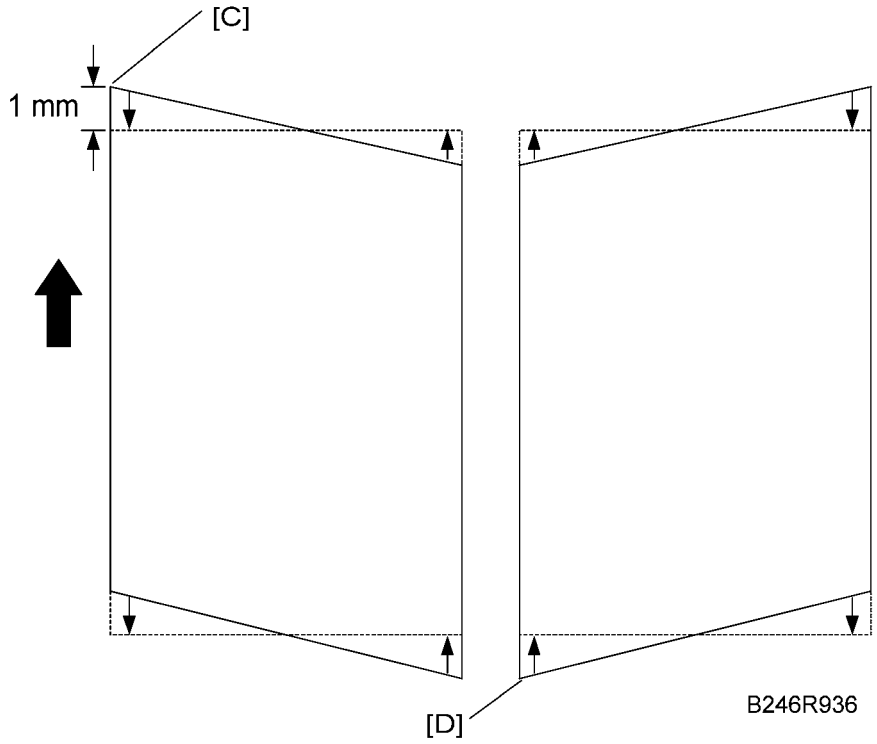
This adjustment corrects the parallelogram pattern to the desired rectangular pattern for printing; it does not correct the skew of scanned images.

1. Execute SP2902-003 (Test Pattern - Printing Test Pattern) 018 to print the A4 LEF pattern. Check the printed patterns and estimate the angle of adjustment required.
2. Remove the exposure glass. ☛ p.4-13
3. Remove the polygon motor cover. ☛ p.4-29
4. Remove the right cover. ☛ p.4-9



B246R935

5. Loosen the screws of the laser exposure unit (x 3).
6. While watching the scale [A], use a flathead screwdriver [B] to move the laser exposure unit left or right to adjust the position of the unit.

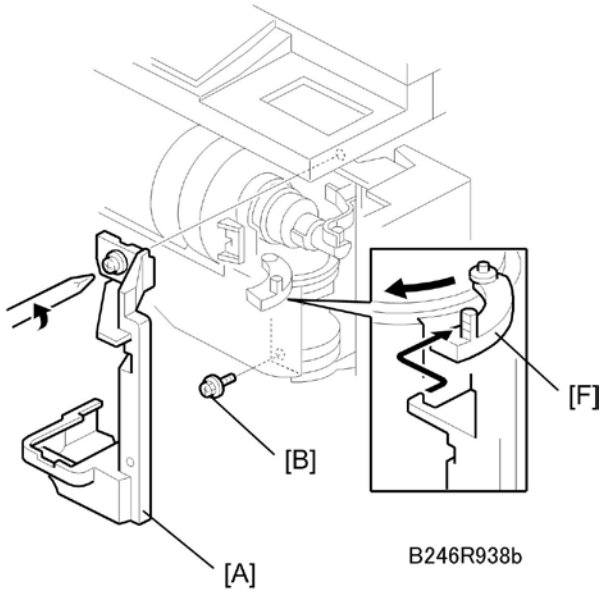


7. Adjust the position of the laser exposure unit.
   - If the pattern is skewed at the corner of the leading edge [C], move the unit so it moves the pointer on the scale toward the back.
   - If the pattern is skewed at the lower left corner of the trailing edge [D], move the unit so it moves the pointer on the scale toward the front.
   - The scale is set for increments of 1 mm.
8. After adjustment, tighten the screws on the laser exposure unit, re-assemble the machine and print the pattern again with SP2902-003 No.18.
9. Check the pattern. Repeat the procedure if more adjustment is required.

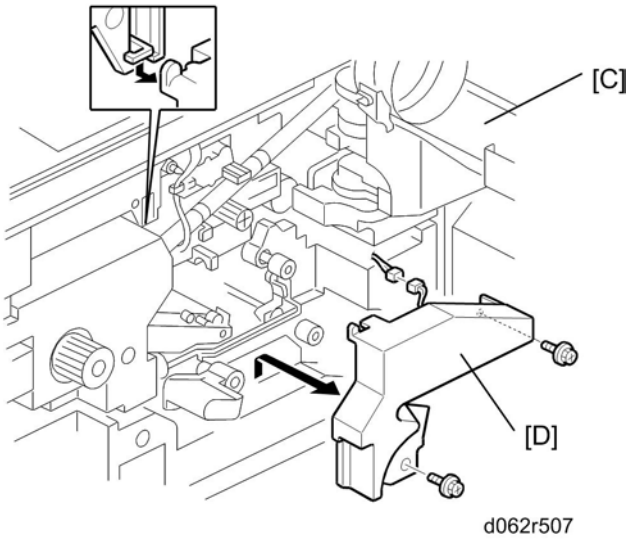
4.6 DRUM UNIT

4.6.1 DEVELOPMENT UNIT REMOVAL

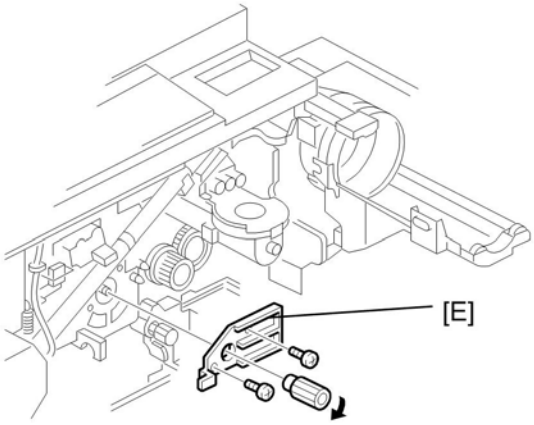
Drum Removal



1. Open the front door.
2. Shutter cover [A] (x 1)
3. Lock screw [B]



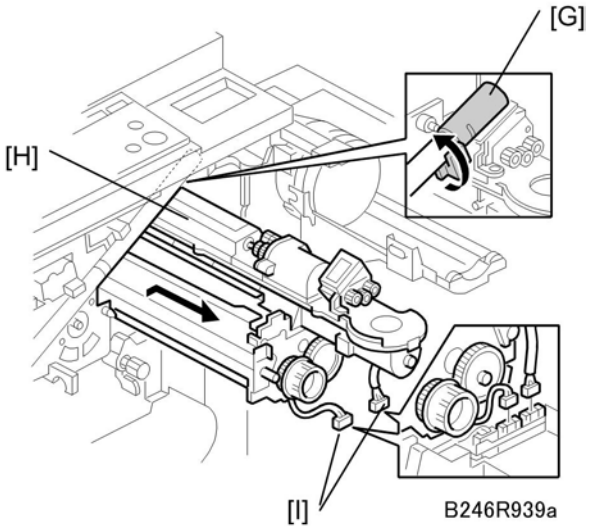
4. Toner bottle [C]
   - Pull the toner bottle holder out and swing the toner bottle holder to the right.
5. PCU inner cover [D] (x 2, x 1)



6. Face plate (knob x 1, x 2) [E]

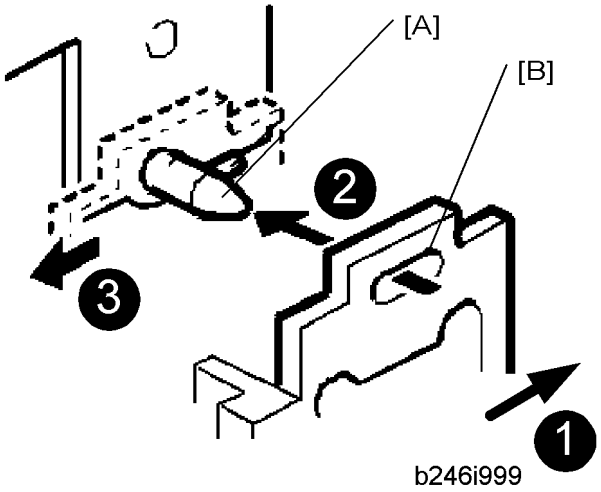
Important

- After re-installation, the tab [F] in the first illustration should be behind the stay and its pin below should be in the open track below.



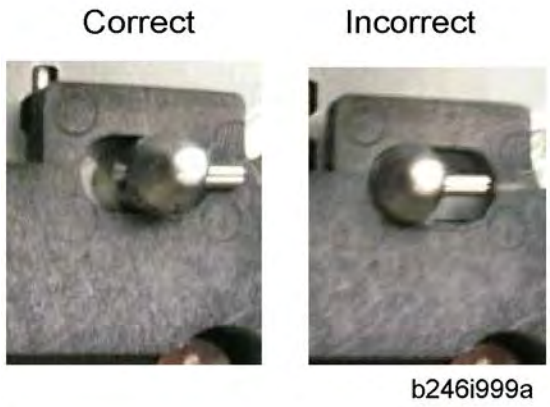
7. Close the supply pipe shutter [G].
8. Development unit [H] (x 2 [I])
   - Allow the unit to slip to the right, then slowly pull it out of the machine.
   - If the LCT is installed, you may need to disconnect it so the front door can open far enough to allow removal of the development unit.

Drum Re-installation



b246i999

1. Push the development unit to the right ❶.
2. While continuing to hold the unit to the right, push it into the machine.
3. Confirm that the pin [A] goes into the left side of the oval hole [B] in the development unit plate.
4. Push the development unit in completely ❷ until it stops, then push it to the left ❸.
5. Make sure you can see the horizontal pin in front of the plate as shown below.



b246i999a

Important

- If you cannot move the development unit plate behind the horizontal pin, turn the front gear of the unit to the left and try again.
- Make sure the pipeline shutter is rotated down to the open position.

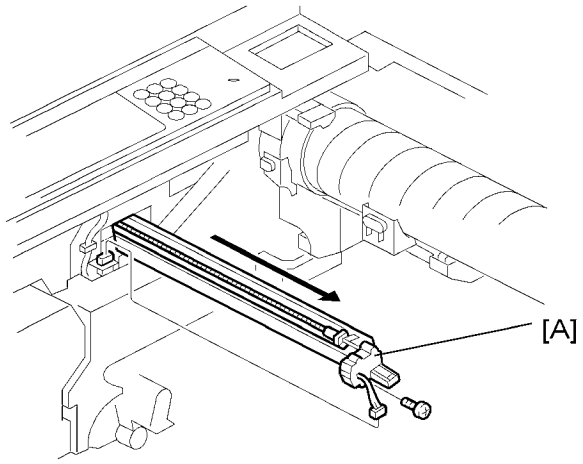
6. Reattach all removed parts.

Replacement with a Used Development Unit

When using a development unit from another machine for test purposes, execute the following procedure.

1. Check the value of SP2220 (Vref Manual Setting) 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 V_{REF} for this unit into SP2220.
3. After the test, reinstall the old development unit, and change SP2220 back to the original value.

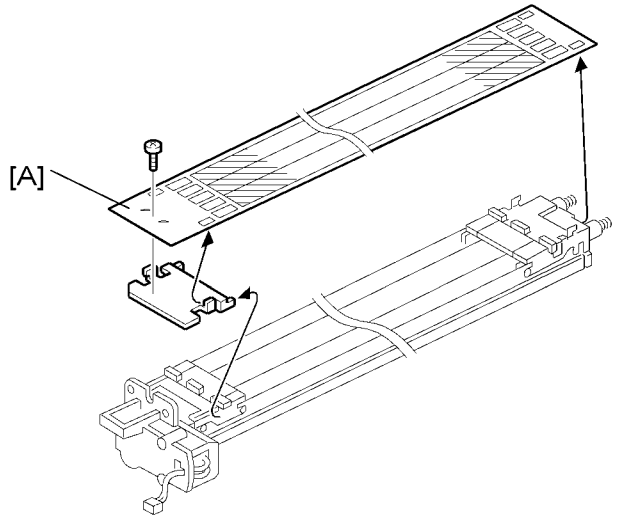
4.6.2 CHARGE CORONA UNIT



B246R941

1. Pull the toner bottle holder out and swing the bottle to the right.
2. Charge corona unit [A] (x 1, x 1)

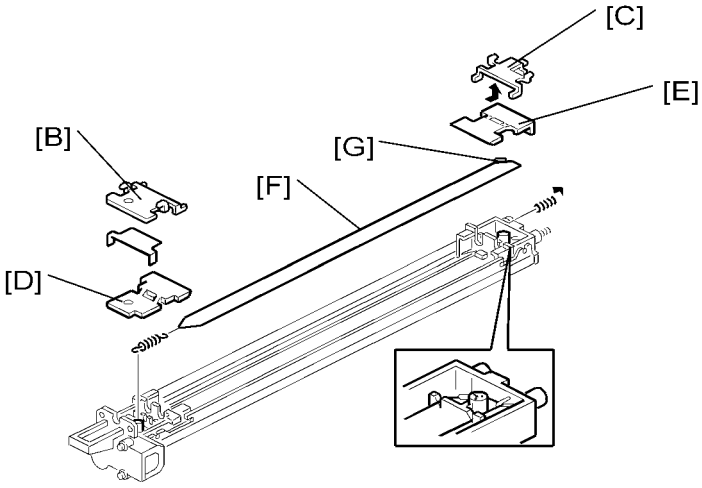
4.6.3 CHARGE CORONA WIRE, GRID, CLEANING PAD



B246R942

- Remove the charge corona unit. p.4-38

1. Grid [A] (x 1)

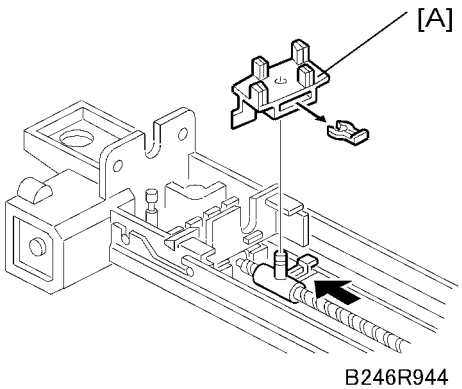


B246R943

2. Front bracket [B]
3. Rear bracket [C]
4. Front block cover [D]
5. Rear block cover [E]
6. Corona wire [F]
7. Disconnect the wire behind the grid bracket.

Important

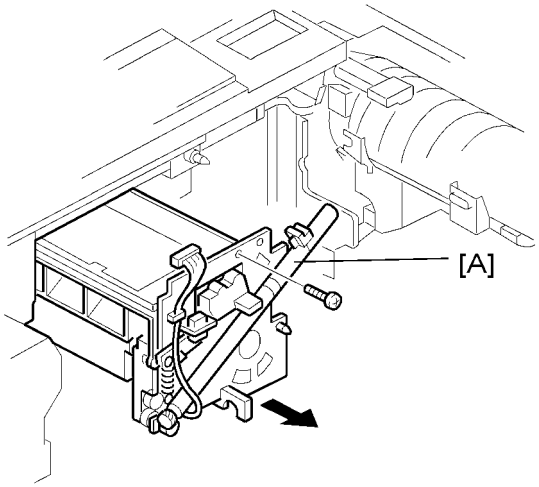
- Never touch the charge corona wire with bare hands. Always protect it from dust, oil, etc.
- Never bend or knot the wire. Charge will not distribute evenly on a bent wire.
- Make sure that the wire seam [G] is as close as possible to the wire hook at the rear.
- At the front and back, make sure that the wire is threaded correctly into the grooves in the end blocks.
- After replacing the charge corona wire, make sure that the wire cleaner pads are engaged correctly with the wires.
- After replacing the wire, set SP2001-001 (Charge Roller Bias Adjustment – Applied Voltage for Image Processing) to the default.



B246R944

1. Cleaning pad [A] (x 1)

4.6.4 OPC DRUM REMOVAL

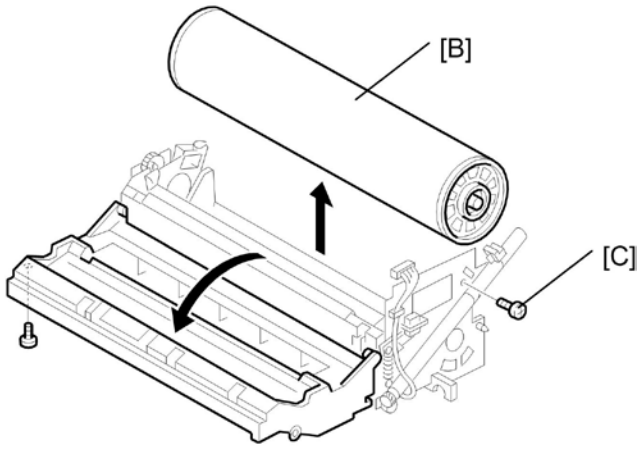


B246R945

Remove

- Development unit ☛ p.4-34
- Charge corona unit ☛ p.4-38

1. Drum unit [A] (x 1, x 2)
   - Grasp the drum unit by the knob to remove it from the machine.



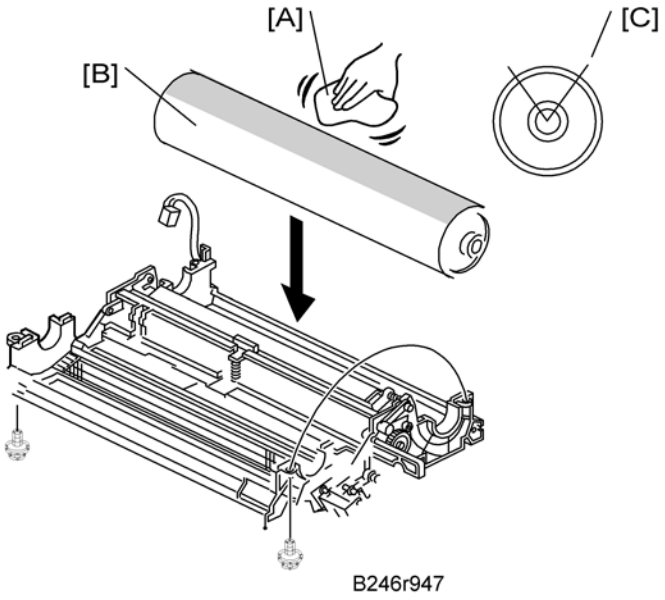
B246R946

2. OPC drum [B] (x2).
3. Toner shield glass cover [C] (x1).
4. After replacing the drum, do the following SPs:
   - Set SP2001-001 (Charge Roller Bias Adjustment – Applied Voltage for Image Processing) to the default setting.
   - SP2962 (Adjustment of Drum Conditions), only if SP3901 (Auto Process Control) is on.

Important

- To avoid fingerprints on the surface of the OPC drum, never touch the surface of the drum with bare fingers.
- Never use alcohol to clean the surface of the OPC drum. Blow dry the OPC drum, then wipe clean with a clean, slightly damp cloth.
- Before installing a new drum, dust the surface of the OPC drum carefully with setting powder. (See below.)

Dusting the Drum Surface



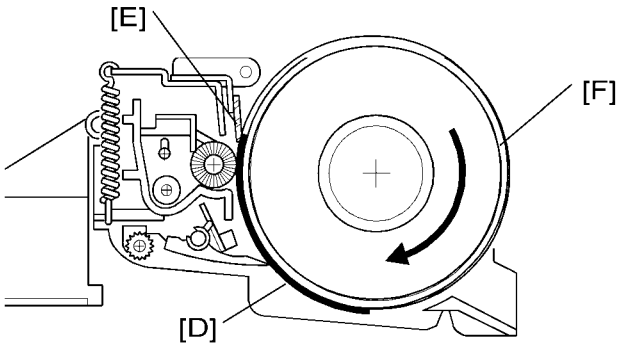
Important

- The surface of a new drum is less smooth, so you must apply Drum Setting Powder (P/N: 54429101) to the drum surface before installation.
- Failure to apply the drum powder before installation could damage the drum cleaning blade or scour the drum surface.

1. Apply the setting powder by tapping the powder bag [A] across the surface of the drum [B].
2. Cover the entire length of the drum over a 45-90 degree portion [C] (about 1/4 of the total drum surface). Apply enough powder so the area turns white.

Note

- If setting powder is not available, use waste toner instead of drum setting powder. However, this could cause dirty backgrounds on the first copies.



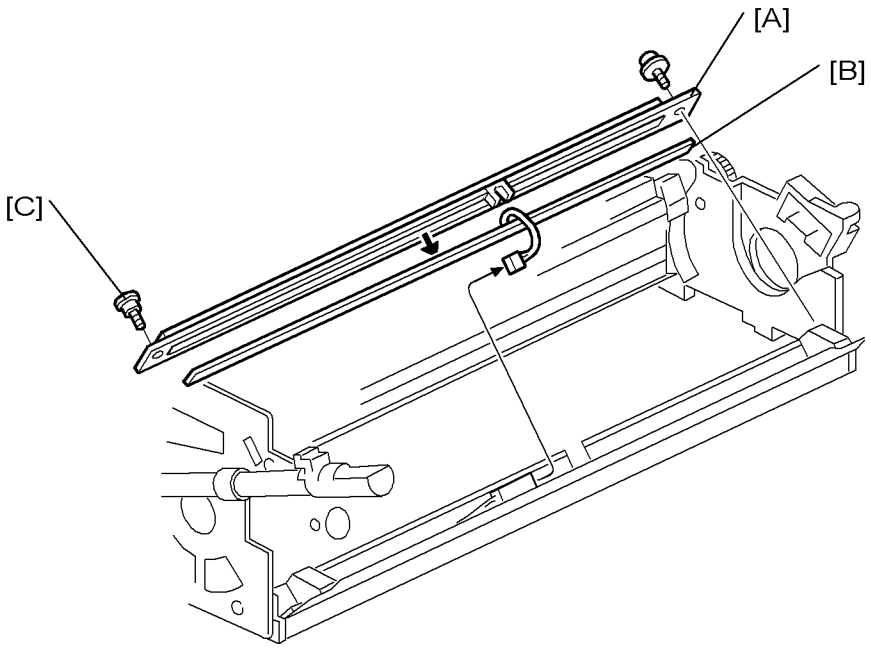
B246R948

3. Install the new drum in the OPC unit so that the powdered surface [D] faces the cleaning blade [E].
4. Rotate the drum once clockwise [F] until it stops again at the same position.

Important

- Never rotate the drum anti-clockwise.

4.6.5 PTL



b246r949

Remove these parts:

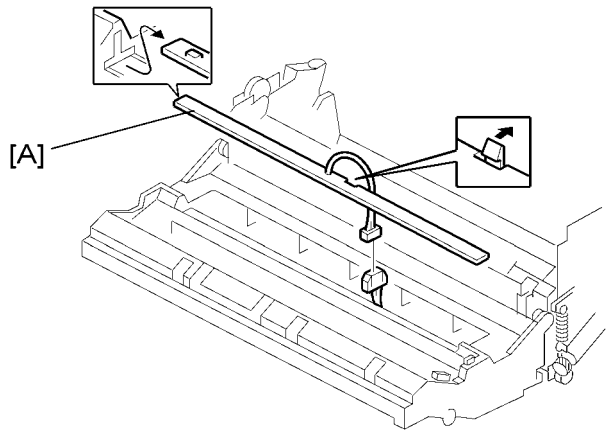
- OPC drum ☛ p.4-40

1. PTL bracket [A] (x 2)
2. PTL [B] (x 1)

Reinstallation

- The shoulder screw [C] must be attached again at its initial location.

4.6.6 QUENCHING LAMP



B246R950

Remove:

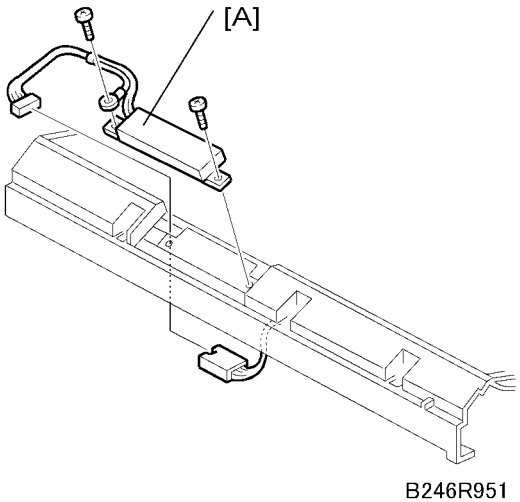
- OPC drum ☛ p.4-40

1. Quenching lamp [A] (x 1)
   - At the center, push back the hook to release the quenching lamp.

Note

- Use only a blower brush to clean the quenching lamp.

4.6.7 DRUM POTENTIAL SENSOR



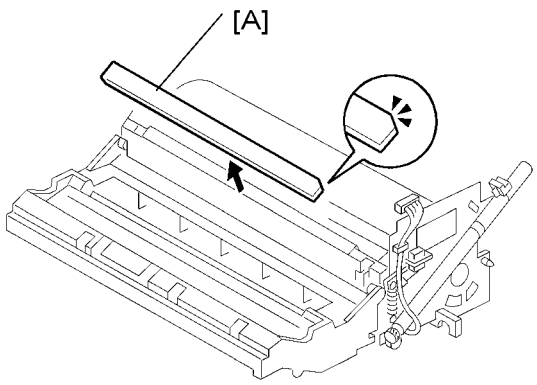
B246R951

Remove:

- OPC drum ☛ p.4-40

1. Drum potential sensor [A] (x 2, x 1)
2. After replacing the drum potential sensor, do SP2962 (Adjustment of Drum Conditions), only if SP3901 (Auto Process Control) is on).

4.6.8 CLEANING FILTER



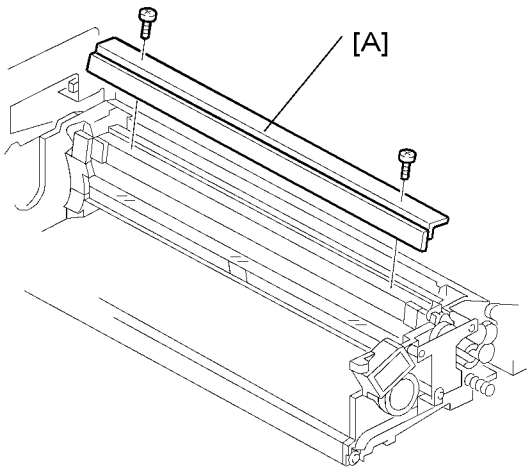
B246R952

Remove:

- OPC drum ☛ p.4-40

1. Cleaning filter [A]

4.6.9 CLEANING BLADE



B246R953

Remove:

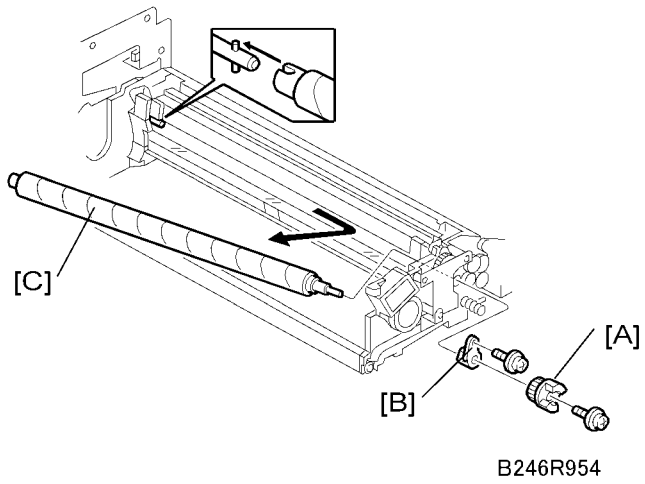
- OPC drum ☛ p.4-40

1. Drum cleaning blade [A] (x 2)

Important

- Clean the blade edge carefully with only a soft, clean cloth.
- Handle the blade carefully to avoid nicking its edge.
- New blades are treated with special setting powder, so avoid touching the edge of a new cleaning blade. If the edge of a new blade is accidentally wiped clean, dust it lightly with some toner before installing it.
- Before installing a new blade, make sure that the blade side seals are not pinched by the blade.

4.6.10 CLEANING BRUSH



B246R954

Remove:

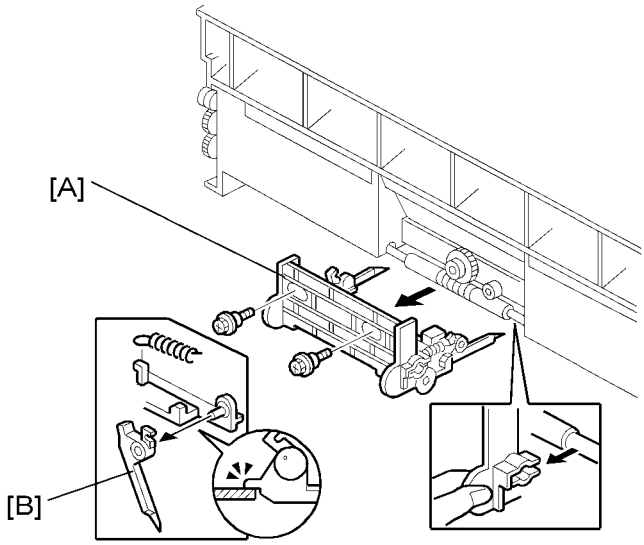
- OPC drum ☛ p.4-40
- Drum cleaning blade ☛ p.4-44

1. Coupling [A] (x 1)
2. Inner bushing [B] (x 1)
3. Cleaning brush [C]

Important

- Pull the shaft toward the rear to disengage the front of the shaft, then pull out.
- After replacing the cleaning brush, clean the ID sensor to make sure that it is clean and free of toner.
- Avoid touching the cleaning brush with bare hands.
- Check the entrance seals and confirm that they are not bent.

4.6.11 PICK-OFF PAWLS



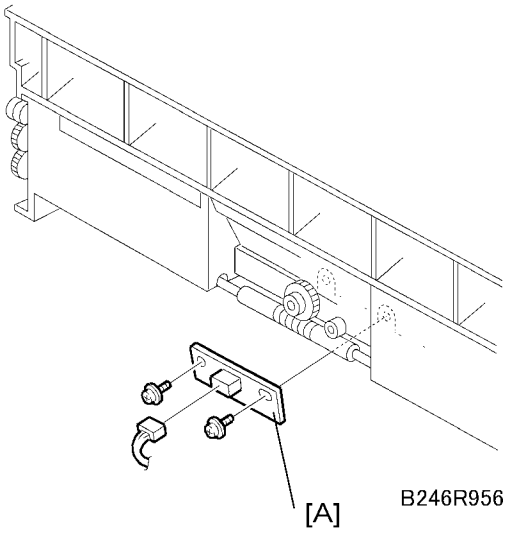
B246R955

Remove:

- OPC drum ☛ p.4-40

1. Pick-off pawl bracket [A] (x 2)
2. Pick-off pawl [B] (spring x 1)

4.6.12 ID SENSOR

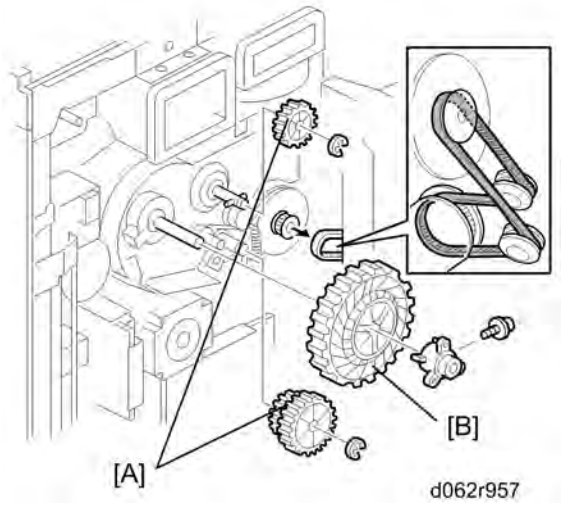


Remove:

- OPC drum ☛ p.4-40
- Pick-off pawls ☛ p.4-46

1. ID sensor [A] (x 2, x 1)
2. After replacing the sensor, do the following SPs:
   - SP2962 (Adjustment of Drum Conditions), only if SP3901 (Auto Process Control) is on.
   - SP3001-002 (ID Sensor Initialization Setting).

4.6.13 DRUM MOTOR



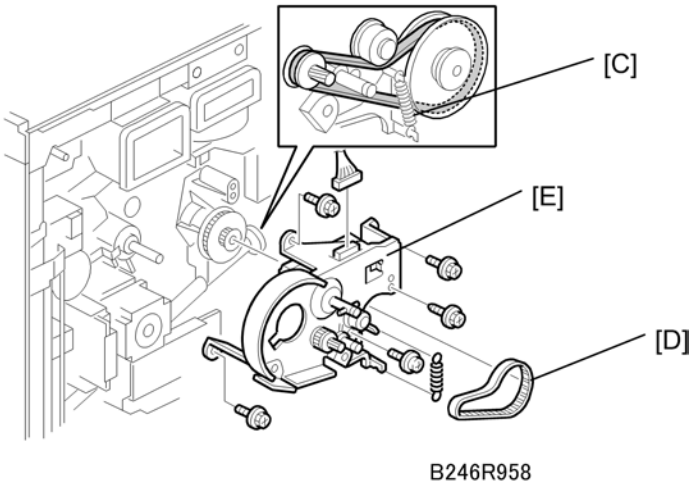
Remove:

- Rear covers ☛ p.4-11
- Controller/IPU panel (x 3) (not shown). The panel swings open like a door. You do not need to remove it.
- Flywheel (x 3) (not shown)

1. Three gears [A] [B](x 1, x 2, Timing belt x 1)

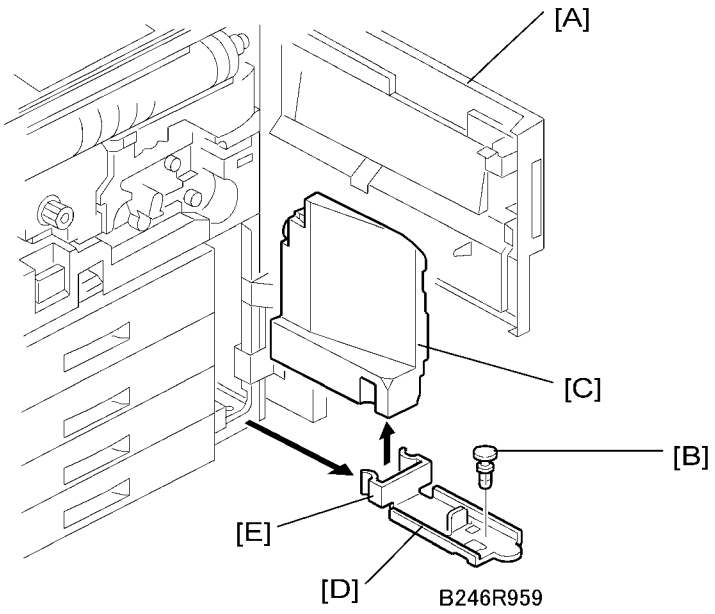
Note

- Gears [A] are different in each model. D131/D132 have black gears, but D133 has white gears.



2. Spring [C]
3. Timing belt [D]
4. Drum motor [E] (x 1, x 5)

4.6.14 TONER COLLECTION BOTTLE

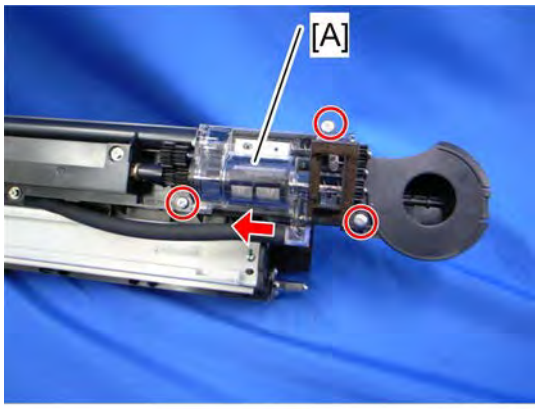


1. Open the front door [A].
2. Remove the lock pin [B], then pull out the toner collection bottle [C] and its base [D].
3. Detach the bottle from the base clamp [E] and replace it.

4.6.15 TONER SEPARATION UNIT

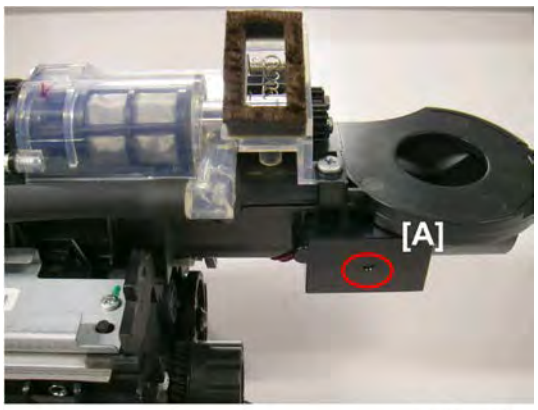
Remove:

- Development unit ☛ p.4-34
- Pressure release tube, only for D133 ☛ p.4-54



d062r504

1. Toner separation unit [A] (x 3, tube x 1)



d062r504a

2. Toner end sensor cover (x1)

Reinstallation



d062r504b

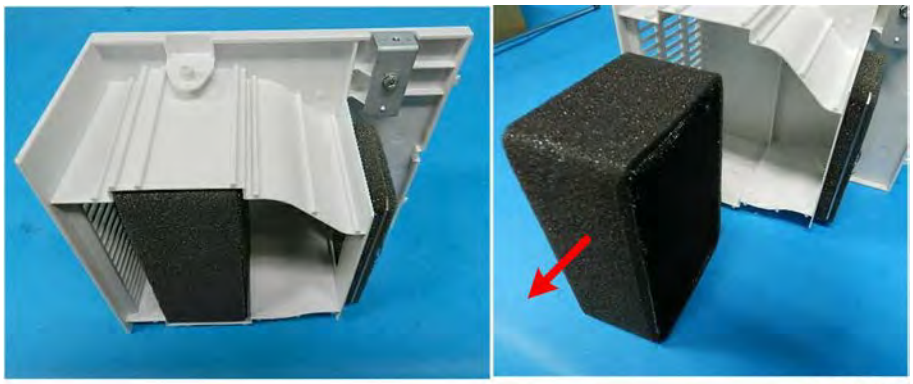
1. When you re-attach the toner end sensor cover, make sure that the toner end sensor harness is not pinched between the cover and the unit.

4.6.16 OZONE FILTERS



d131r123

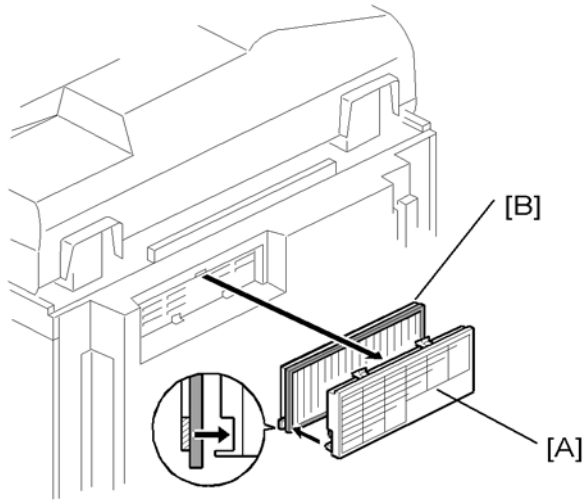
1. On the back of the machine, remove the cover of the ozone filter box (x1).



d131r124

2. Lay the box on a flat surface.
3. Pull the filter out of the box.

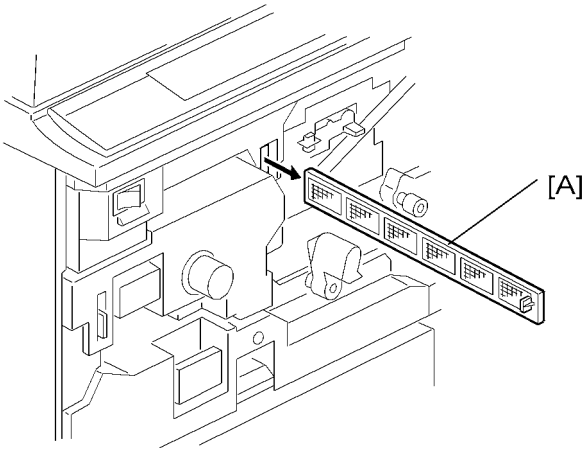
4.6.17 OPTICS DUST FILTER



B246R962

1. Filter cover [A]
2. Optics dust filter [B]

4.6.18 INTERNAL DUST FILTER

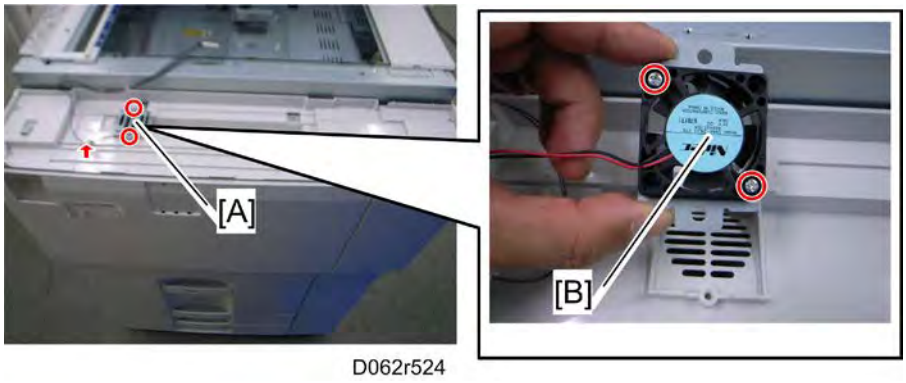


B2246R963

1. Open the front door.
2. Pull the toner bottle holder out and swing the toner bottle holder to the right.
3. Remove the PCU inner cover (x2, x1).
4. Pull out the internal dust filter [A].

4.6.19 TONER COOLING FAN

1. Operation panel ☛ p.4-6



2. Toner cooling fan unit [A] (x 2, x 1).
3. Toner cooling fan [B] (x 2).

Note

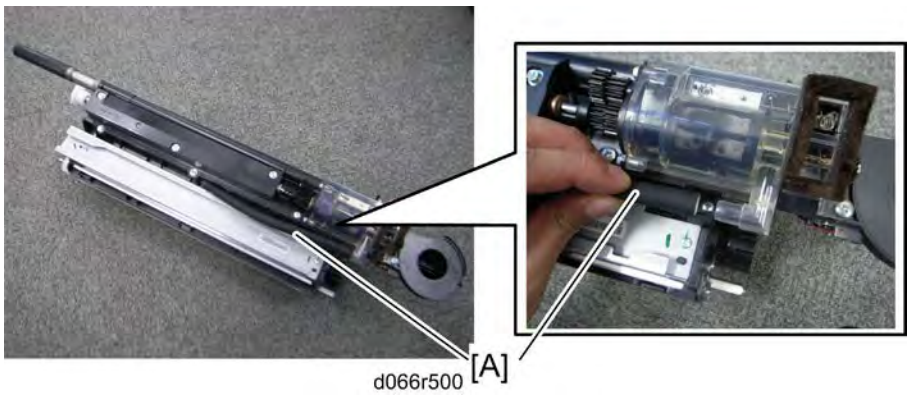
- Make sure the decal is facing down when reinstalled.

4.7 DEVELOPMENT UNIT

4.7.1 DEVELOPER REPLACEMENT

Preparation

For **D133 only**, the pressure release tube [A] should be removed before removing the development unit.



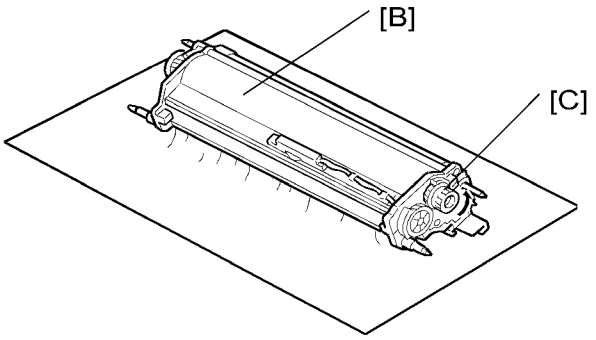
1. Development unit ☛ p.4-34
2. Pressure release tube [A]

Removal

1. Remove the toner hopper [A] (x 2)

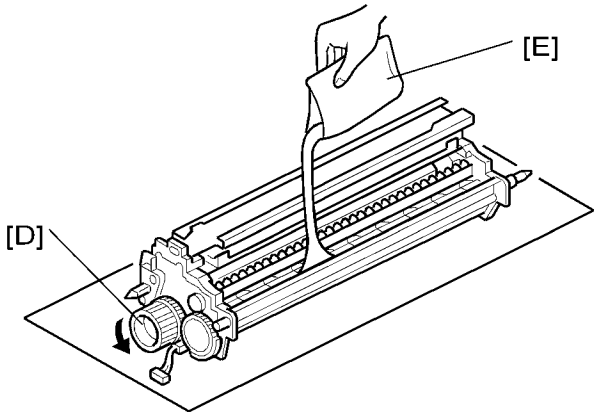


2. Rotate the toner hopper very slightly (10° to 20°) as you slide it up to remove it. To avoid toner spill, hold the hopper level as you remove it



B246R965

3. Hold the development [B] unit over a large sheet of paper, then slowly turn it upside down to empty the developer.
4. Turn the knob [C] through several complete rotations to empty all the developer in the development unit.
5. Clean the development sleeve and its side seals.
6. Turn the unit over and set it on another sheet of clean paper.
7. Note the developer lot number printed on the top edge of the bag. You will need the lot number when you input SP2801-2.
8. Clean the development roller shaft with a clean cloth and blower brush.



B246R966

9. While turning the knob [D] slowly, pour in one pack of developer [E] from one end of the development unit to the other.
10. Make sure that the developer is evenly distributed.
11. Continue to turn the knob several times to prevent clumping in the developer.

Reinstallation

1. Hold the hopper perfectly level when re-attaching it, to prevent toner from entering the rails of the development filter.

Note

- Automatic process control starts automatically after the machine is switched on, so after replacing the developer, you should enter the SP mode and initialize the developer with SP2801 as soon as possible after switching the machine on.

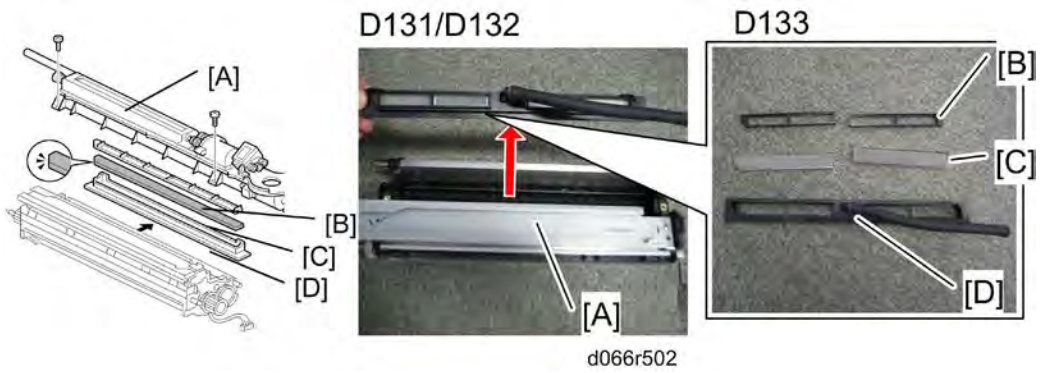
2. Do SP2801 (TD Sensor Initial Setting).
   - Open the front door.
   - Turn the machine on

Note

- If you open the front door, auto process control will not start. SP2801 must be done before auto process control starts.

   - Push [Clear Modes]
   - Enter the SP mode.
   - Close the front door.
   - Push "System SP" on the touch-panel.
   - Enter **2801-002** to select SP2801-002.
   - On the soft keys, enter the lot number from the pack of developer, then push [#].
   - Do SP2801-1.

4.7.2 DEVELOPMENT FILTER



Remove:

- Development unit ☛ p.4-40
- Pressure release tube, only for D133 ☛ p.4-54

1. Toner hopper [A]
2. Filter bracket top [B]
3. Development filter [C]
4. Filter bracket [D]

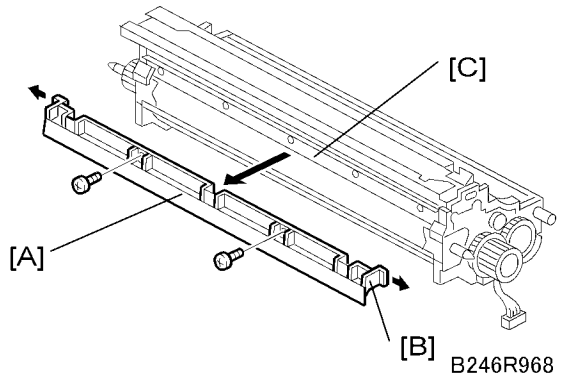
Important

- Make sure that the rails where the development filter bracket [C] connects to the development unit are clean and free of toner. If there is any toner in the rails, wipe them clean.
- When installing a new filter, set the filter snug inside the filter case, and then place the case over the top of the filter bracket [C].
- The filter case seals any gaps at the filter edges to prevent toner scatter.
- After vacuum cleaning, always check the gaps at the ends of the filters to make sure that they are flat and sealed and not open.

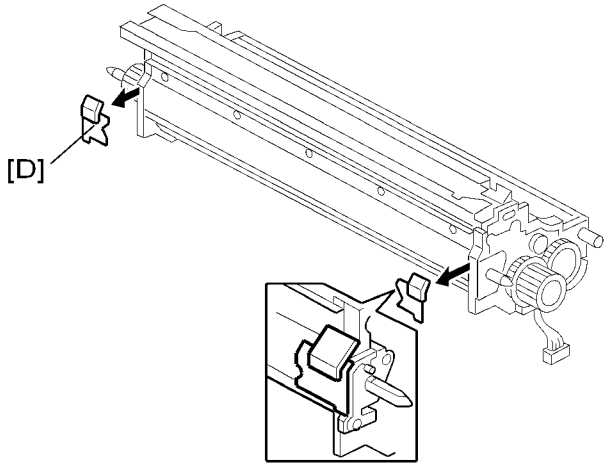
4.7.3 ENTRANCE SEAL AND SIDE SEALS

Removal

- Development unit ☛ p.4-34

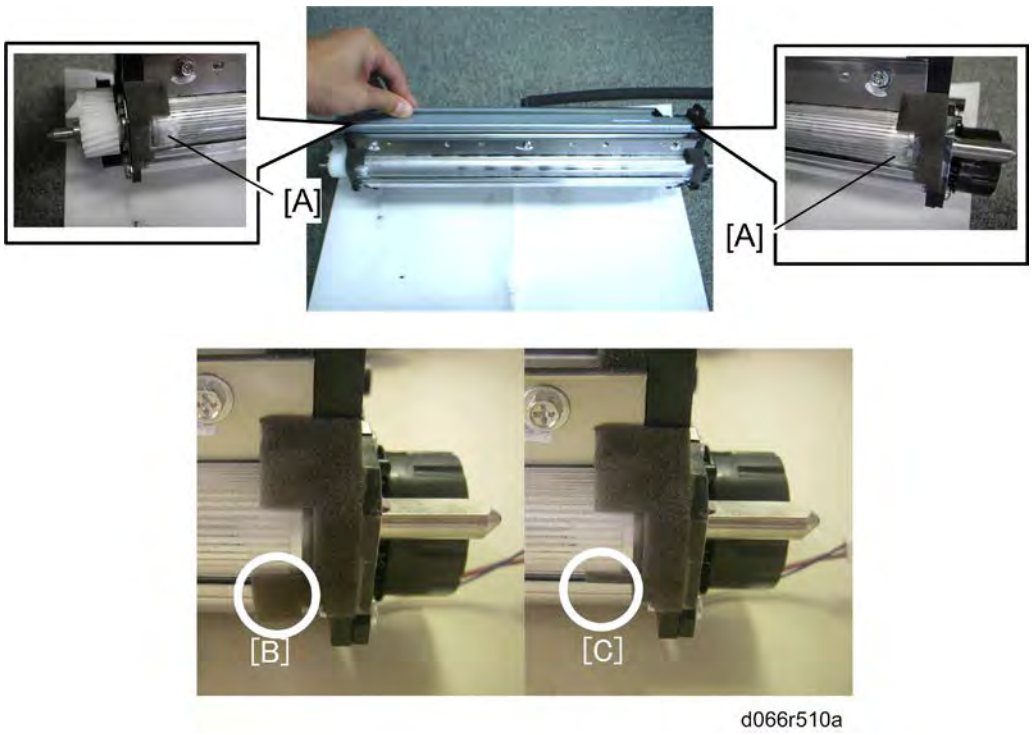


1. Entrance seal bracket [A] (x 2)
2. After removing the screws, press in the catches on either end [B] to release the entrance seal bracket, then remove it.
   - Clean the entrance seal bracket before re-installing it.
   - When re-installing, make sure the tabs [C] and notches are engaged at four locations.



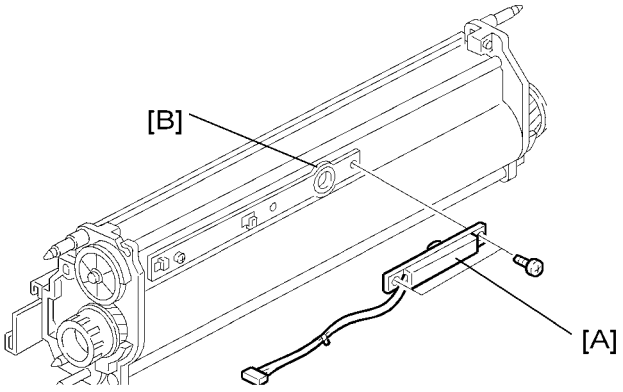
3. Side seals [D]
   - Remove the side seals from both ends, clean the area, and replace with new seals.

Reinstalling



1. Attach the seals [A] as shown in the above diagrams.
2. Reinstall the entrance seal bracket.
   - [B] is incorrect.
   - [C] is correct.

4.7.4 TD SENSOR



B246R970

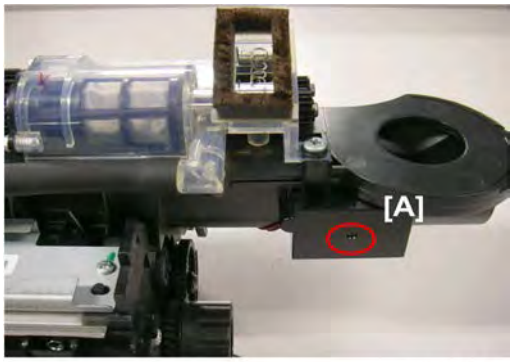
Remove:

- Development unit ☛ p.4-34

1. TD sensor (x 1) [A]
2. Before installing a new TD sensor, clean the TD sensor port [B].
3. After replacing the TD sensor, do these SPs:
   - SP2801 TD Sensor Initial Setting
   - SP2962 Auto Process Control (only if SP3901 – Auto Process Control – is on).

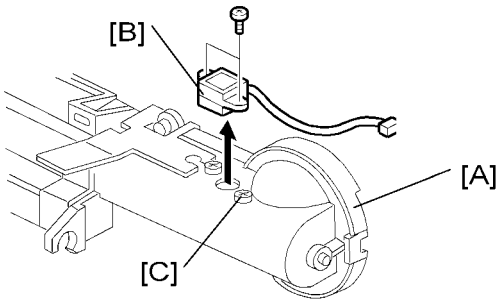
4.7.5 TONER END SENSOR

1. Development unit ☛ p.4-34



d062r504a

2. Toner end sensor cover [A] (x1)



B246R971

3. Toner hopper [A] (x 2)
4. Toner end sensor [B] (x 2)
   - Remove the screws carefully to avoid stripping the holes.
   - Before installing a new toner end sensor, clean the toner end sensor port [C].

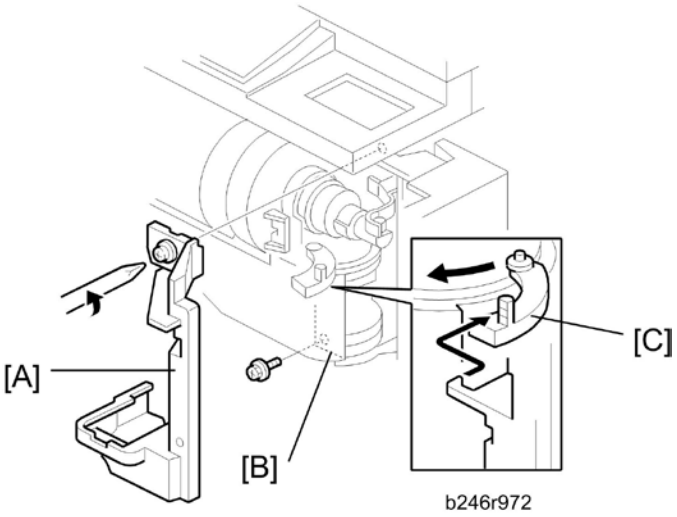
Reinstallation



d062r504b

1. When you re-attach the toner end sensor cover, make sure that the toner end sensor harness is not pinched between the cover and the unit.

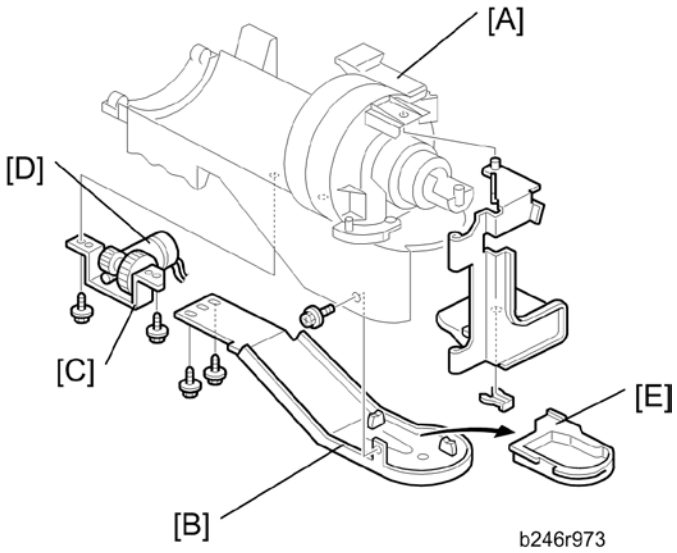
4.7.6 TONER SUPPLY MOTOR



1. Open the front door.
2. Swing the toner unit out of the machine and remove the toner bottle.
3. Bracket [A] (x 1)
4. Lock plate [B] (x 1)

Note

- After re-installation, the tab [C] should be behind the stay and its pin below should be in the open track below.

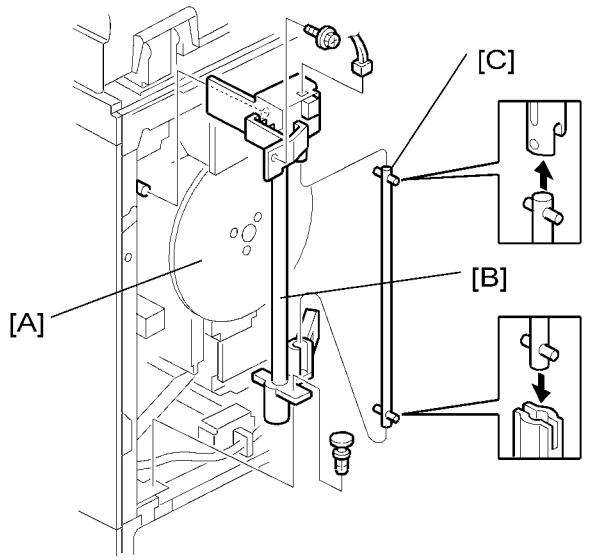


5. Toner bottle unit [A] (x 1, harness x 1, x 1)
   - The c-clamp is under the toner unit.
   - Lift the toner bottle unit off the pegs and lay it on a piece of newspaper to avoid toner spill.
6. Bottom plate [B] (x 3, harnesses x 2)
   - 2 screws on the bottom, 1 screw on the side.
7. Toner supply motor bracket [C] (x 2)
8. Toner supply motor [D] (x 2)

Cleaning Requirement

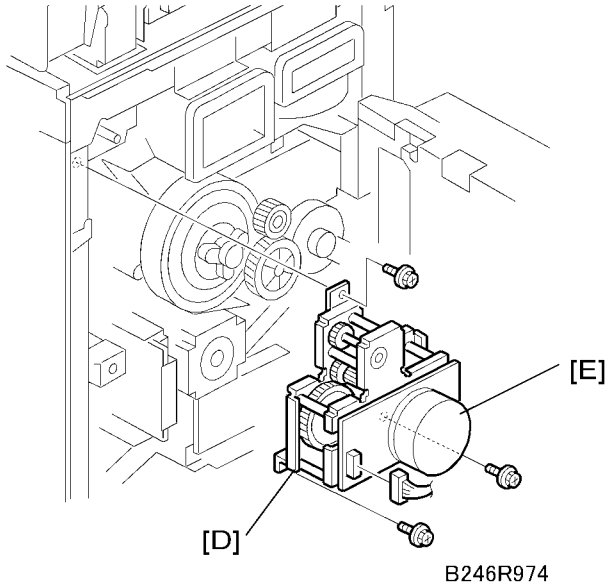
The toner pan [E] must be cleaned at every PM interval (300 K).

4.7.7 DEVELOPMENT MOTOR



B246R975

1. Flywheel [A] (x 3)
2. Waste toner pump tube [B] (x 1, x 1)
3. Drive rod [C]
   - Lift the toner pump tube to disengage the drive rod, pull out the rod, and push the rubber tube aside.

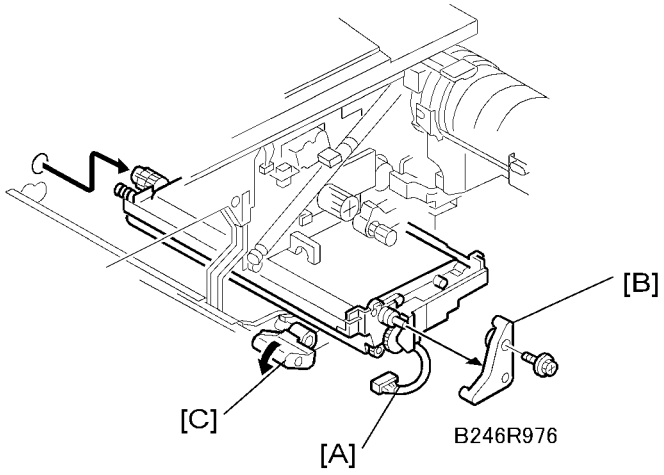


B246R974

4. Development motor bracket [D] (x 3, x 1)
5. Development motor [E] (x 4)

4.8 TRANSFER BELT UNIT

4.8.1 TRANSFER BELT UNIT REMOVAL



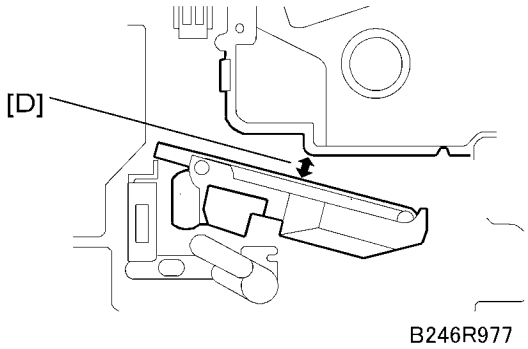
Note

- Before you begin, spread a mat or some clean paper on the floor where you intend to set the transfer belt unit.

Remove:

- OPC drum unit ☛ p.4-40

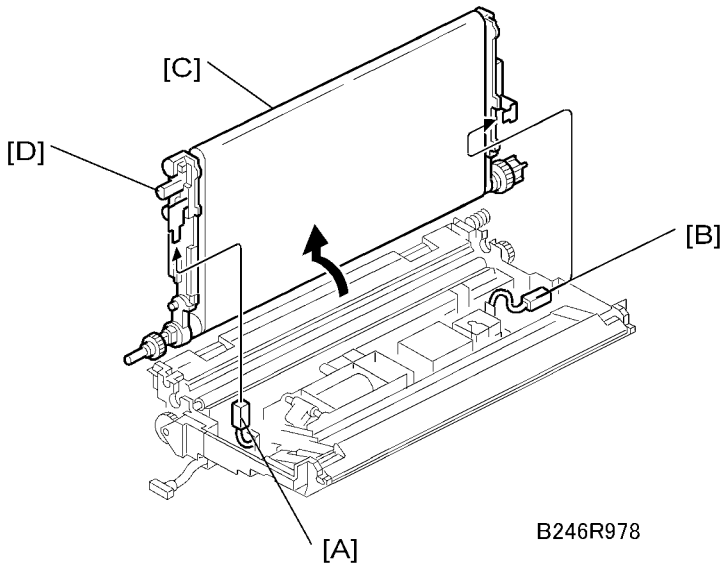
1. Disconnect the transfer belt unit [A] (x 1).
2. Remove the transfer belt unit stay [B] (x 1).
3. While supporting the transfer belt unit with your hand, turn the release lever [C] counter-clockwise to release it, then pull the transfer belt unit out of the machine.



Important

- The transfer belt unit can be removed without removing the OPC drum unit.
- However, the transfer belt unit must be removed carefully to avoid scratching the surface of the transfer belt on the OPC drum unit [D].
- Avoid touching the belt with bare hands.

4.8.2 TRANSFER BELT REMOVAL



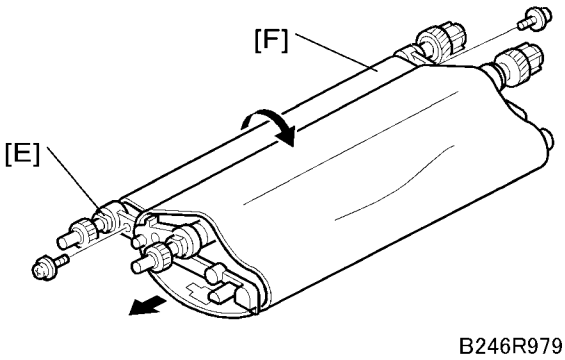
Remove:

- Transfer belt unit ☛ p.4-64

1. Disconnect the earth terminal [A] and transfer current terminal [B] (x 2). While doing this, hold the transfer belt unit [C] by its knobs [D].
2. Raise and stand the belt perpendicular to the unit and remove it.

Note

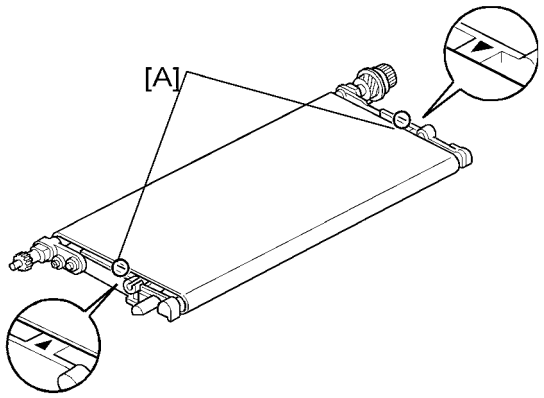
- To avoid scratching the belt on the guide, never rotate the belt unit farther than 90 degrees.



3. Release the drive roller [E] (x 2).
4. Press in on the drive roller to collapse the unit into a “U” shape [F].
5. Remove the belt and replace it.

Re-installation

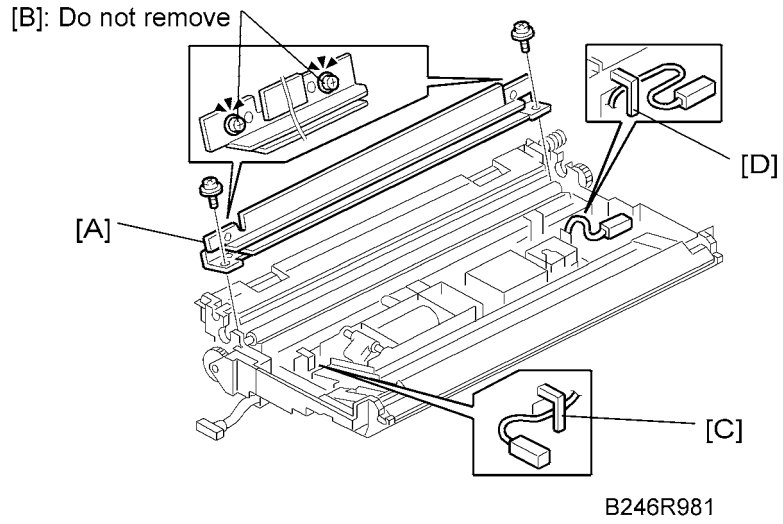
- Before re-assembling the transfer belt unit, use a clean cloth and alcohol to clean the contact points of the drive roller, idle roller, and transfer roller. Make sure these areas are clean and free from toner, paper dust, etc.
- Never touch the surface of the belt with bare hands and never apply alcohol to the surface of the belt. Clean it with a blower brush. Check the underside of the transfer belt and clean with the blower brush.



B246R980

- When re-assembling the transfer belt unit, make sure that the transfer belt is centered between the triangular marks [A] on either side of the unit.
- After re-assembly, make sure that the transfer belt is inside the transfer current terminal. The belt could be cut if it is not positioned correctly.
- Confirm that both the ground and transfer current terminal are connected and that the harnesses are not touching the release lever.
- After re-installing the transfer belt unit, turn the belt and confirm that the toner collection coil turns.
- The transfer belt and transfer roller cleaning blade must always be replaced together.

4.8.3 TRANSFER ROLLER CLEANING BLADE



Remove:

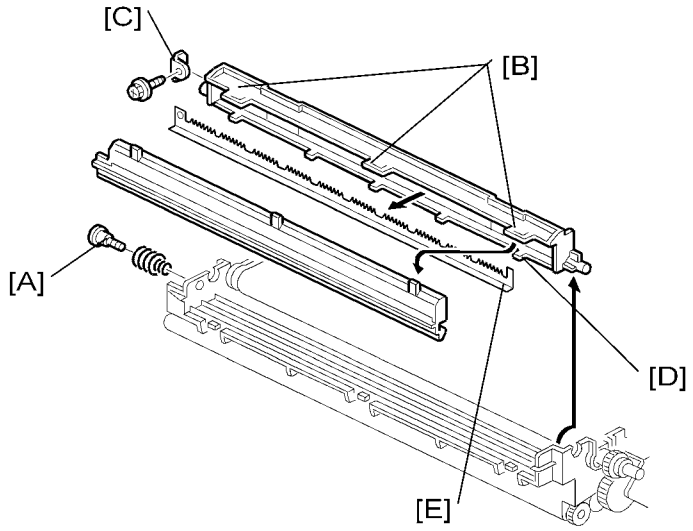
- Transfer belt unit ☛ p.4-64
- Disassemble the transfer belt unit ☛ p.4-64

1. Transfer roller cleaning blade [A] (x 2)

Important

- Never remove the inner lock screws [B] of the transfer roller cleaning blade.
- When re-assembling, make sure that the clamps [C] and [D] are arranged as shown above to avoid contact with the release lever.
- The transfer roller cleaning blade should always be replaced when the transfer belt is replaced.
- Never touch the edge of a new transfer roller cleaning blade. The edge of the blade is dusted with setting powder. If the setting powder is removed accidentally, dust the edge of the blade with toner. This is especially important when only the transfer roller cleaning blade must be replaced without replacing the transfer roller.
- Work carefully around the transfer power pack located inside the transfer belt unit, especially when cleaning with a vacuum cleaner, to avoid damaging the power pack with static electricity.

4.8.4 DISCHARGE PLATE

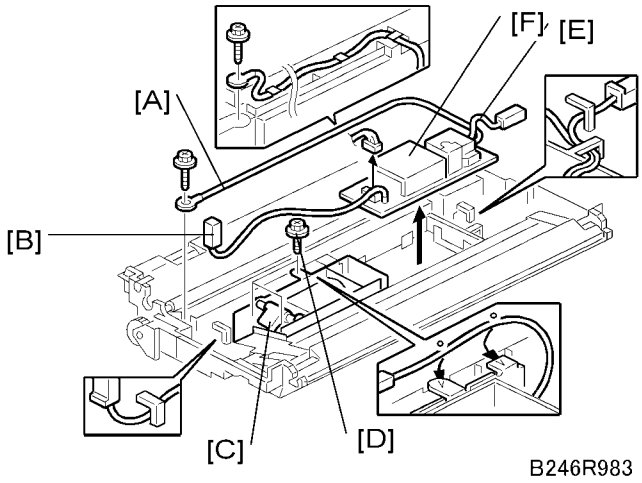


1. Remove the transfer belt unit ☛ p.4-64
2. Remove the shoulder screw and spring [A] (x1, Spring x1).
3. Rotate the discharge unit up, then lift it straight up to remove it.
4. Disconnect the three large tabs [B].
5. Remove the bracket [C] (x 1).
6. Disconnect the 6 small seal case tabs [D].
7. Remove the discharge plate [E].

Reinstallation

1. Set the discharge plate and make sure that it is perfectly flat before re-connecting the tabs.
2. Before re-attaching the bracket [C], make sure that all the tabs are connected.

4.8.5 TRANSFER POWER PACK



Remove:

- Transfer belt unit ☛ p.4-64

1. Wire (x 1) [A] (all wire guides)
2. Ground terminal wire [B] (wire guide x 1)
   - This terminal wire does not disconnect from the power pack.
   - Loosen the two left screws of the transfer belt lift solenoid [C], and remove the top screw [D] to free the ground terminal wire.
3. Transfer current terminal wire [E] (wire guides x 2)
4. Transfer power pack [F] (x 1)
   - Disconnect the two standoffs on the right edge of the power pack and remove.

Re-installation

- Confirm that the left edge of the power pack is below the tabs on the left.
- Confirm that the transfer current terminal wire is below the wire guides on the right.
- Pass the ground terminal wire under the top connector of the solenoid bracket and tighten all the screws of the solenoid bracket.
- Make sure the wire is below all the wire guides at the top.

4.9 FUSING UNIT

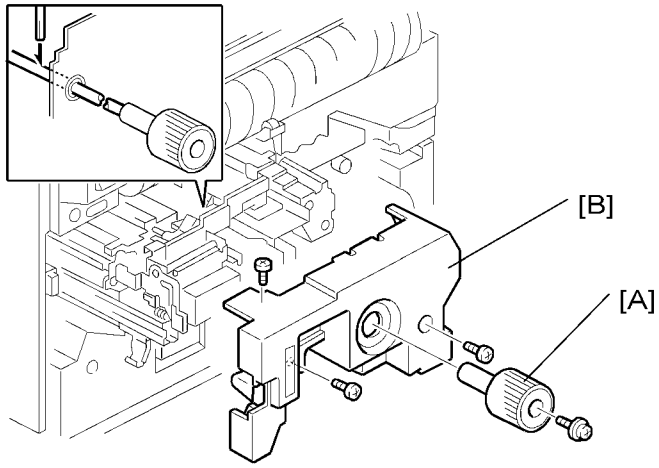
⚠CAUTION

- Switch off the machine, remove the plug from the power source, then allow sufficient time for the fusing unit to cool before you remove it from the machine.

4.9.1 FUSING UNIT REMOVAL

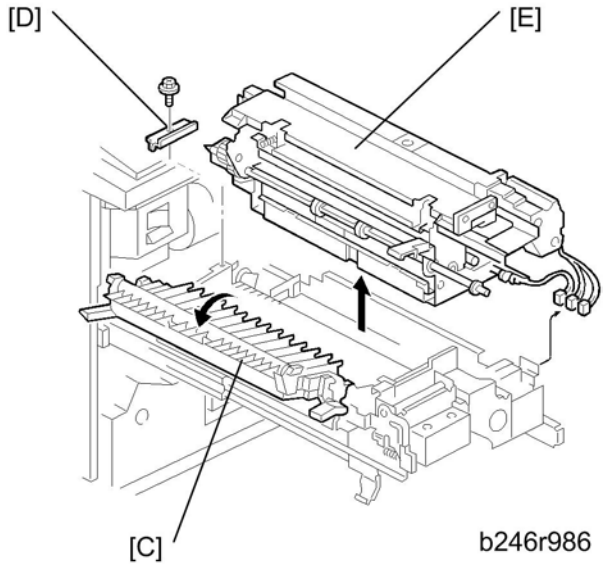
Note

- Before you begin, spread a mat or some clean paper on the floor where you intend to set the fusing unit.



B246R984

1. Open the front door.
2. Pull out the transfer unit.
3. Knob [A] (x 1)
   - Open D3 and D4 until you can see the hole in the shaft.
   - Insert the tip of a screwdriver into the hole of the shaft to hold it in position as the knob is turned to remove or install it.
4. Inner cover [B] (x 3)
   - Pull the fusing unit release lever, then pull the unit out on the rail supports.
   - At reassembly, make sure that the harness of the web drive motor is not pinched by the inner cover.

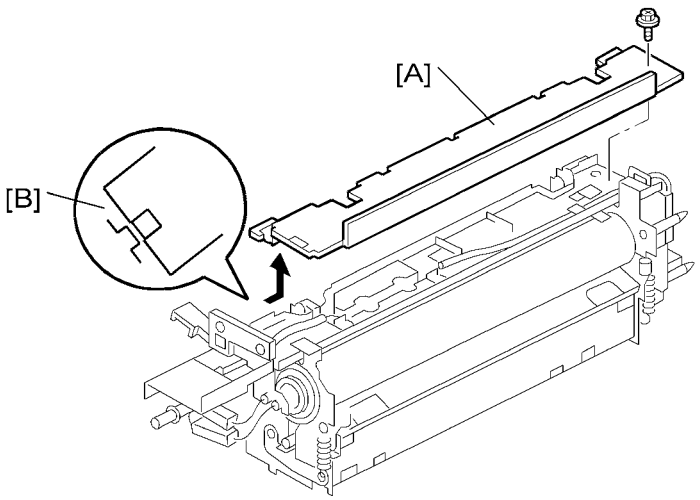


5. Open the exit separation pawl assembly [C].
6. Stopper bracket [D] (x 1)
7. Fusing unit [E] (x 2, x 2)

Important

- Support the bottom of the fusing unit with your hand as you remove it.

4.9.2 FUSING UNIT THERMISTORS AND THERMOSTATS



- Remove the fusing unit ☛ p.4-70

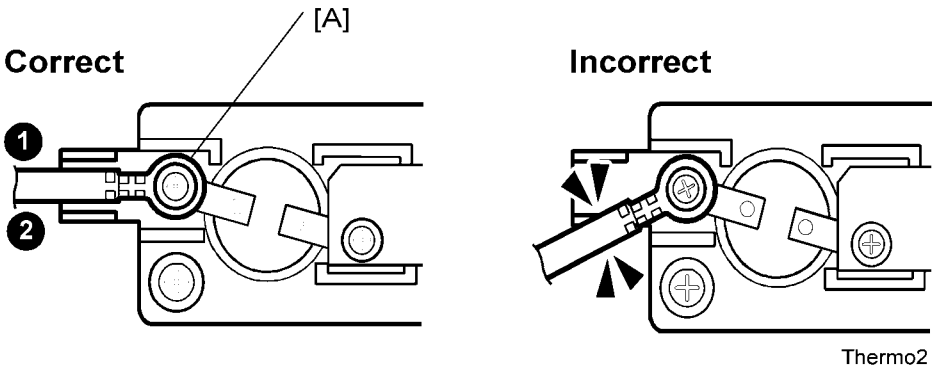
1. Upper cover [A] (x 1)
2. Press in on the internal pawls [B] to release them then remove them.

Important

- Make sure that the pawls [B] engage correctly when you reinstall the unit.

The thermistor-thermostats are replaced as one unit. A disassembly procedure is not required.

Reinstallation



Thermo2

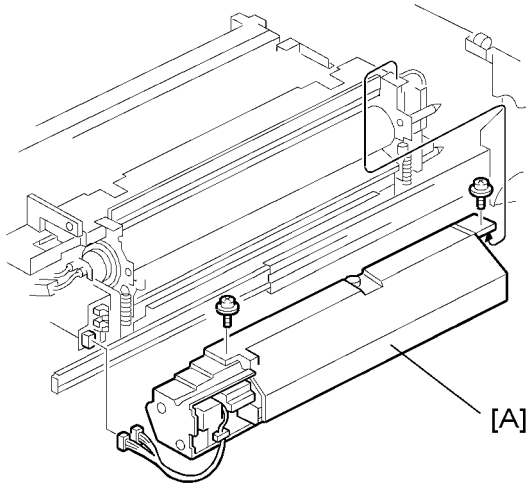
- To prevent damage to a thermostat, never touch its detection surface.
- Place the end of the thermostat harness that has the round lead [A] in between the two ribs ❶, ❷ in the bracket.
- Tighten the screw for the round lead [A] as tight as possible without damaging the screw or screw hole.

Important

- If the harness is not positioned between the between the bracket ribs ❶, ❷ (as shown under "Incorrect" below), this could cause an error (SC542 or SC545).

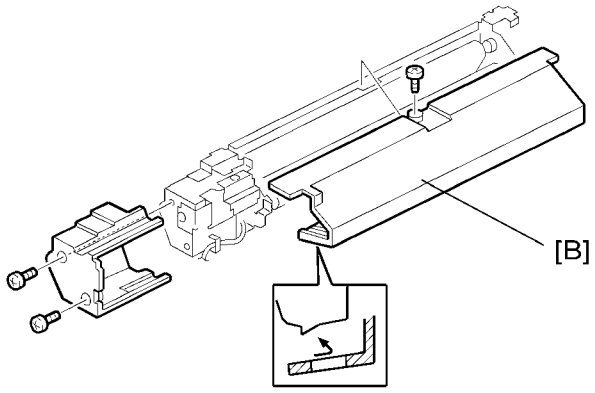
4.9.3 WEB CLEANING ROLLER

Web Unit Disassembly



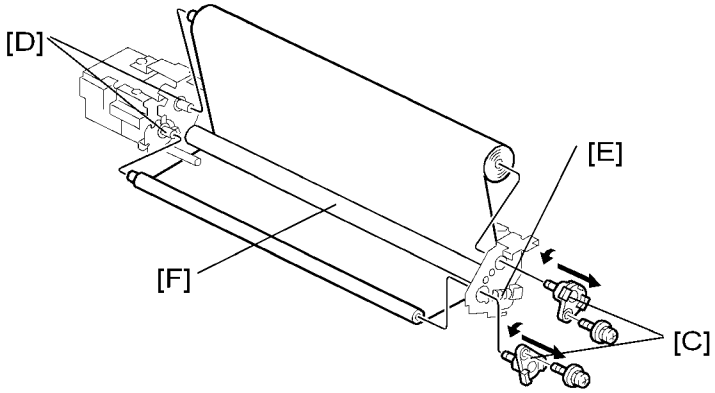
B246R993

1. Open the front door and pull out the fusing unit on its support rails.
2. Web unit [A] (x 2, x 2)
   - The web unit can be removed without removing the fusing unit from the machine.



B246R992

3. Upper cover [B] (x 1)
   - Rotate the cover down slightly to remove.



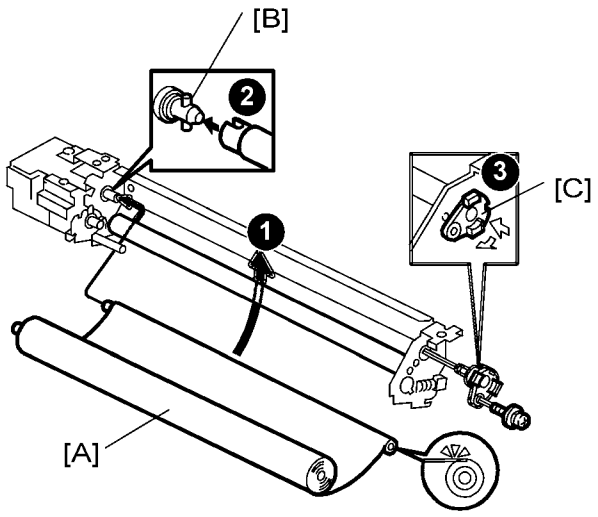
B246R994

4. Web shafts [C] (x 2)
5. Remove the web cleaning rollers from the shaft driver pins [D].
6. Web bushing [E] (spring x 1)
7. Cleaning roller [F]

Reinstallation

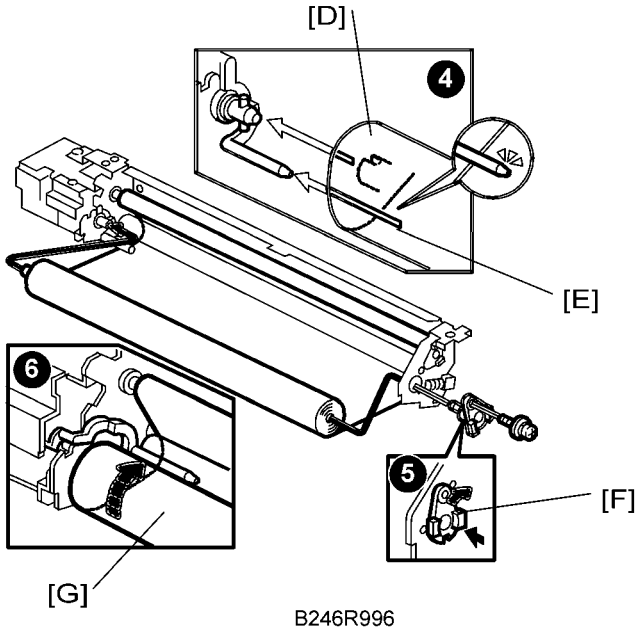
- After replacing the web with a new one, you must execute SP1902-001 (Fusing Web Used Area Display/Setting) to reset the web consumption count to zero. This SP code must be executed to release SC550.
- Be sure to print an SMC report before executing Memory All Clear (SP5801). After executing SP5801, be sure to re-enter the value recorded for SP1902-001 in the SMC report.

Web Unit Re-assembly



B246R995

1. Attach the cleaning roller [A]
   - Insert the end of the web into the slot ❶.
2. Insert the drive pins [B] into the web shaft ❷.
3. After installing bushing [C], rotate the shaft right to lock it, then attach the lock screw ❸.



B246R996

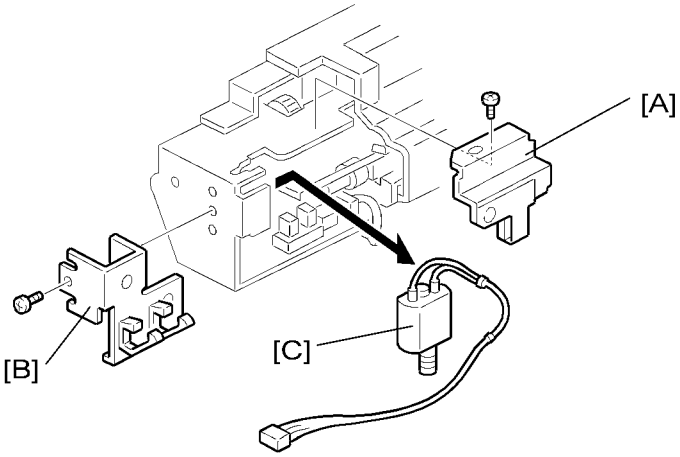
4. Set the web [D] under the feeler [E] of the web end sensor ❹.
5. Attach bushing 2 [F] ❺.
6. Attach the new web roll [G] and wind it tight so no slack remains ❻.

Important

- Before reassembling the machine, confirm that 1) there is no slack in the web roll, 2) the web is below the feeler of the web end sensor.

7. Attach the upper cover.
8. After installing a new web roll, reset SP1902-001 to zero.

4.9.4 WEB MOTOR AND WEB END SENSOR

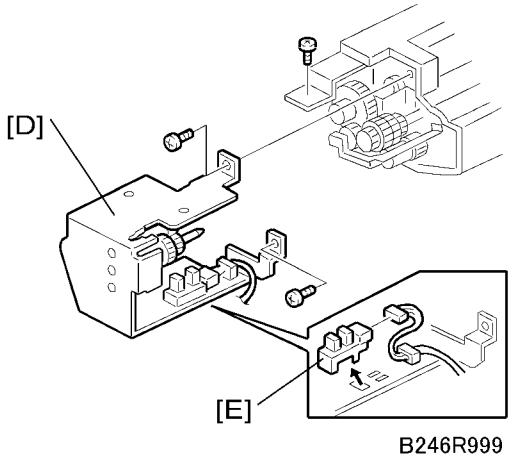


B246R997

Remove:

- Web unit and end cover ☛ p.4-72

1. Bracket [A] (x 1)
2. Web motor positioning bracket [B] (x 1)
3. Web motor [C]



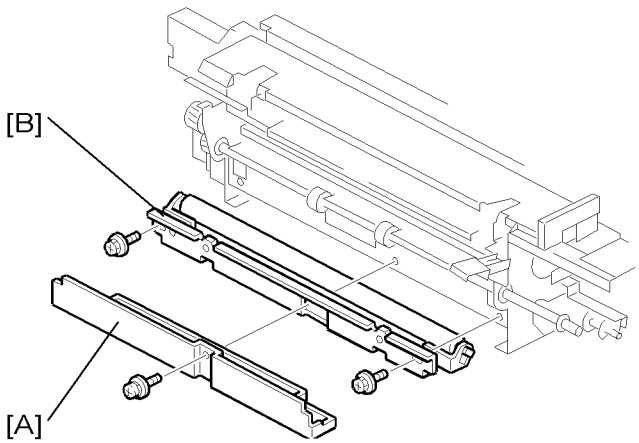
B246R999

4. Web motor/sensor mount [D] (x 3)
5. Web end sensor [E] (x 1, harness x 1)

Reinstallation

- Make sure that the harness of the web driver motor is not pinched by the fusing inner cover

4.9.5 PRESSURE ROLLER CLEANING UNIT



B246R1001

Remove:

- Fusing unit ☛ p.4-70

1. Cover [A] (x 1)
2. Cleaning roller [B] (x 2)
3. Cleaning roller [C] (x 1)

Reinstallation

- When attaching the lower cover of the pressure roller cleaning roller, make sure that the tab [D] engages with the groove [E].
- If the bushings are noisy after replacement, lubricate them on both ends and the holes where the bushings are attached with Barrierta Grease L553R.

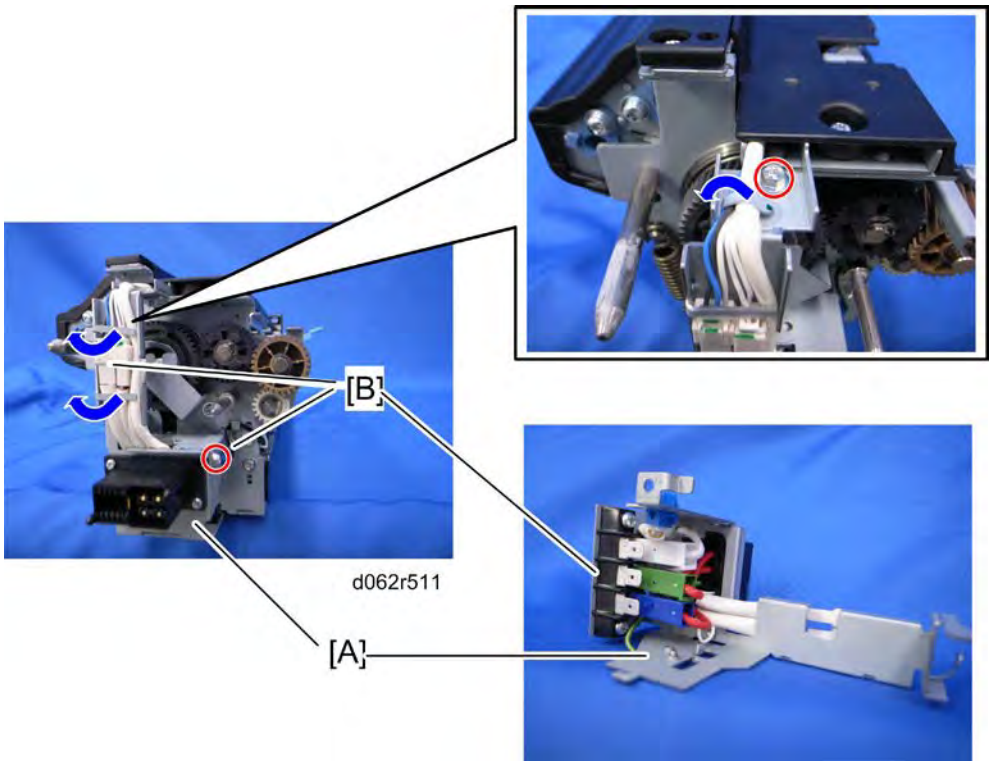
4.9.6 FUSING LAMPS, HOT ROLLER, AND PRESSURE ROLLER

Note

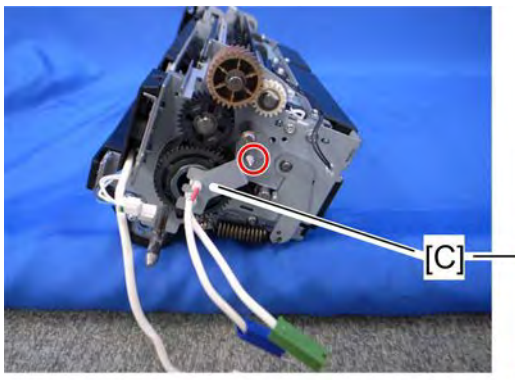
- If you wish to remove the pressure roller only, without removing the hot roller and fusing lamps, please do not use this procedure. Use the procedure in the next section.

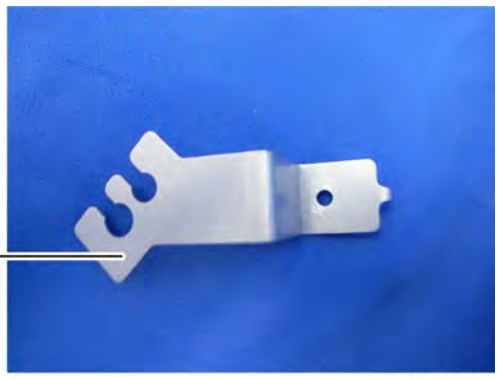
Fusing Lamps

1. Fusing unit ☛ p.4-70

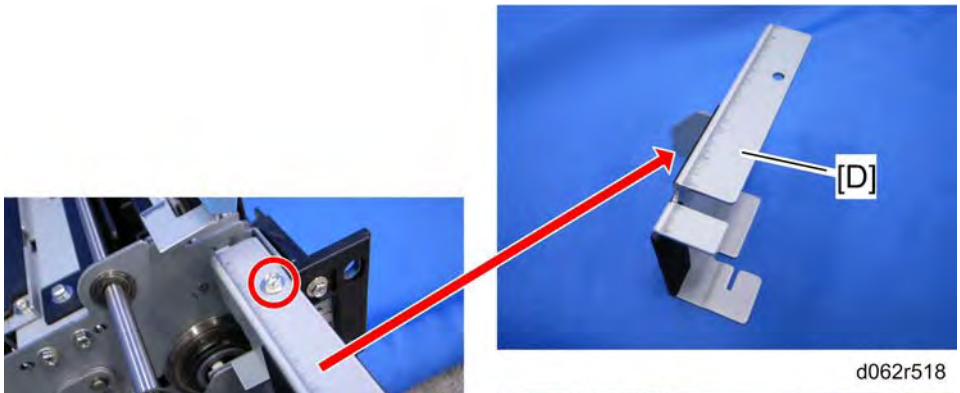


2. Rear terminal connector bracket [A] (x 2, metal clamp x 3, [B] x 6)

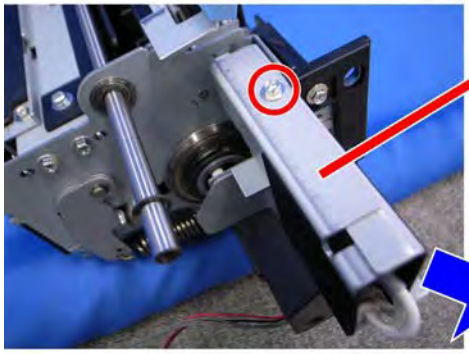




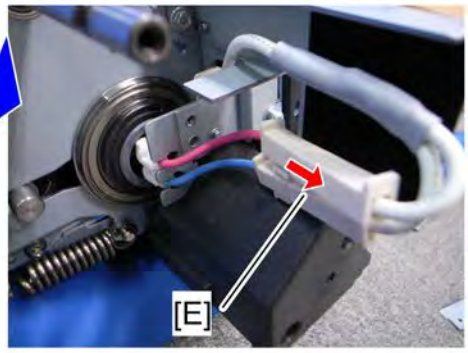
3. Rear fusing lamp holder [C] (x 1)



d062r518

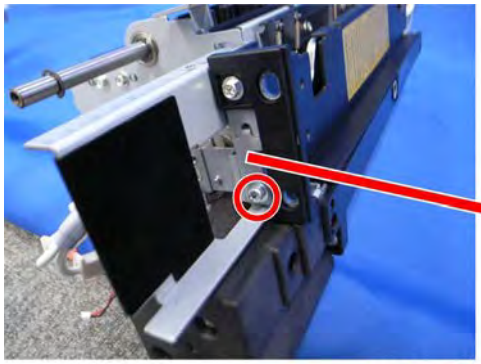


d062r517

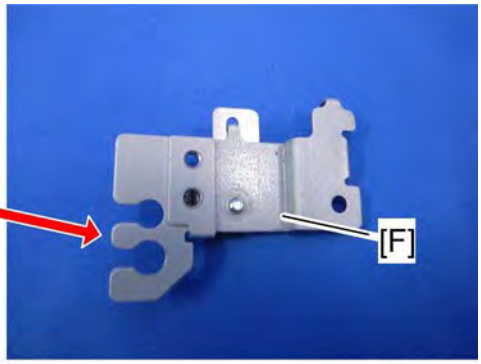


D062r519

4. Plate [D] (x 1)
5. Disconnect two harnesses [E]

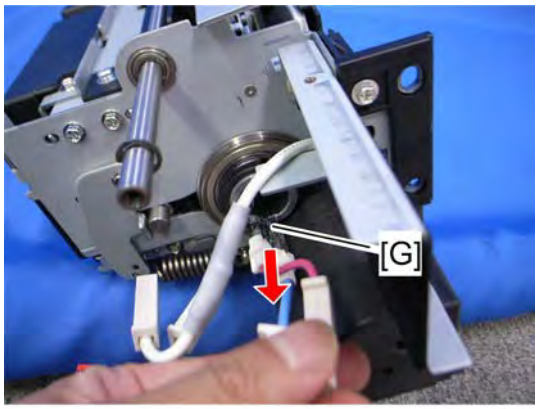


d062r520



d062r521

6. Front fusing holder [F] (x 1)



d062r522

7. Fusing lamps x 2 [G]

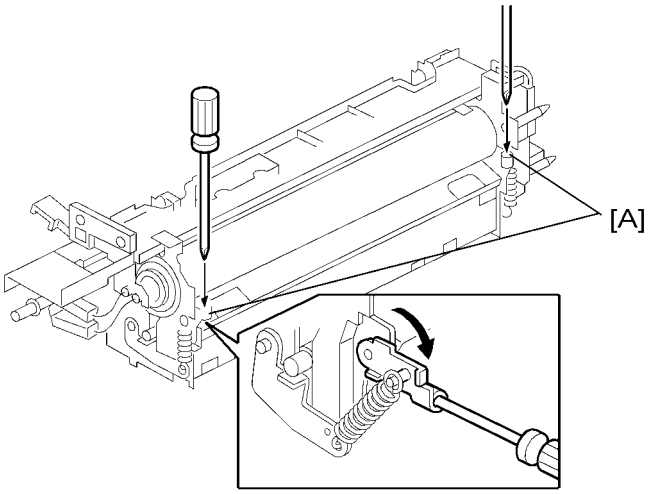
Note

- Be careful when you move the fusing lamps. Do not break them. Do not touch them with bare hands.

Hot Roller and Pressure Roller

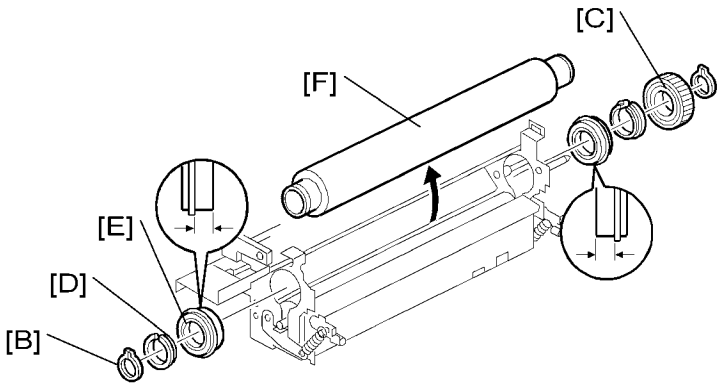
Use this procedure when you want to remove both rollers.

1. Remove the web unit ☛ p.4-72



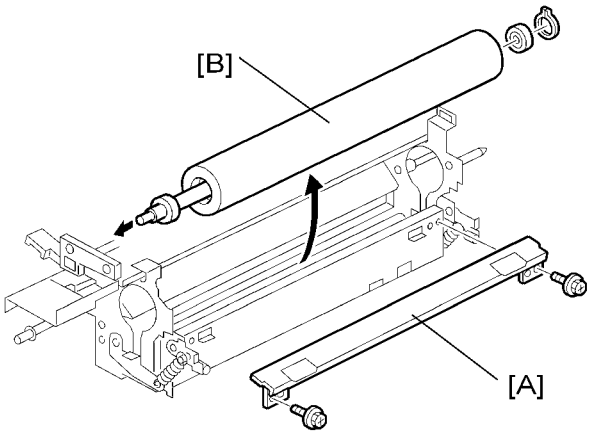
B246R1008

2. Pressure arm [A]
   - Insert the tips of two screwdrivers and press down to release.



B246R1009

3. C-clamps (both ends) [B]
4. Drive gear [C]
5. Bushings (both ends) [D]
6. Bearings [E]
7. Hot roller [F]

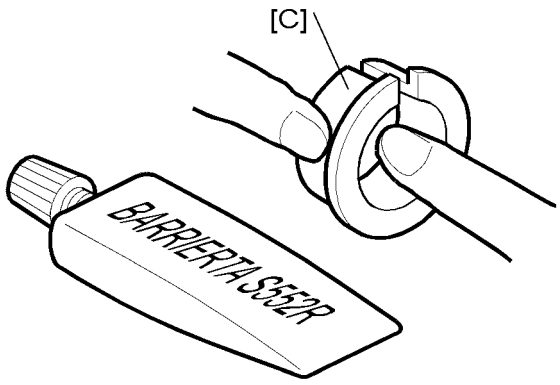


B246R1010

8. Entrance guide plate [A] (x 2)
9. Pressure roller [B] (x 2)

Note

- The pressure roller and pressure roller bearing should always be replaced together.



B246R1011

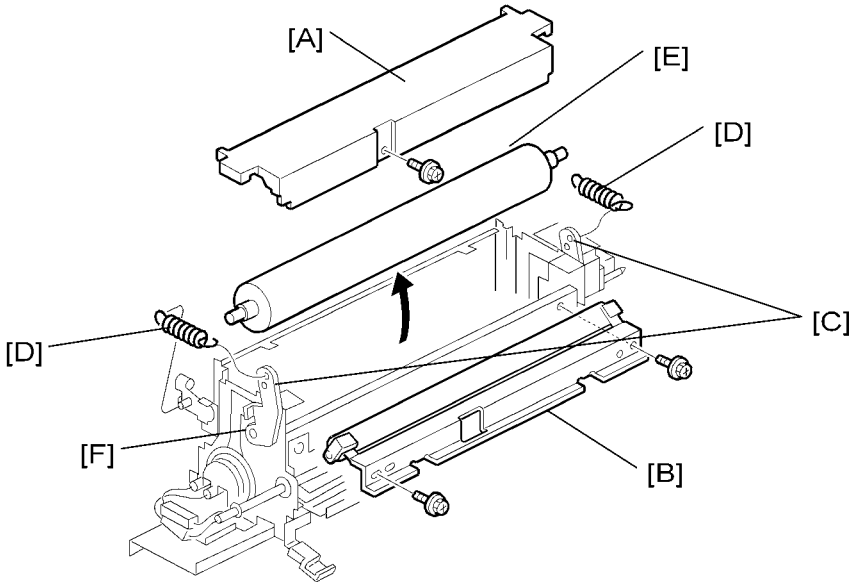
10. Lubricate the inner and outer surfaces [C] of the bushings with Barrierta S552R grease.

Note

- If the bushings are warm, allow them to cool before applying the Barrierta grease. Applying the grease while the bushings are hot could generate gas.

4.9.7 PRESSURE ROLLER

Use this procedure if you need to remove only the pressure roller.



B246R1014

Remove:

- Fusing unit ☛ p.4-70

1. Turn the fusing unit upside down.
2. Lower cover [A] (x 1)
3. Pressure roller cleaning unit [B] (x 2)
4. Release the pressure arms [C]
5. Use screw driver to lower the pressure arms on both ends of the pressure roller.
6. Pressure roller springs [D]
7. Pressure roller [E]

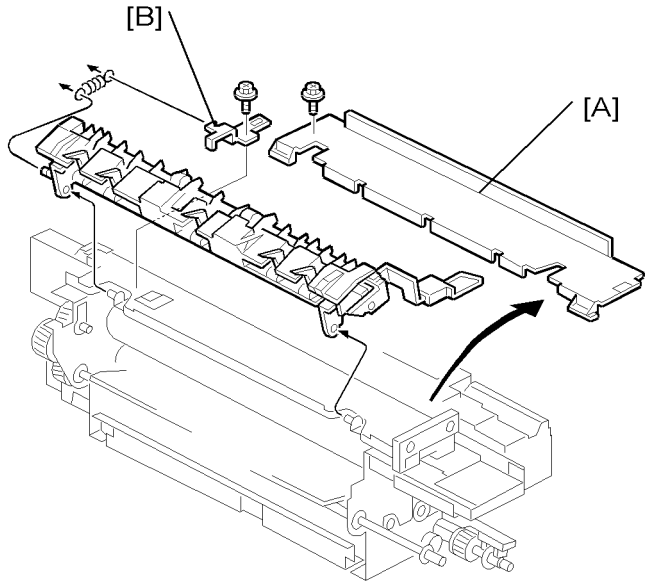
Important

- The fusing lamps are fragile. Work carefully to avoid breaking them.
- During assembly, handle the roller carefully to avoid scratching it on the bracket.
- Make sure the tabs and grooves of the lower cover are engaged correctly before tightening the screw.

Spring Adjustment

- Two holes [F] are provided on each pressure arm for the springs.
- Normally the springs should be attached to the lower holes.
- Attaching the springs to the upper holes exerts less pressure on the hot roller. Attach the springs to the upper holes only for especially thin paper.

4.9.8 STRIPPER PAWLS

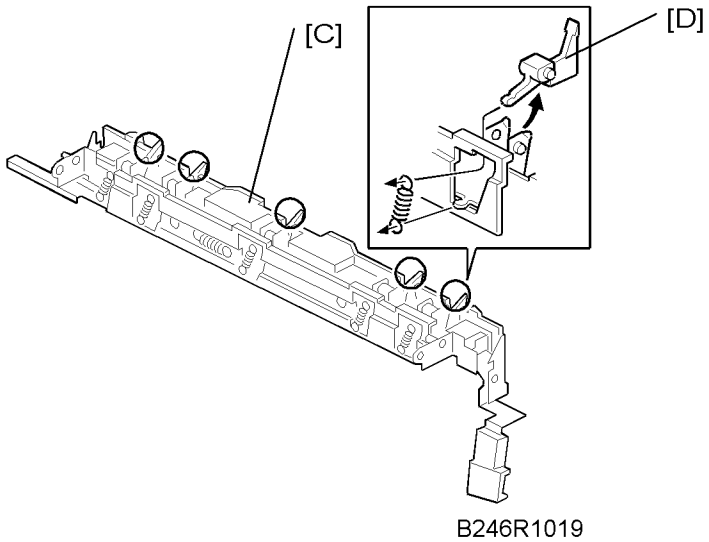


B246R1017

Remove:

- Fusing unit ☛ p.4-70

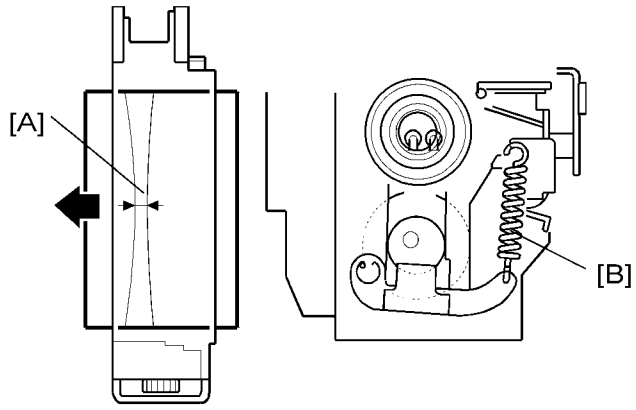
1. Top cover [A]
2. Bracket [B] (x 1, spring x 1)



B246R1019

3. Inner cover [C] (x 2)
4. Stripper pawl [D] (x 1)

4.9.9 NIP BAND WIDTH ADJUSTMENT



B246R1030

1. After the machine is powered on with the main switch, make an A4/LT LEF copy, then stop the machine while the paper is still in the fusing unit by switching it off.

Note

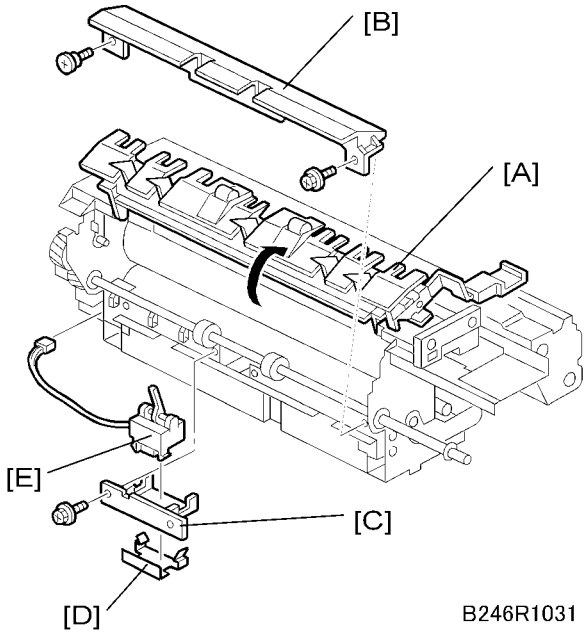
- This is easier with an OHP sheet. Use an OHP sheet if you have one available.

2. Open the front door, then turn the fusing knob to feed out the copy.
3. Measure the width of the band on the part of the image where it is particularly black. The band, called the nip band [A], should be 9.0 ± 0.7 mm at the center.

Note

- When the fusing is incorrect (wrinkles, offset, curl), measure the nip band width.
- The nip band width can be adjusted by changing the position of the springs [B] on either end of the pressure roller.
- The fusing temperature can also be adjusted with SP1105 (Fusing Temperature Adjustment) for Normal, OHP, and Thick Paper.

4.9.10 FUSING UNIT EXIT SENSOR

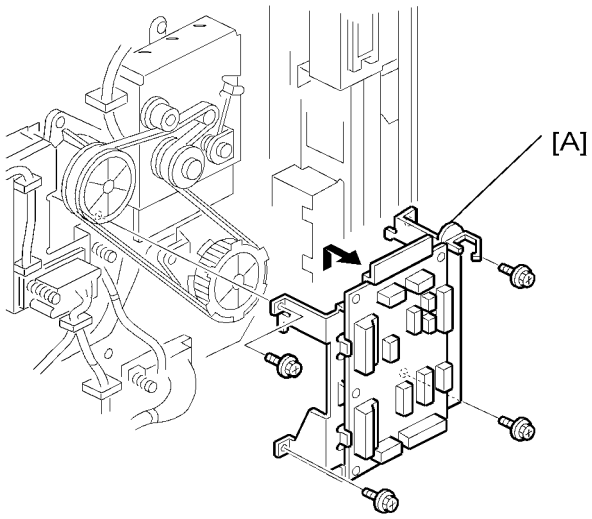


Remove:

- Fusing unit ☛ p.4-70

1. Open the hot roller stripper pawl unit [A]
2. Exit guide plate [B] (x 2)
3. Fusing exit sensor holder [C] (x 2)
4. Plate spring [D]
5. Fusing exit sensor [E] (x 1, x 3)

4.9.11 FUSING/EXIT MOTOR

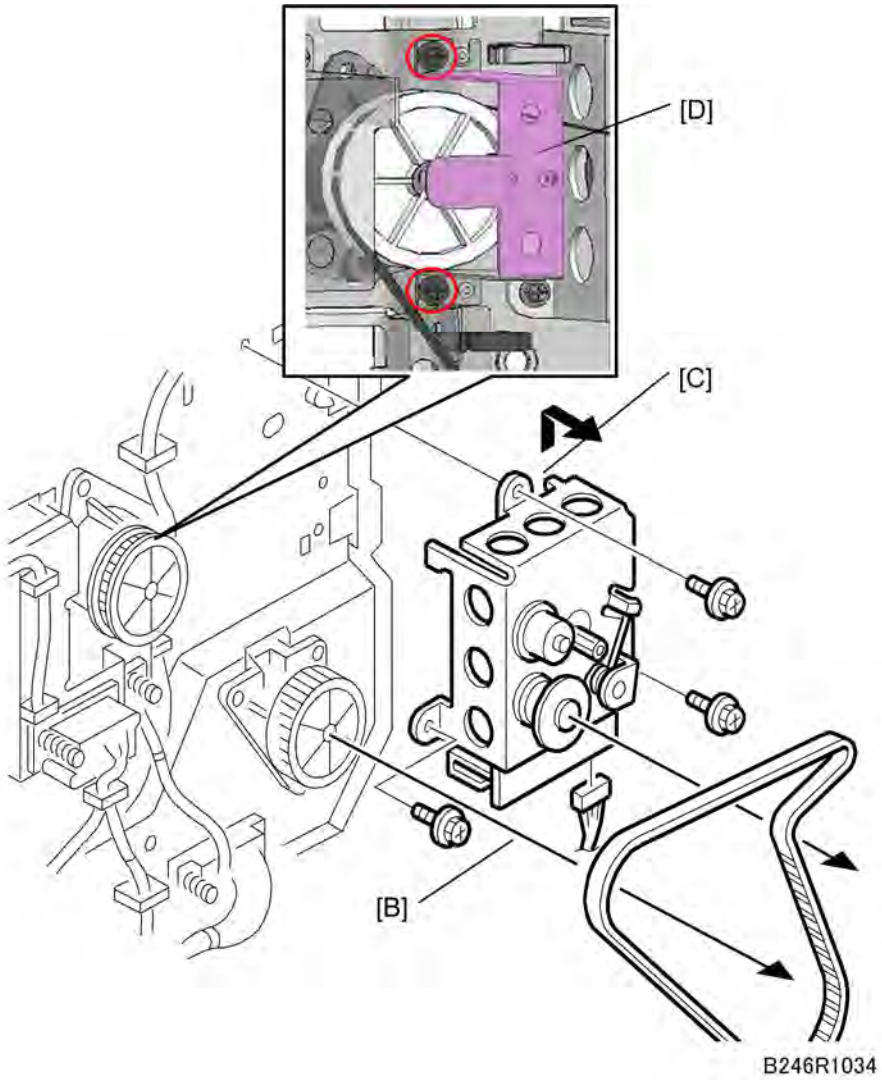


B246R1032

Remove:

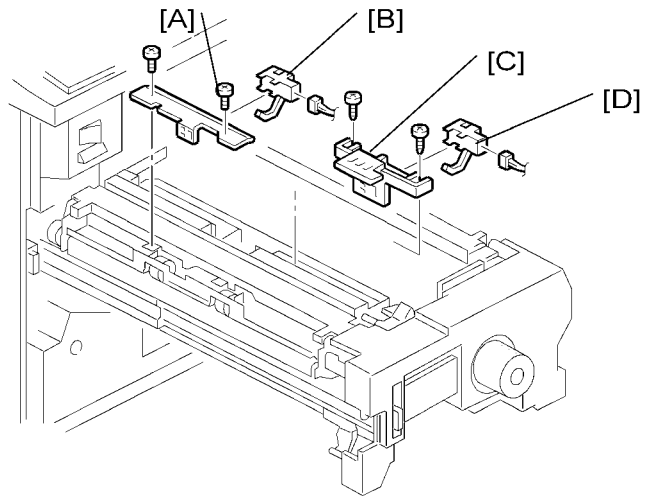
- Rear upper cover ☛ p.4-11

1. Open the BCU (x 4)
2. CNB bracket [A] (x 4, x1, x all)



3. Timing belt [B]
4. Fusing/exit motor bracket [C] (x 3)
5. Ground plate [D] (x 2)
6. Fusing/exit motor (x 2) inside the bracket (not shown)

4.9.12 FUSING EXIT SENSOR AND EXIT UNIT ENTRANCE SENSORS

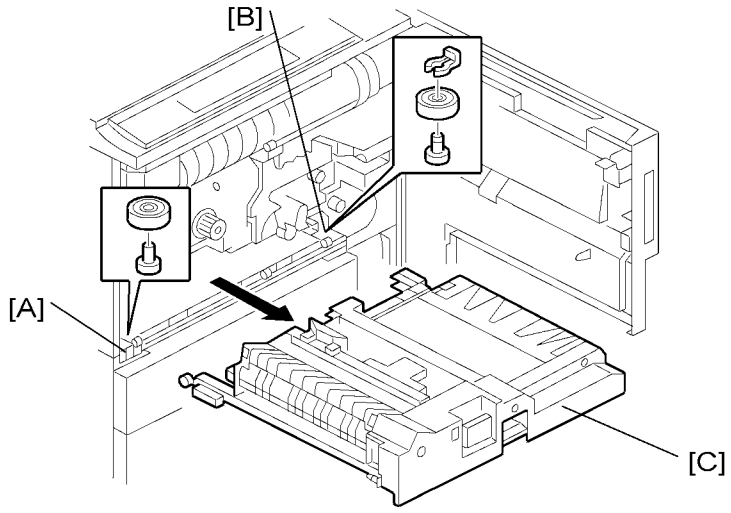


B246R1035

1. Open the front door and pull out the exit/inverter unit.
2. Fusing exit sensor bracket [A] (x 2)
3. Fusing exit sensor [B] (x 1)
4. Exit unit entrance sensor bracket [C] (x 2)
5. Exit unit entrance sensor [D] (x 1)

4.10 DUPLEX UNIT

4.10.1 DUPLEX UNIT REMOVAL



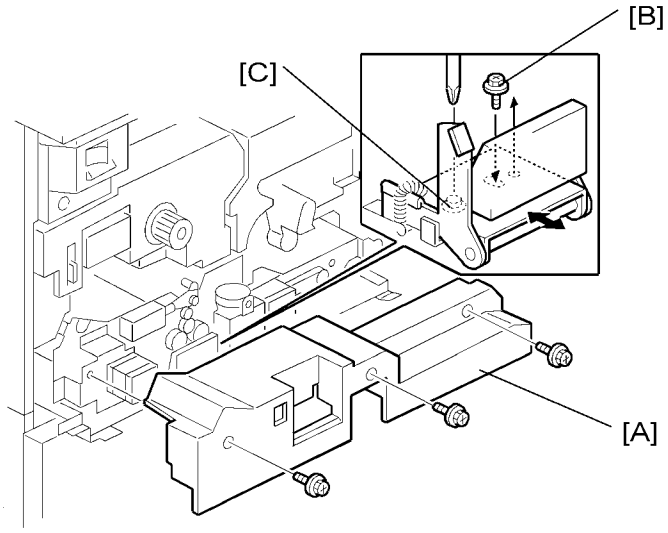
B246R1036

1. Open the front door and pull out the duplex unit.
2. Remove the slide rail roller on the left [A] and on the right [B] (x 1).
3. Lift out the duplex unit [C].

Reinstallation

- To re-install the duplex unit, insert the duplex unit partially, only until it enters the black guide rail, then re-attach each slide rail roller.
- Next, push the duplex unit into the machine completely. This method prevents interference from the guide plate during installation.

4.10.2 DUPLEX UNIT SIDE-TO-SIDE ADJUSTMENT



B246R1037

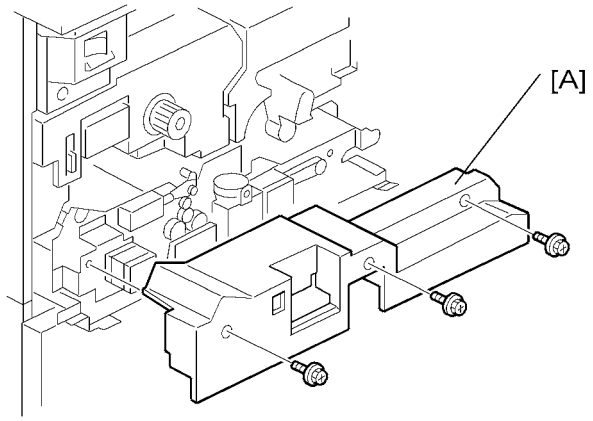
1. Remove the inner cover [A] (x 3)
2. Move the handle lock screw [B] from the right to the center.
3. Loosen the left lock screw [C], then adjust the position of the duplex unit.

4.10.3 JOGGER FENCE ADJUSTMENT

SP1008	Duplex Fence Adjustment
	Execute this SP to adjust the distance between the jogger fences, if required. A smaller value shortens the distance. If the fences are too far apart, skewing may occur in the duplex tray. If the fences are too close, the paper may be creased in the duplex unit. For details, see "Service Tables".

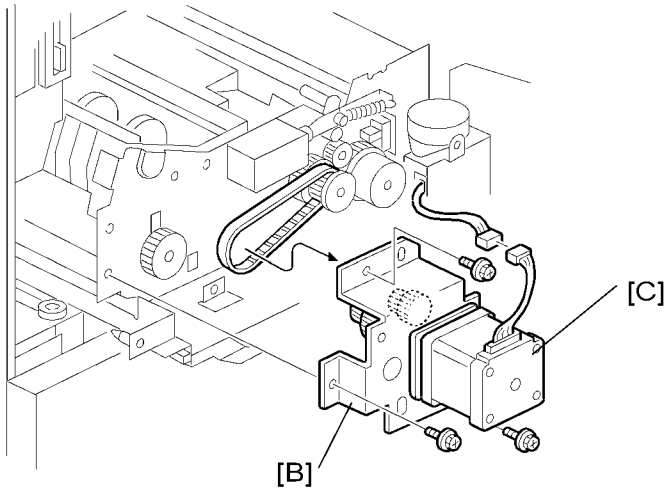
4.10.4 DUPLEX MOTORS

Duplex Inverter Motor



B246R1038

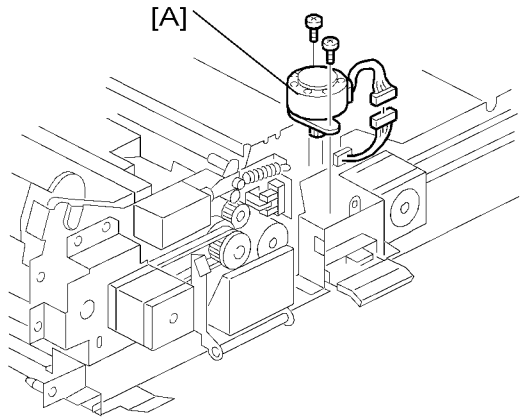
1. Remove the cover [A] (x 3)



B246R1039

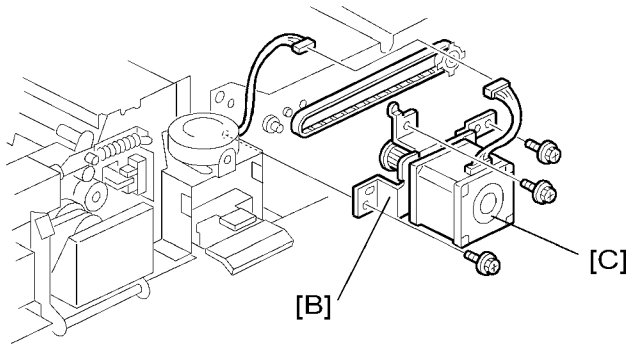
2. Inverter motor bracket [B] (x 3)
3. Inverter motor [C] (x 1, x 1, x 2, timing belt x 1)

Duplex Jogger and Transport Motors



B246R1040

1. Jogger motor [A] (x 1, x 2)

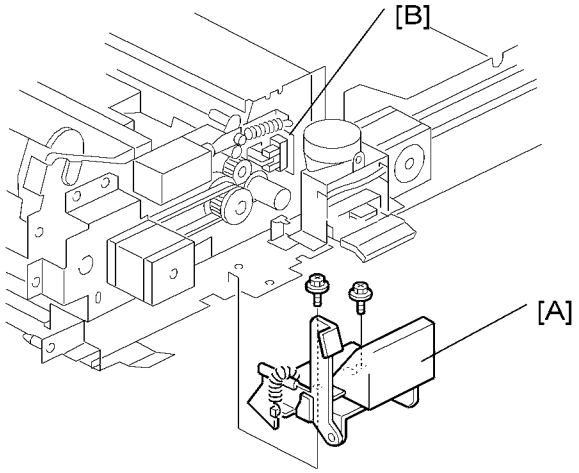


B246R1041

2. Transport motor bracket [B] (x 1, x 1, x 3, timing belt x 1)
3. Transport motor [C] (x 2)

4.10.5 DUPLEX SENSORS

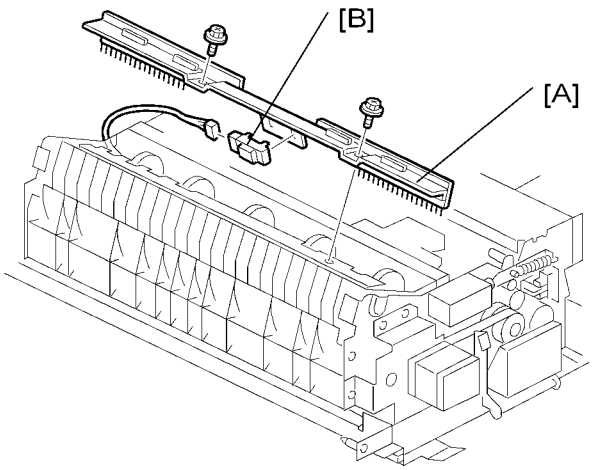
Jogger HP Sensor



G148R591

1. Duplex unit release lever [A] (x 2)
2. Jogger HP sensor [B] (x 1, x 2, x 1)

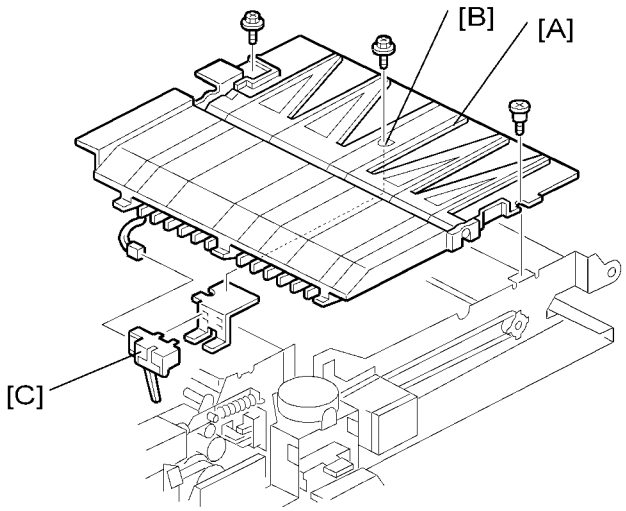
Duplex Entrance Sensor



B246R1043

1. Bracket [A] (x 2)
2. Duplex entrance sensor [B] (x 1)

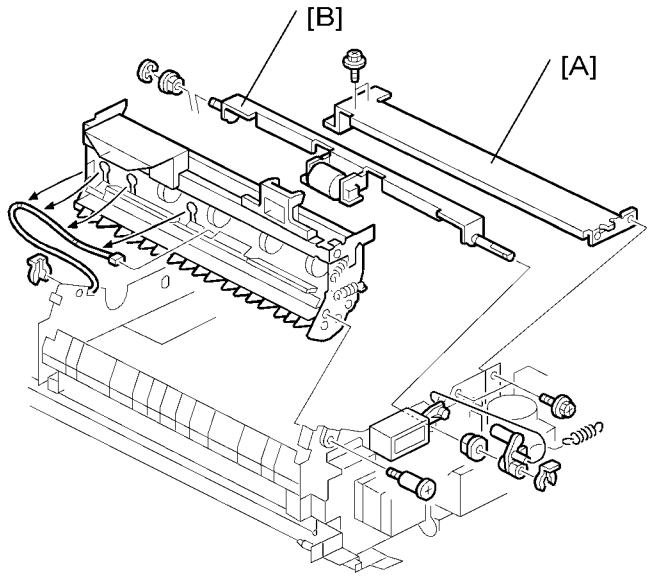
Duplex Transport Sensor 3



B246R1045

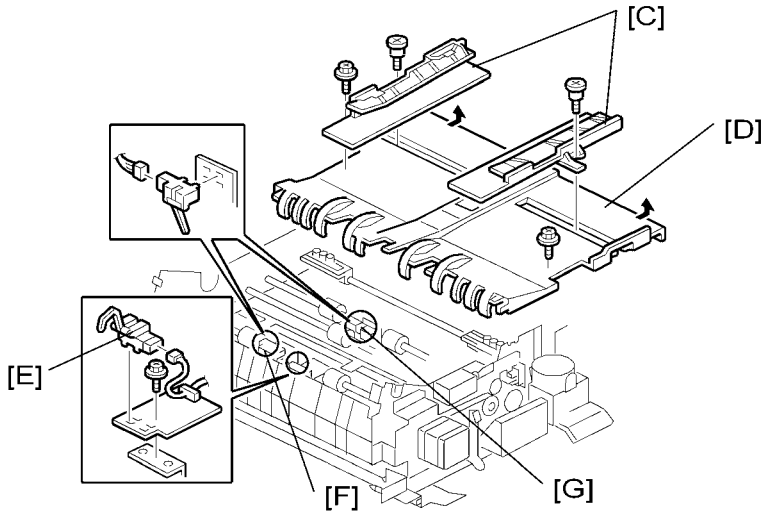
1. Right half of table [A] (x 2, x 1)
   - The front screw is a shoulder screw. Insert the screws in the correct holes when re-attaching.
2. Remove the screw [B] to release the sensor bracket below.
3. Transport sensor 3 [C] (x 1)

Inverter Exit Sensor, Transport Sensors 1 & 2



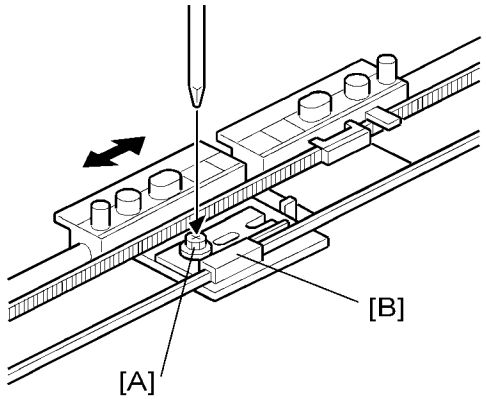
B246R1046

1. Cross-stay [A] (x 4)
2. Reverse trigger roller shaft [B]



3. Jogger fences [C] (x 1 each)
4. Left half of table [D] (x 2)
   - The front screw is a shoulder screw. Insert the screws in the correct holes when re-attaching.
   - To avoid breaking the tabs under the left edge of the table, pull the table to the right to disengage the tabs and then remove.
5. Inverter exit sensor [E] (x 1, x 1, x 1)
6. Transport sensor 1 [F] (x 1, x 1)
7. Transport sensor 2 [G] (x 1, x 1)

4.10.6 DUPLEX JOGGER BELT ADJUSTMENT



B246R1049

Remove:

- Cross stay ☛ p.4-94
- Reverse trigger roller shaft ☛ p.4-94
- Left half of the table
- Jogger motor bracket

Note

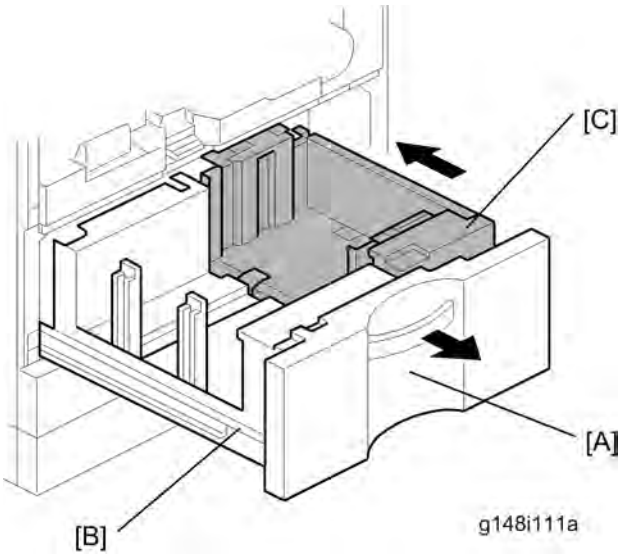
- Slip the one end of the belt around the gear below the jogger motor.
- Slip the other end of the belt around the gear at the other side of the duplex unit.

1. If you are replacing the belt, set both jogger fence brackets at the center of the belt and tighten the screw [A].
2. If you are adjusting the belt, loosen the screw and slide the plastic piece [B] on the belt to the left or right to adjust the position of the front fence, then tighten the screw.

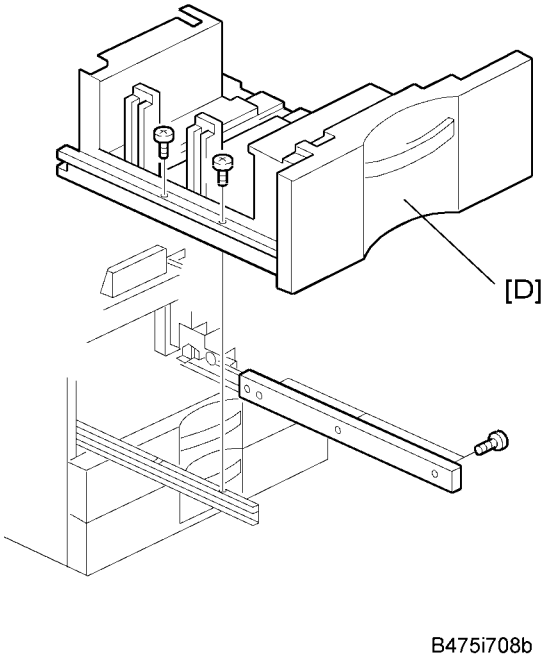
4.11 PAPER FEED

4.11.1 PAPER TRAY

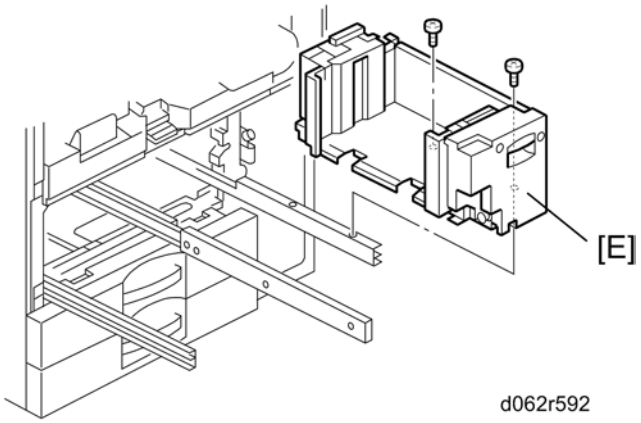
Tandem Tray



1. Open the front door.
2. Pull out the tandem tray drawer [A] completely to separate the left [B] and right [C] sides of the tandem tray.

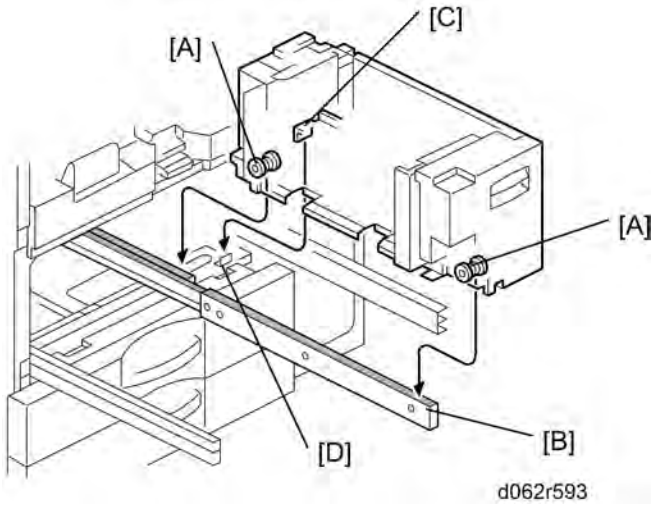


3. Remove the left tandem tray [D] (x 5).



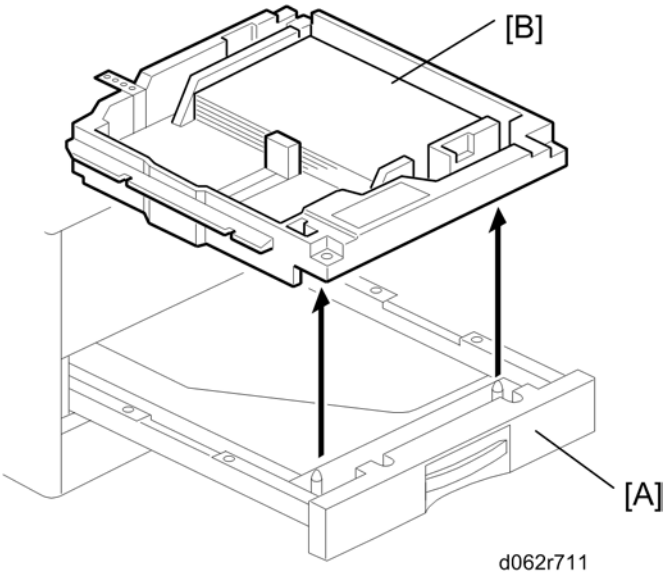
4. Right tandem tray [E] (x 2).

Reinstallation



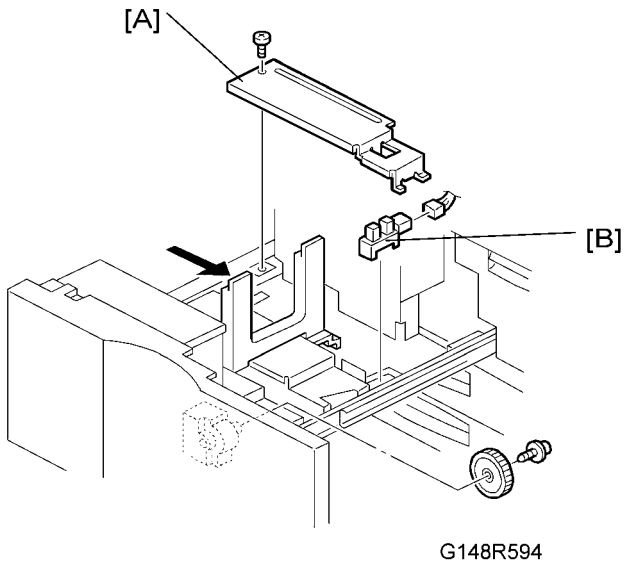
- When re-installing the right tandem tray, make sure that the wheels [A] ride on the slide rail [B].
- When re-installing the right tandem tray, make sure that the tandem tray stopper [C] is set behind the stopper [D] on the frame.

Universal Tray



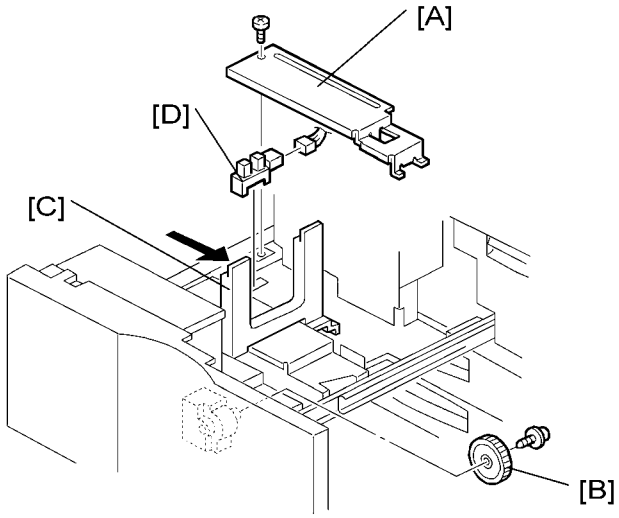
1. Pull tray 2 or tray 3 [A].
2. Lift the tray [B] out of the drawer.

4.11.2 REAR FENCE RETURN SENSOR REPLACEMENT



1. Turn off the machine.
2. Pull out the tandem feed tray.
3. Rear bottom plate [A] (x 1)
4. Return sensor [B] (x 1).

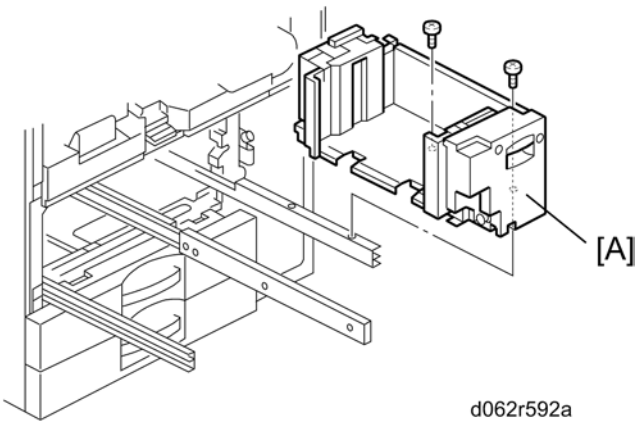
4.11.3 REAR FENCE HP SENSOR REPLACEMENT



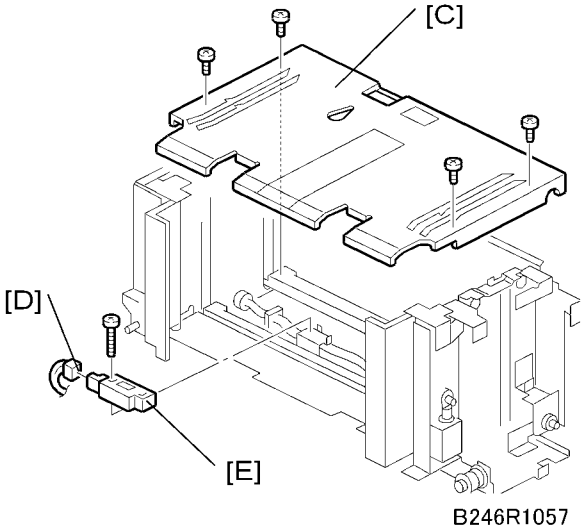
G148R595

1. Turn off the machine.
2. Pull out the tandem feed tray.
3. Rear bottom plate [A] (x 1).
4. Back fence transport gear [B] (x 1)
5. Move the back fence [C] to the right.
6. Rear HP sensor [D] (x 1)

4.11.4 TANDEM RIGHT TRAY PAPER SENSOR REPLACEMENT



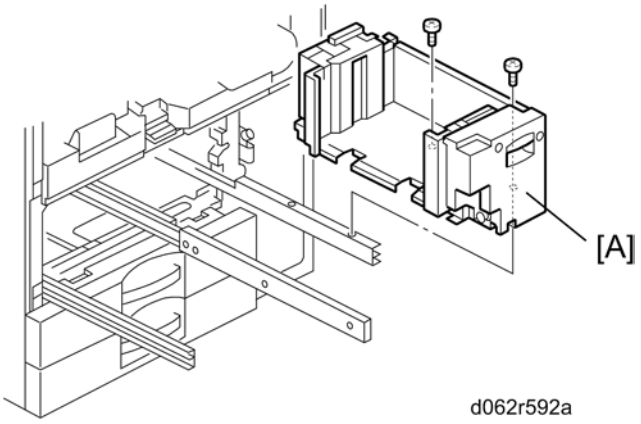
1. Turn off the machine.
2. Remove the right tandem tray ☛ p.4-97
3. Inner cover [A] (x 2)
4. Side fences [B] (x 1 each)



5. Bottom plate [C] (x 4)
6. Connector [D] (x 1)
7. Sensor [E] (x 1)

4.11.5 BOTTOM PLATE LIFT WIRE REPLACEMENT

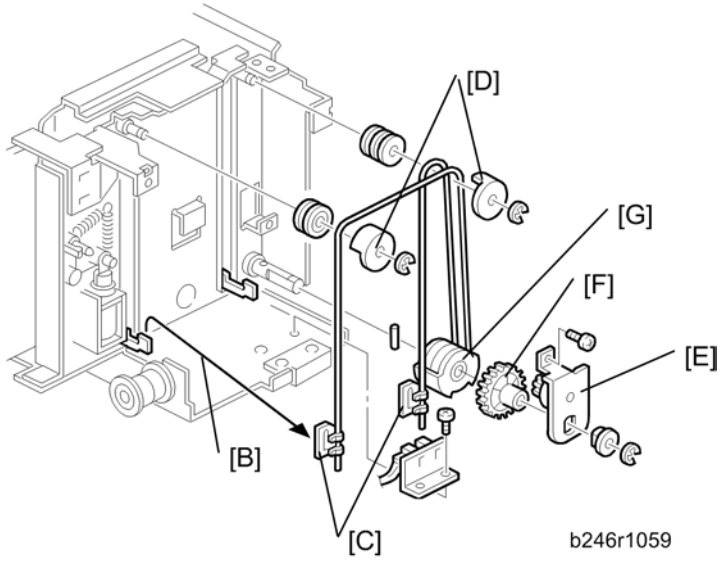
Before replacing the rear bottom plate lift wire, remove the front bottom plate lift wire. The shaft must be removed to replace the lift wire of the bottom plate.



Remove:

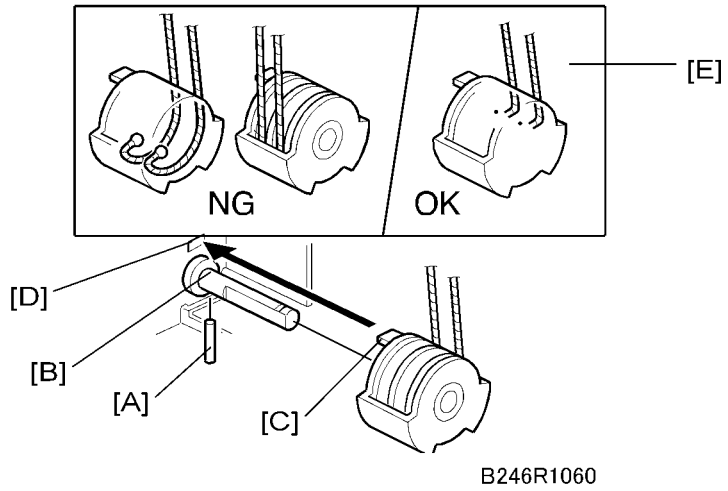
- Right tandem tray ☛ p.4-97

1. Remove the inner cover [A] (x 2)



2. Remove the left stay [B].
3. Wire stoppers [C]
   - Slightly lift the front bottom plate and unhook.
4. Wire covers [D] (x 1 each)
5. Bracket [E] (x 1, x 1, bushing x 1)
6. Gear [F]
7. Bottom plate lift wire [G]

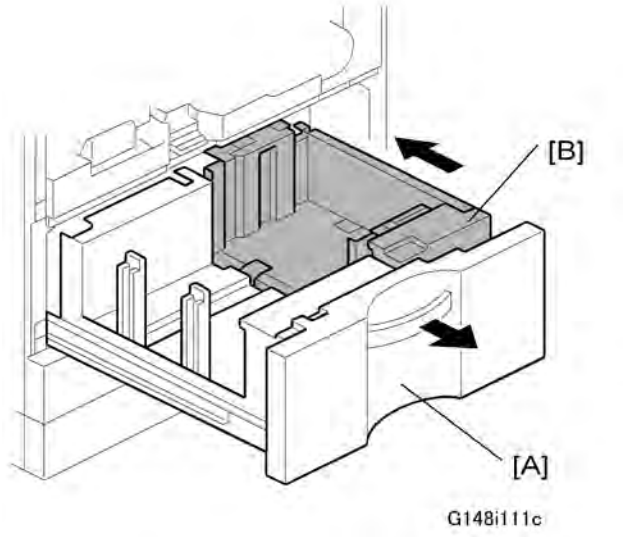
Reinstallation



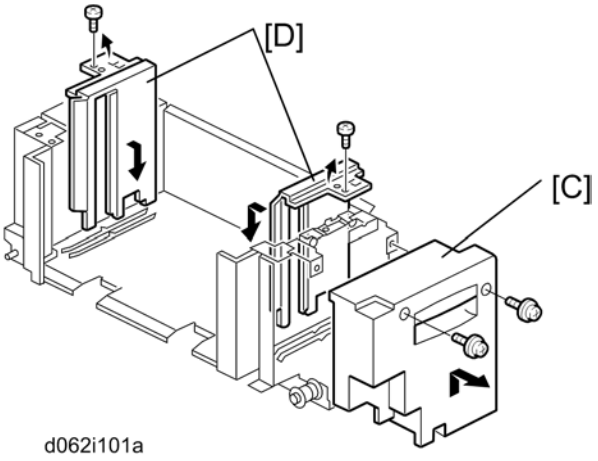
1. Set the positioning pin [A] in the hole [B], and set the projection [C] in the hole [D].
2. Position the wire as shown [E].
3. Do not cross the wires.

4.11.6 TANDEM TRAY PAPER SIZE CHANGE

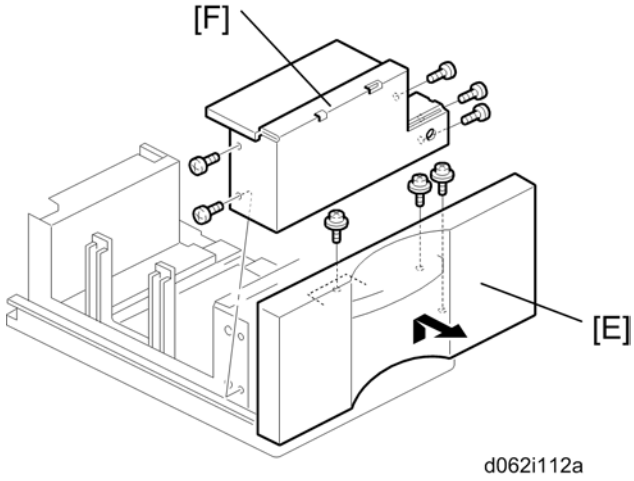
At the factory, this tray is set up for A4 or LT LEF. Only A4 or LT LEF paper can be used for tandem feed.



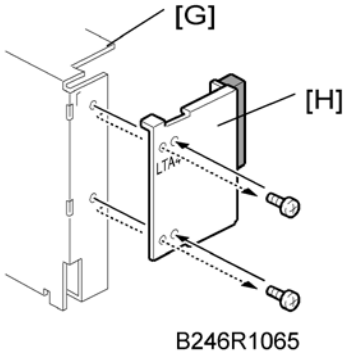
1. Open the front cover.
2. Completely pull out the tandem feed tray [A] to separate the right tandem tray [B] from the left tandem tray.



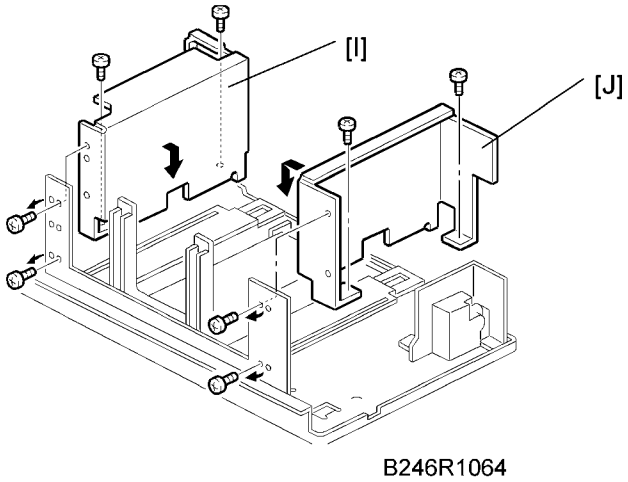
3. Remove the right tandem inner cover [C] (x 2).
4. Re-position the side fences [D] (x 1 each).
   - A4: Outer slot position
   - LT: Inner slot position
5. Re-install the right tandem inner cover.



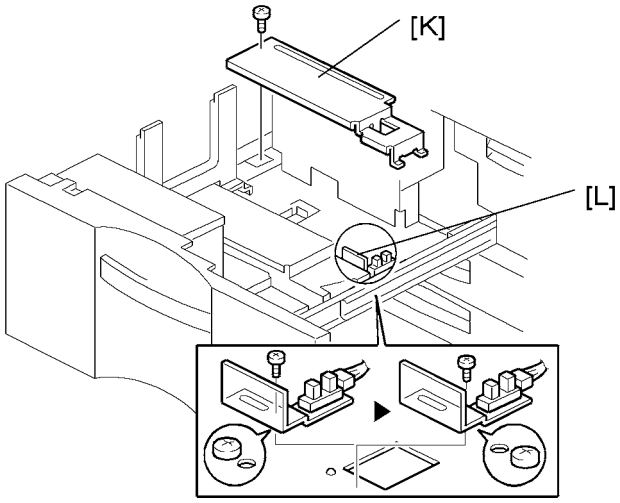
6. Remove the tray cover [E] (x 3).
7. Remove the DC motor cover [F] (x 5).



8. Remove the rear side fence [G] (x 4) and re-position the rear cover [H] (x 2).



9. Re-position the side fences [I] [J] (x 4).
   - A4: Outer slot position
   - LT: Inner slot position
10. Re-install the DC motor cover and the tray cover.



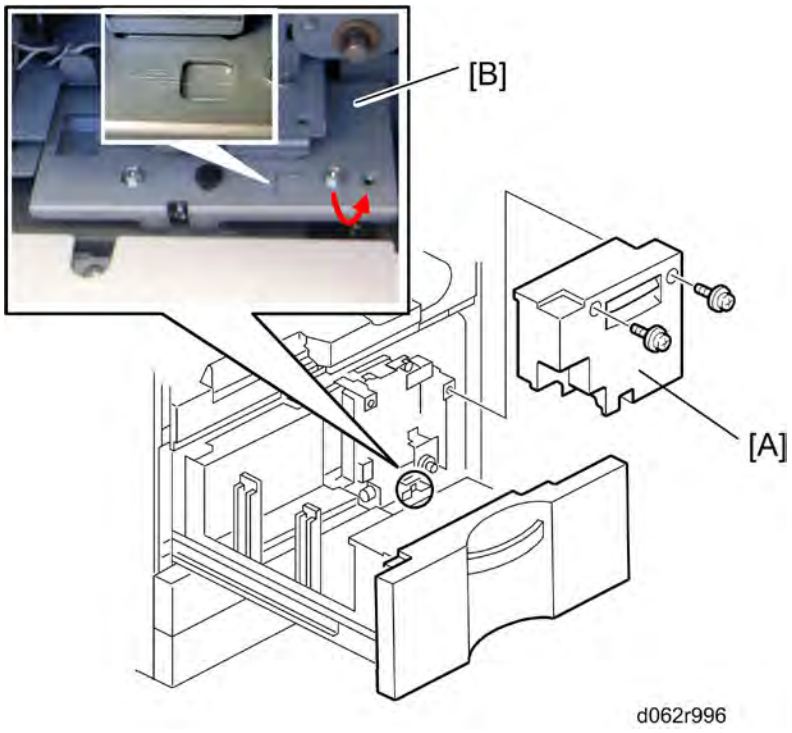
G148i113c

11. Remove the rear bottom plate [K] (x 1).
12. Re-position the return position sensor bracket [L] (x 1).
    To use the paper tray for A4 size, set the screw in the left hole as shown. (For LT size, the screw should be placed on the right.)
13. Reinstall the rear bottom plate.
14. Input the new paper size into SP5959-001 (Paper Size – Tray 1).
15. Do the printer adjustments. See "Print Image Adjustment" at the end of this section.

4.11.7 TANDEM TRAY SIDE REGISTRATION

Normally the side registration of the image can be adjusted in the SP mode.

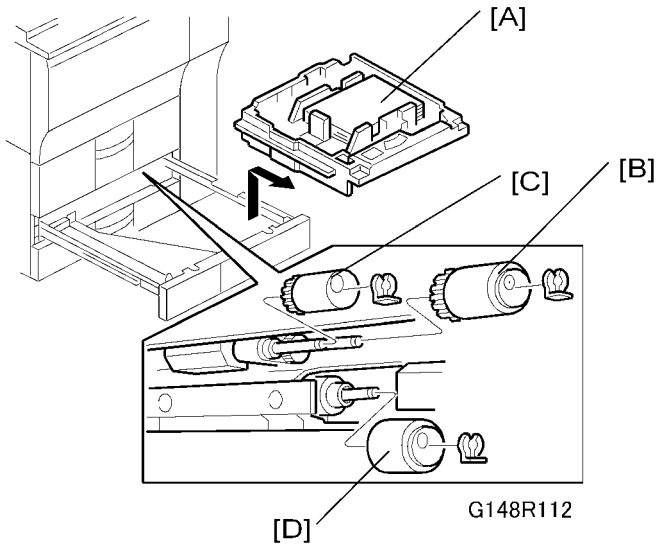
If the punch hole positions are not aligned from a particular feed station, however, you can manually adjust the side registration by changing the tray cover position for that tray, and then adjust the side registration of the image ☛ p.4-155



1. Pull out the tray and remove the right inner cover [A] (x 2).
2. Loosen the screws and adjust the position of the plate [B].
   - Adjustment range: 0 ± 2.0 mm adjustment step: 1.0 mm/step

4.11.8 PICK-UP, FEED, SEPARATION ROLLER REPLACEMENT

1. Remove the tandem tray or universal tray ☛ p.4-97

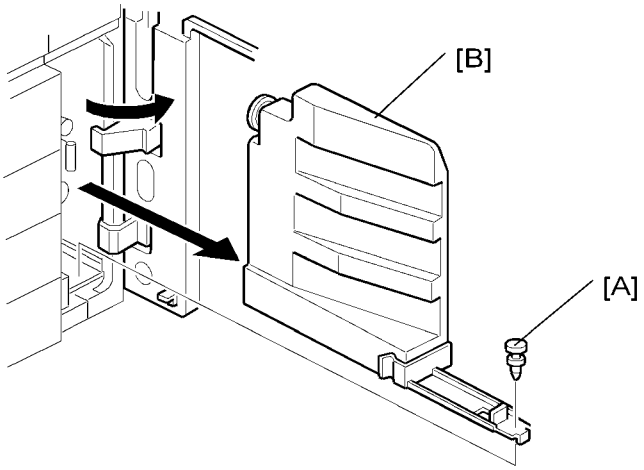


2. Feed roller [B] (x 1)
3. Pick-up roller [C] (x 1)
4. Separation roller [D] (x 1)

Note

- The operation of the FRR mechanisms for the tandem tray (Tray 1) and universal trays (Tray 2, Tray 3), are similar. These rollers are interchangeable.
- Do not touch the surface of new rollers during replacement.

4.11.9 FEED UNIT

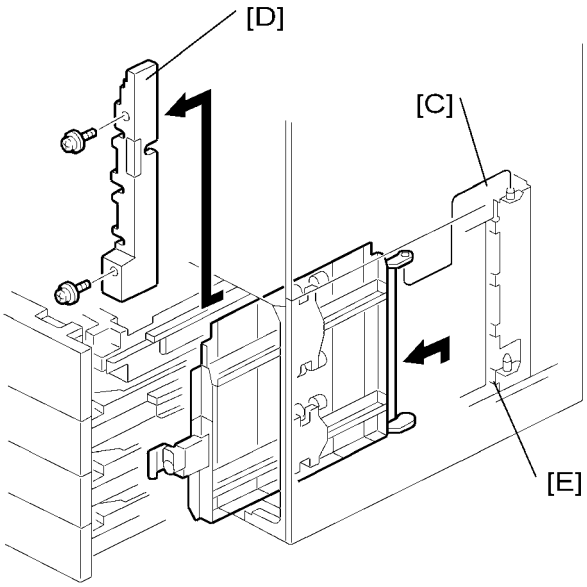


B246R1069

Remove:

- Front door ☛ p.4-9
- LCT entrance guide cover and right lower cover ☛ p.4-115
- If the LCT is connected, disconnect it and pull it away from the machine.
- Pull out all three trays (do not remove).

1. Nylon peg [A]
2. Toner collection bottle [B]

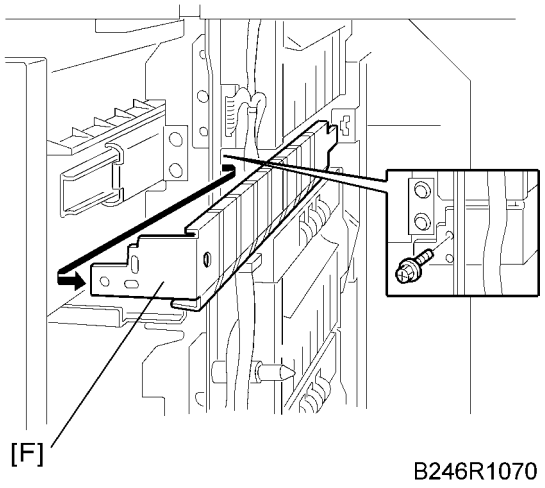


B246R1068

3. Vertical transport guide [C]
4. Inner cover [D] (x 2)

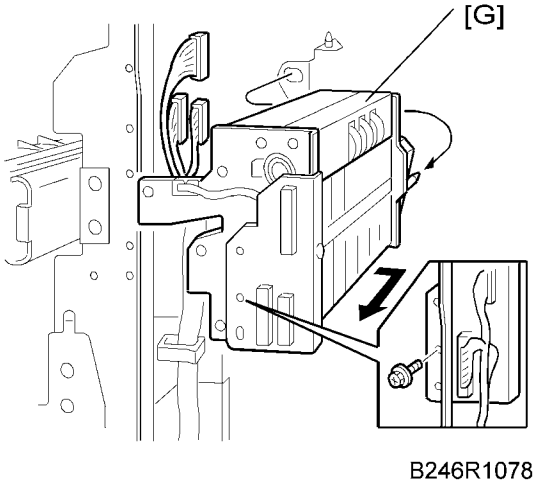
Reinstallation

- When re-installing the vertical transport guide, remove the lower right cover then insert from [E].



B246R1070

5. Guide plate [F] (x 1) (1st feed unit only)



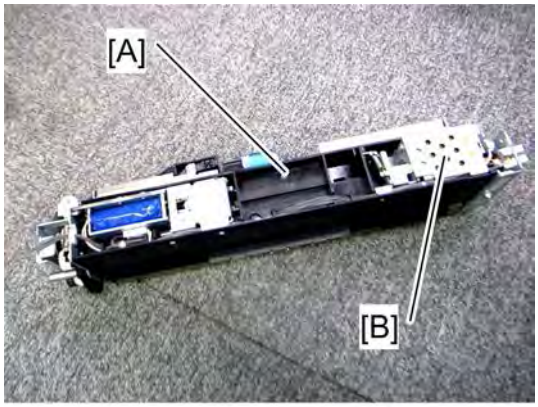
B246R1078

6. Feed unit [G] (x 1, x 3 for D131 or x 2 for 132/D133)
   - Insert your hand from the right and pull the feed unit forward.
   - To avoid hitting the unit on the sides of the machine, remove it carefully and slowly.

4.11.10 PAPER FEED MOTORS

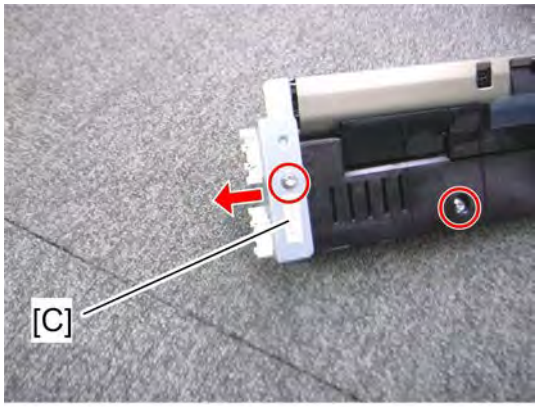
D131 has the paper feed motor in each feed unit. However, D132/D133 have the feed motors at the rear of the machine.

For D131



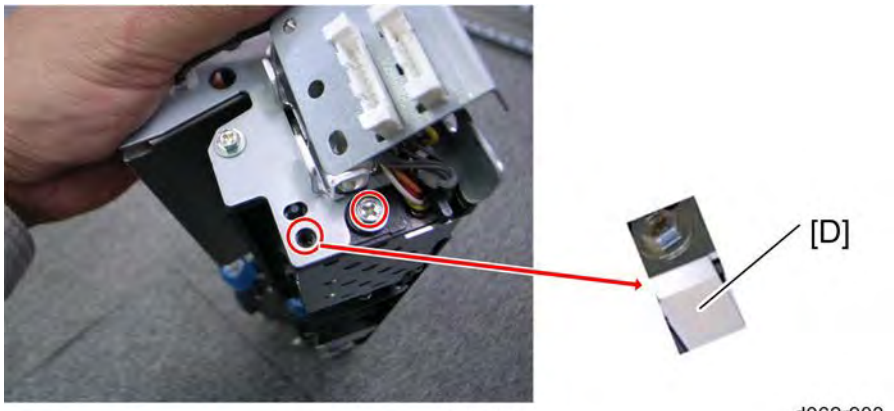
d062r900

1. Feed unit [A] ☛ p.4-109
   - Paper feed motor [B]



d062r901

2. Remove two screws and the connector bracket [C]. When removing bracket [C], no connectors need to be disconnected.



d062r902 d062r903

3. Remove two screws and the bracket [D].

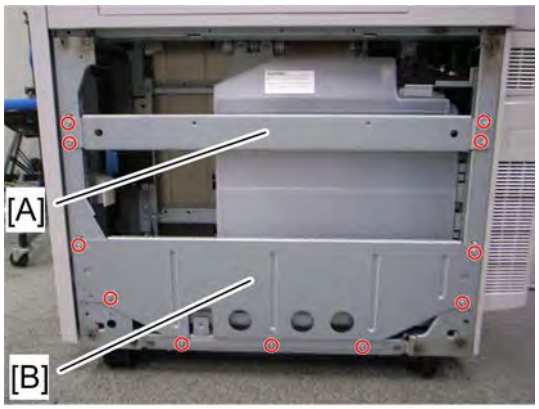


d062r904

4. Remove two screws and a spring, and then remove the paper feed motor [E] (x 1).

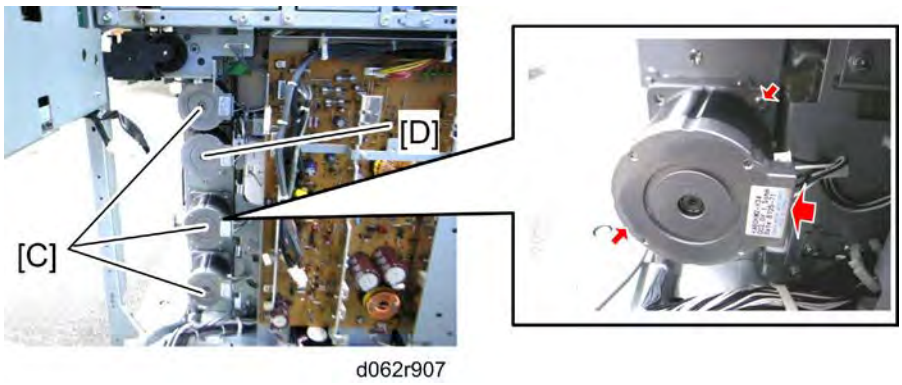
For D132/D133

1. Right lower cover ☛ p.4-9
2. Feed unit ☛ p.4-109
   - Remove the feed unit corresponding to the motor which will be removed.



d062r906

3. Remove the right stay [A] (x 4) and bracket [B] (x 7).
4. Open the controller box ☛ p.4-131
5. PFB bracket ☛ p.4-133



d062r907

6. Paper feed motors [C] (x 2 each, x 1).
7. Lower relay motor [D] (x 2, x 1).

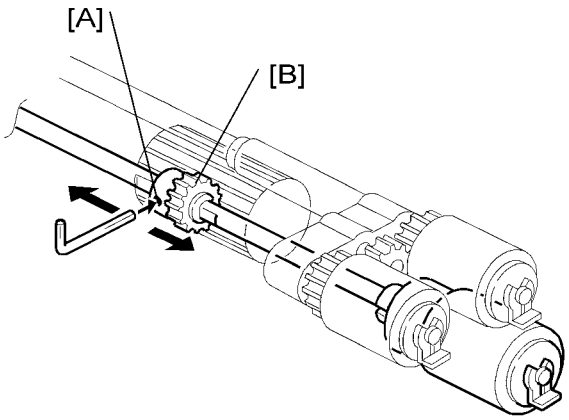
Note

- The positions of the two screws which fasten the paper feed motor are different for each motor.
- Paper feed motor 1: Left upper and right lower.
- Paper feed motor 2 and 3: Right upper and left lower.

4.11.11 SEPARATION ROLLER PRESSURE ADJUSTMENT

The position of the drive gear for the separation roller can be changed in order to change the amount of pressure exerted by the separation roller. This adjustment can be done:

- When feeding special paper, especially thick paper
- When the customer is experiencing feed problems



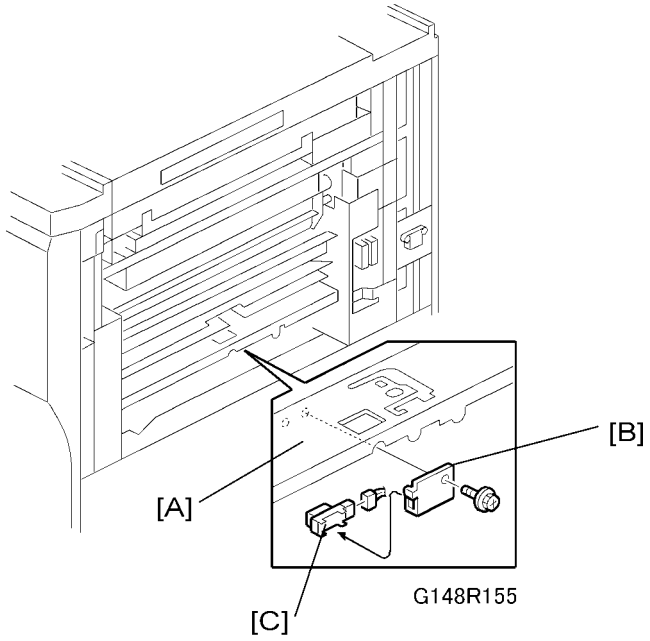
B246R1079

Remove:

- Feed unit ☛ p.4-109

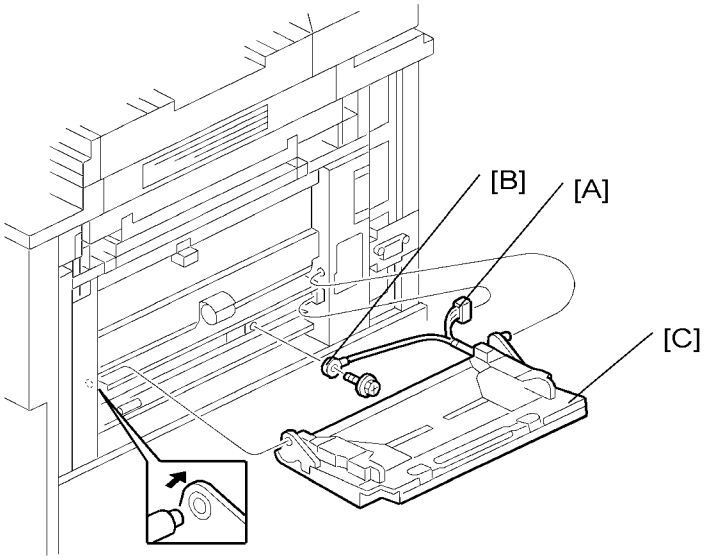
1. Loosen the hex screw [A].
2. The separation roller gear [B] is positioned at the groove before shipping.
3. Do one of the following:
    - To adjust for thick paper, move the separation roller gear [B] to the left to decrease the pressure.
    - To correct misfeeds, move the separation roller gear to the right to increase the pressure.

4.11.12 RELAY SENSOR



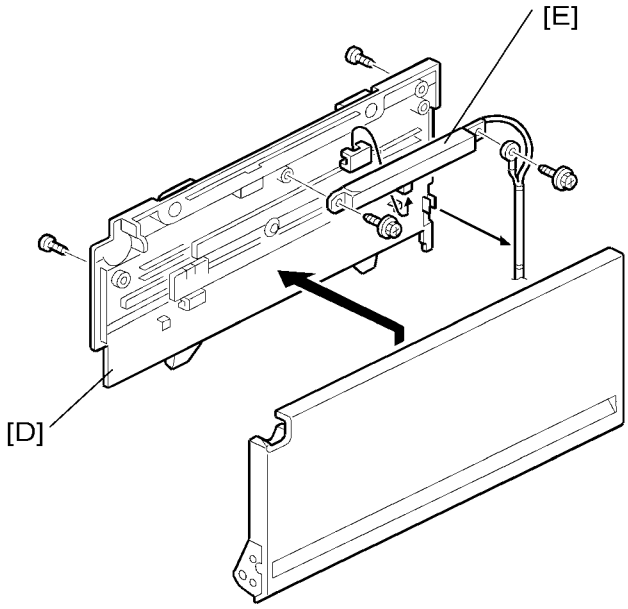
1. Remove the LCT entrance guide cover [A].
2. Relay sensor bracket [B] (x 1)
3. Relay sensor [C] (x 1)

4.11.13 BY-PASS PAPER SIZE DETECTION BOARD



B246R1091

1. Registration inner cover (x 2)
   - Not shown. This cover is directly below the by-pass tray.
2. Connector [A] (x 1)
3. Ground wire [B] (x 1)
4. By-pass tray [C]
   - Disconnect the by-pass tray from the pins on both sides.



B246R1090

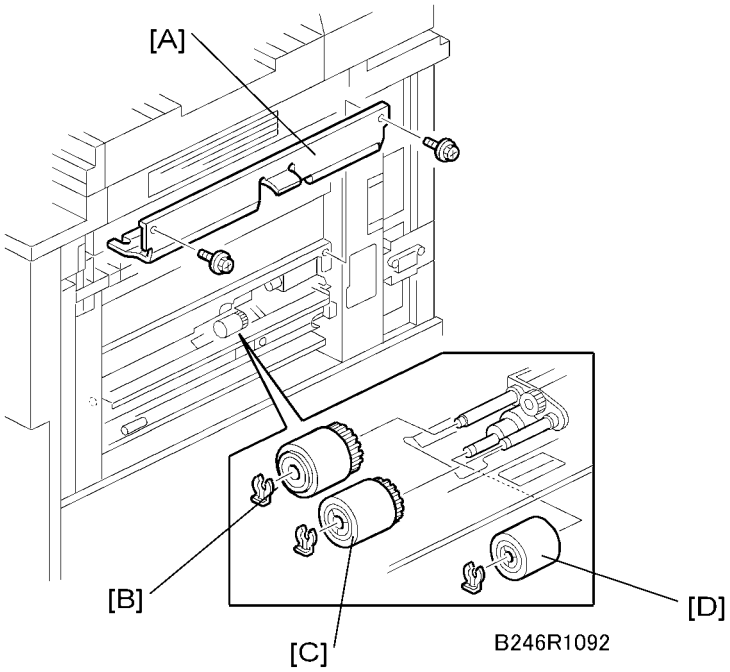
5. By-pass table [D] (x 2)
6. By-pass paper size detection board [E] (x 2)

Reinstallation

After installation, execute SP1904 to calibrate the maximum and minimum paper sizes for the side fences:

- SP1904-001 By-pass Tray Paper Size Detection – Minimum Size: Move the side fences to the minimum size, then execute this SP.
- SP1904-002 By-pass Tray Paper Size Detection – Maximum Size: Move the side fences to the maximum size, then execute this SP.

4.11.14 BY-PASS TRAY ROLLERS

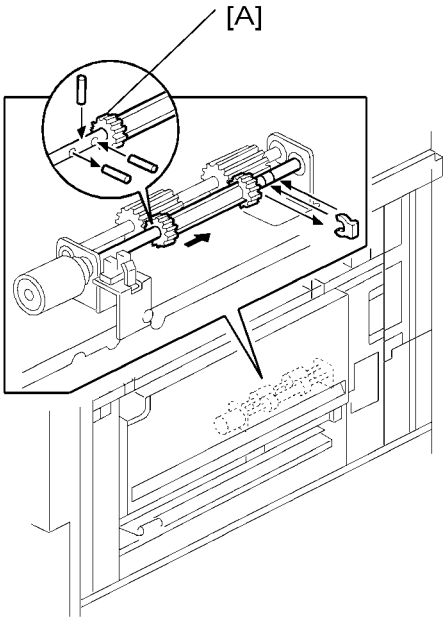


1. Right covers ☛ p.4-9
2. By-pass tray ☛ p.4-116
3. By-pass cover [A] (x 2)
4. Feed roller [B] (x 1)
5. Pick-up roller [C] (x 1)
6. Separation roller [D] (x 1)

Note

- Even though the FRR mechanisms for the tandem tray (Tray 1), universal trays (Tray 2, Tray 3) by-pass tray and ADF are similar, the only rollers that are interchangeable are the tandem and universal trays (Trays 1, 2, 3).
- Do not touch the surface of new rollers during replacement.

4.11.15 BY-PASS SEPARATION ROLLER PRESSURE ADJUSTMENT



B246R1093

1. Loosen the separation roller gear [A].

   The position of the drive gear for the separation roller can be changed in order to change the amount of pressure exerted by the separation roller. This adjustment can be done:

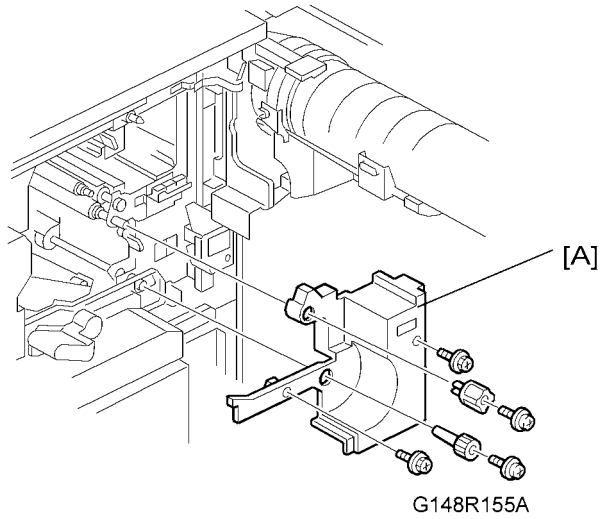
   - When feeding special paper, especially thick paper
   - When the customer experiences feed problems

   Note

   - The separation roller gear is positioned at the groove before shipping.

2. Move the separation roller gear right to increase the pressure to correct misfeeds.

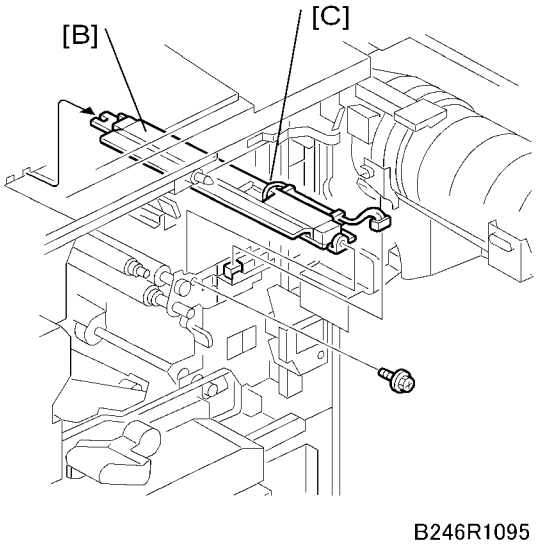
4.11.16 REGISTRATION SENSOR



1. Inner cover [A] (x 4)

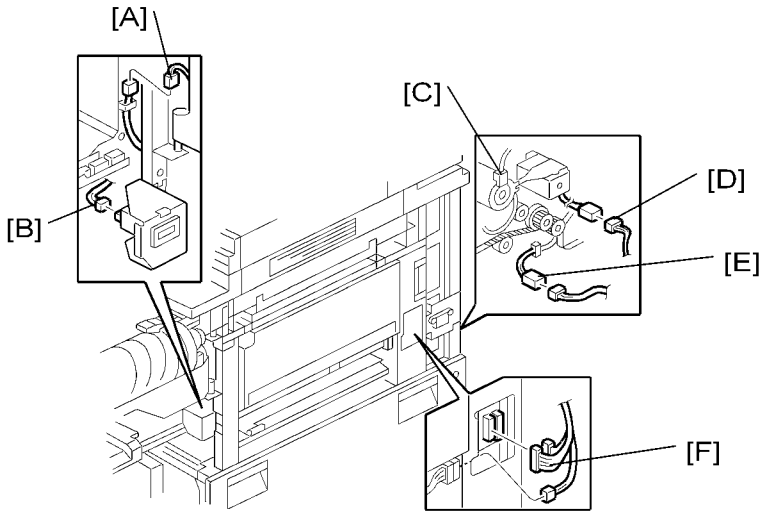
   Remove:

   - Development unit ☛ p.4-34
   - Charge corona unit ☛ p.4-38
   - OPC drum unit ☛ p.4-40



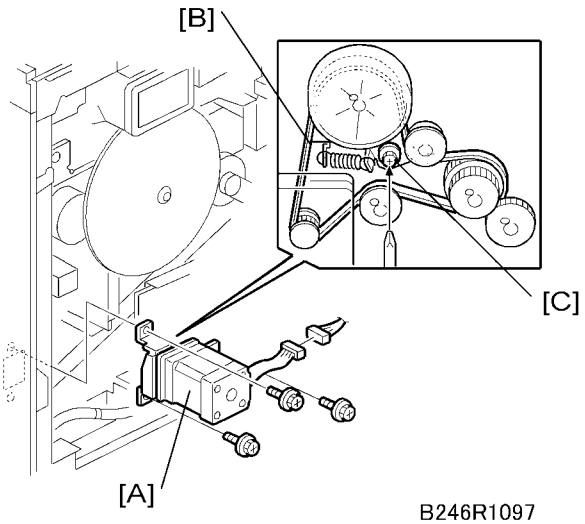
2. Paper dust removal unit [B] (x 1, x 1)
3. Registration sensor [C]

4.11.17 REGISTRATION AND BY-PASS UNIT REMOVAL



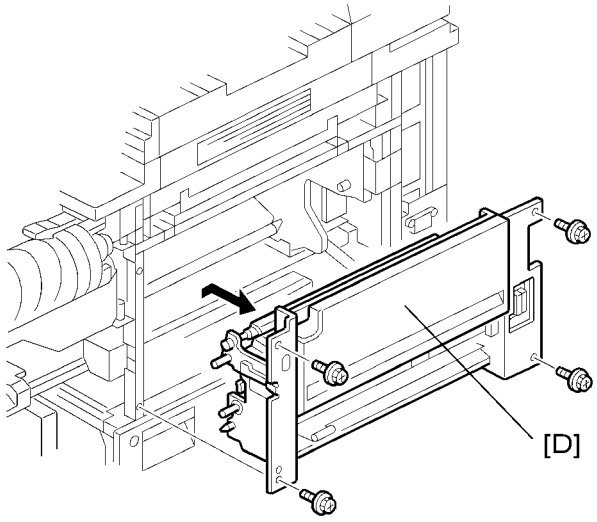
B246R1096

1. Remove the development unit. ☛ p.4-34
2. Remove the inner cover. (x 4)
3. Disconnect the toner bottle holder connector [A] and counter connector [B].
4. Pull out the duplex unit about 10 cm.
   - Confirm that the registration roller is separated from the positioning pin.
5. Remove the right upper cover. ☛ p.4-9
6. Rear upper cover ☛ p.4-11
7. Disconnect the following connectors:
   - Relay clutch connector [C]
   - Guide plate solenoid connector [D]
   - Guide plate sensor connector [E]
   - By-pass tray unit connectors [F]



B246R1097

8. Remove the by-pass feed motor [A] (x 3, x 1).
   - At re-installation, if the tension of the belt [B] is slack, loosen the screw on the tension bracket [C], move the screw to put more tension on the belt, then tighten the screw at the new position.



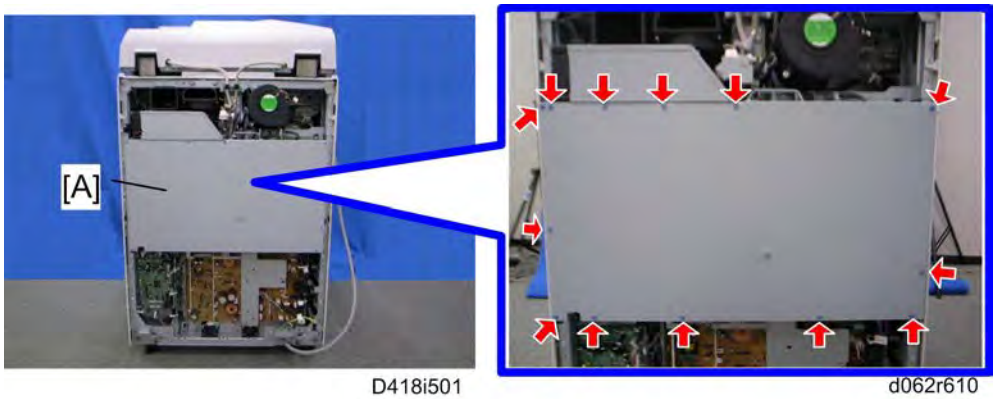
B246R1098

9. Remove the by-pass unit [D] (x 4).
   When removing and installing the by-pass unit:
   - Make sure that the unit does not catch on any harnesses.
   - On re-installation, make sure that no harnesses are pinched between the unit and the machine frame.
   - You must re-install the by-pass unit with the duplex unit open.

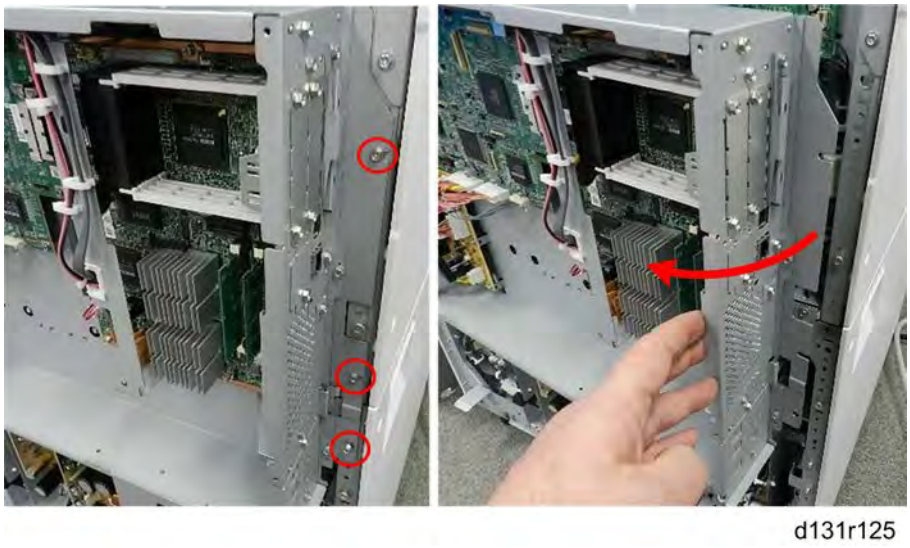
4.12 PCBS AND HDD

4.12.1 CNT BOARD (CONTROLLER BOARD)

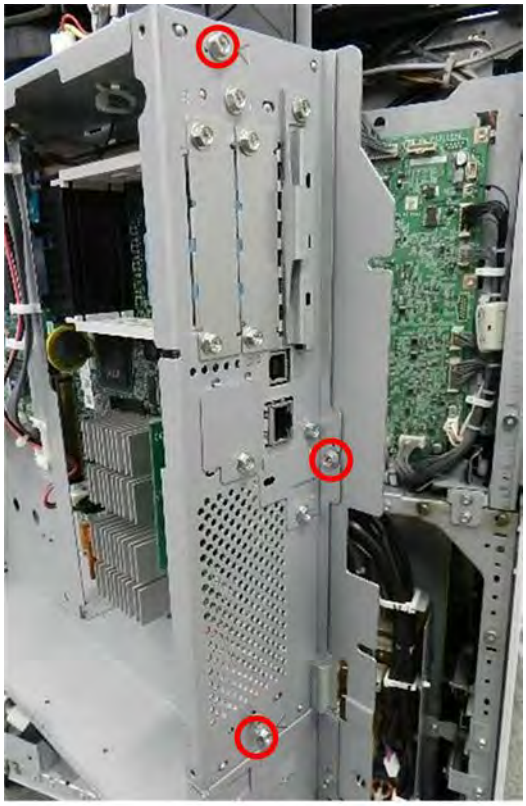
1. Rear upper cover and rear lower cover ☛ p.4-11



2. Controller box cover [A] (🔩 x 13)



3. Open the controller box (🔩 x 3)



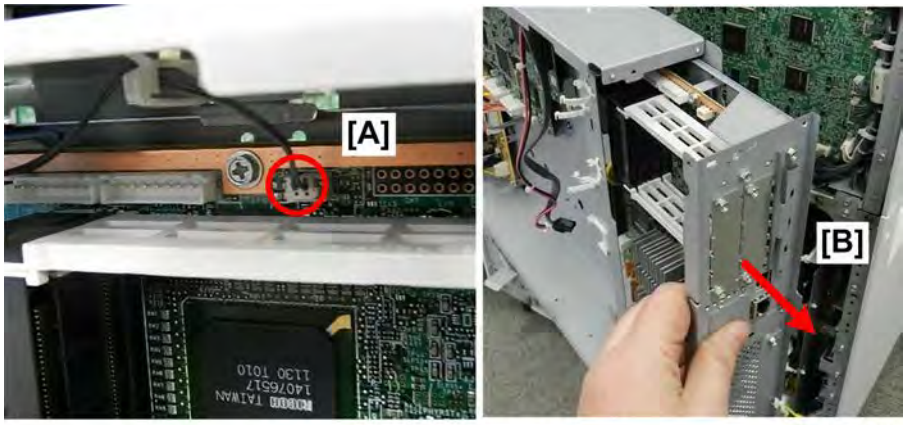
d131r126

4. Disconnect the controller board (x3). The top and bottom screws are marked with a sharp angle bracket "<".



d131r127

5. Disconnect the controller board on the left (x5, x2).



d131r128

6. Disconnect the board at the top [A] (x1).
7. Pull the controller board [B] out of the box.



d131r129

8. Lay the board on a flat surface.

Reinstallation of CNT Board

1. Remove the NVRAM from the old CNT board, and then install it on the new CNT board.
2. Install the new CNT board.



d062r707

3. Make sure the relay connectors [A] are connected securely.

Note

- Each model in this series has a different CNT board.
- If you install the wrong CNT board, the operation panel displays SC955-03.
- In this case, replace the CNT with the correct board.

4.12.2 NVRAM

This machine has an electronic counting device that uses software to monitor the number of copies. In addition to the electronic counter of the NVRAM on the CNT board, the machine is also equipped with a mechanical counter.

NVRAM on the BCU

1. Make sure that you have the SMC report (factory settings). This report comes with the machine.
2. Output the SMC data (SP5-990-001) if possible.
3. Turn the main switch off.
4. Install an SD card into SD card slot 2. Then turn the main power on.
5. Copy the NVRAM data to an SD card (SP5-824-001) if possible.
6. Turn off the main switch. Then unplug the power cord.
7. Replace the NVRAM on the BCU and reassemble the machine.
8. Plug in the power cord. Then turn the main switch on.
9. SC195 occurs.
10. Copy the data from the SD card to the NVRAM (SP5-825-001) if you have successfully copied them to the SD card.
11. Turn the main switch off. Then remove the SD card from SD card slot 2.
12. Turn the main switch on.

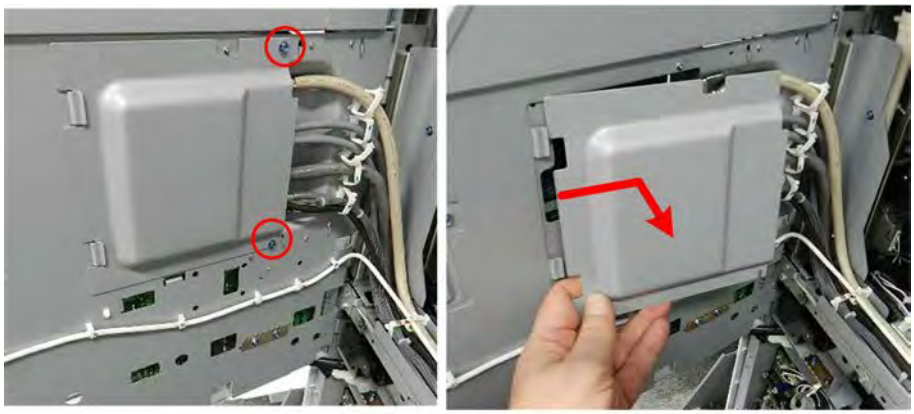
13. Specify the SP and UP mode settings.
14. Do the process control self-check.

NVRAM on the Controller

1. Make sure that you have the SMC report (factory settings). This report comes with the machine.
2. Output the SMC data (SP5-990-001) if possible.
3. Turn the main switch off. Then unplug the power cord.
4. Install a New NVRAM on the controller. Then reassemble the machine.
5. Turn the main switch on.
6. SC995-02 occurs and the machine rewrites SP5-811-005 automatically.
7. When the operation panel displays Copy Screen, turn the machine off and on.
8. Do the process control self-check.

4.12.3 IPU

1. Controller box cover ☛ p.4-122
2. Swing open the controller box (x 3) ☛ p.4-122



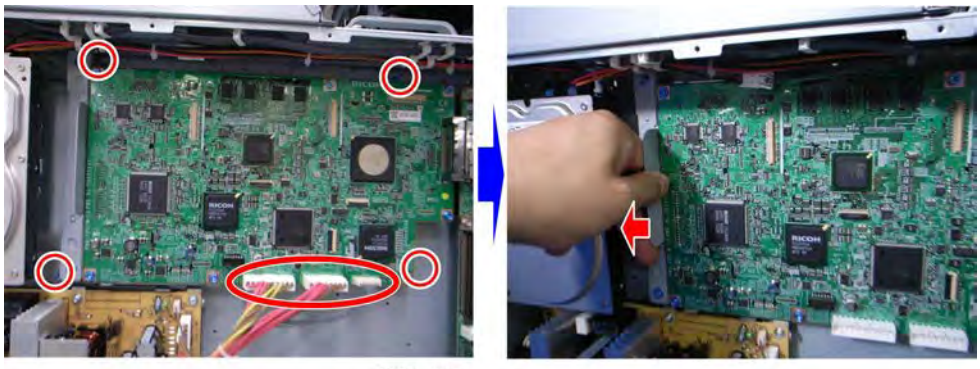
d131r130

3. Behind the IPU on the back of the controller box, remove the IPU connector cover (x 2).



d131r131

4. Disconnect all the harnesses on the back of the IPU.

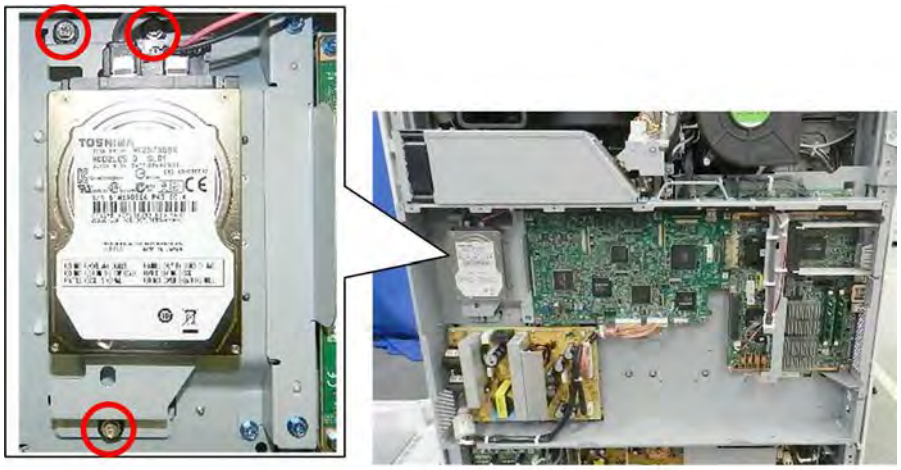


d062r705

5. At the front: IPU(x 4, x3)
6. After removing screws and harnesses, pull the IPU to the left and remove it.

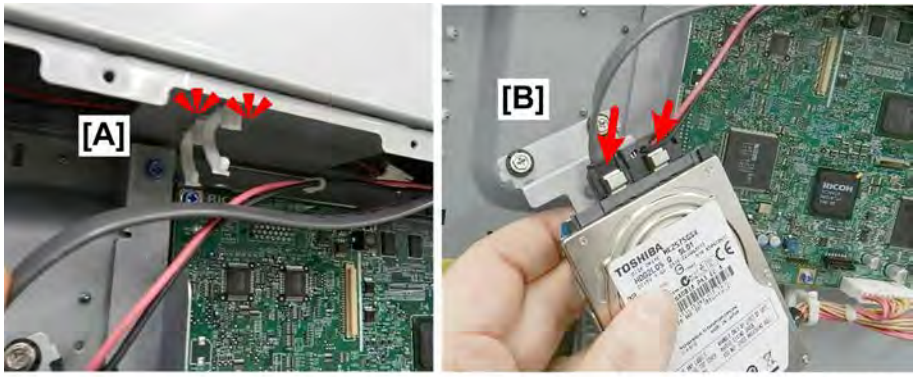
4.12.4 HDD

1. Controller box cover ☛ p.4-122



d131r132

2. Disconnect the HDD bracket from the machine frame (x3).
   - The screws are held in place by rubber grommets.
   - The screws will not come out; just keeping turning them counter-clockwise until you feel them come off.



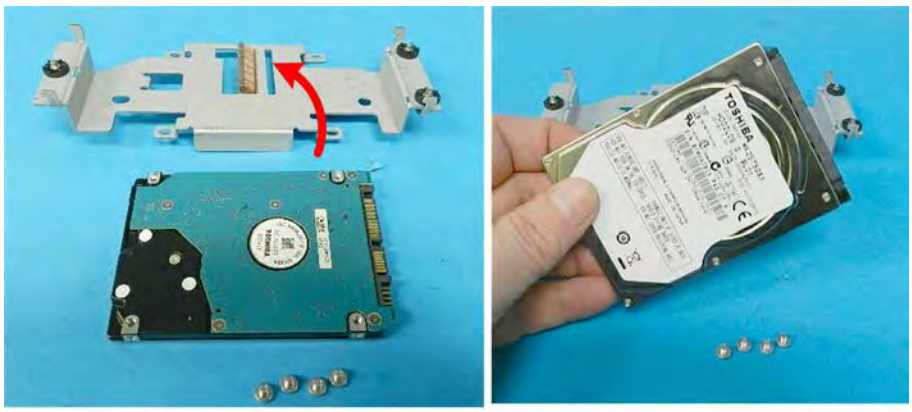
d131r133

3. Free the harnesses at [A] (x2).
4. Disconnect the HDD [B] (x2).



d131r134

5. Lay the HDD bracket [A] on a flat surface.
6. Turn the bracket over [B], and then remove the screws (X4).



7. Separate the bracket and HDD.

Reinstallation

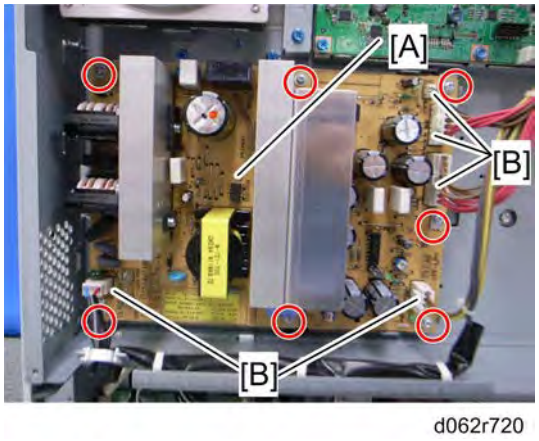
Important

- Explain to the customer that the following information stored on the HDD is lost when the HDD is replaced: (1) Document server documents, (2) Custom-made stamps, (3) Document server address book.
- The address book and document server documents (if needed) must be input again.
- If the customer is using the Data Overwrite Security feature, the DOS function must be set up again. For more, see "Installation".
- The browser unit must also be installed again.

1. After reinstalling a HDD, execute SP5832-011 (HDD Format – All) to format the hard disk.
2. Download the browser. For more details, see the installation instructions for the controller options (in this manual).

4.12.5 CTL-PSU

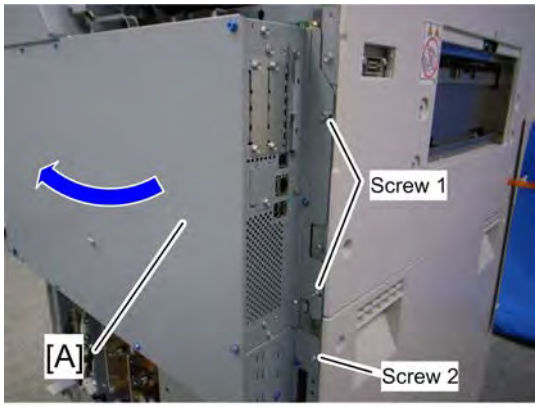
1. Controller box cover ☛ p.4-122



2. CTL-PSU [A] (x 7, x 5 [B])

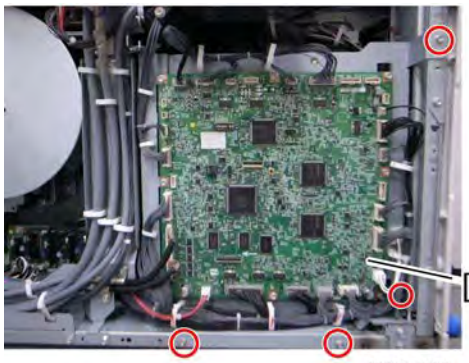
4.12.6 BCU

1. Rear upper cover and rear lower cover ☛ p.4-11

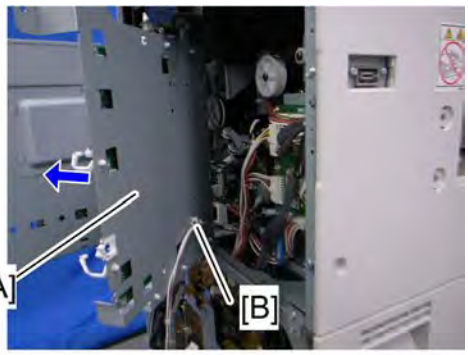


d062r603a

2. Open the controller box [A] (x 3)

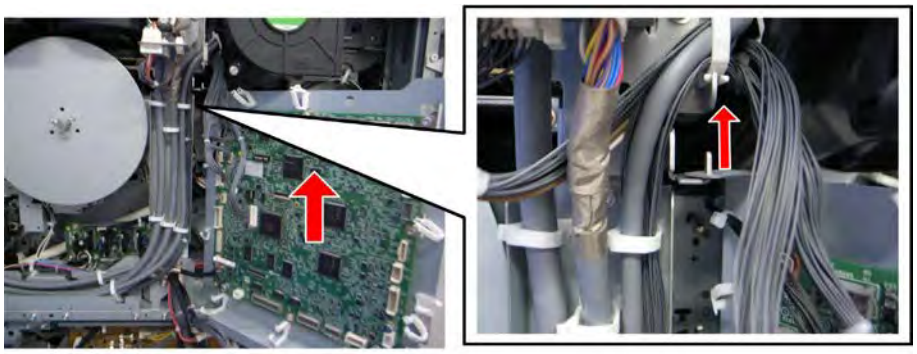


d062r622



d062r625

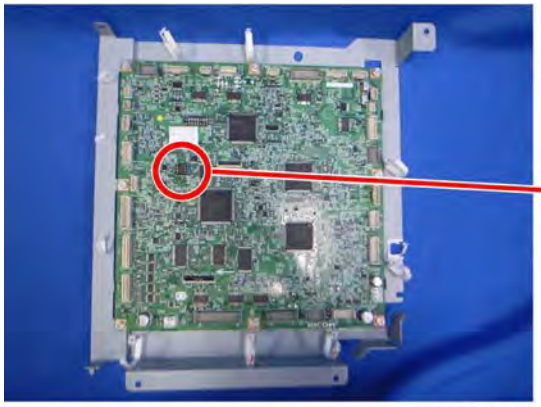
3. Open the BCU bracket [A] (x 4, all s, all s)
4. Do not forget to release the clamp [B].



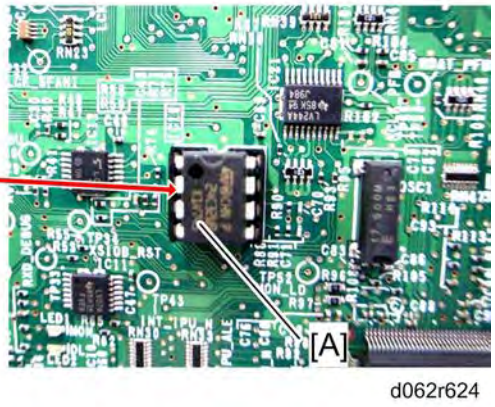
d062r626

5. Lift up the BCU bracket and remove it.

Replace the BCU.



d062r629



d062r624

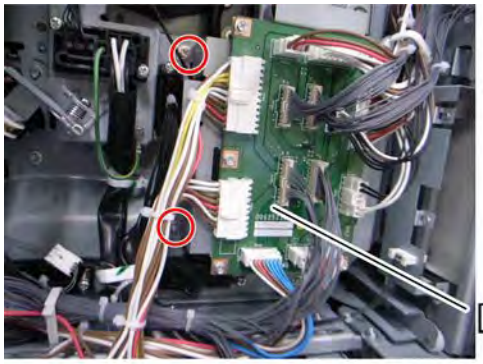
1. Remove the NVRAM from the old BCU, and then install it on the new BCU.
2. Install the BCU.
3. Turn on the machine, so that SC995-01 occurs.
4. Enter the SP mode (SP5-811-004), and then enter the machine code.
5. Exit the SP mode, and then reboot the machine.

Note

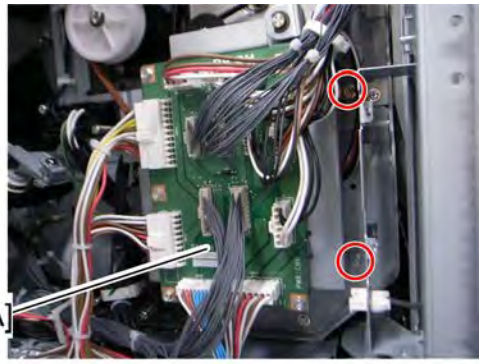
- When installing a new NVRAM, SC195 occurs. In this case, do SP5-811-001 and input the machine code.

4.12.7 CNB

1. Open the BCU bracket. ☛ BCU
   - It is not necessary to release all the clamps and harnesses.



d062r633

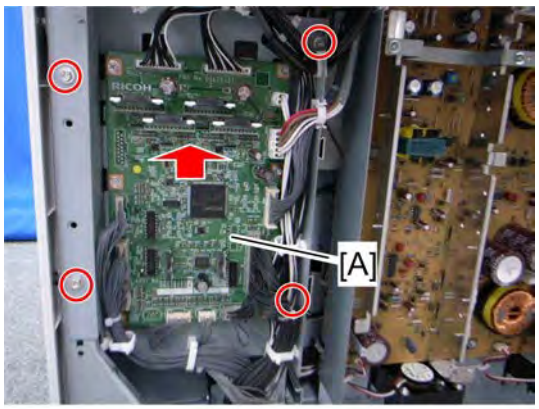


d062r632

2. CNB [A] (x 4, all harnesses)

4.12.8 PFB

1. Open the controller box ☛ p.4-122

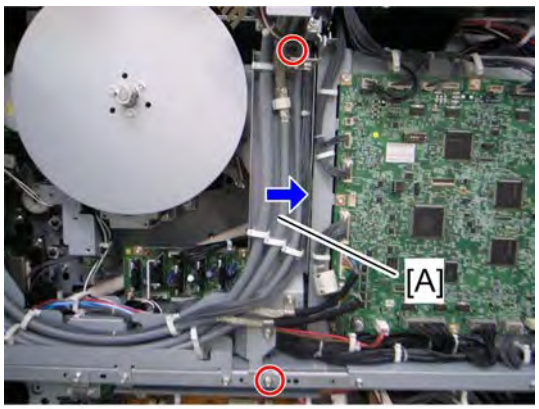


d062r650

2. PFB bracket [A] (x 4, all s)

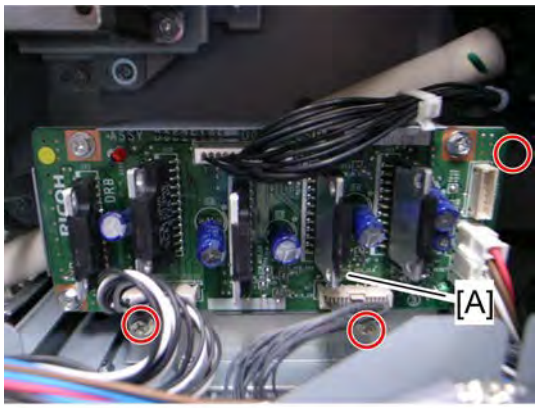
4.12.9 DRB

1. Open the controller box ☛ p.4-122



d062r641

2. Move the stay [A] slightly to the right (🔩 x 2)

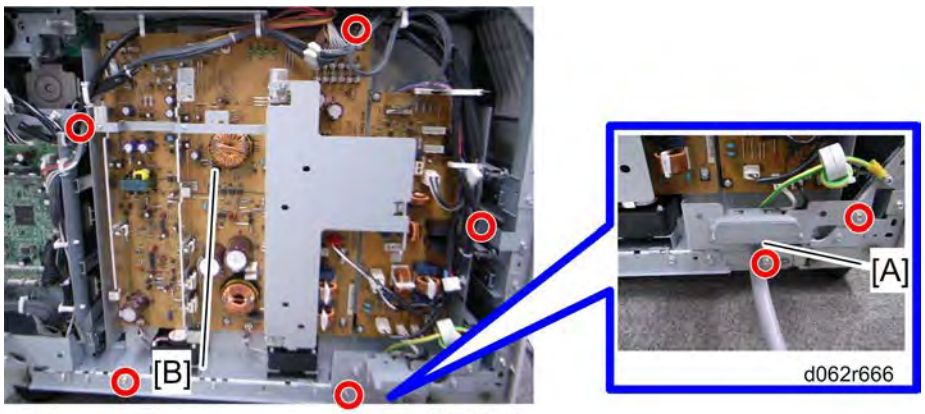


d062r640

3. DRB bracket [A] (🔩 x 3, all s)

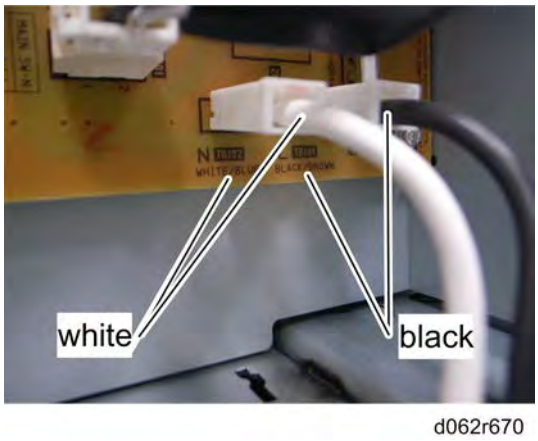
4.12.10 PSU

1. Open the controller box ☛ p.4-122



2. Power cord bracket [A] (🔩 x 2)
3. PSU assembly [B] (🔩 x 5)

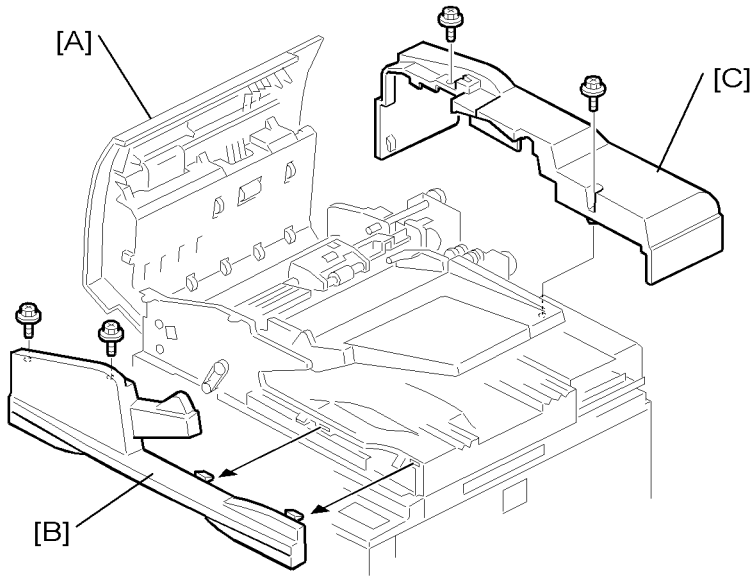
Reinstallation of PSU



Make sure the white cable and black cables are connected correctly.

4.13 ADF

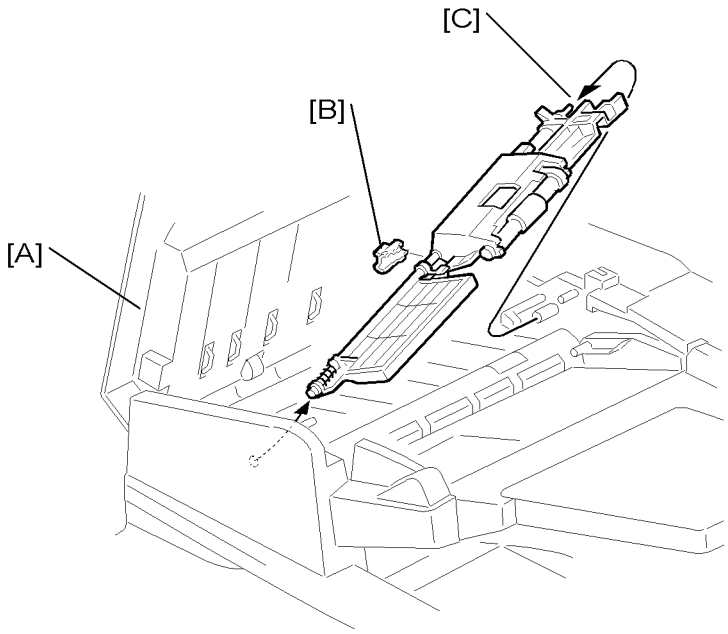
4.13.1 ADF COVERS



b246r866

1. Feed cover [A] (x 2, all s, ground wire x 1).
2. Front cover [B] (x 2)
   - Press down on the tabs to remove.
3. Rear cover [C] (x 2)
   - Press down on the tabs to remove.

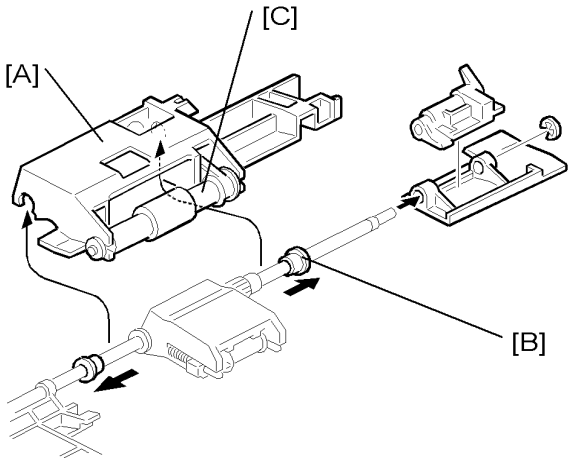
4.13.2 FEED UNIT



b246r867

1. Open the feed cover [A].
2. Remove the snap fitting [B].
3. Push the feed unit slowly to the left to disengage the shaft [C] on the right, then lift it out.

4.13.3 FEED BELT AND PICK-UP ROLLER

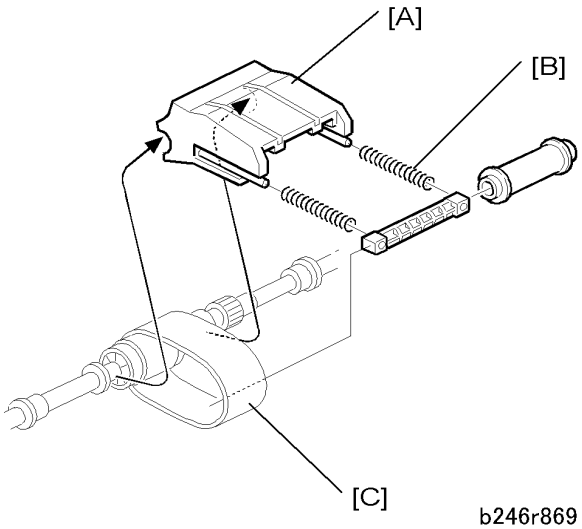


b246r868

1. Remove the feed unit. ☛ p.4-137
2. Remove the pick-up roller unit [A].
3. Remove the bushings [B].
4. Remove the pick-up roller [C].

Note

- At re-assembly, make sure that the tab on the front guide plate is above the pick-up roller.



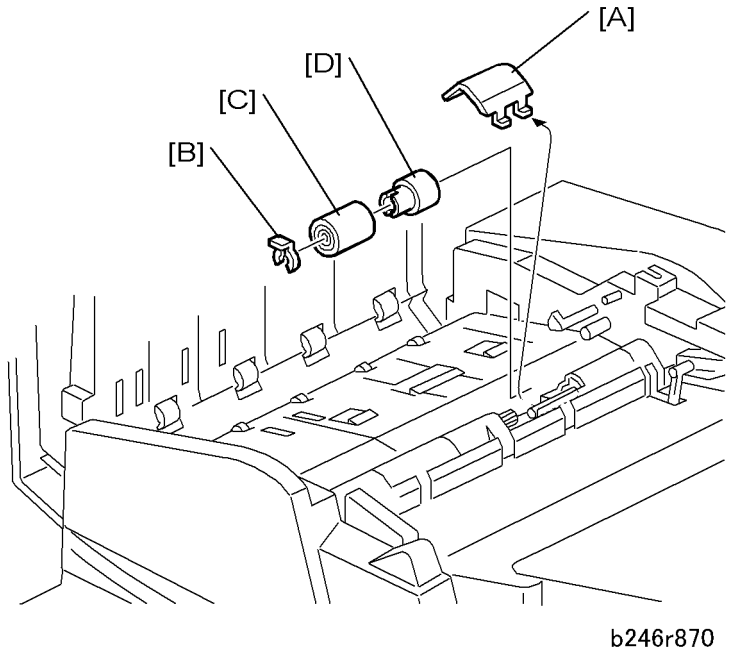
b246r869

5. Hold the feed belt holder [A] by the left and right sides, then carefully pull it off the bushing. Do not let the springs [B] fall.
6. Remove the feed belt [C].

Note

- When re-assembling, set the pick-up roller springs first, then follow this procedure in reverse.

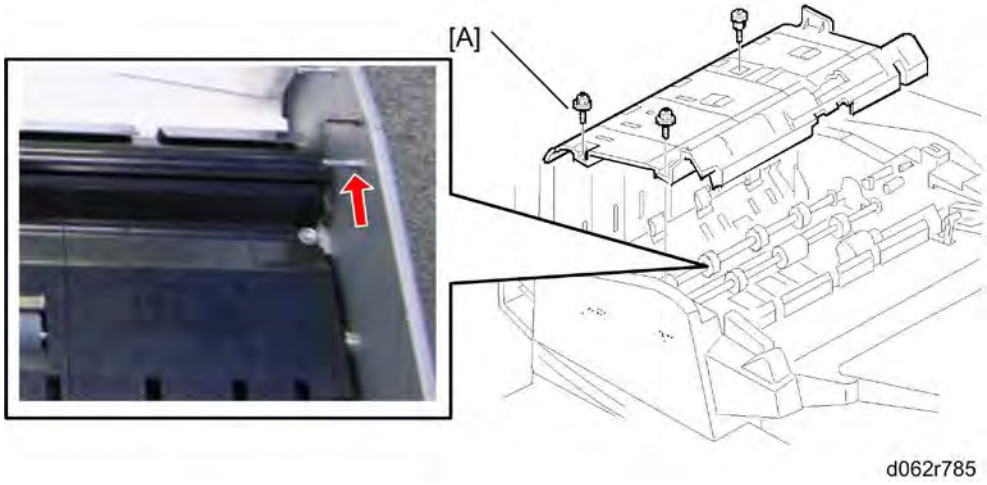
4.13.4 SEPARATION ROLLER



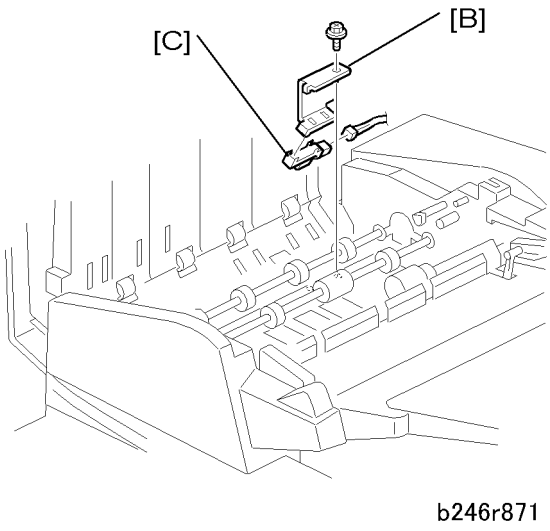
1. Open the feed cover.
2. Remove the feed unit. ☛ p.4-137
3. Separation roller cover [A]
   - Use the tip of a screwdriver to push up the cover.
4. Clip [B] (x 1)
5. Separation roller [C]
6. Torque limiter clutch [D]

4.13.5 REGISTRATION SENSOR

1. Open the feed cover.
2. Remove the feed unit ☛ p.4-137

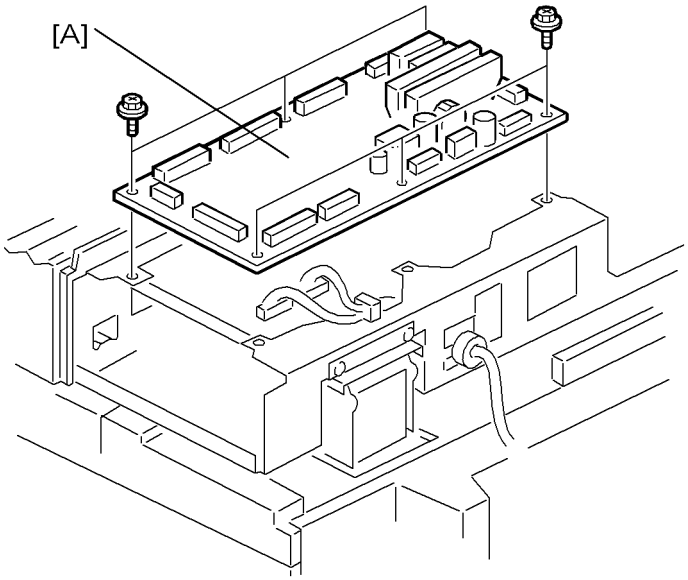


3. Remove the screw indicated above by a red arrow.
4. Guide plate [A] (x 3)



5. Registration sensor bracket [B] (x 1)
6. Registration sensor [C] (x 1)

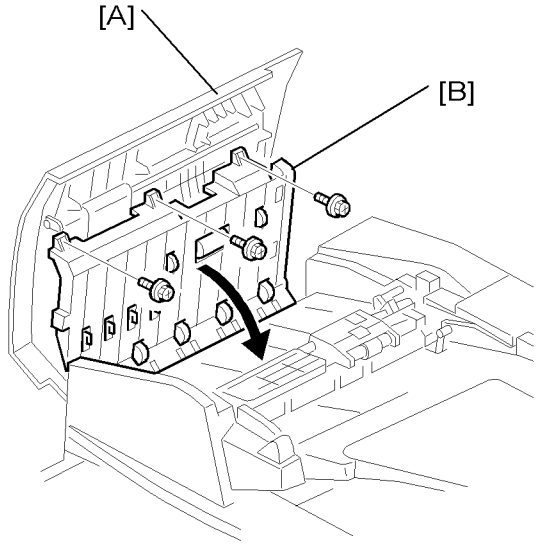
4.13.6 ADF CONTROL BOARD



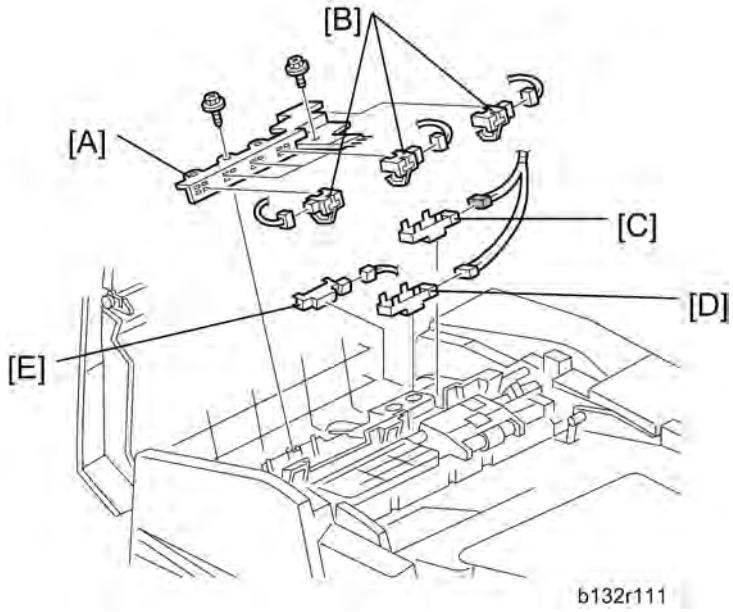
b246r873

1. ADF rear cover ☛ p.4-136
2. ADF board [A] (x 4, all s)

4.13.7 ORIGINAL WIDTH, INTERVAL, SEPARATION AND SKEW CORRECTION SENSORS

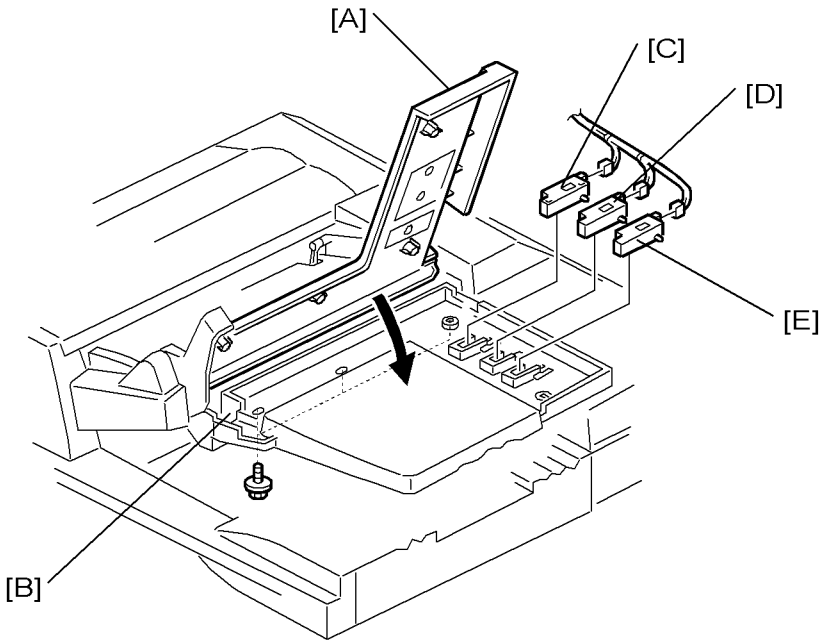


1. Open the feed cover [A].
2. Guide plate [B] (x 3)



3. Width sensor guide plate [A] (x 2)
4. Original width sensors [B] (x 5, x 5)
5. Separation sensor [C] (x 1)
6. Skew correction sensor [D] (x 1)
7. Interval sensor [E] (x 1)

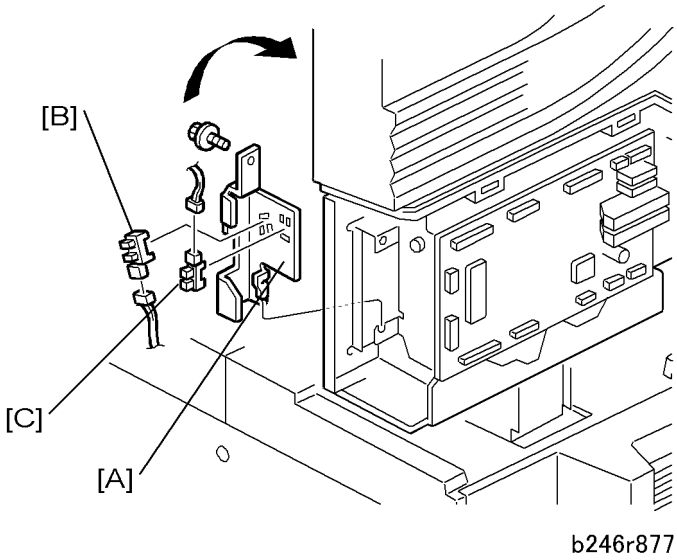
4.13.8 ORIGINAL LENGTH SENSORS



b246r876

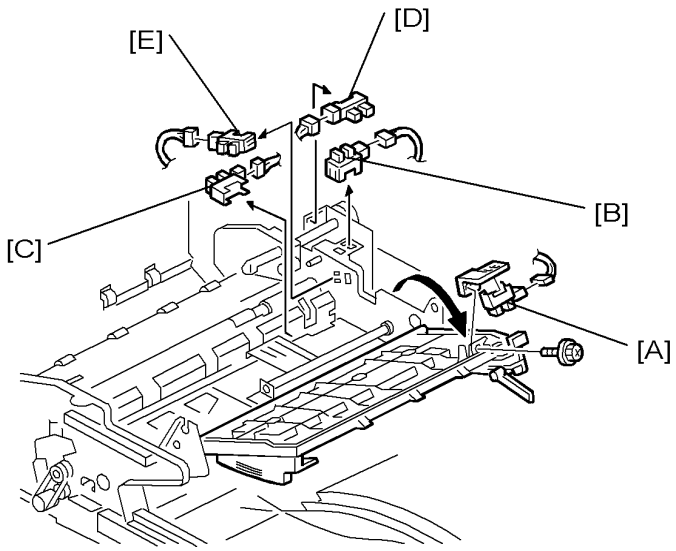
1. Open the original tray [A].
2. Lower cover [B] (x 4)
3. Original length sensor 1 – B5 [C] (x 1)
4. Original length sensor 2 – A4 [D] (x 1)
5. Original length sensor 3 – LG [E] (x 1)

4.13.9 DF POSITION AND APS SENSORS



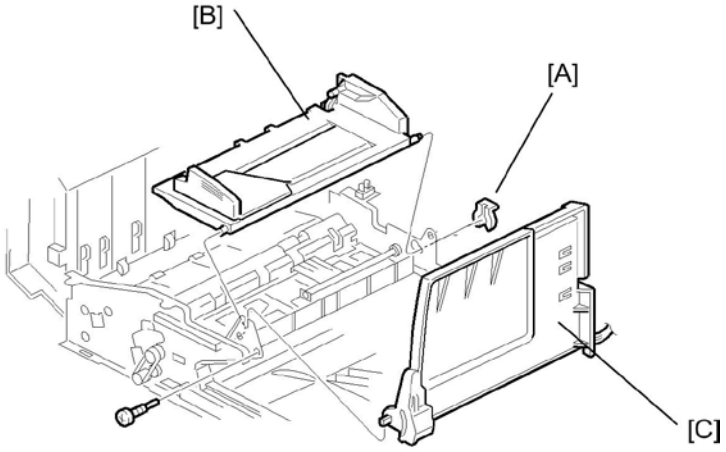
1. Open the ADF.
2. ADF rear cover ☛ p.4-136
3. Bracket [A] (x 1)
4. ADF position sensor [B] (x 1)
5. APS sensor [C] (x 1)

4.13.10 OTHER ADF SENSORS



b246r878

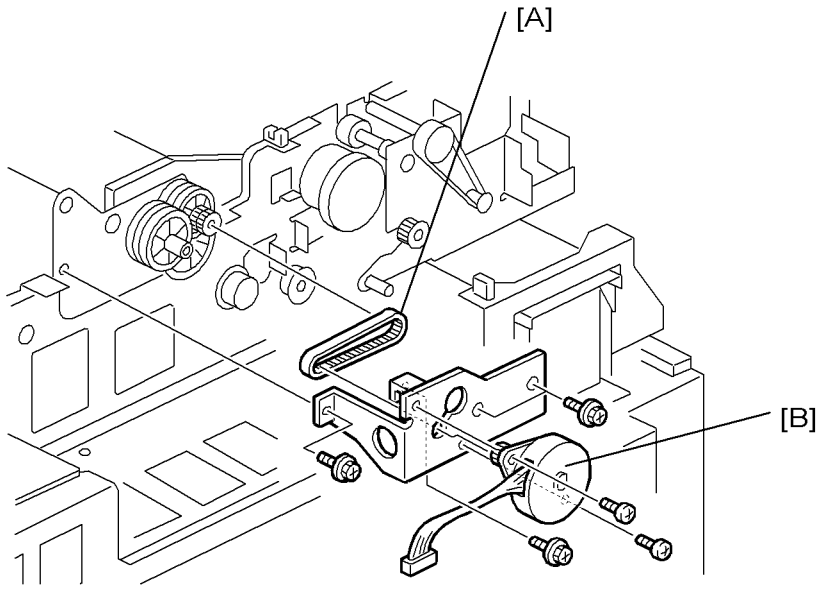
1. Open the feed cover.
2. Open the front door
3. Rear covers (x 4) p.4-11
4. Clips [A] (x 1)
5. Original tray [B] (x 1)
6. Bottom plate [C] (x 1)
7. Original set sensor [D] (x 1)
8. Feed cover sensor [E] (x 1)



b246r879

9. Bottom plate HP sensor [A] (x 1)
10. Pick-up roller HP sensor [B] (x 1)
11. Bottom plate position sensor [C] (x 1)

4.13.11 BOTTOM PLATE LIFT MOTOR

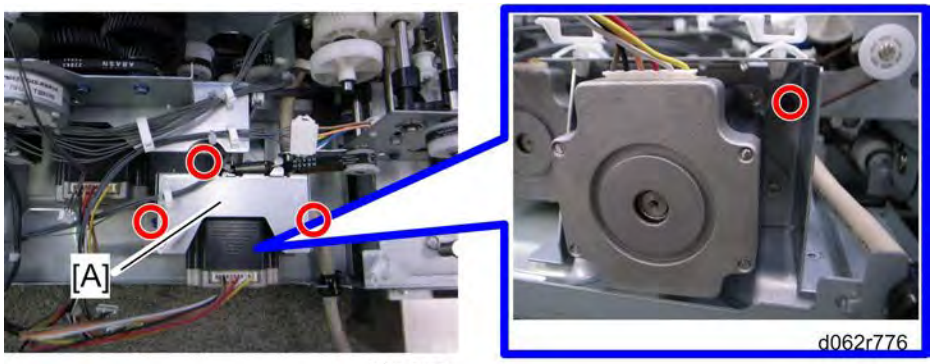


b246r880

1. Open the feed cover.
2. Rear cover ☛ p.4-11
3. Bottom plate lift motor bracket [A] (harness x 1, x 1, x 3, timing belt x 1)
4. Bottom plate lift motor [B] (x 2)

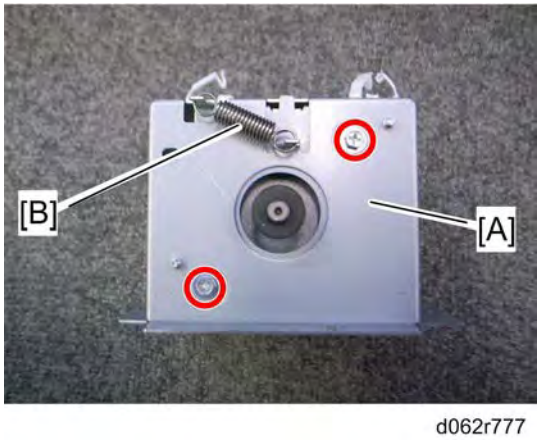
4.13.12 FEED MOTOR

1. Rear cover ☛ p.4-11



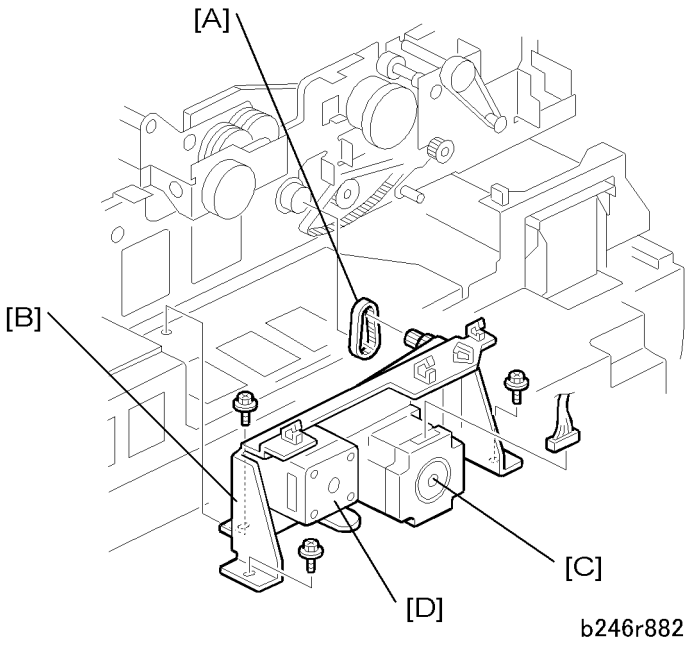
d062r775

2. Feed motor bracket [A] (x 4, x 1, belt x 1)



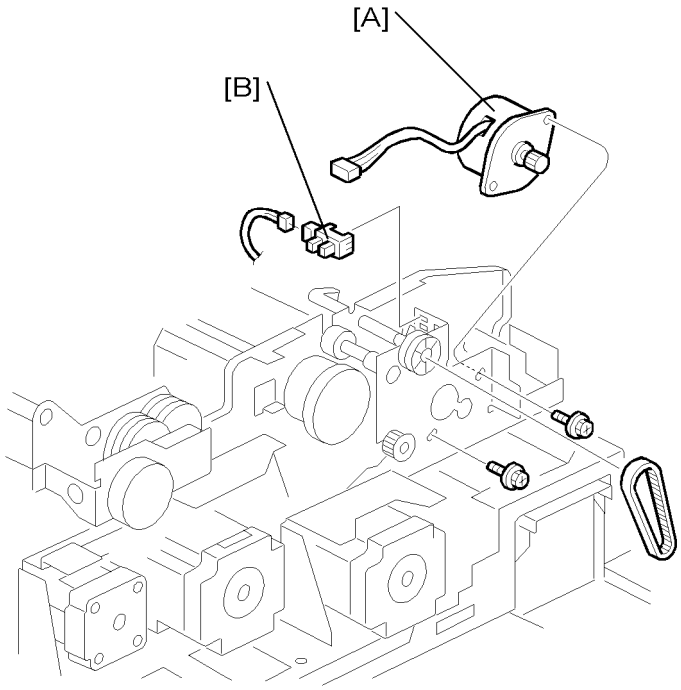
3. Feed motor (x 2, [B] x 1)

4.13.13 EXIT MOTOR AND TRANSPORT MOTOR



1. Open the feed cover.
2. ADF rear cover ☛ p.4-136
3. Bottom plate lift motor ☛ p.4-146
4. Timing belt [A]
5. Exit/transport motor unit [B] (x 3, x 2)
6. Transport motor [C] (x 2)
7. Exit motor [D] (x 2)

4.13.14 PICK-UP ROLLER MOTOR AND HP SENSOR



b246r883

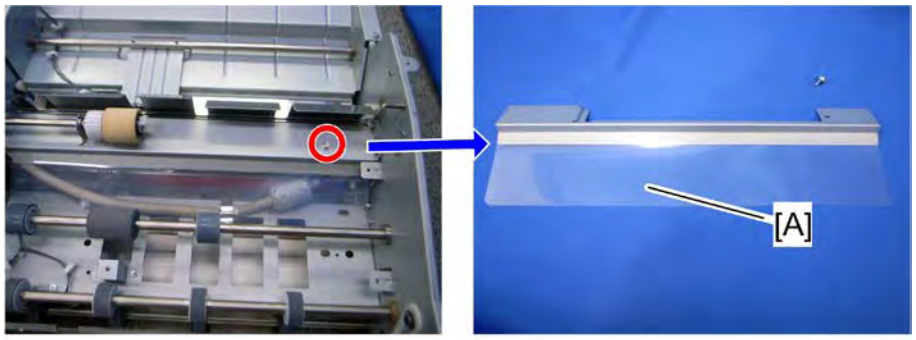
1. Open the feed cover.
2. ADF rear cover ☛ p.4-136
3. Pick-up roller lift motor [A] (x 2, x 1)
4. Pick-up roller HP sensor [B] (x 1)

4.13.15 CIS UNIT

⚠WARNING

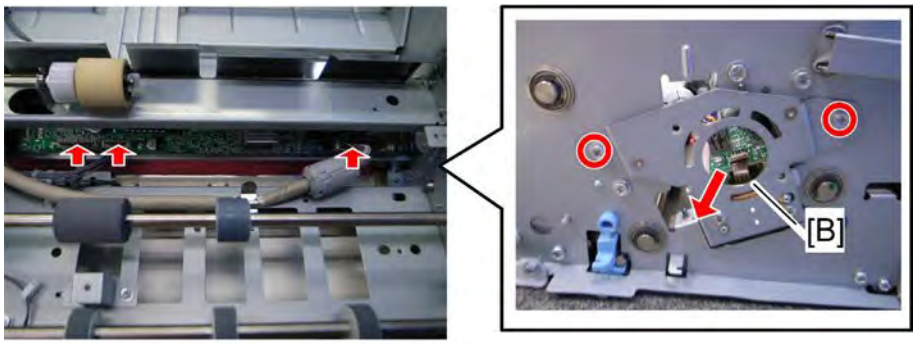
- Turn off the main power switch and unplug the machine before performing this procedure.

1. Open the feed cover.
2. Feed unit ☛ p.4-137
3. Guide plate ☛ p.4-140



d062r778

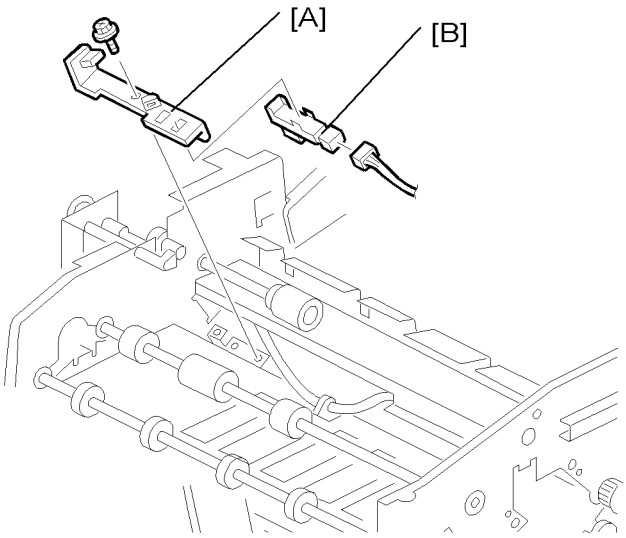
4. Guide plate mylar [A] (x 1)



d062r780

5. CIS unit [B] (x 2, x 3)
   - Pull out the CIS unit carefully to avoid scratching the glass.

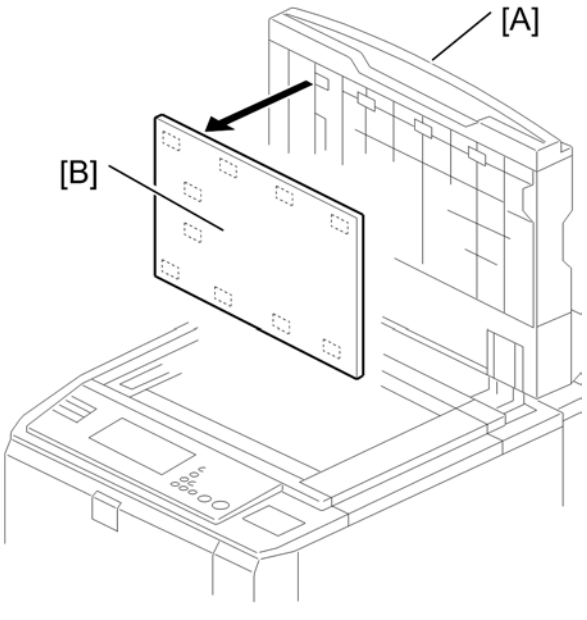
4.13.16 ADF EXIT SENSOR



b246r886

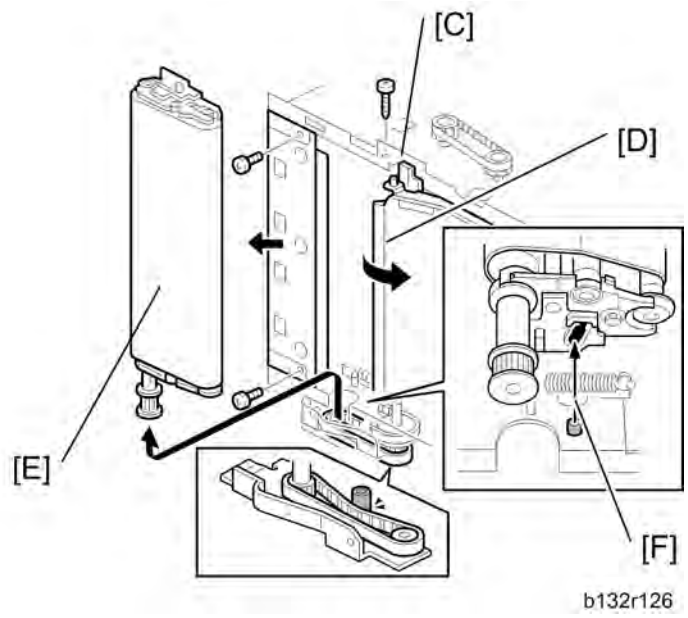
1. CIS Power Supply Board
2. Exit sensor bracket [A] (x 1)
3. Exit sensor [B] (x 1)

4.13.17 ADF TRANSPORT BELT ASSEMBLY



B132R102

1. Open the ADF.
2. Raise the ADF [A] to the vertical position.
3. Pull off the white cover [B] (Velcro fasteners)

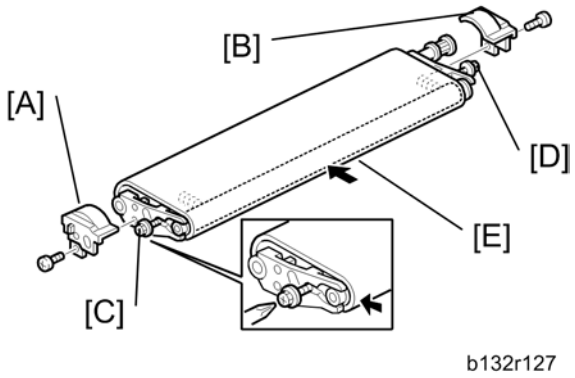


4. Release the stopper pin [C] of the transport guide [D].
5. Remove the transport belt unit [E] (Pin screw x1, Timing belt x1)

Reinstallation

- Attach the timing belt as shown, then insert the pin screw [F] as shown.

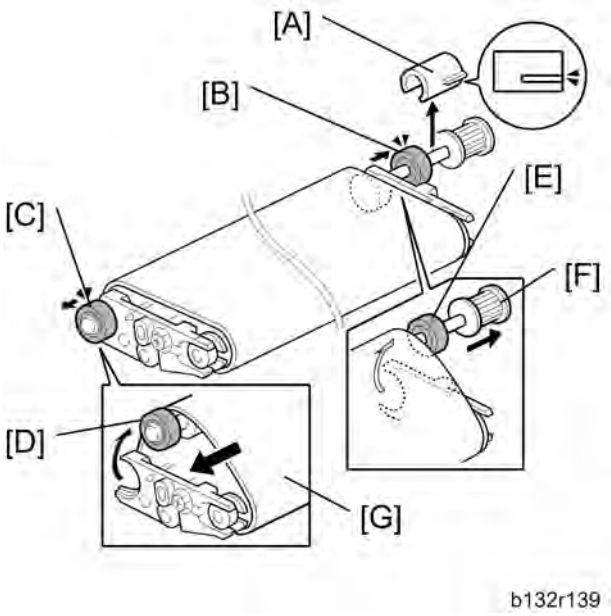
Removing the Belt



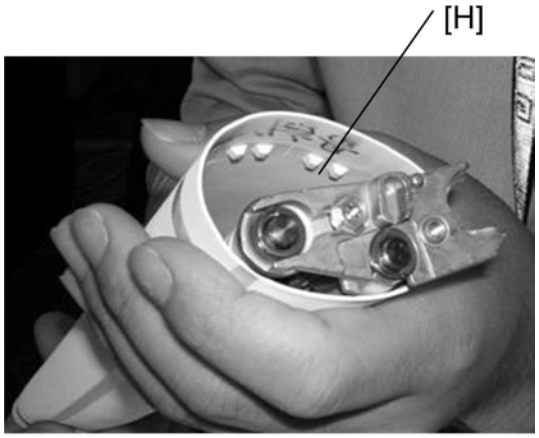
1. Remove the front plastic cover [A] (x1)
2. Remove the rear plastic cover [B] (x1)
3. Loosen front lock screw [C]. Do not remove.
4. Loosen rear lock screw [D]. Do not remove. This releases the spring-loaded tension on the belt.
5. Grip the roller in the center [E], then squeeze the belt to bring the rollers together.
6. While squeezing the belt and rollers together in the center, tighten screws [C] and [D]. This compresses the spring and releases tension on the belt.

   Important: To avoid stripping the threads of the screws, do not apply excessive torque to these screws!

7. Release the belt and make sure that the belt is loose and that the rollers do not move. Repeat Steps 5 and 6 if the rollers expand and tighten the belt.

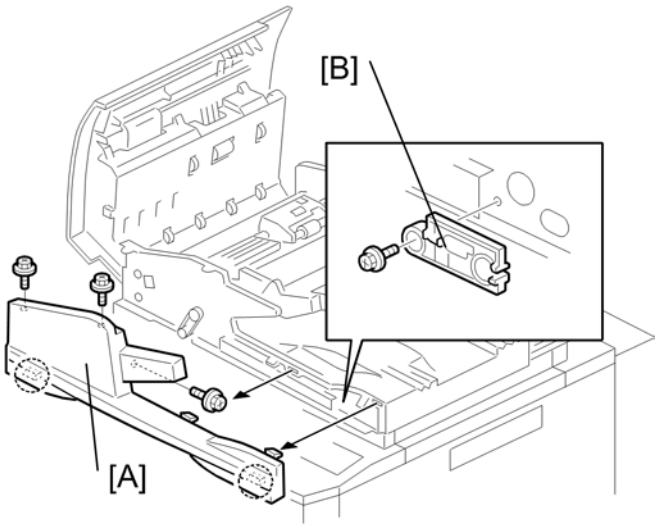


8. Remove the Teflon sleeve [A].
9. Push the rear shaft bearing [B] out of its bracket.
10. Push the front shaft bearing [C] out of its bracket.
11. Push the front end of the shaft [D] over the top of the bracket.
12. Push the rear end of the shaft [E] over the top of the bracket.
13. Pull the shaft [F] out of the belt.
14. Pull the belt [G] toward the front to remove it.
15. Slide the new belt over the assembly.
16. Insert the shaft [F] into the new belt, snap the shaft into its brackets, and push in the shaft bearings.



17. Make sure that studs on the underside of the belt [H] are aligned with the grooves in the Teflon rollers on each end of the shaft below.

Reinstalling the Belt

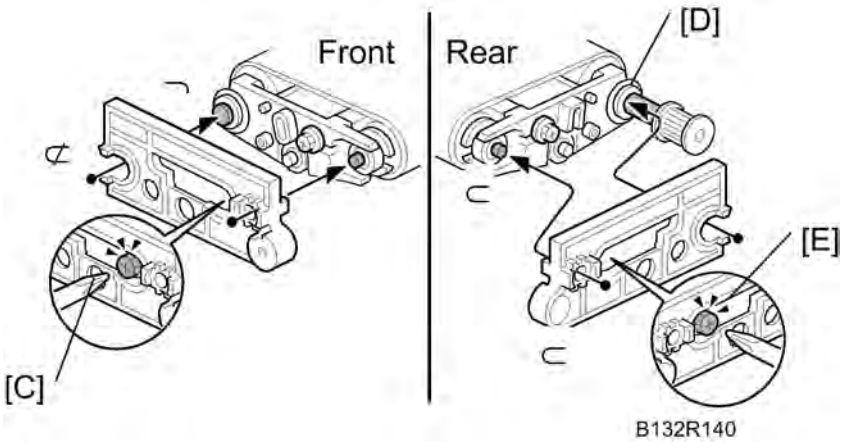


B132R104A

1. Remove the ADF front cover [A]
2. Take out the special tool [B].

Note

- The special tool [B] is attached to the front side plate. It is used to adjust the tension on the belt on both ends of the shaft.



B132R140

3. Fit the special tool onto the front (see "FRONT" in the above diagram).
4. Slowly loosen the front lock screw [C] until you see the tip of the shaft ❶ aligned with the hole ❷, then tighten the screw.

Important

- To avoid stripping the threads of the screws, do not apply excessive torque.

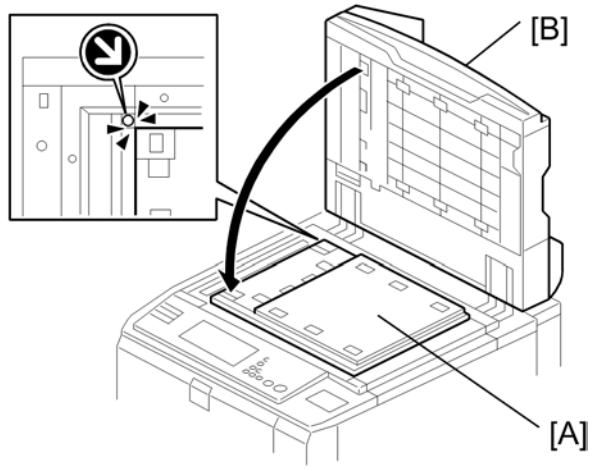
5. Remove the special tool and fit it onto the rear (see "REAR" in the above diagram).

Note

- If the Teflon sleeve has been reattached at [D], remove it. Do not reattach the sleeve until after adjusting the belt tension. (The special tool does not fit over the rear end with the Teflon sleeve attached.)

6. Slowly loosen the rear lock screw [E] until you see the tip of the shaft ❸ aligned with the hole ❹, then tighten the screw.
7. Re-install the Teflon sleeve.
8. Re-install the front and rear plastic cover.
9. Reinstall the transport belt assembly in the ADF.

Reattaching the White Cover



b132r103

1. With its white side down, set the cover [A] on the exposure glass.
2. Make sure the upper left corner is aligned with the arrow at the corner of the exposure glass.
3. Close the ADF [B] on top of the cover.

4.14 COPY IMAGE ADJUSTMENTS: PRINTING/SCANNING

These adjustments must be performed after replacing any of the following parts:

- Scanner wires
- Lens block
- Scanner motor
- Polygon motor
- Tandem tray side fences
- Memory All Clear

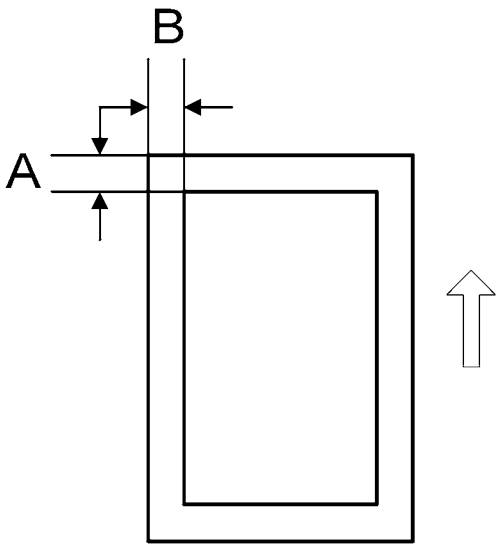
4.14.1 IMAGE ADJUSTMENTS: PRINTING

Preparation

1. Make sure paper is installed correctly in each paper tray before you start these adjustments.
2. Use the Trimming Area Pattern (SP2-902-3, No. 18 to print the test pattern for the following procedures.
3. After completing these printing adjustments, be sure to set SP 2-902-3 to 0 again.

Registration - Leading Edge/Side-to-Side

1. Check the leading edge registration, and adjust it using SP1-001.
   Specification: 4± 2mm.
2. Check side-to-side registration for each paper feed station, and adjust with the following SP modes.



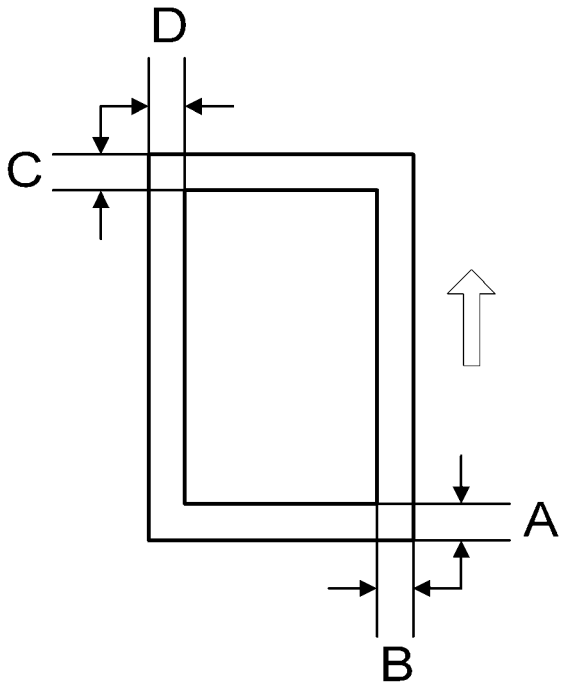
B140r887

	SP mode	Specification
Tray 1 (Tandem Tray)	SP1002-001	0 ±1.5
Tray 2 (Universal Tray)	SP1002-002	
Tray 3 (Universal Tray)	SP1002-003	
Tray 4	SP1002-004	Japan Only
LCT	SP1002-006	0±1.5
Duplex Tray	SP1002-007	0±1.5

Blank Margin

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

1. Check the trailing edge and right edge blank margins, and adjust them with the following SP modes.



B140R888

Letter	What It Means
A	Trailing edge blank margin
B	Right edge blank margin
C	Leading edge blank margin
D	Left edge blank margin

SP2101 Print Erase Margin

	SP mode	Specification
Leading Edge	SP2101-001	2.5±2 mm
Trailing Edge	SP2101-002	
Left edge	SP2101-003	2±1.5 mm
Right edge	SP2101-004	

Registration Buckle Adjustment

When the customer is using special paper, buckle adjustment may be required if paper feed problems arise.

- If the buckle is too large, this can cause wrinkling, creasing, or jams caused by sheets overtaking the sheets ahead of them in the paper path.
- If the buckle is too small, this can cause jams at the registration roller or skew during paper feed.

1. Enter the SP mode.
2. Open SP1003.
    - To prevent wrinkling, creasing, or jams, set a smaller value.
    - To prevent jams at the registration roller or to eliminate skew, set a larger value.

SP1003-001	Registration Buckle Adjustment – Tray, LCT
SP1003-002	Registration Buckle Adjustment – Duplex Tray
SP1003-003	Registration Buckle Adjustment – Bypass Tray
Adjustment range	-9 mm → +9 mm (small → large buckle)
Initial value	0 mm (Buckle = 10 mm)

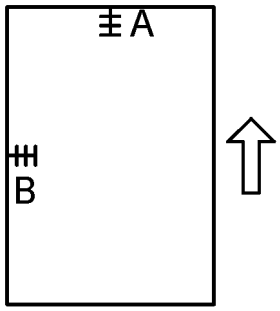
4.14.2 IMAGE ADJUSTMENTS: SCANNING

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

Note

- Use an S-5-S test chart to perform the following adjustments.

Registration: Platen Mode



b140r889

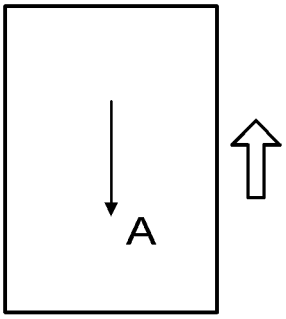
1. Place the test chart on the exposure glass and make a copy from one of the feed stations.
2. Check the leading edge and side-to-side registration, and adjust them with the following SP modes if necessary.

SP No.	Name	Initial	Comment
SP4010	Scanner Leading Edge Registration	0	A positive value shifts the image away from the leading edge, a negative value shifts it toward the leading edge.
SP4011	Scanner Side-to-Side Registration	0	A positive value shifts the image toward the right edge, a negative value shifts it toward the left edge.

Magnification

Use an S-5-S test chart to perform the following adjustment.

Main Scan Magnification



b140r890

1. Place the test chart on the exposure glass and make a copy from one of the feed stations.
2. Check magnification, and then SP2909-001 (Main Scan Magnification - Copy) to adjust magnification if required. Specification: ±2%.

Sub Scan Magnification

1. Place the test chart on the exposure glass and make a copy from one of the feed stations.
2. Check the magnification ratio. Use SP4008 (Scanner Sub Scan Magnification) to adjust if necessary. Specification: ±0.9%.

4.14.3 ADF SCANNING ADJUSTMENTS

Vertical Black Lines

Vertical black lines in scanned images may be caused by dust or scratches on the ADF exposure glass. If the problem cannot be solved by cleaning the ADF exposure glass, execute SP4018 (Scanner Optical Axis Adjustment).

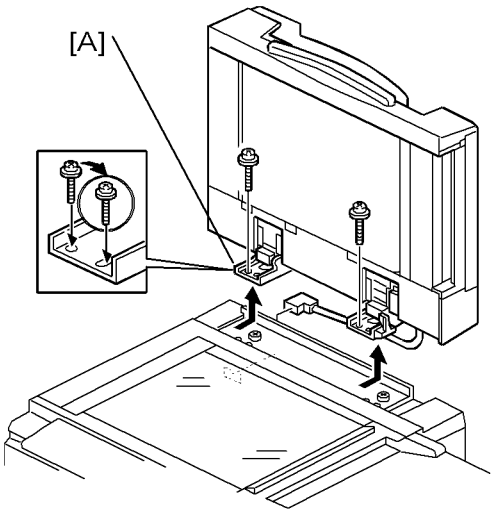
1. Adjust the scanner stopping position with SP4018-003 (just input a new value).
2. Store this value in the machine with SP4018-004.
3. Adjust the ADF registration for the front side scan with SP6006-003.
4. Make a test copy to check that the problem has been solved.

DIP Switch Settings (ADF Main Board)

SW 101				Operation Mode
1	2	3	4	
OFF	OFF	OFF	OFF	I/F Operation
ON	OFF	OFF	OFF	Free run (Simplex: each sheet stopped for registration)
OFF	ON	OFF	OFF	Free run (Simplex: continuous scanning)
ON	ON	OFF	OFF	Free run (Duplex: no registration) SP6009 (ADF Free Run)
ON	OFF	ON	OFF	Not used.
OFF	ON	ON	OFF	
ON	ON	ON	OFF	
OFF	OFF	OFF	ON	
ON	OFF	OFF	ON	Free run (Entrance mode *1, simplex, no registration)
OFF	ON	OFF	ON	Free run (Entrance mode, simplex, continuous scanning)
OFF	ON	ON	ON	Motor test (feed, transport, exit motors)

*1: The entrance mode disregards paper size. Skew correction is performed at the scanning roller.

ADF Skew Correction



b246r891

If the skew with A4 SEF paper is more than 0.5/200 mm in the main scan direction, you can adjust the position of the ADF hinge [A] or adjust the appropriate SP codes below.

6006*	ADF Registration Adjustment
001	ADF Horizontal Registration (Front) Adjusts the side-to-side registration for the front in ADF mode. [–3 to +3/0.1 mm]
002	ADF Horizontal Registration (Back) Adjusts the side-to-side registration for the back in ADF mode. [–3 to +3/0.1 mm]
003	ADF Vertical Registration (Front) Adjusts the vertical registration for the front in ADF mode. [–30 to +24/1 mm] -30 = -5.1 mm +24 = +4.1 mm
004	ADF Vertical Registration (Back) Adjusts the vertical registration for the back in ADF mode. [–30 to +30/1 mm] -30 = -5.1 mm +30 = +5.1 mm

005	ADF Buckle Adjustment 1 Adjusts the roller timing at the skew correction sensor/entrance roller. A larger setting causes more buckling. [–12.0 to +12/1 mm] -12 = -3.0 mm +12 = +3.0 mm
006	ADF Buckle Adjustment 2 Adjusts the roller timing at the interval sensor/scanning roller. A larger setting causes more buckling. [–8.0 to +8/1 mm] -8 = -2 mm +8 = +2 mm
007	ADF Trailing Edge Erase Margin (Front) These settings adjust the erase margin for the trailing edges for the front. [–20 to +20/1 mm] -20 = -10 mm +20 = +10 mm
008	ADF Trailing Edge Erase Margin (Back) These settings adjust the erase margin for the trailing edges for the back. [–20 to +20/1 mm] -20 = -10 mm +20 = +10 mm

Note

- Normally, the interval sensor detects the leading edge of small originals (B6, A5, HLT), or originals for duplex copying, and delays the start of the scanning roller for the prescribed number of pulses to buckle the paper and correct skew. This feature can be switched on for all paper sizes with SP6020 (ADF Contact Mode In/Out). However, switching this feature on for all sizes reduces scanning speed slightly.

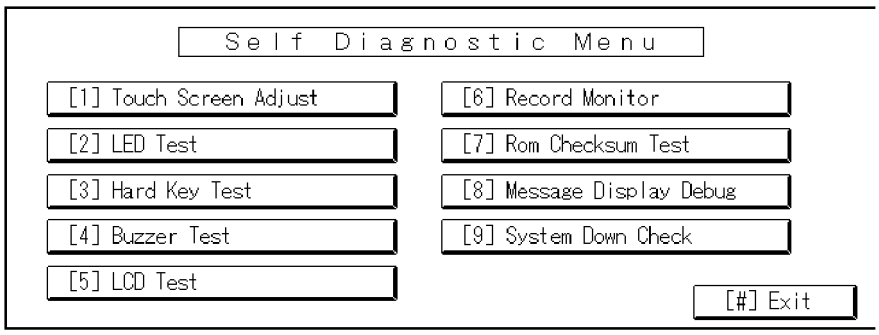
4.15 TOUCH SCREEN CALIBRATION

After clearing the memory, or if the touch screen detection function is not working correctly, follow this procedure to calibrate the touch screen.

Note

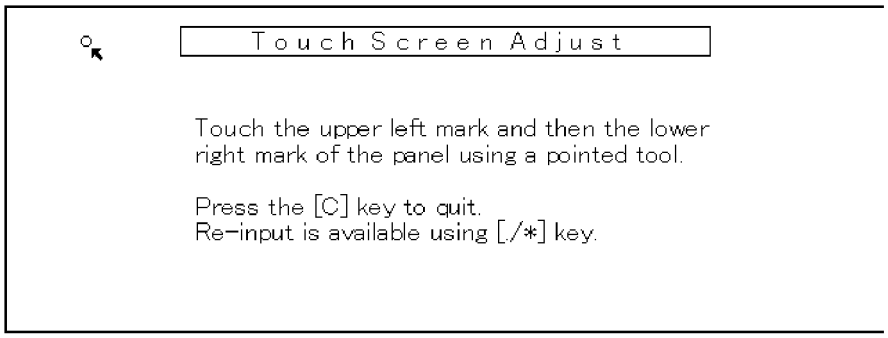
- Do not attempt to use items [2] to [9] on the Self-Diagnostic Menu. These items are for design use only. To avoid causing an error, do not touch the Reset key while doing this procedure.

1. Press [Reset], press [1] [9] [9] [3], and then press [Clear/Stop] 5 times to open the Self-Diagnostics menu.



b140r892

2. On the touch screen press “Touch Screen Adjust” (or press [1]).



b140r893

3. Use a pointed (not sharp!) tool to press the upper left mark .
4. Press the lower right mark after it appears.
5. Touch a few spots on the touch screen to confirm that the marker (+) appears exactly where the screen is touched.
   If the + mark does not appear where the screen is touched, press Cancel and repeat from Step 2.
6. When you are finished, press [#] OK on the screen (or press [#]).
7. Touch [#] Exit on the screen to close the Self-Diagnostic menu and save the calibration settings.

SYSTEM MAINTENANCE

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

5. SYSTEM MAINTENANCE

5.1 RESETS

5.1.1 MEMORY ALL CLEAR: SP5801

Before shipping, the SP mode data settings are printed in an SMC Report and attached to the exposure glass of the machine for your reference. Store this report in a safe place (next to the toner collection bottle, for example). It is a list of all the SP initial settings. Refer to this list if you need to initialize one or more SPs. The initial SP settings are also written in the SP mode tables at the end of this section.

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.

Executing Memory All Clear resets all the settings stored in the NVRAM to their default settings except the following:

SP5811-001	Machine serial number
SP5907	Plug & Play Brand Name and Production Name Setting

1. Execute SP5990 to print out all SMC Data Lists.
2. Open SP mode 5801.
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.

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 2 to 15 below.
002	Engine Clear	Initializes all registration settings for the engine and copy process 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)
006	Copier application	Initializes all copier application settings.
007	Fax application	Initializes the fax reset time, job login ID, all TX/RX settings, local storage file numbers, and off-hook timer.
008	Printer application	Initializes the printer defaults, programs registered, the printer SP bit switches, and the printer CSS counter.
009	Scanner application	Initializes the defaults for the scanner and all the scanner SP modes.
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)
012	R-FAX	Initializes the job login ID, SmartNetMonitor for Admin, job history, and local storage file numbers.
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 Clear	Initializes the SRM (System Resource Manager) settings.

019	LCS Clear	Initializes the LCS (Log Count Service) settings.

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 – Laser Beam Pitch Adjustment
   - Do the printer and scanner registration and magnification adjustments (See "Replacement and Adjustment – Copy Image Adjustments: Printing/Scanning").
   - Do the touch screen calibration (See "Replacement and Adjustment – Touch Screen Calibration").
   - Referring to the SMC data lists, re-enter any values, which had been changed from their factory settings.
   - Execute SP3001-002 – ID Sensor Initial Setting
   - Make sure that SP 5112 is set to 'enabled', or the user will not be able to use non-standard paper sizes.
   - Set SP 1902 001 (amount of fusing unit web used so far) to the most recent setting (see the SMC list).
6. Check the copy quality and the paper path, and do any necessary adjustments.

5.1.2 SOFTWARE AND SETTING RESET

Software Reset

The software can be rebooted when the machine hangs up. Do one of these two steps.

Turn the main power switch off and on.

-or-

Push and hold down [**./***][**#**] together for over 10 seconds. When the machine beeps once, release both buttons. After "Now loading. Please wait" is displayed for a few seconds, the copy window will open. The machine is ready for operation.

Resetting the System

The system settings in the UP mode can be reset to their defaults with this procedure.

1. Make sure that the machine is in the copier standby mode.
2. Press the User Tools key.
3. Hold down [#] and touch the "System Setting" key.
4. A confirmation message will be displayed, then press "Yes".

Resetting Copy/Document Server Features Only

The copy/document server settings in the UP mode can be reset to their defaults with this procedure.

1. Make sure that the machine is in the copier standby mode.
2. Push the User Tools key.
3. Hold down [#] and touch the "Copy/Document Server Features" key.
4. A message will be displayed, then press "Yes".

Resetting Scanner Features Only

The scanner settings in the UP mode can be reset to their defaults with this procedure

1. Make sure that the machine is in the copier standby mode.
2. Push the User Tools key.
3. Hold down [#] and touch "Scanner Features" key.
4. A message will be displayed, then press "Yes"

5.2 SERVICE PROGRAM MODE

5.2.1 GENERAL NOTES

The service program (SP) mode is used to check electrical data, change modes, and adjust values.

⚠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.

5.2.2 SERVICE MODE LOCK/UNLOCK

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

1. If you cannot go into the SP mode, ask the Administrator to log in with the User Tool and then set "Service Mode Lock" to OFF. After he or she logs in:
   - User Tools > System Settings > Administrator Tools > Service Mode Lock > OFF
   - This unlocks the machine and lets you get access to all the SP codes.
   - The CE can 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 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.

5.2.3 TO ENTER AND EXIT THE SERVICE PROGRAM MODE

Ask your supervisor how to enter and/or exit the service program mode.

5.2.4 TO SWITCH TO THE COPY WINDOW FOR TEST PRINTING

1. In the SP mode display, press Copy Window to switch to the copy operation screen when you need to select paper for a test print.
2. Use the copy window (copier mode) to select the appropriate settings (paper size, etc.) for the test print.
3. Press [Start] to execute the test print.
4. Press SP Mode (highlighted) to return to the SP mode screen and repeat from step 1.

Using the SP Mode

SP command numbers can be entered directly (if you know the entire number) or the command can be selected from the menus.

Direct Entry

SP5831 (Initial Setting Clear) an executable SP that initializes the User Tools settings, can be executed immediately by just entering the numbers.

1. Press [5] [8] [3] [1]
2. Press [#].
3. Press "Execute" on the touch panel.

If you know all seven digits of the SP code, enter the seven numbers and press Execute.However, if you do not know all the numbers, enter only the first four numbers of the seven-digit SP and press [#]. The display goes immediately to the first SP of that group. Then you can use the buttons to browse to the desired selection.

Button Selection Entry

1. Refer to the SP Mode Tables at the end of this section to find the SP that you want to adjust.
2. Press the Group number on the left side SP Mode window that contains the SP that you want to adjust.
3. Use the scrolling buttons in the center of the SP mode window to display the SP number that you want to open, then press that number to expand the list.
4. Use the center touch-panel buttons to scroll to the number and title of the item that you want to set, and press [#]. The small entry box on the right is activated and displays the default or the current setting below.
5. To enter a setting
   - Press [**./***] to enter a minus sign. Then use the keypad to enter the appropriate number. The number you enter will write over the previous setting.
   - Press [#] to enter the setting. (If you enter a number that is out of range, the key press is ignored.)
   - When you are prompted to complete the selection, press Yes.
6. If you need to perform a test print, press Copy Window to open the copy window and select the settings for the test print. Press [Start] twice, then press SP Mode (highlighted) in the copy window to return to the SP mode display.
7. When you are finished, press Exit twice to return to the copy window.

5.2.5 SP MODE PRINT (SMC PRINT)

You can print an SMC Report to check the machine's condition. The SMC Report gives a list of the SP commands and their settings.

5990	SP Print Mode (SMC Print)
	In the SP mode, push "Copy Window" to move to the copy screen, select the paper size, then push Start. Select A4/LT (Sideways) or larger to make sure that all the information is printed. Push "SP Window" to go back to the SP mode, select the necessary SP Print Mode, and push Execute.
001	All (Data List)
002	SP (Mode Data List)
003	User Program Data
004	Logging Data
005	Self-Diagnostic Report
006	Non-Default (Prints only SPs that are set to values other than defaults.)
007	NIB Summary (Configuration, Systemlog, Nvramlog)
008	Capture Log
021	Copier User Program (Copy Management Report)
022	Scanner SP
023	Scanner User Program (Scanner Management Report)

5.3 TEST PATTERN PRINTING

5.3.1 PRINTING TEST PATTERN: SP2902-003

Some of these test patterns are used for copy image adjustments but most are used primarily for design testing. These test patterns do not use the IPU.

Note

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

1. Enter the SP mode and select SP2902-003.
2. Enter the number for the test pattern that you want to print and press [#]. (See the table below.)
3. When you are prompted to confirm your selection, press Yes to select the test pattern for printing.
4. Press Copy Window to open the copy window, then select the settings for the test print (paper size, etc.)
5. Press [Start] twice (ignore the “Place Original” messages) to start the test print.
6. After checking the test pattern, press SP Mode (highlighted) to return to the SP mode display.
7. Exit the SP mode.

Test Pattern Table

These patterns can be selected for SP2902-003

No.	Test Pattern
0	None
1	Alternating Dot Pattern (1-dot)
2	Alternating Dot Pattern (2-dot)
3	Alternating Dot Pattern (4-dot)
4	Alternating Dot Pattern (1024-dot)
5	Grid Pattern (1-dot): 0ch
6	Grid Pattern (1-dot): 1ch
7	Grid Pattern (1-dot): 2ch

No.	Test Pattern
8	Grid Pattern (1-dot): 3ch
9	Grid Pattern (1-dot pair)
10	Checkered Flag Pattern
11	Horizontal Line (2-dot)
12	Vertical Line (2-dot)
13	Horizontal Line (1-dot)
14	Vertical Line (1-dot)
15	Cross Stitch (Horizontal)
16	Cross Stitch (Vertical)
17	Argyle Pattern
18	Trimming Area
19	Full Dot Pattern
20	Black Band (Vertical)
21	Black Band (Horizontal)
22	Stair
23	Blank Image
24	Grid Pattern (1-dot): 0ch (with external data)
25	Trimming Area (with external data)
26	Argyle Pattern (with external data)
27	Outside Data

5.3.2 IPU FRONT/BACK TEST PATTERNS: SP2902-001,002

- Front side pattern (SP2902-001). Generated by the IPU in place of data scanned from the front side of an original (CCD > SBU). Generated in the scanner image correction circuit.
- Back side pattern. (SP2902-002. Generated by the IPU in place of data scanner from the back side of an original (CIS > SBU). Generated in the scanner image correction circuit.

The IPU test patterns are primarily used for design purposes. However, they can be used as follows:

- To confirm that the IPU is processing images correctly.
- To fine tune the image processing parameters
- To help trace the causes of poor images. For example, if the IPU test patterns are normal when the machine is producing poor quality images, then the problem must be after the IPU.

1. Enter the SP mode, select SP2902.
2. Select 001 to print a test pattern for the front side, or select 002 to print a test pattern for the back side.
3. Scroll then select the number of the test pattern that you want to print (see the table below).
4. Press [#].
5. Press Copy Window to open the copy window, then select the settings for the test print (paper size, etc.)
6. Press [Start] to start the test print.
7. Press SP Mode (highlighted) to return to the SP mode display.

Note

- Patterns 6, 8, 9, and 11 are the best choices for testing and confirming the operation of the IPU.

Test Pattern Table

These patterns can be selected for both SP2902-001 and 002.

No.	Test Pattern
0	None
1	Vertical Line (1-dot)
2	Vertical Line (2-dot)
3	Horizontal Line (1-dot)
4	Horizontal Line (2-dot)
5	Independent Dot (1-dot)
6	Grid Pattern (1-dot)
7	Vertical Stripes
8	Grayscale Horizontal (16-level)
9	Grayscale Vertical)16-level)
10	Grayscale Vertical-Horizontal (16-level)
11	Cross Pattern
12	Argyle Pattern
13	Density Patch (256-level)
14	Density Patch (64-level)
15	Trimming Area
16	Bandwidth (Vertical)
17	Bandwidth (Horizontal)
18	Auto Create Vertical 1-dot Line (Main Scan)
19	Auto Create Horizontal 1-dot Line (Sub Scan)
20	Auto Create Vertical 2-dot Line (Main Scan)

No.	Test Pattern
21	Auto Create Horizontal 2-dot Line (Sub Scan)
22	Auto Create 1-dot Independent Dots
23	Auto Create Grid 1-dot Line
24	Auto Create Vertical Stripes
25	Auto Create Horizontal Stripes
26	Auto Create Grayscale Horizontal (20 mm)
27	Auto Create Grayscale Horizontal (40 mm)
28	Auto Create Grayscale Vertical (20 mm)
29	Auto Create Grayscale Vertical (40 mm)
30	Auto Create Argyle

5.3.3 IPU PRINTING TEST PATTERN: SP2902-004

This test pattern is generated in the application input processing circuit in the IPU. The operation path is as follows:

Application input > Memory > Printer

This test pattern is primarily used for design purposes, but it can also be used to trace the source of problems beyond the IPU (in the application input) which are causing poor print quality.

1. Enter the SP mode and select SP2902-004.
2. Enter the number for the test pattern that you want to print and press [#]. (See the table below.)

No.	Pattern
0	Off
1	Vertical Grayscale 20
2	Horizontal Grayscale 40
3	Horizontal Grayscale 20
4	Horizontal Grayscale 25
5	Caterpillar

3. When you are prompted to confirm your selection, press Yes to select the test pattern for printing.
4. Press Copy Window to open the copy window, then select the settings for the test print (paper size, etc.)
5. Press [Start] twice (ignore the “Place Original” messages) to start the test print.
6. Press SP Mode (highlighted) to return to the SP mode display.
7. Switch the machine off and on.

5.4 UPDATING THE FIRMWARE

5.4.1 SOFTWARE UPDATE

Software Update Procedure

SD cards are used to update the software and to back up important data. Here is a list of the firmware modules that can be updated or restored from an SD card:

- GW controller software
- BCU software
- LCDC (operation panel) software
- Network Sys (network) software
- Web Sys (Web Image Monitor)
- Document Server software
- NFA (Net File) software
- Printer application software
- Scanner application software
- DESS (encryption module) software

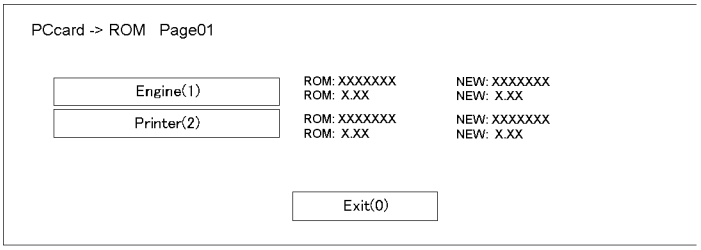
Important

- Never connect or remove an IC card or SD card with the machine power turned on.
- Never turn the power off while the machine is downloading data from an IC card or SD card.
- The IC cards and SD card are precision items. Use them carefully.
- Never store IC cards or SD cards in a location where they are exposed to high temperature, high humidity, or direct sunlight.
- Never bend an IC card or SD card, scratch it, or expose it to strong vibration.
- Before uploading data to an SD card, always confirm that its write-protect switch is off.

Doing the Software Update Procedure

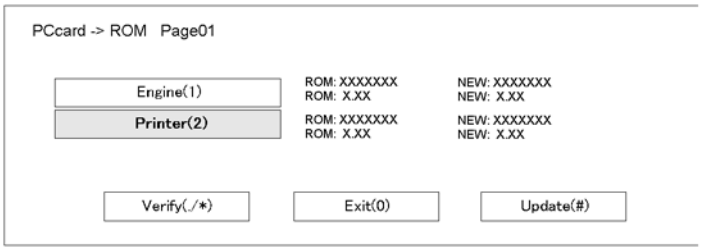
An SD card with the software downloaded to it is necessary for this procedure.

1. Turn the main switch off.
2. Remove the SD card slot cover (x 1).
3. Hold the SD card (the surface with printing must be away from the front of the machine), and install the SD card in slot 2.
4. Turn the main power switch on.
5. Stop until the version update screen is displayed. If the SD card contains more than one software application, the screen will be almost the same as the one below. The screen below shows that the SC card contains two applications: "Engine" and "Printer".



b246s903

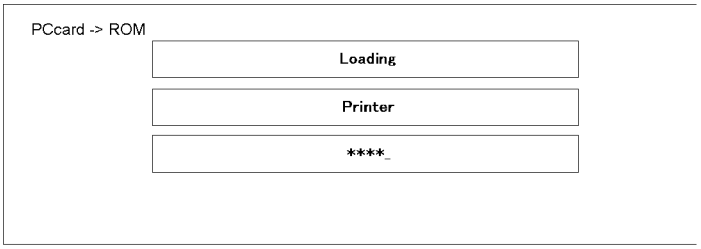
6. To select the item for upgrade, touch the selection on the touch panel, or push the corresponding key on the 10-key pad (1 to 5) of the operation panel. The number in parentheses tells you which key to push. When you make a selection, the [Verify(./*)] and [Update(#)] buttons come on the screen.



b246s904

- If you push [Exit] (or the [0] key), you go back to the usual operation screen.
- Push the [Start] key on the operation panel to select and download all the options shown on the screen.
- Push the [Clear] key on the operation panel if you want to cancel your selections and make new ones.
- "ROM": This is the number and other version information of the ROM firmware installed in the machine at this time.
- "NEW": This is the number and other version information of the firmware on the SD card.

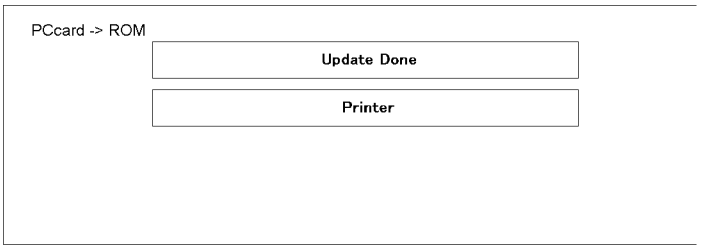
7. With the selected items shown in reverse color, push the [Update] button or the [#] key on the operation panel to start the update.
   After you push [Update]:



b246s905

- The middle bar shows the name of the module that the machine updates at this time. (The example above shows that the machine updates the "Printer" module at this time.)

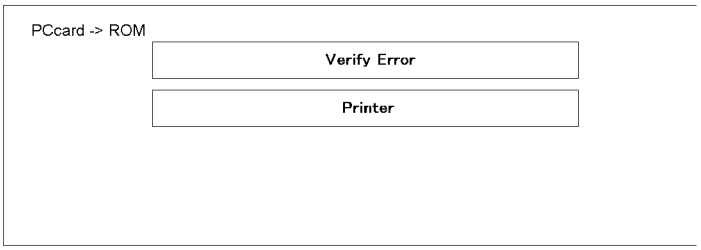
- The bottom bar is a progress bar. The "_" marks in the progress bar are replaced by "*" marks. This progress bar cannot be displayed during the firmware update for the operation panel. But, the LED of the [Start] key on the operation panel changes from red to green to show that the update of the operation panel firmware continues.
- When the update is completed, you will see this screen.



b246s906

After the firmware update, you will see "Update Done" in the first bar. The name of the module in the bottom bar is the name of the last module that was updated (only the name of the last module is shown, if several modules were been updated).

8. Turn the power off and on. Then, select the items that you updated, and then push the [Verify] button. This is to check that the modules were updated correctly.
9. If you see "Verify Error" in the first bar on the screen, then you must do the procedure again for the module shown in the bottom bar.



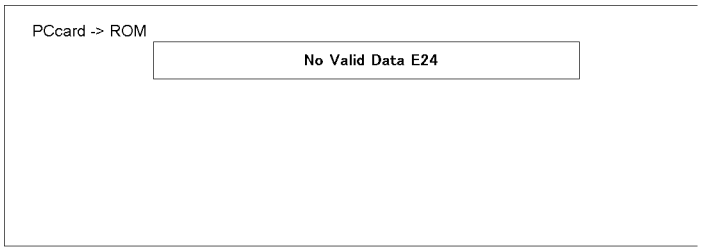
b246s907

Note

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

10. After the firmware is correctly updated, turn the main power switch off.
11. Push the SD card in a small distance to release it, then pull it out of the slot.
12. Turn the main power switch on, and check that the machine operates correctly.

Errors During Firmware Update



b246s908

If an error occurs during a download, an error message will appear. The error code consists of the letter "E" and a number ("E20", for example).

Error Message Table

No.	meaning	Solution
20	Cannot map logical address	Make sure the SD card is installed correctly, or use a different SD card.
21	Cannot access memory	HDD connection not correct, or replace hard disk.
22	Cannot decompress compressed data	The ROM data on the SD card is not correct, or data is damaged.
23	Error occurred when ROM update program started	Controller program defective. If the second attempt fails, replace the controller board.
24	SD card access error	Make sure the SD card is installed correctly, or use a different SD card.
30	No HDD available for stamp data download	HDD connection not correct or replace hard disks.
31	Data incorrect for continuous download	Install the SD card with the remaining data necessary for the download, then re-start the procedure.
32	Data incorrect after download interrupted	Do the recovery procedure for the module, then repeat the installation procedure.
33	Incorrect SD card version	The ROM data on the SD card is not correct, or data is damaged.

34	Module mismatch - Correct module is not on the SD card	The data on the SD is not correct. Get the correct data (Japan, Overseas, OEM, etc.) then install again.
35	Module mismatch – Module on SD card is not for this machine	SD update data is not correct. The data on the SD card is for a different machine. Get the correct data then install again.
36	Cannot write module – Cause other than E34, E35	SD update data is not correct. The data on the SD card is for a different machine. Get the correct data then install again.
40	Engine module download failed	Replace the data for the module on the SD card and try again, or replace the BCU board.
42	Operation panel module download failed	Replace the data for the module on the SD card and try again, or replace the LCDC.
43	Stamp data module download failed	Replace the data for the module on the SD card and try again, or replace the hard disk.
44	Controller module download failed	Replace the data for the module on the SD card and tray again, or replace the controller board.
50	Electronic confirmation check failed	SD update data is not correct. The data on the SD card is for a different machine. Get the correct data then install again.

Updating the LCDC for the Operation Panel

1. Use this procedure to update the LCDC (LCD Control Board).
2. Turn the copier main switch off.
3. Put the SD card into slot 2.
4. Turn the copier main switch on.
5. Stop until the card utility screen is displayed.
   After approximately 10 seconds, the initial screen opens in English.
6. Touch [Opepanel.DOM].
7. Touch [UpDate(#)] to start the update.
   While the data downloads, the operation panel goes off.
   The LED on the [Start] key flashes red at 1/2 second intervals for approximately 6 minutes.
   When the update is completed, the [Start] key starts to flash at 1-second intervals.
8. Turn the copier main power switch off, remove the SD card, then turn the copier on again.

Downloading Stamp Data

After you replace or format the HDD, download the stamp data from the controller firmware to the hard disk.

1. Go into the SP mode.
2. Select SP5853 then press "Execute".
3. Obey the instructions on the screen to complete the procedure.

5.4.2 UPLOADING/DOWNLOADING NVRAM DATA

Uploading Content of NVRAM to an SD card

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

Note

- Always upload this data to an SD card before you replace the NVRAM.

1. Before you turn the machine off, do SP5990 001 (SMC Print). This gives you a record of the NVRAM settings if the upload fails.
2. Turn the copier main power switch off.
3. Put the SD card into slot 2, then turn the copier on.
4. Do SP5824 001 (NVRAM Data Upload) then push the "Execute" key
   When uploading is completed, a file is coped to the NVRAM folder on the SD card. The file is saved to this path and filename:
   NVRAM¥<serial number>.NV
   Here is an example for Serial Number "B0700017":
   NVRAM¥B0700017.NV
5. To prevent an error during the download, write the serial number of the machine on the SD card.

   Note

   - This is necessary because NVRAM data from more than one machine can be uploaded to the same SD card.

Downloading an SD Card to NVRAM

Do 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 BCU is defective, the NVRAM data download will not complete correctly.
- If the download does not complete correctly, do the download procedure again.
- If this does not complete correctly, input the NVRAM data manually from the SMC print that you made before you uploaded the NVRAM data.

1. Turn the copier main power switch off.
2. Put the SD card with the NVRAM data into slot 2.
3. Turn the copier main power switch on.
4. Do SP5825-001 (NVRAM Data Download) and push the "Execute" key.

   Note

   - This procedure also downloads the C/O, P/O Count data to the NVRAM:
   - 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 not complete correctly.

5.5 SERVICE PROGRAM MODE TABLES

5.5.1 SP TABLES

See "Appendices" for the following information:

- System SP Tables
- Printer SP Tables
- Scanner SP Tables

5.6 INPUT/OUTPUT CHECK

See "Appendices" for the following information:

- Input/Output Check

5.7 USING THE DEBUG LOG

This machine provides a debug log feature that allows the service technician to save and retrieve error information for analysis.

Every time an error occurs, debug information is recorded in RAM 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 procedures below to set up the machine so the error information is saved automatically to the HDD. Then attempt to duplicate the problem so the error data will be stored.

5.7.1 SETTING UP "SAVE DEBUG LOG"

The debug information cannot be saved until the “Save Debug Log” function is switched on and a target is selected.

To Switch Debug Log On

1. To enter the SP mode, press △▽ together (5s), release, then press [#Enter].
2. Select SP5857.

SP5857 >> Save Debug Log

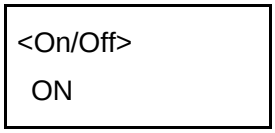
3. Push [#Enter].

SP5857-001 On/Off

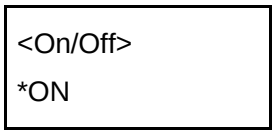
4. Push [#Enter].

<On/Off> *OFF

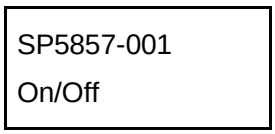
5. Push ▽.



6. Push [#Enter].



7. Push [Esc].

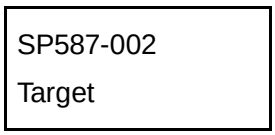


Do the next procedure to select the target.

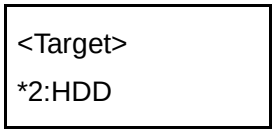
To Select the Target for the Debug Log File

You can select either the HDD (default) or the SD card as the target. This procedure shows you how to select the SD card.

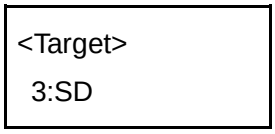
1. Push ▽.



2. Push [#Enter].



3. Push ▽.



4. Push [#Enter].

<Target>
*3:SD

5. Push [Esc] twic.

SP5857 >>
Save Debug Log

6. Do the next procedure to select the events that you want to record in the debug log file.

To Select Events

1. Push ▽.

SP5858 >>
DebugSaveWhen

2. Push [#Enter].

SP5858-001
EngineSC Error

Here is a list of the events that you can select. Any number of events can be selected.

SP No.	Name	What It Does
SP5858-001	EngineSC Error	Saves error data when an engine-related SC code occurs.
SP5858-002	SystemSC Error	Saves error data when a controller-related SC Code occurs.
SP5858-003	Any SC Error	Saves error data only for the SC code that you specify by manually entering the SC code number.
SP5858-004	Jam	Saves error data for jams.

Example 1: To Select Items 001, 002, or 004

1. Push △ or ▽ to select 001, 002, or 003. This example shows the selection of 001.

```
SP5858-001
EngineSC Error
```

2. Push [#Enter].

```
<EngineSC Error>
*OFF
```

3. Push ▽.

```
<EngineSC Error>
 ON
```

4. Push [#Enter].

```
<EngineSC Error>
*ON
```

5. Push [Esc].

SP5858-001 EngineSC Error

6. Repeat this procedure to select either 002 or 004.

Example 2: To set an SC code with 003

This example shows you how to enter "672" for SC672.

Note

- For details about SC code numbers, please refer to the SC tables in Section "4. Troubleshooting".

1. Select "SP5858-003".

SP5858-003 Any SC Code

2. Push [#Enter].

0000000 _

3. Push [#Enter] to toggle the on the number display in the 2nd line.

0000000 0

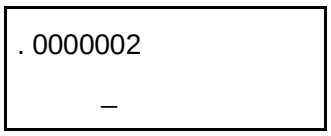
4. Push △ or ▽ to display "2".

0000000 2

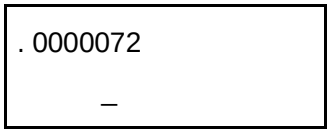
5. Push [#Enter] to enter the "2" in the line above.

0000002 _

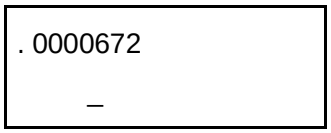
6. Push △ or ▽ to move the cursor to the next digit.



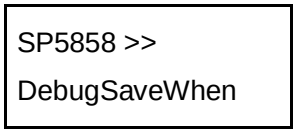
7. Repeat Steps 2 to 6 to enter the "7".



8. Repeat Steps 2 to 6 to enter the "6".



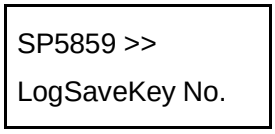
9. Push [Esc] twice.



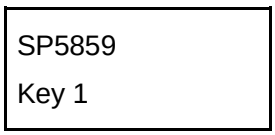
10. Do the next procedure to select one or more memory modules for the debug error data recording.

To select one or more memory modules for recording in the debug log file

1. Select SP5859.



2. Push [#Enter].



3. Push [#Enter].

```
0000000
       _
```

Note

- The default settings for Keys 1 to 10 are all zero (“0”).

4. Select the number from the table below, then use these key presses to enter the number.

```
0002222
   _
```

Key Press	What It Does
△ or ▽	Moves the cursor to select the digit in the line above.
[#Enter]	Enters the number entry mode (displays a "0" at the cursor).
△ or ▽	Selects the number to enter at the digit position in the line above.
[#Enter]	Enters the selected number in the line above and exits the entry mode you can select the next position with △ or ▽

5. Refer to the table below for the 4-digit numbers to enter for each key. (The acronyms in parentheses indicate the names of the modules.)

4-Digit Entries for Keys 1 to 10

Key No.	Printer	Web
1	2222 (SCS)	
2	2223 (SRM)	
3	256 (IMH)	
4	1000 (ECS)	
5	1025 (MCS)	
6	4400 (GPS)	5682 (NFA)

Key No.	Printer	Web
7	4500 (PDL)	6600 (WebDB)
8	4600 (GPS-PM)	3300 (PTS)
9	2000 (NCS)	6666 (WebSys)
10	2224 (BCU)	2000 (NCS)

Key to Acronyms

Acronym	Meaning
ECS	Engine Control Service
GPS	GW Print Service
GSP-PM	GW Print Service – Print Module
IMH	Image Memory Handler
MCS	Memory Control Service
NCS	Network Control Service
NFA	Net File Application
PDL	Printer Design Language
PTS	Print Server
SCS	System Control Service
SRM	System Resource Management
WebDB	Web Document Box (Document Server)

The machine is now set to record the debugging information automatically on the SD card or HDD (the target selected with SP5857-002) for the events that you selected SP5858 and the memory modules selected with SP5859.

Please keep the following important points in mind when you are doing this setting:

- 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.
- One area of the disk is reserved to store the debug log. The size of this area is limited to 4 MB.

5.7.2 RETRIEVING THE DEBUG LOG FROM THE HDD

1. Insert the SD card into SD slot 2.
2. Enter the SP mode and execute SP5857-009 (HDD for SD (4MB)) to write the debugging data to the 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.

5.7.3 MORE ABOUT DEBUG LOG

SP5857-015: SD to SD (Any)

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: Make HDD LogFile

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: Make SD Log File

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).

TROUBLESHOOTING

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

6. TROUBLESHOOTING

6.1 SERVICE CALL CONDITIONS

For "Service Call Conditions" information, see "Appendices".

- SC Code Descriptions: SC100: Scanning
- SC Code Descriptions: SC200: Exposure
- SC Code Descriptions: SC300: Image Development 1
- SC Code Descriptions: SC400: Image Development 2
- SC Code Descriptions: SC500: Feed, Transport, Duplex, and Fusing
- SC Code Descriptions: SC600: Data Communication
- SC Code Descriptions: SC700: Peripherals
- SC Code Descriptions: SC800: Overall System
- SC Code Descriptions: SC900: Miscellaneous

6.2 IMPORTANT SP CODES

SP5802	Free Run Mode	Execute this SP to force base engine to run in the free run mode for testing.
SP5803	Input Check	Displays the signals received from sensors and switches. Refer to the detailed tables in "Service Tables”.
SP5804	Output Check	Switches electrical components one by one for testing. Refer to the detailed tables in "Service Tables”.
SP5990	SMC Printout	Prints the SMC Report. Some SC codes (logged SPs) are shown only in the SMC Report and do not show on the operation panel display.
SP7801	ROM Version Display.	Displays the version number of the main machine and connected peripherals.
SP7832	Self-Diagnostic Result Display	Execute this SP to display a list of error codes. No errors have occurred if nothing is displayed.
SP7801	Firmware Version	Displays the current numbers of all versions of the firmware in the system.
SP7403	Status of Issued SC	Execute to display the following information about the most recently issued SC: 1) Source file name, 2) SC number, 3) Result

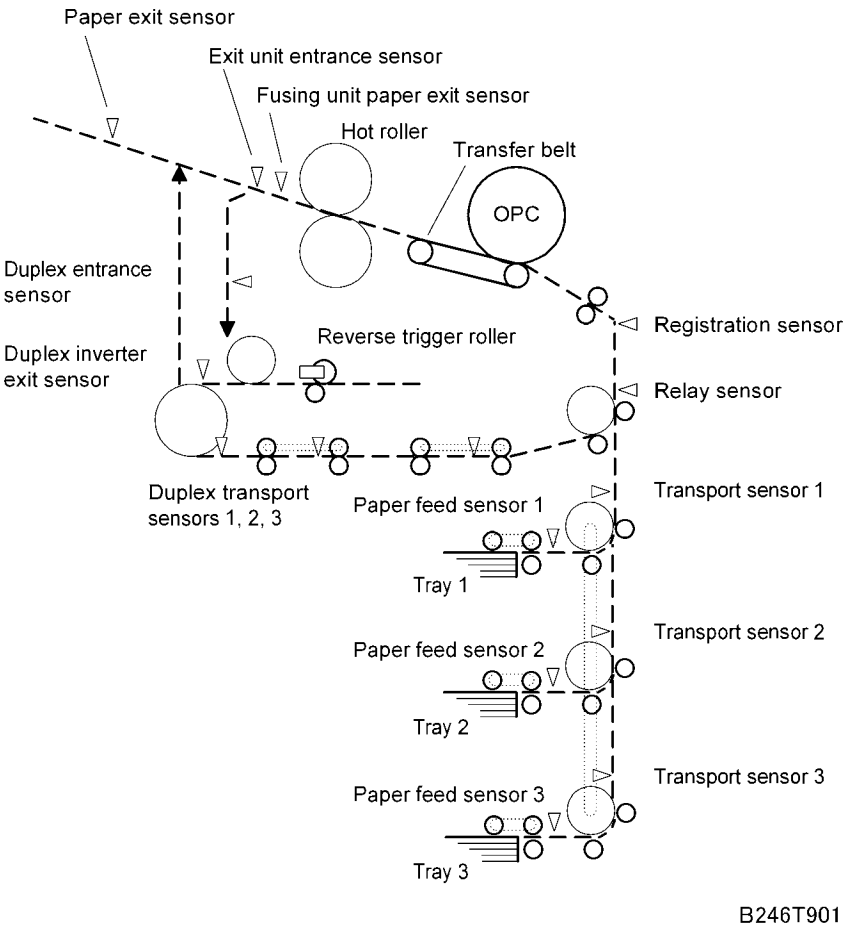
Note

- For more information about these and other SP codes, see “Service Tables”.

6.3 JAM DETECTION

6.3.1 SENSOR LOCATIONS

The illustration below shows the locations of the jam sensors.



6.3.2 FREQUENT PAPER JAMS

If there are frequent paper jams, check SP7504 in “Service Tables”. If these locations have frequent jams, do the procedures described below.

Symptom 1: Jams when paper is fed from a by-pass tray that is not used frequently

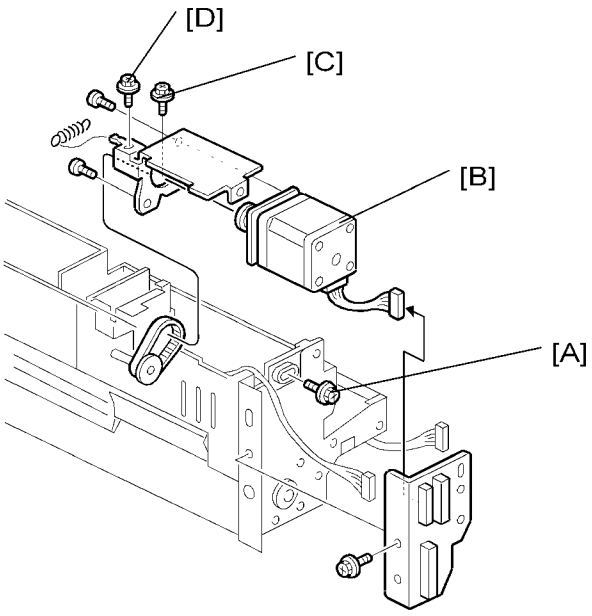
If the customer does not use the by-pass tray frequently, the rollers can become worn.

1. Visually check the by-pass tray pick-up, feed, and separation rollers.
2. If these rollers are paler than the rollers in paper trays that are more frequently used, replace the rollers in the by-pass tray.

Note

- For more details, see Replacement and Adjustment - By-Pass Tray Rollers.

Symptom 2: Jams with noise from the paper feed unit



1. Remove the paper feed unit.
2. Loosen screw [A].
3. Push the motor [B] toward the tray side, then tighten the screw [A].
4. Loosen screws [C] and [D], let the spring move the unit to the correct position, then tighten the screws.

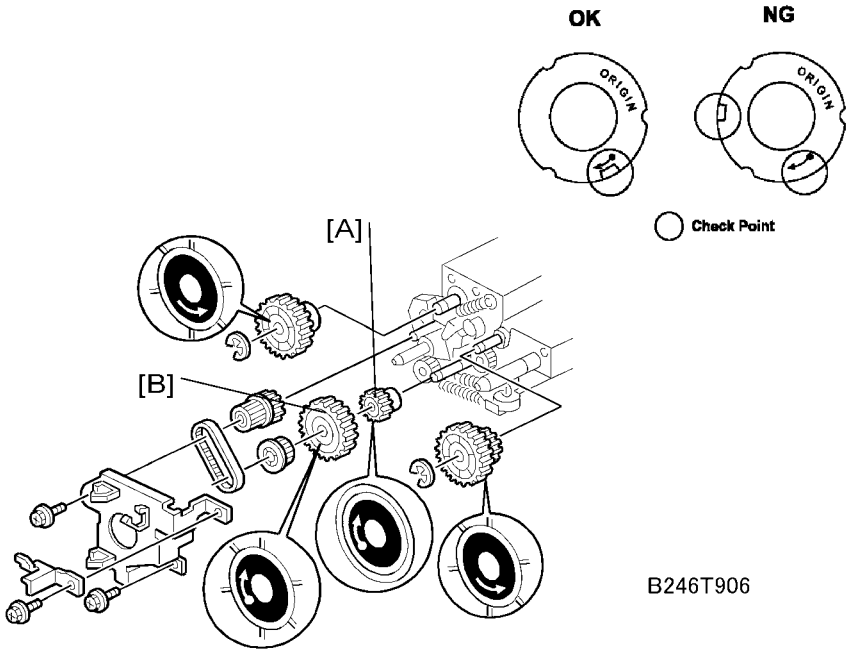
Symptom 3: Other

If none of the two symptoms 1 or 2 applies, do this procedure.

1. Use SP7504 to check the jam counts and find which SPs have high counts.
2. From the table and illustration below, find which gears must be replaced.
   Example: For tray 1, if SP7504-012 is high, replace gear A, or if SP7504-008 is high, replace gear B.

Tray	SP7504 12	SP7504 8	SP7504 9	SP7504 10	SP7504 11
Tray 1	Gear [A]	Gear [B]			
Tray 2		Gear [A]	Gear [B]		
Tray 3			Gear [A]	Gear [B]	
Tray 4				Gear [A]	Gear [B]

3. Clean the shafts and replace the necessary gears.
4. Replace a gear if its cutout and arrow are not in the same position.



5. When you replace Gear [A] or Gear [B], be sure to put the metal face on the outer side, and the arrow must be in view.
6. If a replacement gear is not available, do this as a temporary procedure:
   - Remove the paper feed unit.
   - Remove the gear.

- Clean the gear shaft and inside the gear.
- Attach the gear.
- Install the paper feed unit.

6.3.3 JAM CODES

Here are lists of SC codes that are printed in the SMC report; they do not appear on the operation panel display.

ADF: Paper Jam Errors

No.	Location	Position Code
003	Separation Sensor: On	P1
004	Skew Correction Sensor: On	P1
005	Interval Sensor: On	P2
006	Registration Sensor: On	P2
007	Exit Sensor: On	P2
053	Separation Sensor: Off	P1
054	Skew Correction Sensor: Off	P1
055	Interval Sensor: Off	P2
056	Registration Sensor: Off	P2
057	Exit Sensor: Off	P2

Main Unit and LCIT RT4010 (D613): Paper Jam Errors

No.	Location	Position Code
1	Initial Jam (Power On)	A1
3	1st Paper Feed SN: Late	A1
4	2nd Paper Feed SN: Late	A1
5	3rd Paper Feed SN: Late	A1
6	4th Paper Feed SN: Late (Japan Only)	A1
7	LCT Feed SN: Late	U
8	1st Vertical Transport SN: Late	A1
9	2nd Vertical Transport SN: Late	A1
10	3rd Vertical Transport SN: Late	A1
11	4th Vertical Transport SN: Late (Japan Only)	A1
12	Relay SN: Late	B
13	Registration SN: Late	B/C
14	Fusing Exit SN: Late	D
15	Exit Unit Entrance SN: Late	E
16	Paper Exit SN: Late	E
19	Duplex Entrance SN: Late	E
20	Duplex Transport SN 1: Late	F
21	Duplex Transport SN 2: Late	F
22	Duplex Transport SN 3: Late	F
23	Duplex Exit SN: Late	E
24	LCT Relay SN: Late	U
34	By-pass Paper Feed SN: Late	A2

No.	Location	Position Code
45	Sort Tray: Paper Exit SN: Late	R
46	Sort Tray: Tray Lift Motor	R
47	Sort Tray: Shift Tray Motor	R
53	1st Paper Feed SN: Lag	A1
54	2nd Paper Feed SN: Lag	A1
55	3rd Paper Feed SN: Lag	A1
56	4th Paper Feed SN: Lag (Japan Only)	A1
57	LCT Feed SN: Lag	U
58	1st Vertical Transport SN: Lag	A1
59	2nd Vertical Transport SN: Lag	A1
60	3rd Vertical Transport SN: Lag	A1
61	4th Vertical Transport SN: Lag (Japan Only)	A1
62	Relay SN: Lag	B
63	Registration SN: Lag	B/C
-	-	-
66	Paper Exit SN: Lag	E
69	Duplex Entrance SN: Lag	E
-	-	-
71	Duplex Transport SN 2: Lag	F
72	Duplex Transport SN 3: Lag	F
-	-	-
74	LCT Relay SN: Lag	B
84	By-pass Paper Feed SN: Lag	A2

Finisher SR4060 (D611): Paper Jam Errors

No.	Location	Position Code	SC Code
109	Tray 1 Lift Motor Error	R1 to 4	SC720-70
110	Jogger Motor Error	R5 to 8	SC720-30
111	Exit Guide Motor Error	R1 to 4	SC720-24
111	Front Shift Jogger Motor Error	R1 to 4	SC720-72
111	Rear Shift Jogger Motor Error	R1 to 4	SC720-73
111	Shift jogger retraction motor Error	R1 to 4	SC720-73
111	Return Roller Motor Error	R1 to 4	SC720-74
111	Shift Motor Error	R1 to 4	SC720-71
112	Corner Stapler Rotation Motor Error	R5 to 8	SC720-43
112	Stapler Movement Motor Error	R5 to 8	SC720-42
113	Corner Stapler Motor Error	R5 to 8	SC720-44
113	Booklet Stapler Motor Error 1	R5 to 8	SC720-60
113	Booklet Stapler Motor Error 2	R5 to 8	SC720-61
115	Feed-Out Belt Motor Error	R5 to 8	SC720-41
116	Punch Motor Error	R1 to 4	SC720-87
116	Punch Movement Motor Error	R1 to 4	SC720-80
116	Paper Position Sensor Slide Motor Error	R1 to 4	SC720-81

Finisher SR4070 (D612): Paper Jam Errors

No.	Location	Position Code	SC Code
129	Tray 1 Lift Motor Error	R1 to 4	SC720-70
129	Tray 1 Lift Motor Error	R1 to 4	SC720-70
130	Jogger Motor Error	R8 to 12	SC720-30
131	Exit Guide Motor Error	R1 to 4	SC720-24
131	Front Shift Jogger Motor Error	R1 to 4	SC720-72
131	Rear Shift Jogger Motor Error	R1 to 4	SC720-73
131	Shift jogger retraction motor Error	R1 to 4	SC720-73
131	Return Roller Motor Error	R1 to 4	SC720-74
131	Shift Motor Error	R1 to 4	SC720-71
132	Corner Stapler Rotation Motor Error	R8 to 12	SC720-43
132	Stapler Movement Motor Error	R8 to 12	SC720-42
133	Corner Stapler Motor Error	R8 to 12	SC720-44
133	Booklet Stapler Motor Error 1	R8 to 12	SC720-60
133	Booklet Stapler Motor Error 2	R8 to 12	SC720-61
134	Folder Plate Motor Error	R8 to 12	SC720-41
134	Bottom Fence Lift Motor	R8 to 12	SC720-53
134	Clamp Roller Retraction Motor Error	R8 to 12	SC720-55
134	Stack Junction Gate Motor Error	R8 to 12	SC720-57
135	Feed-Out Belt Motor Error	R8 to 12	SC720-41
136	Punch Motor Error	R1 to 4	SC720-87
136	Punch Movement Motor Error	R1 to 4	SC720-80
136	Paper Position Sensor Slide Motor Error	R1 to 4	SC720-81

Finisher SR4080 (D610): Paper Jam Errors

No.	Location	Position Code
158	Punch Motor Error	R1 to 3
159	Tray 1 (Upper Tray Lift) Motor Error	R1 to 3
160	Shift Motor Error	R4 to 7
161	Jogger Motor Error	R4 to 7
162	Stack Plate Motor Error 1: Front Motor Error	R4 to 7
163	Stack Plate Motor Error 2: Center Motor Error	R4 to 7
164	Stack Plate Motor Error 3: Rear Motor Error	R4 to 7
165	Shift Motor Error	R1 to 3
166	Return Roller Motor Error	R1 to 3
167	Front Shift Jogger Motor Error	R1 to 3
168	Shift Jogger Retraction Motor Error	R1 to 3
169	Downstream Finisher Communication Error	R4 to 7
170	Corner Stapler Motor Error	R4 to 7
171	Stapler Movement Motor Error	R4 to 7
172	Corner Stapler Rotation Motor Error	R4 to 7
173	Feed-Out Belt Motor Error	R4 to 7
174	Punch Motor Error	R1 to 3
175	Jogger Top Fence Motor Error	R4 to 7
176	Jogger Bottom Fence Motor Error	R4 to 7
-	Staple Trimming Hopper Full	R4 to 7

Mailbox CS4000 (D616): Paper Jam Errors

No.	Location	Position Code
201	Vertical Transport Sensor 1	W
202	Vertical Transport Sensor 2	W
203	Vertical Transport Sensor 3	W
204	Vertical Transport Sensor 4	W
205	Vertical Transport Sensor 5	W

Cover Interposer Tray CI4000 (D614): Paper Jam Errors

No.	Location	Position Code
251	Paper Feed Sensor	Q
252	Vertical Transport Path	Q1 to Q3
253	Bottom Plate Position Sensor	Q

Multi Folding Unit FD4000 (D615): Paper Jam Errors

No.	Location	Position Code
351	Entrance SN: Late	N1 to N5
352	Entrance SN: Lag	N1 to N5
353	Top Tray Exit SN: Late	N1 to N5
354	Top Tray Exit SN: Lag	N1 to N5
355	Horizontal Path Exit SN: Late	N1 to N5
356	Horizontal Path Exit SN: Lag	N1 to N5
357	1st Stopper HP SN: Late	N6 to N22

No.	Location	Position Code
358	1st Stopper HP SN: Lag	N6 to N22
359	2nd Stopper HP SN: Late	N6 to N22
360	2nd Stopper HP SN: Lag	N6 to N22
361	3rd Stopper HP SN: Late	N6 to N22
362	3rd Stopper HP SN: Lag	N6 to N22
363	Skew Correction Jam	N6 to N22
364	Folded Paper Path Jam	N1 to N5
366	Entrance JG Motor Jam	N1 to N5
367	Fold JG Motor Jam	N1 to N5
368	1st Stopper Motor Jam	N6 to N22
369	2nd Stopper Motor Jam	N6 to N22
370	3rd Stopper Motor Jam	N6 to N22
371	Dynamic Roller Trans. Motor Jam	N6 to N22
372	Registration Roller Release Motor Jam	N6 to N22
373	Fold Plate Motor Jam	N6 to N22
374	Jogger Fence Motor Jam	N6 to N22
375	Positioning Roller Motor Jam	N6 to N22
376	Direct-Send JG Motor Jam	N6 to N22
377	FM6 Pawl Motor Jam	N6 to N22
399	Main Machine Set. Incorrect	N1 to N5 / N6 to N22

6.4 PROGRAM DOWNLOAD

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, a progress bar ("***____") is displayed until the download completes successfully.
- If the download is interrupted while the asterisks are 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 become corrupted. If this occurs, it may not be possible to restart the downloading program.
- If the GW controller software cannot be downloaded, software on other SD cards cannot be downloaded as well.
- If such problems occur, it may be possible to restart the program without replacing the controller board by setting controller DIP SW 1 to ON and then re-starting.

6.4.1 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.

6.4.2 DOWNLOAD ERROR CODES

	Display	Details	Recovery
01	Reboot after card insert E01 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.	▪ Turn 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.	▪ Turn 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)	▪ Turn the machine off/on ▪ Set DIP SW 1 to ON and retry ▪ Replace RAM DIMM ▪ Replace controller board
05	Download Error E05 Power off/on	Controller ROM update error 5 Error occurs when writing to the device.	▪ Turn the machine off/on ▪ Set DIP SW 1 to ON and retry ▪ Replace RAM DIMM ▪ Replace controller board

	Display	Details	Recovery
06	Download Error E06 Power off/on	Controller ROM update error 6	▪ 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.
		CPU clock error.	
19	Download Error E19 Power off/on	Controller ROM update error 7	▪ Software defective
		Schedule data is unclear.	
20	Down Error E20 Power Off/On	System error 1 (+SC991)	▪ Turn the machine off/on and re-try ▪ Replace controller board
		The physical address cannot be mapped. Software/hardware is defective	
21	Download Error E21 Power Off/On	System error 2 (+SC991)	▪ Turn the machine off/on and re-try. ▪ Replace RAM ▪ Replace the controller board
		There is not sufficient memory to download.	
22	Download Error E22 Module ID Card No xx/xx	System error 3 (+SC991)	▪ Turn the machine off/on and re-try. ▪ Replace card ▪ Replace controller board
		Data fails to decompress. Card defective.	
	SC991	System error 4	▪ Turn the machine off/on and re-try ▪ Set DIP SW 1 to ON and re-try ▪ Replace the controller board
		“Selfupdate” does not execute. Software defective.	

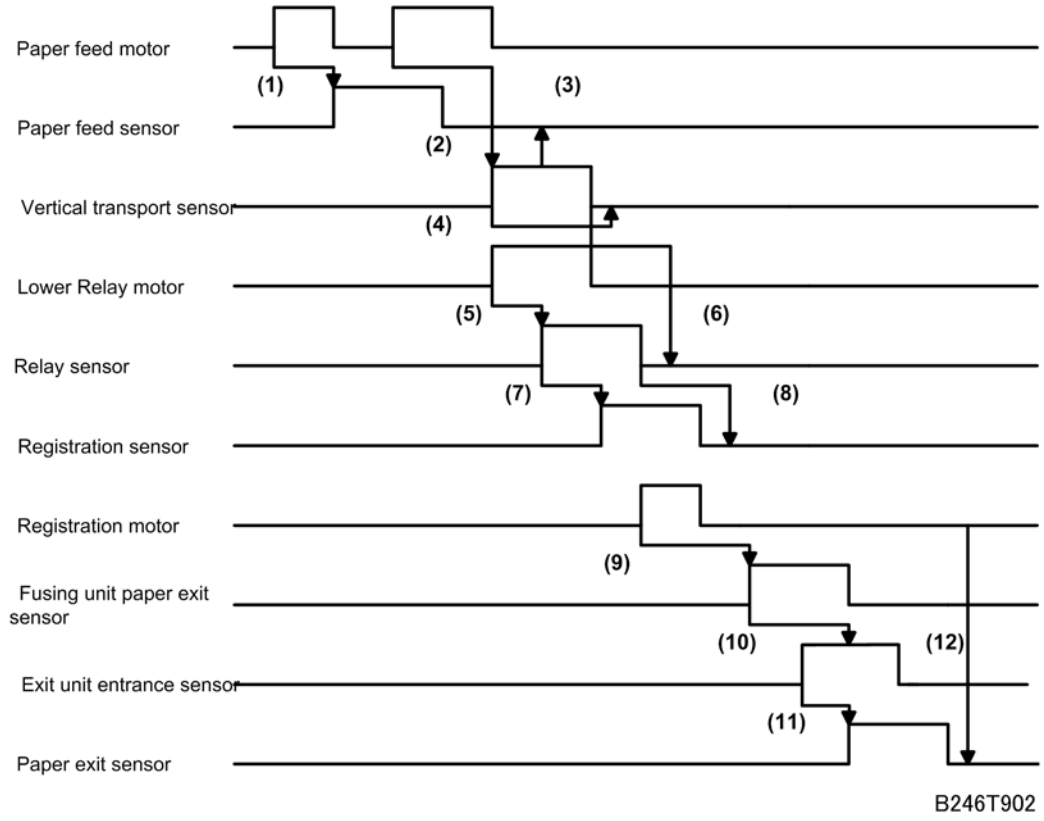
	Display	Details	Recovery
23	Download Error E24 Power Off/On	System error 5	▪ Turn the machine off/on and re-try ▪ Replace the card ▪ Replace the controller board
		Card read/write error. Software or card defective.	
30	No Valid Data E30	Download dysfunction 1	▪ HDD defective ▪ HDD harness disconnected, defective
		Print download is not possible. Cannot download to HDD because HDD not installed or defective.	
31	Reboot After Card Insert E31 Module ID Card No. xx/xx	Download dysfunction 2	▪ Set the correct cards in the correct order
		Download continuity error with more than one card. The second or later card is not compatible.	
32	Reboot After Card Insert E32 Module ID Card No. xx/xx	Download dysfunction 3	▪ Use the correct card ▪ If power failure caused the failure, remove the card and insert another.
		Download interrupted because card is not correct, or power failure interrupted download.	
33	No Valid Data E33	Download dysfunction 4	▪ Use the correct card
		Card version error. Attempted to download program using a card with the wrong version number.	
34	No Valid Data E34	Download dysfunction 5	▪ Use the correct card
		Specification error. DOM card set in EXP machine, or vice versa.	
35	No Valid Data E35	Download dysfunction 6	▪ Use the correct card
		Wrong model. The inserted card is for another model.	

	Display	Details	Recovery
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.	▪ Turn the machine off/on and re-try
41	Download Error E41 Module ID Card No. xx/xx	Download result failure 2 Fax download failure.	▪ Turn 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.	▪ Turn the machine off/on and re-try
43	Download Error E43 Module ID Card No. xx/xx	Download result failure 4 Print download failed.	▪ Turn the machine off/on and re-try

	Display	Details	Recovery
44	Download Error E44 Module ID Card No.	Download result failure 5	▪ Turn the machine power off/on. ▪ Set controller DIPSW-1 to ON to force the machine to write ▪ If you cannot force the machine to write, replace the controller board.
		The data targeted for the write operation could not be accessed.	
50	No Valid Data E50	Download invalid	▪ Use the correct SD card.
		The source data for the update could not be authenticated.	
51	(no display)	Remote ROM update failure 1	▪ Turn the machine power off/on and try again.
		The source data for the ROM update is corrupted because the machine is operating and an SC code has been issued.	
52	(no display)	Remote ROM update failure 2	▪ Try again with the correct data.
		The source data received for the ROM update is corrupted; it failed a SUM check due to its abnormal length.	
53	(no display)	Download result failure 6	▪ Do the download procedure again.
		The previous download in progress was cancelled.	

6.5 TIMING CHARTS

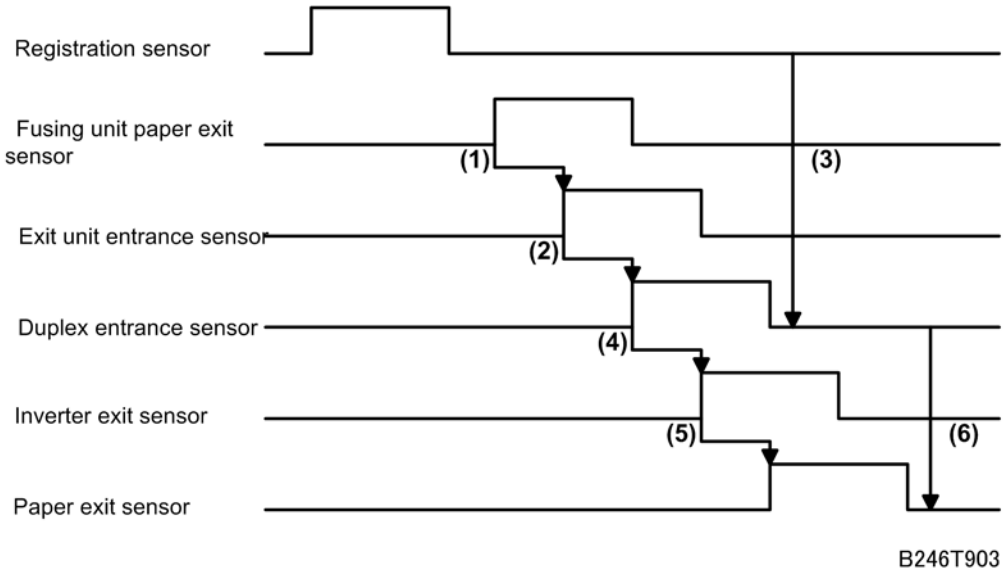
6.5.1 FEED, TRANSPORT, FEED OUT: FACE-UP



(1):	Paper feed motor ON > Paper feed sensor does not switch ON at the correct time.
(2):	Paper feed motor ON > Vertical transport sensor does not switch ON at the correct time.
(3):	Vertical transport sensor ON> Paper feed sensor does not switch OFF at the correct time.
(4):	Vertical transport sensor ON > Vertical transport sensor does not switch OFF at the correct time.
(5):	Lower relay motor ON> Relay sensor does not switch ON at the correct time.
(6):	Vertical transport sensor OFF > Relay sensor does not switch OFF at the correct time.
(7):	Relay sensor ON > Registration sensor does not switch ON at the correct time.
(8):	Relay sensor OFF> Registration sensor does not switch OFF at the correct time.

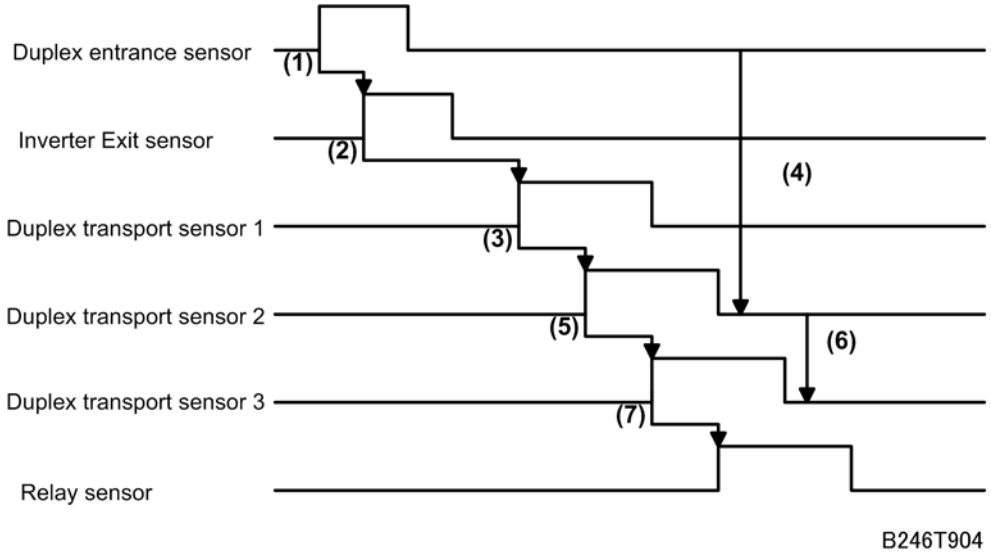
(9):	Registration motor ON > Fusing unit paper exit sensor does not switch ON at the correct time.
(10):	Fusing unit paper exit sensor ON > Exit unit entrance sensor does not switch ON at the correct time.
(11):	Exit unit entrance sensor ON> Paper exit sensor does not switch ON at the correct time.
(12):	Registration motor OFF > Paper exit sensor does not switch OFF at the correct time.

6.5.2 TRANSPORT, INVERTER, FEED OUT: FACE-DOWN



(1):	From the registration sensor to the fusing unit exit, jam detection is the same as face-up feed out.
(2):	Exit unit entrance sensor ON > Duplex entrance sensor does not switch OFF at the correct time.
(3):	Registration sensor OFF > Duplex entrance sensor does not switch OFF at the correct time.
(4):	Duplex entrance sensor ON > Inverter exit sensor does not switch OFF at the correct time.
(5):	Inverter exit sensor ON > Paper exit sensor does not switch ON at the correct time.
(6):	Duplex entrance sensor OFF > Paper exit sensor does not switch OFF at the correct time. (Paper remains at the duplex unit exit.)

6.5.3 DUPLEX TRANSPORT



(1):	Duplex entrance sensor ON > Inverter exit sensor does not switch ON at the correct time.
(2):	Inverter exit sensor ON > Duplex transport sensor 1 does not switch on at the correct time.
(3):	Duplex transport sensor 1 ON> Duplex transport sensor 2 does not switch on at the correct time.
(4):	Duplex entrance sensor ON > Duplex transport sensor 2 does not switch OFF at the correct time.
(5):	Duplex transport sensor 2 ON > Duplex transport sensor 3 does not switch ON at the correct time.
(6):	Duplex transport sensor 2 OFF > Duplex transport sensor 3 does not switch OFF at the correct time.
(7):	Duplex transport sensor 3 ON > Relay sensor does not switch on at the correct time.

6.6 OTHER PROBLEMS

6.6.1 BLOWN FUSE CONDITIONS

Fuse	Rating		Symptom at Power On
	115 V	210~230V	
FU1	2A/125V		Anti-condensation heater does not operate.
		8A/250V	Machine does not operate
FU101	12A/125V	5V/250V	Machine does not operate
FU103	6.3A/125V	6.3A/250V	"Please Wait" then halts.
FU104	6.3A/125V	6.3A/250V	SC569-00
FU105	6.3A/125V	6.3A/250V	“Door Open” is displayed.
FU106	6.3A/125V	6.3A/250V	ADF does not operate.
FU107	6.3A/125V	6.3A/250V	SC569-00
FU108	6.3A/125V	6.3A/250V	Finisher does not work.
FU109	6.3A/125V	6.3A/250V	“Door Open” is displayed.
FU110	6.3A/125V	6.3A/250V	SC324-01
FU111	6.3A/125V	6.3A/250V	SC530-00
FU113	2A/125V		Fax unit does not operate
FU115	8A/125V		**Japan only**
FU116	8A/125V		**Japan only**

6.6.2 COMMON PROBLEMS

Problem	Check	Inspect, Clean, Replace
Dirty Copies	Fusing Unit	Pressure roller
Jam – Fusing Unit	Fusing Unit	Hot roller
Jam – Fusing Unit	Fusing Unit	Hot roller strippers
Jam – Original	ADF	Pick-up, paper feed, separation rollers
Lines (black or white)	Around the Drum	Cleaning blade, cleaning brush
Misfeed – Fusing Unit	Fusing Unit	Hot roller
Offset	Fusing Unit	Hot roller
Poor separation	Transfer Belt Unit	Transfer belt, transfer belt cleaning blade
SC300 ~ SC306	Around the Drum	Charge corona wire, charge corona grid, charge corona wire cleaner.
Skew – Original	ADF	Pick-up, paper feed, separation rollers
Toner on transfer belt	Transfer Belt Unit	Transfer belt, transfer belt cleaning blade
Wrinkling	Fusing Unit	Pressure roller

ENERGY SAVE

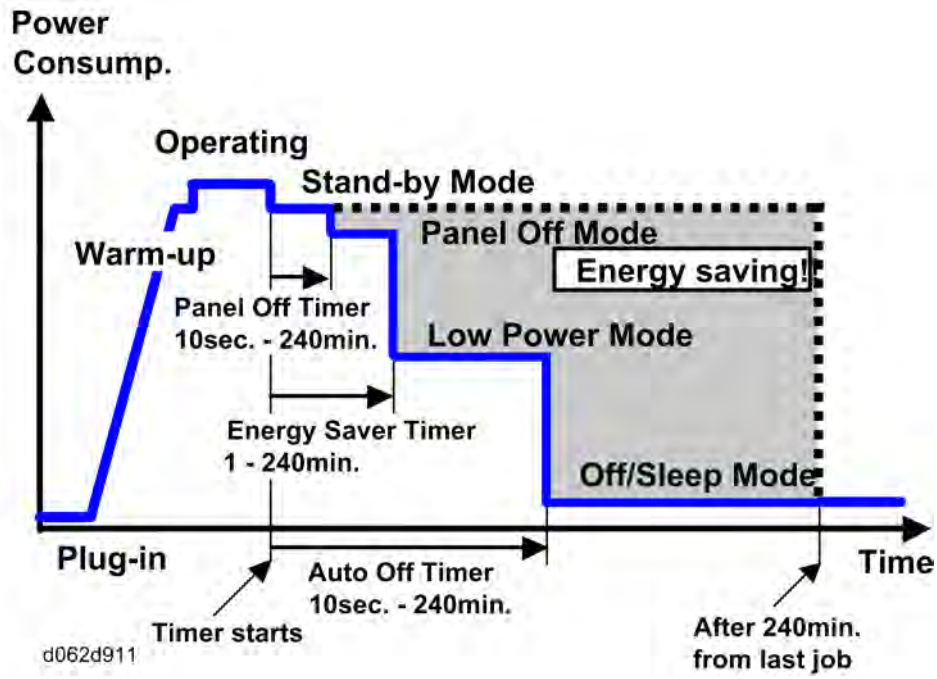
REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

7. ENERGY SAVE

7.1 ENERGY SAVE

7.1.1 ENERGY SAVER MODES

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



The area shaded grey in this diagram represents the amount of energy that is saved when the timers are at the default settings. If the timers are changed, then the energy saved will be different. For example, if the timers are all set to 240 min., the grey area will disappear, and no energy is saved before 240 min. expires.

Timer Settings

The user can set these timers with User Tools (System settings > Timer setting)

- Energy saver timer (1 – 240 min): Low Power Mode. Default setting: 1 to 240 minute
- Sleep Mode (1 to 240 min.): Default setting 1 min.
- Auto off timer (1 – 240 min): Off/Sleep Mode Default settings:

D131	1 min.
D132	1 min.
D133	15 min.

Normally, Energy Saver timer < Auto Off timer. But, for example, if Auto Off timer < or = Energy Saver timer, the machine goes immediately to Off mode when the Auto Off timer expires. It skips the Panel Off and Energy Saver modes.

Example

- Panel off: 1 min.
- Low power: 15 min.
- Auto Off: 1 min.
- The machine goes to Off mode after 1 minute. Panel Off and Low Power modes are not used.

Return to Stand-by Mode

Low Power Mode

The recovery time depends on the model and the region.

- MT-C5 a/c: 10 sec.
- MT-C5e: 30 sec.

Off/Sleep Mode

Recovery time.

- MT-C5 a/c: Max. 30 sec.
- MT-C5e: Max 300 sec.

Recommendation

We recommend that the default settings should be kept.

- If the customer requests that these settings should be changed, please explain that their energy costs could increase, and that they should consider the effects on the environment of extra energy use.
- If it is necessary to change the settings, please try to make sure that the Auto Off timer is not too long. Try with a shorter setting first, such as 30 min., then go to a longer one (such as 60 min.) if the customer is not satisfied.
- If the timers are all set to the maximum value, the machine will not begin saving energy until 240 minutes has expired after the last job. This means that after the customer has finished using the machine for the day, energy will be consumed that could otherwise be saved.
- If you change the settings, the energy consumed can be measured using SP8941, as explained below.

7.1.2 ENERGY SAVE EFFECTIVENESS

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

- 8941-001: Operating mode
- 8941-002: Standby mode
- 8941-004: Low power mode
- 8941-005: Off/sleep mode

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

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

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

To use SP8941 to calculate the energy consumed:

- At the start of the measurement period, read the values of SP8941 001 to 005.
- At the end of the measurement period, read the values of SP8941 001 to 005 again.
- Find the amount of time spent in each mode (subtract the earlier measurement from the later measurement).
- Multiply this by the power consumption spec for each mode.
- Convert the result to kWh (kilowatt hours)

Here is an example calculation.

Machine Date	Power Consumption (W): **Data: a**	SP8941:Machine Status	Start Time: (min.) **Data: b**	End Time: (min.) **Data: c**	Time Differences (Data:b - Data: c) (min.) **Data: d**	Power Consumption (Data:a x Data:d) (Wmin.) **Data: e**
① Operating mode	1081.8	001: Operating Time	21089.0	21386.0	297.0	321294.6
② Ready mode (stand by)	214.0	002: Standby Time	306163.0	308046.0	1883.0	402962.0

③ Energy mode (Panel off)	214.0	003: Energy Save Time	71386.0	75111.0	3725.0	797150.0
④ Low power mode	153.0	004: Low power Time	154084.0	156340.0	2256.0	345168.0
⑤ Off/Sleep mode	7.0	005: Off mode Time	508776.0	520377.0	11601.0	81207.0
Total Time of Data: d (min.)					19762.0	
Total Time of Data: d/60min. (Hour)					329.37	
Total Power Consumption of Data: e (Wmin.)						1947781.60
Total Power Consumption of Data: e /60min./1000W (KWH)						32.46

7.2 PAPER SAVE

7.2.1 EFFECTIVENESS OF DUPLEX/COMBINE FUNCTION

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

1. Duplex:

Reduce paper volume in half!



d062d102

2. Combine mode:

Reduce paper volume in half!



d062d100

3. Duplex + Combine:

Using both features together can further reduce paper volume by 3/4!



d062d101

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

The total counter counts all pages printed.

- For one duplex page, the total counter goes up by 2.
- For a duplex job of a three-page original, the total counter goes up by 3.

The duplex counter counts pages that have images on both sides.

- For one duplex page, the duplex counter goes up by 1.
- For a duplex job of a three-page original, the duplex counter will only increase by 1, even though two sheets are used.

These Machines (D131/D132/D133)

- Total counter: SP 8581-001
- Duplex counter: SP 8411-001
- Single-sided with combine mode: SP 8421-004
- Duplex with combine mode: SP 8421-005

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

Duplex mode:

Originals	Simplex Sheet used	Duplex Sheets used	**Paper Saved**	Total counter SP8501-001	Duplex counter SP8411-001
1	1	1	**0**	1	0
2	2	1	**1**	2	1
3	3	2	**1**	3	1
4	4	2	**2**	4	2
5	5	3	**2**	5	2
10	10	5	**5**	10	5
20	20	10	**10**	20	10

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

2 in 1 mode:

Originals	Simplex Sheet used	Duplex Sheets used	**Paper Saved**	Total counter SP8501-001	Duplex counter SP8421-004
1	1	1	**0**	1	1
2	2	1	**1**	1	1
3	3	2	**1**	2	2
4	4	2	**2**	2	2
5	5	3	**2**	3	2
10	10	5	**5**	5	5
20	20	10	**10**	10	10

Duplex + 2 in 1 mode:

Originals	Simplex Sheet used	Duplex Sheets used	**Paper Saved**	Total counter SP8501-001	Duplex counter SP8421-005
1	1	1	**0**	1	1
2	2	1	**1**	1	1
3	3	1	**2**	2	2
4	4	1	**3**	2	2
5	5	2	**3**	3	3
6	6	2	**4**	3	3
7	7	2	**5**	4	4
8	8	2	**6**	4	4
9	9	3	**6**	5	5
10	10	3	**7**	5	5
11	11	3	**8**	6	6
12	12	3	**9**	6	6

D131/D132/D133
SERVICE MANUAL APPENDICES

D131/D132/D133 APPENDICES

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SPECIFICATIONS

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		None

1. APPENDIX: GENERAL SPECIFICATIONS

1.1 GENERAL SPECIFICATIONS

1.1.1 COPIER

Engine

Configuration	Console	
	Original: Sheet/Book/Objects Original Size Max. A3/11" x 17" Min. B6 SEF/5.5" x 8.5" (using ADF) Original Alignment: Rear left corner	
Copy Paper Size	Paper tray, Duplex	A3/11" x 17" – A5/ 5.5" x 8.5"
	Bypass tray	A3/11" x 17" – A6 SEF/5.5" x 8.5"
	Non-standard sizes	Width: 139.7 – 297 mm (5.5" x 11.7") Length: 139.7 – 432 mm (5.5" x 17")
Copy Paper Weight	Paper Tray	52.3 to 127.9 g/m^2 (14 to 34 lb.)
	Duplex	64 to 127.9 g/m^2 (17 to 34 lb.)
		By-pass ▪ Standard: 52.3 to 157 g/m^2 (14 to 43 lb.) ▪ Thick Paper mode: 52.3 to 216 g/m^2 (14 to 58 lb.)

Reproduction Ratios	7 reduction ratios, 5 enlargement ratios Metric (%): 400, 200, 141, 122, 115, 93, 82, 75, 71, 65, 50, 25 Inch (%): 400, 200, 155, 129, 121, 93, 85, 78, 73, 65, 50, 25		
Copying Speed	D131: 60 ppm D132: 75 ppm D133: 90 ppm (A4, LT LEF)		
First Copy Time	D131	3.9 s	(Tray 1, A4/LT LEF face-up, contact glass mode, APS off)
	D132	3.2 s	
	D133	2.9 s	
Warm-up Time	D131: < 30 seconds D132: < 30 seconds D133: < 300 seconds From power on at 23°C (73.4°F)		
	< 30 sec. at return from power off mode		
Continuous Copying	1 to 999 (Operation panel entry)		
Paper Capacity	Tray 1 (tandem tray)	3100 sheets (1550 x2)	
	Tray 2	550 sheets	
	Tray 3	550 sheets	
	Bypass tray	100 sheets (80 g/m^2, 20 lb.)	
Paper Output	A4/8.5" x 11" and smaller	500 sheets	
	B4 and larger	250 sheets	
Power Source	North America	D132: 120V, 60Hz, 20A D133: 208-240, 60Hz, 12A	
	Europe/Asia/China	220-240V/10A 50/60Hz	
	Taiwan	D132: 110V/20A 60Hz D133: 220V/12A 60Hz	

Power Consumption	Full System	NA	D131/D132: <1.8 KW D133: <1.9 KW
		EU	D131/D132: < 1.9 KW D133: < 1.9 KW
Energy Start	Implemented		
Memory	1 GB (Base) 1.5 GB (SP)		
HDD Capacity	250 GB		
Allowed voltage fluctuation	10%		
Dimensions (wxdxh)	690 x 799 x 1171 mm (27.2 x 31.1 x 46.1 in.)		
Weight	Approx. 214 kg (471 lb.)		
Resolution	1200 dpi (printing) 600 dpi (scanning)		
Gradation	256 levels (scanning and printing)		
Toner Replenishment	Cartridge exchange (1100 g)		
Total Counter	Electric Counter		

ADF

Original Size	Simplex: A3/11" x 17" – B6/5.5" x 8.5" Duplex: A3/11" x 17" – B5/5.5" x 8.5"
Original Weight	Simplex: 40 to 128 g/m^2 (11 to 34 lb.) Duplex: 52 to 128 g/m^2 (14 to 34 lb.)
Table Capacity	250 sheets: 69g/m^2 (150 sheets: 80g/m^2, 20 lb. Bond)
Original Standard Position	Rear left corner
Separation	Feed belt and separation roller
Original Transport	Roller transport
Original Feed Order	From top original
Reproduction Range	100%
Power Source	DC 24 V from the main machine
Power Consumption	< 110 W
Rated Voltage of Output Connector	Max. DC 24 V
Permissible voltage fluctuation	±10%
Dimensions (w x d x h)	680 x 560 x 180 mm (26.8" x 22.0" x 7.1")
Weight	18 kg (39.6 lb.)

Power Consumption

NA

Operation Mode	D131	D132	D133
Main unit only			
Warm Up	1380W	1400W	1720W
Stand-by	269W	269W	299W
During printing	1230W	1250W	1480W
Maximum	1620W	1640W	1750W
Complete system*[1]			
Warm Up	1410W	1420W	1740W
Stand-by	289W	289W	320W
During printing	1330W	1350W	1610W
Maximum	1720W	1740W	1880W

*[1] Main Machine + Finisher + Cover Interposer Tray + LCT

EU/AA

Operation Mode	D131	D132	D133
Main unit only			
Warm Up	1500W	1510W	1730W
Stand-by	279W	279W	299W
During printing	1260W	1280W	1490W
Maximum	1730W	1760W	1790W
Complete system*[1]			
Warm Up	1520W	1530W	1740W
Stand-by	310W	310W	320W
During printing	1330W	1360W	1540W
Maximum	1800W	1830W	1840W

*[1] Main Machine + Finisher + Cover Interposer Tray + LCT

Noise Emission

No.	Test Mode dB (A)	Noise Power Level	Operator Position	Bystander Position Max.
D131	Standby OFF Mode: MFP, CTL FAN ON	49.3	37.5	36.6
	Book Mode	67.0	51.9	53.9
	System: LCT Feed DF Simplex, Punch Sort	74.3	62.4	59.8
	System: Standby Engine OFF	50.1	35.7	37.5
D132	Standby OFF Mode: MFP, CTL FAN ON	49.4	37.7	36.9
	Book Mode	69.7	55.2	58.8
	System: LCT Feed DF Simplex, Punch Sort	74.3	62.1	59.9
	System: Standby Engine OFF	50.0	35.7	37.5
D133	Standby OFF Mode: MFP, CTL FAN ON	50.4	38.2	37.7
	Book Mode	71.0	56.4	58.3
	System: LCT Feed DF Simplex, Punch Sort	75.0	62.4	60.5
	System: Standby Engine OFF	52.3	36.9	39.5

*1 System: Main Machine + Finisher + Multi Folder +LCT

Note

- The above measurements were made in accordance with ISO 7779. Full system measurements include the Mainframe + Finisher + LCT + Cover Interposer + Punch.

1.2 PERIPHERAL SPECIFICATIONS

1.2.1 A3/11" X 17" TRAY TYPE 9001 (D482)

Paper Size	A3, B4, 11" x 17", 8.5" x 14", A4 SEF, A4 LEF, 8.5" x 11" SEF, 11" x 8.5" LEF
Paper Weight	52 to 163 g/m^2 16 to 40 lb. Bond 50 to 60 lb. Cover 90 lb. Index (no Tab)
Tray Capacity	1,000 sheets (80 g/m^2, 20lb)

1.2.2 LCIT RT4010 (D613)

Paper capacity	4,000 sheets
Paper Sizes	A4 LEF, B5 LEF, 8.5" x 11" LEF *1
Paper Weight	52 to 128 g/m^2 (14 to 34 lb)
Pick-up and Feed	FRR (Feed and Reverse Roller)
Power Consumption	Less than 50 W (Max.)
Power Supply	DC24 V, 5V (powered by the main unit)
Rated Voltage of Output Connector	Max. DC 24 V
Dimensions (W x D x H)	314 x 458 x 659 mm (12.4" x 18.1" x 25.9")
Weight	20.0 kg (44 lb.)

*1: In platen mode, APS (Auto Paper Select) with the original length and original width sensors are not used.

1.2.3 FINISHER SR4080 (D610)

Upper Tray

Paper Capacity (80 g/m^2)	500 sheets (A4, 8.5" x 11" and smaller)
	250 sheets (B4, 8.5" x 14" and larger)
Paper Size	A3 to A6 SEF, 11" x 17" to 5.5" x 8.5", 12" x 18"
Paper Weight	52 to 216 g/m^2 (14 to 58 lb)
Upper Tray Full Detection	Provided

Shift Tray

Paper Capacity (80 g/m^2)	3000 sheets (A4 LEF, B5 LEF, 8.5" x 11" LEF)
	1500 sheets (A3, A4 SEF, B4 and B5 SEF, 11" x 17", 8.5" x 14", 8.5" x 11" SEF, 12" x 18")
	500 sheets (A5 LEF, 5.5" x 8.5" LEF)
	100 sheets (A5 SEF, 5.5" x 8.5" SEF)
Paper Size	A3 to A5, 11" x 17" to 5.5" x 8.5", 12" x 18" (including tab paper)
Paper Weight	52 to 216 g/m^2 (14 to 58 lb)
Shift Tray Full Detection	Provided

Stapler

<table>
<tr><td>Stapling Stack Size</td><td colspan="3">A4, B5, 8.5" x 11" (Max. 100 Sheets)
A3, B4, 11" x 17", 8.5" x 14" (Max. 50 sheets)</td></tr>
<tr><td>Stapling Paper Size</td><td colspan="3">A3 to B5
11" x 17" to 8.5" x 11"</td></tr>
<tr><td>Stapling Paper Weight</td><td colspan="3">64 to 80 g/m^2 (17 to 20 lb)</td></tr>
<tr><td>Staple Position</td><td colspan="3">4 Modes
▪ 1 Staple: Front, Rear, Rear-Oblique
▪ 2 Stapes: 2 locations</td></tr>
<tr><td>Staple Capacity</td><td colspan="3">5000 staples/cartridge</td></tr>
<tr><td>Staple Supply</td><td colspan="3">Cartridge or Staple Replacement</td></tr>
<tr><td rowspan="5">Stapled Stack Size</td><td>Sheets</td><td>Sets</td><td>Sizes</td></tr>
<tr><td>10 to 100</td><td>200 to 30</td><td rowspan="2">A4 SEF, B5 SEF, 8.5" x 11" SEF
A4 LEF, B5 LEF, 8.5" x 11" LEF</td></tr>
<tr><td>2 to 9</td><td>150</td></tr>
<tr><td>10 to 50</td><td>150 to 30</td><td rowspan="2">A3, B4, 11" x 17", 8.5" x 14"</td></tr>
<tr><td>2 to 9</td><td>150</td></tr>
<tr><td>Trim Waste Staple Capacity</td><td colspan="3">30,000 or more</td></tr>
<tr><td>Waste Staple Hopper Full Detection</td><td colspan="3">Provided</td></tr>
<tr><td>Power Consumption</td><td colspan="3">Less than 100 W</td></tr>
<tr><td>Power Source</td><td colspan="3">DC 24 V (From Mainframe)</td></tr>
<tr><td>Size (W x D x H)</td><td colspan="3">800 x 730 x 980 mm (31.5" x 28.7" x 38.6")</td></tr>
<tr><td>Weight</td><td colspan="3">Less than 65 kg (143 lb.)</td></tr>
</table>

1.2.4 PUNCH UNIT TYPE 1075 (B531)

This punch unit is installed in the Finisher SR4080.

Punch Hole Positions	2/3-hole (North America) 2/4-hole (Europe)
Punch Paper Size	
2-Hole (NA)	A5 to A3 SEF, 11" x 17" to 5.5" x 8.5" SEF A5 to A4 LEF, 8.5" x 11" LEF, 5.5" x 8.5" LEF
3-Hole (NA)	A3 SEF, B4 SEF, 11" x 17" SEF A4 LEF, B5 LEF, 8.5" x11" LEF
4-Hole (EUR/A)	A3 SEF, 11" x 17" SEF A4 LEF, 8.5" x 11" LEF
Paper Weight	
2-Hole (NA)	52 g/m^2 to 163 g/m^2 (14 to 43 lb)
3-Hole (NA)	52 g/m^2 to 163 g/m^2 (14 to 43 lb)
4-Hole (EUR/A)	52 g/m^2 to 128 g/m^2 (14 to 34 lb)
Punch Waste Hopper Capacity	
2-Hole (NA)	10K
3-Hole (NA)	15K
4-Hole (EUR/A)	15K
Operation Modes	All (Shift, Proof, Staple)

DIP SW Settings

The correct DIP SW settings of the Punch Unit 531 are provided in the table below for your reference only. The DIP switches of these punch units do not need to be changed at installation, or adjusted for operation.

Punch Unit	Unit No.	DIP SW Settings			
		1	2	3	4
2/3-Hole (NA)	B531-17	1	0	1	0
2/4-Hole (EUR/A)	B531-27	1	0	0	1

0: OFF, 1: ON

1.2.5 PUNCH UNIT TYPE 850 SC (A812)

This punch unit is installed in the Finisher SR4080..

Punch Hole Positions	2-hole, 3-hole (NA) 4-hole (EUR/A) 4-hole (North Europe)
Punch Paper Size	
2-Hole	A5 to A3 SEF, 11" x 17" to 8.5" x 11" SEF A5 to A4 LEF, 8.5" x 11" LEF
3-Hole (NA)	A3 SEF, B4 SEF, 11" x 17" SEF A4 LEF, B5 LEF, 8.5" x 11" LEF
4-Hole (EUR/A)	A3 SEF, 11" x 17" SEF A4 LEF, 11" x 17" LEF
4-Hole (North Europe)	B5 to A3 SEF, 8.5" x 11" to 11" x 17" SEF A5 to A4 LEF, 8.5" x 11" LEF, 5.5" x 8.5" LEF
Paper Weight	
2-Hole, 3-Hole (NA)	52 g/m^2 to 163 g/m^2 (14 to 43 lb)
4-Hole (Europe/North Europe)	52 g/m^2 to 128 g/m^2 (14 to 34 lb)
Punch Waste Hopper Capacity	
2-Hole	40K
3-Hole (NA)	15K
4-Hole (EUR/A)	15K
4-Hole (North Europe)	15K
Power Supply	DC 24 V (From Finisher)
Power Consumption	60 W
Weight	Less than 2.4 K (5.3 lb.)
Operation Modes	All (Shift, Proof, Staple)

DIP SW Settings

The correct DIP SW settings of the Punch Unit A812 are provided in the table below for your reference only. The DIP switches of these punch units do not need to be changed at installation, or adjusted for operation.

Punch Unit	Unit No.	DIP SW Settings			
		1	2	3	4
2-Hole (EUR/A)	A812-40/A812-67	0	0	0	0
3-Hole (NA)	A812-57	1	0	0	0
4-Hole EUR/A)	A812-30	0	1	0	0
4-Hole (North Europe)	A812-31	0	0	1	0
2-Hole (NA)	A812-32	0	0	0	1

0: OFF, 1: ON

1.2.6 OUTPUT JOGGER UNIT TYPE 9002B (B513)

This jogger unit is installed above the shift tray of the Finisher SR4080.

Paper Size	A3 SEF, B4 SEF, 11" x 17" SEF A4 LEF, B5 LEF, 8.5" x 11" LEF
Paper Weight	52 g/m^2 to 216 g/m^2 (14 to 58 lb)
Weight	Less than 1.7 kg (3.7 lb.)
Dimensions (W x D x H)	125 mm x 450 mm x 100 mm (5" x 17.7" x 4")
Power Supply	DC 24 V, DC 5V (From Finisher)
Power Consumption	24 W

1.2.7 8 1/2"X14" PAPER SIZE TRAY TYPE 9002 (B474)

Paper Size	B4, 8.5" x 14", A4 SEF, 8.5" x 11" SEF
Paper Weight	52 to 128 g/m^2 (14 to 34 lb)
Tray Capacity	1,000 sheets (80 g/m^2, 20lb)

1.2.8 FINISHER SR4060 (D611)

This finisher provides corner stapling only.

Finisher

Dimensions (W x D x H)	657 x 613 x 960 mm		
Weight	Less than 54 kg Less than 56 kg with Punch Unit		
Power Consumption	Less than 96 W		
Noise	Less than 75 db		
Configuration	Console type attached base-unit		
Power Source	From base-unit		
Proof Tray	Stack Capacity*	250 sheets	A4, 8.5"x11" or smaller
		50 sheets	B4, 8.5"x14" or larger
	Paper Size	A5-A3 SEF, A6 SEF, A6 SEF 5.5"x8.5"-11"x17"SEF, 12"x18" SEF	
	Paper Weight	52 g/m²-163 g/m² 14 lb Bond- 43 lb Bond / 90 lb Index / 60 lb Cover	

Shift Tray	Stack Capacity*	3,000 sheets	A4 LEF, 1/2" x11" LEF
		1,500 sheets	A3 SEF, A4 SEF, B4 SEF, B5, 11"x17" SEF, $8_{1/2}$" x14" SEF, $8_{1/2}$" x 11" SEF, 12"x18" SEF
		500 sheets	A5 LEF**
		100 sheets	A5 SEF, B6 SEF, A6 SEF, $5_{1/2}$" x $8_{1/2}$",SEF
	Paper Size	A5 - A3 SEF, A6 SEF, B6 SEF, $5_{1/2}$" x $8_{1/2}$" - 11"x17" SEF, 12" x 18" SEF	
	Paper Weight	52 g/m²-256 g/m² 14 lb Bond- 68 lb Bond / 140 lb Index / 90 lb Cover	

Stapler

Paper Size	B5-A3 8.5"x11"-11"x17", 12"x18"		
Paper Weight	64 g/m²-90 g/m² 17 lb Bond-28 lb Bond		
Staple Position	Top, Bottom, 2 Staple, Top-slant		
Stapling Capacity	Same Paper Size	50 sheets	A4, 1/2" x11" or smaller
		30 sheets	B4, 1/2" x14" or larger
	Mixed Paper Size	30 sheets	A4 LEF + A3 SEF, B5 LEF + B4 SEF, 8 1/2" x11" LEF + 11" x17" SEF
Staple Replenishment	Cartridge exchange / 5000 pins per cartridge		
Stapled Stack Capacity (same size)	Paper Size	Pages/Set	Sets
	A4 LEF, 8.5"x11" LEF	20-50 pages	150-60 sets
		2-19 pages	150 sets
	A4 SEF, B5, 8.5"x11" SEF	15-50 pages	100-30 sets
		2-14 pages	100 sets
	Others	15-30 pages	100-33 sets
		2-14 pages	100 sets
Stapled Stack Capacity (mixed sizes)	A4 LEF & A3 SEF, B5 LEF & B4 SEF, 8.5"x11" LEF, 11" x17" SEF	2-30 pages	50 set

1.2.9 FINISHER SR4070 (D612)

This finisher provides booklet as well as corner stapling. Equipped with two trays, the upper tray holds stapled and shifted copies, and the lower tray holds booklet stapled and folded copies.

Finisher

Dimensions (W x D x H)	657 x 613 x 960 mm (25.9 x 24.1 x 37.8")		
Weight	Less than 63 kg (138.6 lb.) (no punch unit) Less than 65 kg (143 lb.) (with punch unit)		
Power Consumption	Less than 96 W		
Noise	Less than 75 db		
Configuration	Console type attached base-unit		
Power Source	From base-unit		
Proof Tray	Stack Capacity*	250 sheets A4, 8.5"x11" or smaller 50 sheets B4, 8.5"x14 or larger	
	Paper Size	A5-A3 SEF, A6 SEF, A6 LEF $5_{1/2}$" x$8_{1/2}$" to 11" x 17" SEF, 12"x18" SEF	
	Paper Weight	52 g/m²-163 g/m² 14 lb Bond- 43 lb Bond / 90 lb Index / 60 lb Cover	
Shift Tray	Stack Capacity*	2,000 sheets	A4 LEF, 8.5"x11" LEF
		1,000 sheets	A3 SEF, A4 SEF, B4 SEF, B5 11"x17" SEF, $8_{1/2}$" x14" SEF, $8_{1/2}$" x 11" SEF, 12"x18" SEF
		500 sheets	A5 LEF
		100 sheets	A5 SEF, B6 SEF, A6 SEF, $5_{1/2}$" x$8_{1/2}$" SEF

	Paper Size	A5 - A3 SEF, A6 SEF, B6 SEF $5_{1/2}$" x$8_{1/2}$" to 11" x 17" SEF, 12" x 18" SEF
	Paper Weight	52 g/m²-256 g/m² 14 lb Bond- 68 lb Bond / 140 lb Index / 90 lb Cover

Stapler

Paper Size	B5-A3, 8.5"x11"-11"x17", 12"x18"		
Paper Weight	64 g/m²-90 g/m², 17 lb Bond-28 lb Bond		
Staple Position	Top, Bottom, 2 Staple, Top-slant		
Staples Capacity*	Same Paper Size	50 sheets	A4, $8_{1/2}$" x 11" or smaller
		30 sheets	B4, $8_{1/2}$" x 14" or larger
	Mixed Paper Size	30 sheets	A4 LEF & A3 SEF, B5 LEF & B4 SEF, $8_{1/2}$"x11" LEF & 11" x17" SEF
	Booklet Stapling	15 sheets	A4 SEF, A3 SEF, B5 SEF, B4 SEF, 8.5"x11" SEF, 8.5"x14" SEF, 11"x17" SEF, 12"x18" SEF
Staple Replenishment	Corner staple	5,000 staples per cartridge	
	Booklet staple	2,000 staples per cartridge	
Corner Staple Capacity	Same Size	A4 LEF, 8.5"x11" LEF	13-50 pages 2-12 pages
		A4 SEF, B5, 8.5"x11" SEF	10-50 pages 2-9 pages
		Others	10-30 pages 2-9 pages
	Mixed Size	A4 LEF + A3 SEF B5 LEF + B4 SEF 8.5"x11" LEF + 11" x17" SEF	2-30 pages

Booklet Staple Capacity	A4 SEF, A3 SEF, B5 SEF, B4 SEF 8.5"x11" SEF, 8.5"x14" SEF, 11"x17" SEF 12"x18" SEF	2-5 pages 6-10 pages 11-15 pages

SR4060/SR4070 Paper Specifications

Paper Size	Plain Paper			Paper Type	
	Copier PPC	Used Paper	Recycled Paper	Colored Paper	Translucent Blueprint
A3 SEF	●	—	●	●	▲
B4 SEF	●	▲	●	●	▲
A4 SEF	●	▲	●	●	▲
A4 LEF	◆	▲	◆	◆	▲
B5 SEF	●	▲	●	●	▲
B5 LEF	◆	▲	◆	◆	▲
A5 SEF	○	—	—	—	—
A5 LEF	○	—	—	—	—
B6 SEF	▲	—	—	—	—
B6 LEF	▲	—	—	—	—
12" x 18" SEF	●	—	●	●	—
11" x 17" SEF	●	—	●	●	▲
$8_{1/2}$" x 14"	●	—	●	●	▲

Paper Size	Plain Paper			Paper Type	
	Copier PPC	Used Paper	Recycled Paper	Colored Paper	Translucent Blueprint
$8_{1/2}$" x 11" SEF	●	—	●	●	▲
$8_{1/2}$" x 11" LEF	◆	▲	◆	◆	▲
$5_{1/2}$" x $8_{1/2}$"	○	—	—	○	—
$5_{1/2}$" x $8_{1/2}$"	○	—	—	○	—

◆: Corner stapling, Shift, YES

●: Booklet stapling/folding, Shift, YES

○: Shift ONLY

▲: Shift NO

—: Not available

1.2.10 PUNCH UNIT TYPE 3260 (B702)

This punch unit is designed for use with the Finisher SR4060 and Finisher SR4070. There are three variations of this punch unit:

- Punch Unit Type 3260 SC (B702)
- Punch Unit Type 3260 2/4 EU (B702)
- Punch Unit Type 3260 NA 3/2 (B702)

Available Punch Units	NA	2/3 hole switchable	
	EU	2/4 holes switchable	
	Scandinavia	4 holes	
Punch Waste Replenishment	NA 2-hole	Up to 5,000 sheets	
	NA 3-hole	Up to 5,000 sheets	
	EU 2-hole	Up to 14,000 sheets	
	EU 4-hole	Up to 7,000 sheets	
	Scandinavia 4-hole	Up to 7,000 sheets	
Paper Weight	52 g/m²-163 g/m², 14 lb Bond to 43 lb Bond / 90 lb Index / 60 lb Cover		
Paper Sizes	NA 2-hole	SEF	A5 to A3, $5_{1/2}$" x$8_{1/2}$" to 11"x17"
		LEF	A5 - A4, $5_{1/2}$" x $8_{1/2}$", $8_{1/2}$" x 11"
	NA 3-hole	SEF	A3, B4, 11"x17"
		LEF	A4, B5, $8_{1/2}$" x 11"
	EU 2-hole	SEF	A5 - A3, $5_{1/2}$" x $8_{1/2}$" to 11" x 17"
		LEF	A5 to A4, $5_{1/2}$" x $8_{1/2}$", $8_{1/2}$" x 11"
	EU 4-hole	SEF	A3, B4, 11"x17"
		LEF	A4, B5, $8_{1/2}$" x 11"
	Scandinavia 4-hole	SEF	A5 to A3, $5_{1/2}$" x $8_{1/2}$" to 11" x 17"
		LEF	A5 - A4, $5_{1/2}$"x$8_{1/2}$", $8_{1/2}$" x 11"

1.2.11 MAILBOX CS4000 (D616)

The mailbox can be installed on top of the Finisher SR4060, SR4070, or SR4080.

Dimensions (w x d x h)	540 x 600 x 660 mm (21.3 x 23.6 x 26 in.)
Weight	Less than 15 kg (33 lb.)
Power Consumption	Less than 48 W
Noise	Less than 74 dB
Number of Bins	9 bins
Stack Capacity of each Bin	100 sheets*
Paper Size	A5. A4, A3
	$5_{1/2}$" x $8_{1/2}$", $8_{1/2}$" x11", $8_{1/2}$" x14", 11"x17"
Paper Weight	52 - 128g/m²
	14 lb – 34 lb Bond

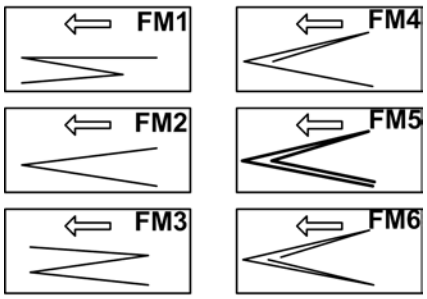
1.2.12 COVER INTERPOSER TRAY CI4000 (D614)

Dimension (W x D x H)		500 x 600 x 600 mm (19.7 x 23.6 x 23.6 in.)
Weight		Less than 12 Kg (26.4 lb.)
Power Consumption		Less than 43 W
Noise		Less than 65 db
Stack Capability*		200 Sheets
Paper Size		A5-A3, $5_{1/2}$" x $8_{1/2}$" - 11" x 17"
Paper Weight		64 g/m^2-216 g/m^2 17 lb. Bond- 80 lb. b Cover
Original Set Position		Center
Original Set	Normal Feed	Face-up
	Booklet Feed	Face-down

1.2.13 MULTI FOLDING UNIT FD4000 (D615)

General

Dimensions (W × D × H)	470 × 980 × 730 mm (18.6 × 38.6 × 28.8 in.)	
Weight	Approx. 92 kg (202.9 lb.)	
Power Consumption	Maximum 270 W (A separate power source is required.)	
Power Source	220 - 240 V, 50/60 Hz, 1.2 A	
Operating Environment	Temperature and humidity ranges: Same as main machine.	
Paper Weight	Single sheet mode: 64 to 103 g/m^2 (17 lb. Bond - 28 lb. Bond) Multiple sheets mode: 64 to 80 g/m^2 (17 lb. Bond - 20 lb. Bond)	
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.)	

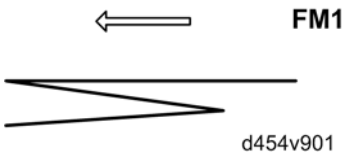
Level	Less than 5 mm deviation at front/back, left/right		
Weight	92 kg (203 lb)		
Noise Level (dB A)	Mode	Alone	System
	No Folding	< 76 dB	---
	Folding	< 78 dB	< 83 dB

Tray Capacity

The capacity of the tray on top of the unit for folded paper is determined by these variables:

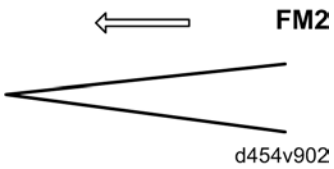
- Folding Methods (FM1 to FM6)
- Paper size
- Paper weight

Folding Mode FM1



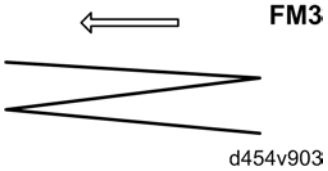
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	35	20
12x18"	35	20
A3 SEF	35	20
DLT	35	20
B4 SEF	35	20
LG SEF	35	20
A4 SEF	30	20
LT SEF	30	20

Folding Mode FM2



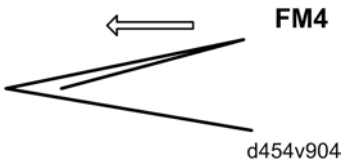
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
13x19.2"	40	25
13x19"	40	25
12.6x19.2"	40	25
12.6x18.5"	40	25
13x18"	40	25
SRA3 (320x450 mm)	40	25
SRA4 (225x320 mm)	40	25
226x310 mm	40	25
310x432 mm	40	25
8-kai	40	25
12x18"	40	25
A3 SEF	40	25
DLT	40	25
B4 SEF	40	25
LG SEF	40	25
A4 SEF	50	50
LT SEF	50	50
B5 SEF	50	50

Folding Mode FM3



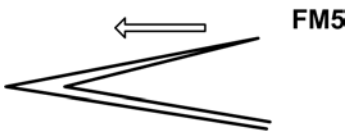
Size	Weight (Standard) 64 to 80 g/m^2	Weight (Heavy) 64 to 80 g/m^2
8-kai	30	20
12x18"	30	20
A3 SEF	30	20
DLT	30	20
B4 SEF	30	20
LG SEF	30	20
A4 SEF	40	30
LT SEF	40	30
B5 SEF	40	30

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
LG SEF	40	20
A4 SEF	50	40
LT SEF	50	40
B5 SEF	50	40

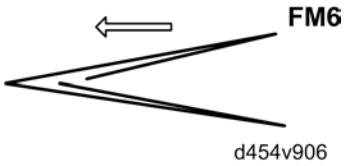
Folding Mode FM5



d454v905

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

APPENDIX:

SERVICE CALL CONDITIONS

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

2. APPENDIX: SERVICE CALL CONDITIONS

2.1 SERVICE CALL CONDITIONS

2.1.1 SERVICE MODE LOCK/UNLOCK

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

1. If you cannot go into the SP mode, ask the Administrator to log in with the User Tool and then set "Service Mode Lock" to OFF. After he or she logs in:
   - User Tools > System Settings > Administrator Tools > Service Mode Lock > OFF
   - This unlocks the machine and lets you get access to all the SP codes.
   - The CE can 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 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.

2.1.2 SERVICE CALL CONDITIONS

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 user cannot reset the SC.	This is a fatal error. The machine cannot be used until the service technician releases it for servicing with SP5810, solves the problem, and then cycles the machine off/on.

Level	Definition	Reset Procedure
B	SCs that disable only the features that use the defective item. Although these SCs are not shown to the user under normal conditions, they are displayed on the operation panel only when the defective feature is selected.	Turn the main power switch off/on.
C	SCs that are not shown on the operation panel. They are internally logged.	Logging only
D	Turning the operation switch or the main power switch off/on resets SCs Displayed on the operation panel. These are re-displayed if the error occurs again.	Turn the operation switch or main power switch off/on.

2.1.3 BEFORE YOU USE THE TABLES

The following notations are used to identify which finisher the SC codes refer to.

Notation	Finisher
D610	Finisher SR4080 (D610)
D611	Finisher SR4060 (D611)
D612	Finisher SR4070 (D612)
D615	Multi Folding Unit FD4000 (D615)

Only one of these finishers can be installed in the system. Many of the SC codes apply to more than one finisher because they have nearly identical parts and part names.

Example'

725	B	Exit guide motor (D610/D611/D612)
		The status of the exit guide sensor did not change at the prescribed time during operation of the exit guide.
		▪ Exit guide open sensor loose, broken, defective. ▪ Exit guide motor defective ▪ Finisher main board defective

SC725 applies to the exit guide motor of whichever finisher is installed: The SR4080, the SR4060, or the SR4070

Important

- If a problem concerns electrical circuit boards, always disconnect then reconnect the connectors before replacing the PCBs.
- If a motor lock error occurs, first check the mechanical load before replacing motors or sensors.
- When a Level "A" or "B" SC occurs while in an SP mode, the display does not display the SC number. If this occurs, check the SC number after leaving the SP mode.

2.2 SC100: SCANNING

2.2.1 SC100

SC101	D	Exposure Lamp Error
		At trigger on, the lamp was not detected on.
	-	▪ SBU board defective ▪ SIOB board defective ▪ IPU board defective ▪ BCU board defective ▪ Exposure lamp defective ▪ Lamp stabilizer defective ▪ Lamp stabilizer harness damaged, disconnected ▪ Standard white plate dirty, disconnected or has condensation ▪ DF white belt dirty ▪ DF glass dirty or has condensation ▪ Scanner mirror dirty, out of position or has condensation ▪ Lens dirty, out of position

SC120	D	Scanner home position error 1
		The scanner HP sensor does not detect the OFF condition during initialization or copying.
	-	▪ BCU, SIOB defective ▪ Scanner motor defective ▪ Scanner HP sensor defective. ▪ Harness between BCU, SIOB, scanner motor disconnected. ▪ Harness between scanner HP sensor and BCU disconnected. ▪ Scanner wire, timing belt, pulley, or carriage installed incorrectly.

SC121	D	Scanner home position error 2
		The scanner HP sensor does not detect the ON condition during initialization or copying.
	-	▪ BCU, SIOB defective ▪ Scanner motor defective ▪ Scanner HP sensor defective ▪ Harness between BCU, SIOB, scanner motor disconnected ▪ Harness between scanner HP sensor and BCU disconnected ▪ Scanner wire, timing belt, pulley or carriage installed incorrectly.

SC141	D	Black level detection error
		The black level cannot be adjusted within the target during auto gain control.
		▪ Harness between SBU – SIOB is disconnected. ▪ Harness between SIOB – BCU is disconnected. ▪ Defective SBU ▪ Defective BCU
		▪ Check the SBU-SIOB/SIOB-BCU harness connections or replace these harnesses. ▪ Replace the SBU. ▪ Replace the BCU

SC142	D	White level detection error
		The white level cannot be adjusted to the second target level within the target during auto gain control.
	-	▪ Dirty exposure lamp or optics section ▪ SBU board defective ▪ SIOB defective ▪ IPU board defective ▪ BCU board defective ▪ Harnesses are disconnected. ▪ Exposure lamp defective ▪ Lamp stabilizer defective ▪ Scanner motor defective
		1. Clean the exposure glass, white plate, mirrors, and lens. 2. Check if the exposure lamp is lit during initialization. 3. Check the harness connection. 4. Replace the exposure lamp. 5. Replace the scanner motor. 6. Replace the SBU board, SIOB, IPU board or BCU board.

SC144	D	SBU transmission error
		▪ After the SBU switches on, the BCU detects one of the following conditions on the SBU: ▪ 1 s after power on, the SYDO signal does not go high, even after 1 retry. ▪ 1 s after power on, the SYDO signal goes high, but the SBU ID could not be read after 3 attempts.
	-	▪ SBU defective ▪ SIOB defective ▪ BCU defective ▪ Harness between the SBU - SIOB is disconnected ▪ Harness between the SIOB - BCU is disconnected ▪ Harness between the SIOB – PSU is disconnected

SC161-01	D	IPU error (LSYNC abnormal)
		The error result of self-diagnostic by the ASIC on the BICU is detected.
		▪ Defective BICU ▪ Defective connection between BICU and SBU
		▪ Check the connection between BICU and SBU. ▪ Replace the BICU.
SC161-02	D	IPU error (Ri response abnormal)
		The machine detects an error during an access to the Ri.
		▪ Defective BICU board
		▪ Replace the BICU board.
SC161-03	D	IPU error (Aruru operation abnormal)
		The IPU fails to configure or initialize the DRAM.
		▪ Defective BICU board
		▪ Replace the BICU board.

SC165	D	Copy data security unit error
		The copy data security option is installed by not operating correctly.
	-	▪ Copy data security card corrupted ▪ The board is not installed or the board is defective

SC181	D	Inverter Fan Error
		When the exposure lamp is triggered on, the inverter fan motor does not rotate.
	-	▪ SIOB defective ▪ BCU defective ▪ Inverter fan motor defective ▪ Harness between the inverter fan motor - SIOB is disconnected ▪ Harness between the SIOB – BCU is disconnected ▪ Harness between the SIOB – PSU is disconnected

SC182	D	Scanner Fan Error: Right Side
		The fan located on the right side of the exposure unit is not rotating.
	-	▪ Check the fan connections ▪ Fan defective ▪ Check SBU connection ▪ SBU defective

SC185	D	CIS transmission error
		Error caused during ASIC register's automatic initialization on the CIS, or during transmission between the CIS – DF.
	-	▪ Harness between the CIS – DF is disconnected ▪ CIS defective

SC186	D	CIS LED error
		▪ LED on the CIS causes error ▪ During initializing, the ration of the average between leading-edge area and rear-edge is beyond the permissible level (0.7 – 1.43). ▪ During scanning, the shading data peak is under 32(8bit).
		▪ Harness CN210 and CN220 on ADF are disconnected. ▪ Otherwise, replace CIS.

SC187	D	CIS BK level error
		The BK level scanned by CIS is abnormal. The BK level average of R, G or B is/are not from 2 to 62. 0 < Calibrated BK data level < 255(10bit).
		▪ Turn off the machine. ▪ Make sure CN210 and CN220 are connected firmly. ▪ Turn on the machine.

SC188	D	CIS white level error
		The shading data peak detected from the CIS is abnormal.
		▪ CIS defective
	-	▪ Make sure CN210 and CN220 are connected firmly. ▪ Replace the CIS.

SC189	D	CIS gray balance adjustment error
		The adjustment error occurs during the test after adjusting the gray balance.
		▪ Retry the gray balance adjustment. ▪ If the machine does not recover, do the following steps. 1. Turn off the machine. 2. Make sure CN210 and CN220 are connected firmly. 3. Turn on the machine. ▪ If the machine does not recover, replace the CIS.

SC195	D	Machine serial number error
		The number registered for the machine serial number does not match.
	-	Confirm the correct serial number of the machine in the specifications. **Important:** When SC195 occurs, the serial number must be input. Contact your technical supervisor.

2.3 SC200: EXPOSURE

2.3.1 SC200

SC202	D	Polygon mirror motor error 1: Timeout at ON
		The polygon mirror motor unit did not enter "Ready" status within 20 sec. after the motor was turned on,
	-	▪ The polygon mirror motor PCB connector is loose, broken, or defective ▪ Polygon mirror motor PCB defective ▪ Polygon mirror motor defective ▪ IPU defective

SC203	D	Polygon mirror motor error 2: Timeout at OFF
		The polygon mirror motor did not leave "Ready" within 3 sec. after the motor was switched off. (The XSCRDY signal did not go HIGH (inactive) within 3 sec.)
	-	▪ The polygon mirror motor PCB connector is loose, broken, or defective ▪ Polygon mirror motor PCB defective ▪ Polygon mirror motor defective ▪ IPU defective

SC204	D	Polygon mirror motor error 3: XSCRDY signal error
		The polygon mirror motor "Ready" signal goes inactive (HIGH) while images are being produced or the synchronization signal is being output.
	-	▪ Polygon mirror motor PCB connector loose, broken, defective ▪ Polygon mirror motor PCB defective ▪ Polygon mirror motor defective

SC220	D	Laser synchronization detection error
		The 1st laser synchronization detection unit could not detect the line synchronization signal (DETP0) within 500 ms while the polygon mirror motor was operating at normal speed. **Note:** The unit polls for the signal every 50 ms. This SC is issued after the 10th attempt fails to detect the signal.
	-	▪ Laser synchronization board connector loose, broken, defective ▪ Laser synchronization detection board is not installed correctly (out of alignment) ▪ Laser synchronization board defective ▪ IPU defective

SC221	D	Laser Synchronization Detector Error: K Leading Edge (LD1)
		While the polygon motor is rotating normally, no synchronizing detection signal is output for black, leading edge for any LD other than LD0.
	-	▪ Harness between the laser synchronizing detector and I/F unit is disconnected, defective ▪ Check all connections between LD unit, LDB, IPU ▪ LD unit ▪ LDB defective ▪ IPU defective

SC230	D	FGATE ON error: K
		The PFGATE ON signal does not assert within 5 seconds after processing the image in normal job or MUSIC for start position [K].
		▪ Defective ASIC ▪ Poor connection between controller and BICU. ▪ Defective BICU
		▪ Check the connection between the controller board and the BICU. ▪ Replace the BICU. ▪ Replace the controller board.

SC231	D	FGATE OFF Error: K
		▪ The PFGATE ON signal still asserts within 5 seconds after processing the image in normal job or MUSIC for end position [K]. ▪ The PFGATE ON signal still asserts when the next job starts.
		See SC 230 for troubleshooting details.

SC240	C	LD error
		The BICU detects LDB error a few times consecutively when LDB unit turns on after LDB initialization.
		▪ Worn-out LD ▪ Disconnected or broken harness of the LD
		▪ Replace the harness of the LD. ▪ Replace the laser optics housing unit. ▪ Replace the BICU.

SC270	D	GAVD communication error
		A problem occurred in the GAVD or eSOC.
		▪ Check connection points on the BCU, IPU for loose, broken, or defective harness or connector ▪ IPU defective ▪ BCU defective ▪ LDU effective

2.4 SC300: IMAGE DEVELOPMENT 1

2.4.1 SC300

SC300-00	D	Charge corona output error
		The feedback voltage from the charge corona unit is detected too high 9 times.
	-	▪ Charge corona power pack defective ▪ Charge corona harness disconnected ▪ Poor charge corona unit connection

SC305-00	D	Charge corona wire cleaner error 1
		The charge cleaner pad does not arrive at the home position: Motor locked within 4 s after switching on, or does not lock within 30 s. Motor locked within 10 s after reversing, or does not lock within 30 s.
	-	▪ Charge corona wire cleaner motor defective ▪ Motor driver defective

SC306-00	C	Charge corona wire cleaner error 2
		Charge corona motor is disconnected. (The current at the charge corona motor is detected less than 83 mA.)
	-	▪ Charge corona wire cleaner motor connector is defective or disconnected.

SC307-00	D	Charge grid circuit open
		When high voltage goes to the corona grid, feedback voltage is more than the set value 9 times. This feedback voltage is used to update PWM for output control.
	-	▪ Charge corona unit defective or disconnected ▪ Charge corona harness defective ▪ Charge corona power pack is defective.

SC320-01	D	Development output abnormal
		The high voltage applied to the development unit is detected 10 times higher than the upper limit (45%) of PWM.
	-	▪ Development power pack defective ▪ Development bias leak due to poor connection, defective connector

SC324-01	D	Development motor lock
		The development motor lock signal remains high for 2 seconds while the development motor is on.
		If this SC is returned on a machine in the field, inspect the toner supply unit coil. If the gear is not damaged, replace the coil. If the gear is damaged, the gear shaft is probably deformed, so replace the entire unit. ▪ Drive mechanism overloaded due to toner clumping in the wasted toner path ▪ Motor driver board defective

SC360-01	D	TD sensor adjustment error: Adjustment output abnormal
		During the TD sensor auto adjustment, the TD sensor output voltage (Vt) is 2.5 volts or higher even though the control voltage is set to the minimum value (PWM = 0). When this error occurs, SP2-906-1 reads 0.00V. **Note:** This SC is released only after correct adjustment of the TD sensor has been achieved. Switching the machine off and on will cancel the SC display, but does not release ID sensor toner supply.
	-	▪ TD sensor defective ▪ TD sensor harness disconnected ▪ TD sensor connector disconnected or defective ▪ IOB defective ▪ Toner bottle motor defective Note: When the TD sensor is defective, the toner supply is controlled using pixel count and the ID sensor.

SC360-11	D	TD sensor adjustment error: Timeout Error
		During the TD sensor auto adjustment, the TD sensor output voltage (Vt) does not enter the target range (3.0 ± 0.1V) within 20 s. When this error occurs, the display of SP2-906-1 reads 0.00V. **Note:** This SC is released only after correct adjustment of the TD sensor has been achieved. Switching the machine off and on will cancel the SC display, but does not release ID sensor toner supply.
	-	▪ TD sensor defective ▪ TD sensor harness disconnected ▪ TD sensor connector disconnected or defective ▪ IOB defective

SC361-00	C	TD sensor output error: Upper Limit
		TD sensor output voltage (Vt), measured during each copy cycle, is detected higher than 4V for 10 prints.
	-	▪ TD sensor defective ▪ TD sensor harness disconnected ▪ TD sensor connector disconnected or defective ▪ IOB defective ▪ Toner bottle motor defective **Note**: When the TD sensor is defective, the toner supply is controlled using pixel count and the ID sensor.

SC362-00	C	TD sensor output error: Lower limit
		TD sensor output voltage (Vt), measured during each copy cycle, is detected 10 times lower than 0.5V.
	-	▪ TD sensor defective ▪ TD sensor harness disconnected ▪ TD sensor connector disconnected or defective ▪ IOB defective ▪ Toner bottle motor defective Note: When the TD sensor is defective, the toner supply is controlled using pixel count and the ID sensor.

SC370-01	C	ID sensor adjustment error: LED output abnormal
		One of the following ID sensor output voltages is detected at ID sensor initialization. ▪ Vsg less than 4.0V when the maximum PWM input (255) is applied to the ID sensor. ▪ Vsg greater than or equal to 4.0V when the minimum PWM input (0) is applied to the ID sensor.
	-	▪ ID sensor defective ▪ ID sensor harness disconnected ▪ ID sensor connector defective ▪ IOB defective ▪ ID sensor pattern not written correctly ▪ Incorrect image density ▪ Charge power pack defective ▪ ID sensor dirty

SC370-11	C	ID sensor adjustment error: Timeout error
		Vsg falls out of the adjustment target (4.0 ±0.2V) during Vsg checking within 20 sec.
	-	▪ ID sensor defective ▪ ID sensor harness disconnected ▪ ID sensor connector defective ▪ IOB defective ▪ ID sensor pattern not written correctly ▪ Incorrect image density ▪ Charge power pack defective ▪ ID sensor dirty

SC375-00	C	ID sensor error: Drum surface voltage error
		The ID sensor output voltage is 5.0V and the PWM signal input to the ID sensor is 0 when checking the ID sensor pattern.
	-	▪ ID sensor defective ▪ ID sensor harness disconnected ▪ ID sensor connector defective ▪ IOB defective ▪ ID sensor pattern not written correctly ▪ Incorrect image density ▪ Charge power pack defective ▪ ID sensor dirty

SC376-00	C	ID sensor error: Pattern edge detection failed
		For 2 s during the ID sensor pattern check, the ID sensor pattern edge voltage is not 2.5V or the pattern edge is not detected within 800 ms.
	-	▪ ID sensor defective ▪ ID sensor harness disconnected ▪ ID sensor connector defective ▪ IOB defective ▪ ID sensor pattern not written correctly ▪ Incorrect image density ▪ Charge power pack defective ▪ ID sensor dirty

SC377-00	C	ID sensor error: Potential surface reading error
		The Vp value, which measures the reflectivity of the ID sensor pattern, was not in the range of -70V to -400V.
	-	▪ Potential sensor defective ▪ Potential sensor harness defective ▪ Potential sensor disconnected ▪ IOB defective ▪ OPC unit connector defective ▪ Charge corona power pack defective ▪ Charge corona wire dirty, broken

SC378-00	C	ID sensor pattern error
		One of the following ID sensor output voltages was detected twice consecutively when checking the ID sensor pattern. ▪ Vsp greater than or equals 2.5V ▪ Vsg less than 2.5 ▪ Vsp = 0V ▪ Vsg = 0
	-	▪ ID sensor defective ▪ ID sensor harness disconnected ▪ ID sensor connector defective ▪ IOB defective ▪ ID sensor pattern not written correctly ▪ Incorrect image density ▪ Charge power pack defective ▪ ID sensor dirty

SC380-01	C	Potential sensor calibration error (VM100)
		During drum potential sensor calibration, when -100V is applied to the drum, the output value is out of the prescribed range.
	-	▪ Potential sensor defective ▪ Potential sensor harness disconnected ▪ Potential sensor connector defective or disconnected ▪ IOB defective ▪ OPC connector defective ▪ Development power pack defective

SC380-11	C	Potential sensor calibration error (VM800)
		During drum potential sensor calibration, when -800V is applied to the drum, the output value is out of the prescribed range.
	-	▪ Potential sensor defective ▪ Potential sensor harness disconnected ▪ Potential sensor connector defective or disconnected ▪ IOB defective ▪ OPC connector defective ▪ Development power pack defective

SC380-21	C	Potential sensor calibration error (skew)
		During drum potential sensor calibration, the drum potential sensor output voltage does not meet specification when test voltages (–100V, –800V) are applied to the drum.
	-	▪ Potential sensor defective ▪ Potential sensor harness disconnected ▪ Potential sensor connector defective or disconnected ▪ IOB defective ▪ OPC connector defective ▪ Development power pack defective

SC380-31	C	Potential sensor calibration error (cut off)
		During drum potential sensor calibration, the drum potential sensor output voltage did not meet specification when test voltages (–100V, –800V) are applied to the drum.
	-	▪ Potential sensor defective ▪ Potential sensor harness disconnected ▪ Potential sensor connector defective or disconnected ▪ IOB defective ▪ OPC connector defective ▪ Development power pack defective

SC380-41	C	Potential sensor calibration error (VD)
		During drum potential sensor calibration when adjusting the drum potential (VD), the drum potential sensor detects VD higher than VG (grid voltage). -or- When adjusting VD (drum surface potential of black areas after exposure), even after 5 adjustments of VG (charge corona grid potential), VD could not be set in the target range (–800±20+ VL + 130V)
	-	▪ Potential sensor defective ▪ Potential sensor harness disconnected ▪ Potential sensor connector defective or disconnected ▪ IOB defective ▪ OPC connector defective ▪ Development power pack defective ▪ Charge corona unit worn out, dirty

SC380-51	C	Potential sensor calibration (VL)
		During drum potential sensor calibration, when VL is adjusted, the pattern surface potential VL pattern is not within range 0V to -400V. (VL is the potential after exposing a white pattern.)
	-	▪ Potential sensor defective ▪ Potential sensor harness disconnected ▪ Potential sensor connector defective or disconnected ▪ IOB defective ▪ OPC connector defective ▪ Charge corona power pack defective ▪ Development power pack defective

SC396-01	D	Main motor error
		The main motor lock signal remains low for 2 seconds while the main motor is on.
		▪ Drive mechanism overloaded ▪ Motor driver board defective

2.5 SC400: IMAGE DEVELOPMENT 2

2.5.1 SC400

SC410-00	C	Quenching lamp error
		At the completion of auto process control initialization, the potential of the drum surface detected by the potential sensor is more than -400V, the prescribed value.
		▪ Quenching lamp defective ▪ Quenching lamp harness disconnected ▪ Quenching lamp connector loose, defective

SC440-01	D	Transfer output abnormal (voltage leak detected)
		When the transfer is output, the feedback voltage remains higher than 4V for 60 ms.
	-	▪ Transfer power pack defective ▪ Transfer current terminal, transfer power pack disconnected, damaged connector

SC440-02	D	Transfer output abnormal release detection
		When the transfer is output, there is hardly any feedback voltage within 60 ms even with application of 24% PWM.
	-	▪ Transfer power pack defective ▪ Transfer unit harness disconnected ▪ Transfer connector loose, defective

SC495-00	D	Toner recycling unit error
		Encoder pulse does not change for 3 s after the main motor switches on.
		▪ Waste toner transport has stopped due to motor overload ▪ Toner end sensor detective, disconnected

SC496-00	D	Toner collection bottle error
		The toner collection bottle set switch remains off when the front door is closed.
		▪ No toner collection bottle set ▪ Poor connection of the switch connector

2.6 SC500: FEED, TRANSPORT, DUPLEX, AND FUSING

2.6.1 SC500

SC501	B	Tray 1 lift malfunction
		▪ The lift sensor is not activated within 10 s after the tray lift motor starts lifting the bottom plate. ▪ When the tray lowers, the tray lift sensor does not go off within 1.5 s. ▪ Tray overload detected when the tray is set. ▪ The lower limit sensor of the LCT does not detect the lower limit within 10 s.
		▪ Tray lift motor defective, disconnected ▪ Paper or other obstacle trapped between tray and motor ▪ Pick-up solenoid disconnected, blocked by an obstacle ▪ Too much paper loaded in tray **Note** ▪ At first, the machine displays a message asking the operator to reset the tray. ▪ This SC will not display until the operator has pulled the tray out and pushed it in 3 times. ▪ If the operator turns the machine off/on before the 3rd opening and closing of the tray, the 3-count is reset.

SC502	B	Tray 2 lift malfunction
		▪ The lift sensor is not activated within 10 s after the tray lift motor starts lifting the bottom plate. ▪ When the tray lowers, the tray lift sensor does not go off within 1.5 s. ▪ Tray overload detected when the tray is set.
		▪ Tray lift motor defective or disconnected ▪ Paper or other obstacle trapped between tray and motor ▪ Pick-up solenoid disconnected or blocked by an obstacle ▪ Too much paper loaded in tray **Note** ▪ At first, the machine displays a message asking the operator to reset the tray. ▪ This SC will not display until the operator has pulled the tray out and pushed it in 3 times. ▪ If the operator turns the machine off/on before the 3rd opening and closing of the tray, the 3-count is reset.

SC503	B	Tray 3 lift malfunction
		▪ The lift sensor is not activated within 10 s after the tray lift motor starts lifting the bottom plate. ▪ When the tray lowers, the tray lift sensor does not go off within 1.5 s. ▪ Tray overload detected when the tray is set.
		▪ Tray lift motor defective or disconnected ▪ Paper or other obstacle trapped between tray and motor ▪ Pick-up solenoid disconnected or blocked by an obstacle ▪ Too much paper loaded in tray **Note** ▪ At first, the machine displays a message asking the operator to reset the tray. ▪ This SC will not display until the operator has pulled the tray out and pushed it in 3 times. ▪ If the operator turns the machine off/on before the 3rd opening and closing of the tray, the 3-count is reset.

SC504	B	Tray 4 lift malfunction
		▪ The lift sensor is not activated within 10 s after the tray lift motor starts lifting the bottom plate. ▪ When the tray lowers, the tray lift sensor does not go off within 1.5 s. ▪ Tray overload detected when the tray is set.
		▪ Tray lift motor defective or disconnected ▪ Paper or other obstacle trapped between tray and motor ▪ Pick-up solenoid disconnected or blocked by an obstacle ▪ Too much paper loaded in tray **Note** ▪ At first, the machine displays a message asking the operator to reset the tray. ▪ This SC will not display until the operator has pulled the tray out and pushed it in 3 times. ▪ If the operator turns the machine off/on before the 3rd opening and closing of the tray, the 3-count is reset.

SC510	B	LCT tray malfunction
		One of the following conditions is detected: ▪ When the bottom plate is lifted, the upper limit sensor does not come on for 18 s. ▪ When the bottom plate is lowered, the lower limit sensor does not come on for 18 s. ▪ After lift begins, the upper limit sensor does not switch on before the pick-up solenoid switches on. ▪ The paper end sensor switches on during lift and the upper limit sensor does not switch on for 2.5 s, and a message prompts user to reset paper.
		▪ Tray lift motor defective or connector disconnected ▪ Lift sensor defective or disconnected ▪ Pick-up solenoid defective or disconnected ▪ Paper end sensor defective

SC515-00	C	Duplex jogger motor error 1
		When the jogger fence moves to the home position, the jogger HP sensor does not turn on even if the jogger fence motor has moved the jogger fence 153.5 mm.
		▪ Paper or other obstacle has jammed mechanism ▪ Sensor connector disconnected or defective ▪ Sensor defective

SC516-00	C	Duplex jogger motor error 2
		When the jogger fence moves from the home position, the jogger fence HP sensor does not turn off even if the jogger motor has moved the jogger fence 153.5 mm.
		▪ Paper or other obstacle has jammed mechanism ▪ Sensor connector disconnected or defective ▪ Sensor defective

SC530-00	D	Main fan error
		The main fan motor lock signal goes high for 5 s while the fan is on.
		▪ Fan motor overloaded due to obstruction ▪ Fan connector disconnected

SC540-01	D	Fusing exit motor error
		The PLL lock signal was low for 2 s during motor operation.
		▪ Motor lock caused by physical overload ▪ Motor drive PCB defective

SC540-02	D	Fusing web motor error 1
		The amount of current detected during operation of the web motor exceeded 350 mA in 5 successive samples.
		▪ Motor connection loose, broken, defective ▪ Motor disconnected ▪ Motor lock or short

SC540-03	A	Fusing web motor error 2
		SC540-02 has occurred three times and the machine has shut down automatically due to failure of the web motor.
		▪ Web motor harness loose, broken, defective ▪ Web motor disconnected ▪ Web motor defective

SC540-04	A	Fusing web motor error 3
		SC540-02 has occurred at total of 10 times and the machine has shut down automatically due to failure of the web motor.
		▪ Web motor harness loose, broken, defective ▪ Web motor disconnected ▪ Web motor defective

SC541	A	Fusing thermistor open
		The fusing temperature detected by the center thermistor was below 0°C for 7 s.
		▪ Thermistor open ▪ Thermistor connector defective ▪ Thermistor damaged, or out of position ▪ Fusing temperature –15% less than the standard input voltage

SC542-001	A	Fusing temperature warm-up error 1: Center themistor
		The center thermistor that touches the hot roller determined that the hot roller failed to reach the warm-up temperature within the prescribed time.
		▪ Fusing lamp disconnected ▪ Thermistor warped, out of position ▪ Thermostat has opened

SC542-002	A	Fusing temperature warm-up error 2: Center themistor
		The center thermistor that touches the hot roller determined that the hot roller failed to reach 100^{o} within the prescribed time.
		▪ Fusing lamp disconnected ▪ Thermistor warped, out of position ▪ Thermostat has opened

SC542-003	A	Fusing temperature warm-up error 3: Center themistor
		The center thermistor that touches the hot roller determined that the hot roller failed to reach 100^{o} within the prescribed time.
		▪ Fusing lamp disconnected ▪ Thermistor warped, out of position ▪ Thermostat has opened

SC543	A	Fusing lamp overheat error 1 (software)
		Central thermistor detected a temperature of 240°C at the center of the hot roller. Fusing temperature control software error
		▪ PSU defective ▪ IOB defective ▪ BICU defective

SC544	A	Fusing lamp overheat error 1: Hardware
		The center thermistor or an end thermistor detected a temperature of 250°C on the hot roller.
		▪ PSU defective ▪ IOB defective ▪ BICU defective

SC545	A	Fusing lamp overheat error 2: Center lamp
		After hot roller reaches warm-up temperature, the fusing lamps remained on at full capacity for 11 samplings (1.8 s. duration) while the hot roller was not rotating.
		▪ Thermistor damaged, or out of position ▪ Fusing lamp disconnected

SC547-01	D	Zero cross signal error 1: Fusing relay
		At power on and with the fusing relay off, 3 samplings detected that the zero cross was not normal.
		▪ Fusing relay short ▪ Fusing relay drive circuit defective

SC547-02	D	Zero cross signal error 2: Fusing relay
		No zero cross signal was detected within 3 sec. after power on or after closing the front door.
		▪ Fusing relay short ▪ Fusing relay drive circuit defective

SC547-03	D	Zero cross signal error 2: Unstable power supply
		After 11 samplings the power supply was not within 50 to 60 Hz, indicating that the power supply is not stable.
		▪ Check power source with local supplier

SC551	A	Fusing thermistor error 1: End thermistor
		The end thermistor (contact type) was less than 0C (32F) for more than 7 seconds.
		▪ Thermistor connector loose, broken, defective ▪ Thermistor incorrectly installed or loose

SC552-01	A	Fusing reload temperature error 1: End thermistor
		The end thermistor (contact type) could not detect: ▪ 100°C 25 seconds after the start of the warm-up cycle. ▪ A change in temperature more than 16 degrees for 5 seconds. ▪ The reload temperature with 56 seconds after the start of the fusing temperature control cycle.
		▪ Fusing lamp disconnected ▪ Thermistor connector loose, broken, defective ▪ Thermistor out of position, installed incorrectly ▪ Thermostat open

SC552-02	A	Fusing reload temperature error 2: End thermistor
		The hot roller did not reach 100^{o}C within the prescribed time.
		▪ Fusing lamp disconnected ▪ Thermistor connector loose, broken, defective ▪ Thermistor out of position, installed incorrectly ▪ Thermostat open

SC552-03	A	Fusing reload temperature error 3: End thermistor
		The hot roller did not reach the prescribed temperature within 3 sec, after the start of the fusing temperature control cycle.
		▪ Fusing lamp disconnected ▪ Thermistor connector loose, broken, defective ▪ Thermistor out of position, installed incorrectly ▪ Thermostat open

SC553	A	Fusing thermistor error 4: End thermistor (software)
		The end thermistor (contact type) was at 240°C (464°F) for more than 1 second. The temperature is read 10 times every second. (at 0.1 s intervals).
		▪ PSU defective ▪ IOB control board defective ▪ BICU control board defective

SC555	A	Fusing lamp error
		After the start of the warmup cycle, a fusing lamp was at full power for 1.8 s but the hot roller did not turn.
		▪ Thermistor bent, out of position ▪ Fusing lamp disconnected ▪ Circuit breaker opened

SC557	C	Zero cross signal error
		High frequency noise was detected on the powe r line.
		▪ No action required. The SC code is logged and the operation of the machine is not affected.

SC559	A	Fusing jam: 3 counts
		At the fusing exit sensor the paper was detected late for three pulse counts (lag error), and SP1159 was on.
		▪ If this SC occurs, the machine cannot be used until the service technician cancels the SC code. ▪ This SC occurs only if SP1159 has been set to "1" (On). (Default: 0 (Off)).

SC569	D	Fusing pressure release motor error
		During copying, the HP sensor could not detect the actuator, tried again 3 times and could not detect.
		▪ Motor lock because of too much load ▪ Motor driver defective ▪ HP sensor defective, disconnected, connector defective, harness damaged

SC590-00	D	Toner collection motor error
		The toner collection motor sensor output does not change for 3 s while the toner collection motor is on.
		▪ Motor lock due to obstruction ▪ Motor driver board defective ▪ Motor connection loose, defective ▪ Toner collection motor sensor disconnected, sensor defective ▪ Rotational transmission shaft (dia. x 30) missing

2.7 SC600: DATA COMMUNICATION

2.7.1 SC600

SC620-01	D	BCU-ADF Communication Error: Break RX abnormal
		A BREAK was detected after connection.
		▪ ADF I/F cable connection loose, broken, defective ▪ ADF control board defective ▪ BCU defective ▪ Serial line level unstable ▪ External noise on the line

SC620-2	D	BCU-ADF Communication Error: Timeout
		▪ ADF I/F cable connection loose, broken, defective ▪ ADF control board defective ▪ BCU defective ▪ Serial line level unstable ▪ External noise on the line

SC621-01	D	BICU/Finisher communication error: Break error
		During communication with the finisher MBX, the BICU received a break (Low) signal from the finisher.
		▪ Connection between main machine loose, broken, defective ▪ Breaker switch defective ▪ Power cord loose, broken, defective ▪ Peripheral unit control board defective

SC621-02	D	BCU/Finisher communication error: Timeout error
		During communication between the finisher MBX and the BCU, no ACK signal was detected for 100 ms, even after three attempts.
		▪ Connection between main machine loose, broken, defective ▪ Breaker switch defective ▪ Power cord loose, broken, defective ▪ Peripheral unit control board defective ▪ BCU defective ▪ Serial line level unstable, external noise on the line

SC623	D	BCU-PFB communication error
		More than 2 in communication errors between the BCU and PFB were detected after startup, or more than 3 errors were detected after settings were initialized.
		▪ Harness connectors between BCU and PFB loose, broken, disconnected ▪ Serial line connection unstable ▪ External noise on the line ▪ BCU defective ▪ PFB defective

SC626-01	D	BICU, LCT communication error: Break reception error
		During communication with the LCT, the BICU received a break (Low) signal.
		▪ LCT connection to main machine loose, broken, defective ▪ LCT control board defective ▪ BCU defective ▪ Serial line connection unstable ▪ External noise on the line

SC626-02	D	BICU, LCT communication error: Timeout error
		After 1 data frame is sent to the LCT, an ACK signal is not received within 100 ms, and is not received after 3 retries.
		▪ LCT connection to main machine loose, broken, defective ▪ LCT control board defective ▪ BCU defective ▪ Serial line connection unstable ▪ External noise on the line

SC632	B	Counter device error 1	CTL
		After 3 attempts to send a data frame to the optional counter device via the serial communication line, no ACK signal was received within 100 ms.	
		▪ Serial line between the optional counter device, the relay board and copier control board is disconnected or damaged. ▪ Make sure that SP5113 is set to enable the optional counter device.	
		▪ Check if the setting of the SP5113 is correctly set. ▪ Check the connection between the main machine and optional counter device.	

SC633	B	Counter device error 2	CTL
		After communication was established, the controller receivee the brake signal from the accounting device.	
		▪ Serial line between the optional counter device, the relay board and copier control board is disconnected or damaged. ▪ Make sure that SP5113 is set to enable the optional counter device.	
		▪ Confirm that the setting of SP5113 is correct. ▪ Check the connection between the main machine and optional counter device.	

SC634	B	Counter device error 3	CTL
		A backup RAM error was returned by the counter device.	
		▪ Counter device control board defective ▪ Backup battery of counter device defective	
		▪ Replace the counter device.	

SC635	B	Counter device error 4	CTL
		A backup battery error was returned by the counter device.	
		▪ Counter device control board defective ▪ Backup battery of counter device defective	
		▪ Replace the counter device.	

SC636	D	SD Card Error	CTL
01		Expanded authentication module error	
		There is no expanded authentication module in the machine. The SD card or the file of the expanded authentication module is broken. There is no DESS module in the machine.	
		▪ No expanded authentication module ▪ Defective SD card ▪ Defective file in the authentication module ▪ No DESS module	
		1. Install the expanded authentication module. 2. Install the SD card. 3. Install the DESS module. 4. In the SSP mode set SP5-401-160 to 0. 5. In the SSP mode, set SP5-401-161 to 0. 6. Cycle the machine off/on. 7. Execute SP5-876-1 (security all clear). 8. If this is a mass-produced machine, replace the NV.	
02		Version error	

		The version of the expanded authentication module is not correct.
		▪ Incorrect module version
		▪ Install the correct file of the expanded authentication module.
11		OSM user code file error
		The correct "usercode" file could not be found in the root folder of the SD card because the file is not present, or the existing file is corrupted or the wrong type file.
		▪ Create the usercode files with the User Setting Tool "IDissuer.exe" . ▪ Store the files in the root folder of the SD card. **Note:** Make sure the eccm.mod file is in the root folder of the SD card.

SC637	D	Tracking information notification error	CTL
01		Ttracking application error	
		Tracking information was lost. The machine failed to give notice of the tracking information to the tracking SDK application.	
		▪ Cycle the machine off/on	
02		Management server error	
		The machine failed to give notice of the tracking information to the management server. Tracking information was lost, and the machine could not count correctly.	
		▪ Cycle the machine off/on	

SC640	D	Engine-to-Controller Communication Error	CTL
		This is a checksum error.	
		▪ PCI hardware error	
		▪ Cycle the machine off/on	

SC641	D	Engine serial communication error	CTL
		An error occurs in serial communication with engine.	
		▪ SC641-1: Timeout error ▪ SC641-2: Retry over ▪ SC641-3: Download error ▪ SC641-4: UART error	
		▪ Cycle the machine off/on	

SC650	B	@Remote communication error (Cumin-M)	CTL
	01	The authentication for the Cumin-M fails failed at a dial up connection due to one or more of the following: ▪ Incorrect SP settings ▪ Disconnected telephone line ▪ Disconnected modem board ▪ Disconnected wireless LAN card	
		▪ Check and set the correct user name (SP5-816-156) and password (SP5-816-157).	
	04	Communication line error	
		The supplied voltage is not sufficient due to the defective communication line or defective connection.	
		The authentication for the Cumin-M fails failed at a dial up connection due to one or more of the following: ▪ Incorrect SP settings ▪ Disconnected telephone line ▪ Disconnected modem board ▪ Disconnected wireless LAN card	
		▪ Check and set the correct user name (SP5-816-156) and password (SP5-816-157).	
	05	No modem board	

	Modem board is not installed even though the setting at Cumin-M (During the operation)
	The authentication for the Cumin-M fails failed at a dial up connection due to one or more of the following: ▪ Incorrect SP settings ▪ Disconnected telephone line ▪ Disconnected modem board ▪ Disconnected wireless LAN card
	▪ Check and set the correct user name (SP5-816-156) and password (SP5-816-157).
13	Modem board error 1
	Modem board not installed or the board is defective.
	▪ Install the modem board. ▪ Check correct setting value for modem driver (SP5-816-160, SP5-816-165 to 171, SP5-816-188 and 189). ▪ Replace the modem board.
14	Modem board error 2
	Modem board not installed or the board is defective.
	▪ Uninstall the modem board if it is installed. ▪ Check that the wired/wireless LAN is working properly.

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. Here is a list of error codes:

Error	Problem	Solution
1	Failure to certify dial-up	In the User Tools, check the dial-up user and dial-up password settings
4	Illegal modem setting	Check the setting of SP5816 160 to determine whether the setting for the AT command is correct. If this SP setting is correct, then the problem is a bug in the software.
5	Poor connection due to low power supply on the line.	The problem is on the external power supply line, so there is no corrective action on the machine.
11	Data in the NVRAM became corrupted when the network enable switch and Cumin-M were enabled at the same time.	Use SP5985 1 and set the NIC to "0" (Disable) to disable the network board.
12	The modem board could not enable the NIB.	Replace the modem board.

SC651-01	C	Illegal Remote Service Dial-up	CTL
		An expected error occurred when Cumin-M dialed up the NRS Center.	
		▪ Software bug ▪ No action is required because only the count is logged	

SC651	C	Incorrect dial up connection	CTL
01	-	Chat program parameter error	
02	-	Chat program execution error	
		An unexpected error occurs when the modem (Cumin-M) tries to call the center with a dial up connection.	
		▪ Caused by a software bug	
		▪ No action required ▪ This SC does not interfere with operation of the machine.	

SC652	D	Remote service ID2 mismatching
		There was an authentication mismatch between ID2 for @Remote, the controller board, and NVRAM.
		▪ Used controller board installed ▪ Used NVRAM installed ▪ An unexpected error occurs when the modem (Embedded RCG-M) tries to call the center with a dial up connection.
		▪ Install the correct controller board or anew controller board. ▪ Install the correct NVRAM or new NVRAM.

SC653	D	Incorrect remote service ID2	CTL
		ID2 stored in the NVRAM is incorrect.	
		▪ Used NVRAM installed ▪ An unexpected error occured when the modem (Embedded RCG-M) tries to call the center with a dial up connection	
		▪ Clear the ID2 in the NVRAM ▪ Input the correct ID2.	

SC670	D	Engine start up error	CTL
		The BCU failed to respond within the prescribed time when the machine was turned on.	
		▪ Connections between BCU and controller board are loose, disconnected, or damaged.	
		▪ Replace the BCU ▪ Replace the controller board	

SC671	D	Illegal Engine Board	CTL
		An illegal engine board was detected by the firmware at power on.	
		▪ Replace BICU	

SC672	D	Controller start up error	CTL
		▪ After the machine was powered on, communication between the controller and the operation panel was not established, or communication with controller was interrupted after a normal startup. ▪ After startup reset of the operation panel, the attention code (FDH) or the attention acknowledge code (FEH) was not sent from the controller within 30 sec.. ▪ After the controller issued a command to check the communication line with the controller at 30-second intervals, the controller failed to respond twice.	
		▪ Controller stalled ▪ Controller board installed incorrectly ▪ Controller board defective ▪ Operation panel connector loose, broken, or defective ▪ The controller did not completely shut down when the switch was turned off.	
		▪ Check the setting of SP5-875-001. ▪ If this SP is set to "1 (OFF)", change it to "0 (ON)"	

2.8 SC700: PERIPHERALS

2.8.1 SC700: PERIPHERALS

SC700-01	D	ARDF bottom plate lift motor
		▪ The bottom plate HP sensor does not detect the home position of the bottom plate after the bottom plate lift motor switches on and lowers the bottom plate. ▪ The bottom plate position sensor does not detect the position of the plate after the lift motor switches on and raises the bottom plate.
		▪ ARDF feed motor disconnected, defective ▪ Bottom plate HP sensor disconnected, defective ▪ ARDF main board defective

SC700-02	D	ADF bottom plate motor error
		▪ Bottom plate position sensor does not detect the plate after the bottom plate lift motor switches on to lift the plate. ▪ Bottom plate HP sensor does not detect the plate after the bottom plate motor reverses to lower the plate.
		▪ Bottom plate position sensor defective ▪ Bottom plate HP sensor defective ▪ Bottom plate motor defective ▪ ADF main board defective

SC720-01	D	Downstream finisher communication error
		No response signal was received from the downstream finisher (D611/D612) after 3 attempts
		▪ Finisher I/F cable loose, broken defective ▪ Finisher control board defective

SC720-24	B	Exit guide motor (D611/D612)
		The status of the exit guide sensor did not change at the prescribed time during operation of the exit guide.
		▪ Exit guide open sensor loose, broken, defective. ▪ Exit guide motor defective ▪ Finisher main board defective

SC720-25		Punch motor error (D611/D612)
		After the punch operation, the punch HP sensor did not detect the punch unit at the home position.
		▪ Punch motor connection loose, broken, defective. ▪ Punch overload (blocked by obstruction) ▪ Home position sensor connection loose, broken, defective ▪ HP sensor defective

SC720-30	B	Finisher jogger motor error (D611/D612)
		▪ The finisher jogger HP sensor remains de-activated for more 1,000 pulses when returning to home position. ▪ The finisher jogger HP sensor remains activated for more than 1,000 pulses when moving away from home position.
		▪ Jogger HP sensor defective ▪ Jogger mechanism overload ▪ Jogger motor defective (not rotating) ▪ Finisher main board defective ▪ Harness disconnected or defective

SC720-41	D	Feed-Out Belt Motor Error (D611/D612)
		The stack feed-out belt HP sensor does not activate within the specified time after the stack feed-out belt motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		If the motor is operating ▪ Stack feed-out HP sensor harness loose, broken, defective ▪ Stack feed-out HP sensor defective If the motor is not operating: ▪ Feed-out motor blocked by an obstruction ▪ Feed-out motor harness loose, broken, defective ▪ Feed-out motor defective ▪ Booklet finisher main board defective

SC720-42	B	Finisher stapler movement motor error (D611/D612)
		The stapler HP sensor is not activated within the specified time after the stapler motor turned on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Stapler movement motor disconnected, defective ▪ Stapler movement motor overloaded due to obstruction ▪ Stapler HP sensor disconnected, defective

SC720-43	B	Finisher corner stapler rotation motor error (D611/D612)
		The stapler does not return to its home position within the specified time after stapling. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Stapler rotation motor disconnected, defective ▪ Stapler rotation motor overloaded due to obstruction ▪ Stapler rotation HP sensor disconnected, defective

SC720-44	B	Finisher corner stapler motor error (D611/D612)
		The stapler motor does not switch off within the prescribed time after operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Staple jam ▪ Number of sheets in the stack exceeds the limit for stapling ▪ Stapler motor disconnected, defective

SC720-52	B	Finisher folder plate motor error (D612)
		The folder plate moves but is not detected at the home position within the specified time. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Folder plate HP sensor disconnected, defective ▪ Folder plate motor disconnected, defective ▪ Folder plate motor overloaded due to obstruction.

SC720-53	B	Folding unit bottom fence lift motor (D612)
		The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Motor harness disconnected, loose, defective ▪ Motor defective

SC720-55	B	Clamp roller retraction motor error (D612)
		The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Motor harness disconnected, loose, defective ▪ Motor defective

SC720-57	B	Stack junction gate motor error (D612)
		Occurs during operation of the punch unit. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Motor harness disconnected, loose, defective ▪ Motor overload ▪ Motor defective

SC720-60	B	Booklet stapler motor error 1 (D612)
		The front stapler unit saddle-stitch motor does not start operation within the specified time. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Front motor disconnected, defective ▪ Front motor overloaded due to obstruction

SC720-61	B	Booklet stapler motor error 2 (D611/D612)
		The rear stapler unit saddle-stitch motor does not start operation within the specified time. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Rear motor disconnected, defective Rear motor overloaded due to obstruction

SC720-70	B	Finisher tray 1 (upper tray lift) motor error (D611/D612)
		The upper tray paper height sensor does not change its status with the specified time after the tray raises or lowers. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Tray lift motor disconnected, defective ▪ Upper tray paper height sensor disconnected, defective ▪ Finisher main board connection to motor loose ▪ Finisher main board defective

SC720-71	D	Shift Motor Error (D611/D612)
		The shift tray half-turn sensors: Failed twice to detect the shift tray at the home position at the specified time. -or- Failed twice to detect that the shift tray had left the home position.
		If the motor is operating ▪ Half-turn sensor 1, 2 harnesses loose, broken, defective ▪ One of the half-turn sensors is defective If the motor is not operating: ▪ Motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Finisher main board defective

SC720-72	B	Front shift jogger motor error (D611/D612)
		The sides fences do not retract within the prescribed time after the shift jogger motor switches on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Shift jogger motor disconnected, defective ▪ Shift jogger motor overloaded due to obstruction ▪ Shift jogger HP sensor disconnected, defective

SC720-73	B	Rear shift jogger motor (D611/D612)
		The side fences do not retract within the prescribed time after the shift jogger motor switches on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Motor harness disconnected, loose, defective ▪ Motor defective ▪ Motor overload ▪ HP defective

SC720-74	B	Shift jogger retraction motor error (D611/D612)
		The side fences do not retract within the prescribed time after the retraction motor switches on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Motor harness disconnected, loose, defective ▪ Motor defective ▪ Motor overload ▪ HP defective

SC720-75	B	Return roller motor error (D611/D612)
		Occurs during the operation of the lower tray pressure motor.
		▪ Motor harness disconnected, loose, defective ▪ Motor overloaded ▪ Home position sensor harness disconnected, loose, defective ▪ Home position defective

SC720-80	D	Punch movement motor error (D611/D612)
		Occurs during operation of the punch unit. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Motor harness disconnected, loose, defective ▪ Motor defective

SC720-81	D	Paper position sensor slide motor error (D611/D612)
		Occurs during operation of the punch unit. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Motor harness disconnected, loose, defective ▪ Motor defective

SC720-87	D	Finisher punch motor error (D611/D612)
		The punch HP sensor is not activated within the specified time after the punch motor turned on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Punch HP sensor disconnected, defective ▪ Punch motor disconnected, defective ▪ Punch motor overload due to obstruction

SC722-01	D	Downstream finisher communication error
		No response signal was received from the downstream finisher (D610) after 3 attempts
		▪ Finisher I/F cable loose, broken defective ▪ Finisher control board defective

SC722-10	B	Transport motor error (D610)
		A pulse signal from the transport motor could not be detected within the prescribed time. The first detection triggers a jam code, and the second detection triggers this SC.
		▪ Motor overload due to an obstruction ▪ Motor harness connector loose, broken, defective ▪ Motor defective

SC722-24	B	Exit guide motor (D610)
		The status of the exit guide sensor did not change at the prescribed time during operation of the exit guide.
		▪ Exit guide open sensor loose, broken, defective. ▪ Exit guide motor defective ▪ Finisher main board defective

SC722-25		Punch motor error (D610)
		After the punch operation, the punch HP sensor did not detect the punch unit at the home position.
		▪ Punch motor connection loose, broken, defective. ▪ Punch overload (blocked by obstruction) ▪ Home position sensor connection loose, broken, defective ▪ HP sensor defective

SC722-30	B	Finisher jogger motor error (D610)
		▪ The finisher jogger HP sensor remains de-activated for more 1,000 pulses when returning to home position. ▪ The finisher jogger HP sensor remains activated for more than 1,000 pulses when moving away from home position.
		▪ Jogger HP sensor defective ▪ Jogger mechanism overload ▪ Jogger motor defective (not rotating) ▪ Finisher main board defective ▪ Harness disconnected or defective

SC722-33	B	Finisher staple hammer motor error (D610)
		The staple hammer motor did not return to the home position within the prescribed time (340 ms).
		▪ Staple hammer HP sensor loose, broken, defective ▪ Electrical overload on the stapler drive PCB elect ▪ Staple hammer motor defective ▪ Finisher main board defective

SC722-35	D	Stack Plate Motor Error 1: Front Motor(D610)
		The stack plate HP sensor (front) does not activate within 500 ms after the motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		If the motor is operating ▪ Front stack plate HP sensor harness loose, broken, defective ▪ Front stack plate HP sensor defective If the motor is not operating: ▪ Motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Booklet finisher main board defective

SC722-36	D	Stack Plate Motor Error 2: Center Motor (D610)
		The stack plate HP sensor (center) does not activate within 500 ms after the motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		If the motor is operating ▪ Center stack plate HP sensor harness loose, broken, defective ▪ Center stack plate HP sensor defective If the motor is not operating: ▪ Motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Booklet finisher main board defective

SC722-37	D	Stack Plate Motor Error 3: Rear Motor (D610)
		The stack plate HP sensor (rear) does not activate within 500 ms after the motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		If the motor is operating ▪ Rear stack plate HP sensor harness loose, broken, defective ▪ Rear stack plate HP sensor defective If the motor is not operating: ▪ Motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Booklet finisher main board defective

SC722-39	B	Jogger Top Fence Motor (D610)
		The top fence HP sensor detected that: The top fence did not arrive at the home position within the specified number of pulses. -or- The top fence failed to leave the home position within the specified number of pulses.
		If the jogger top fence motor is operating: ▪ Top fence HP sensor harness loose, broken, defective ▪ Top fence HP sensor defective If the jogger top fence motor is not operating: ▪ Motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Finisher main board defective

SC722-40	B	Jogger Bottom Fence Motor (D610)
		The bottom fence HP sensor detected that: The bottom fence did not arrive at the home position at the specified time. -or- The bottom fence failed to leave the home position at the specified time.
		If the jogger bottom fence motor is operating: ▪ Bottom fence HP sensor harness loose, broken, defective ▪ Bottom fence HP sensor defective If the jogger bottom fence motor is not operating: ▪ Motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Finisher main board defective

SC722-41	D	Feed-Out Belt Motor Error (D610)
		The stack feed-out belt HP sensor does not activate within the specified time after the stack feed-out belt motor turns on. The 1st detection failure causes a jam error, and the 2nd failure causes this SC code.
		If the motor is operating ▪ Stack feed-out HP sensor harness loose, broken, defective ▪ Stack feed-out HP sensor defective If the motor is not operating: ▪ Feed-out motor blocked by an obstruction ▪ Feed-out motor harness loose, broken, defective ▪ Feed-out motor defective ▪ Booklet finisher main board defective

SC722-42	B	Finisher stapler movement motor error (D610)
		The stapler HP sensor is not activated within the specified time after the stapler motor turned on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Stapler movement motor disconnected, defective ▪ Stapler movement motor overloaded due to obstruction ▪ Stapler HP sensor disconnected, defective

SC722-43	B	Finisher corner stapler rotation motor error (D610)
		The stapler does not return to its home position within the specified time after stapling. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Stapler rotation motor disconnected, defective ▪ Stapler rotation motor overloaded due to obstruction ▪ Stapler rotation HP sensor disconnected, defective

SC722-44	B	Finisher corner stapler motor error (D610)
		The stapler motor does not switch off within the prescribed time after operating. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Staple jam ▪ Number of sheets in the stack exceeds the limit for stapling ▪ Stapler motor disconnected, defective

SC722-70	B	Finisher tray 1 (upper tray lift) motor error (D610)
		The upper tray paper height sensor does not change its status with the specified time after the tray raises or lowers. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Tray lift motor disconnected, defective ▪ Upper tray paper height sensor disconnected, defective ▪ Finisher main board connection to motor loose ▪ Finisher main board defective

SC722-71	D	Shift Motor Error (D610)
		The shift tray half-turn sensors: Failed twice to detect the shift tray at the home position at the specified time. -or- Failed twice to detect that the shift tray had left the home position.
		If the motor is operating ▪ Half-turn sensor 1, 2 harnesses loose, broken, defective ▪ One of the half-turn sensors is defective If the motor is not operating: ▪ Motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Finisher main board defective

SC722-72	B	Front shift jogger motor error (D610)
		The sides fences do not retract within the prescribed time after the shift jogger motor switches on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Shift jogger motor disconnected, defective ▪ Shift jogger motor overloaded due to obstruction ▪ Shift jogger HP sensor disconnected, defective

SC722-74	B	Shift jogger retraction motor error (D610)
		The side fences do not retract within the prescribed time after the retraction motor switches on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Motor harness disconnected, loose, defective ▪ Motor defective ▪ Motor overload ▪ HP defective

SC722-75	B	Return roller motor error (D610)
		Occurs during the operation of the lower tray pressure motor.
		▪ Motor harness disconnected, loose, defective ▪ Motor overloaded ▪ Home position sensor harness disconnected, loose, defective ▪ Home position defective

SC722-80	B	Finisher staple trimming hopper full (D610)
		The staple waste hopper is full of cut staples.
		▪ If the hopper is full, empty the hopper ▪ If the hopper is not full, the hopper full sensor is disconnected, defective

SC722-81	D	Finisher transport motor error (D610)
		The encoder pulse of the finisher transport motor does not change state (high/low) within 600 ms and does not change after 2 retries.
		▪ Finisher transport motor defective ▪ Transport motor harness disconnected, or defective ▪ Finisher main board defective

SC722-83	D	Finisher punch motor error (D610)
		The punch HP sensor is not activated within the specified time after the punch motor turned on. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Punch HP sensor disconnected, defective ▪ Punch motor disconnected, defective ▪ Punch motor overload due to obstruction

SC724-71	D	Shift Motor Error
		The shift tray half-turn sensors: Failed twice to detect the shift tray at the home position at the specified time. -or- Failed twice to detect that the shift tray had left the home position.
		If the motor is operating ▪ Half-turn sensor 1, 2 harnesses loose, broken, defective ▪ One of the half-turn sensors is defective If the motor is not operating: ▪ Motor blocked by an obstruction ▪ Motor harness loose, broken, defective ▪ Motor defective ▪ Finisher main board defective

SC725-01	D	Downstream finisher communication error (D615)
		No response signal was received from the downstream finisher (D615) after 3 attempts
		▪ Finisher I/F cable loose, broken defective ▪ Finisher control board defective

SC725-12	B	Reg. Roller Transport Motor Error	Multi Folder (D615)
		The motor drive PCB detected an error at the motor.	
		▪ Motor harness or connector loose, broken, defective ▪ Motor or motor drive board defective	

SC725-13	B	Dynamic Roller Transport Motor Error	Multi Folder (D615)
		The motor drive PCB detected an error at the motor.	
		▪ Motor harness or connector loose, broken, defective ▪ Motor or motor drive board defective	

SC725-14	B	Z-fold top tray exit motor error
		The motor driver detects an error.
		▪ Motor over current ▪ Motor driver overheat

SC725-30	B	Z-fold stopper 1 Motor error
		The bottom fence HP sensor detected that: The bottom fence did not arrive at the home position at the specified time. -or- The bottom fence failed to leave the home position at the specified time.
		▪ Motor over-current ▪ Motor driver overheat ▪ Motor harness loose

SC725-31	B	2nd Stopper Motor Error	Multi Folder (D615)
		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	

SC725-32	B	3rd Stopper Motor Error	Multi Folder (D615)
		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	

SC725-33	B	Jogger Fence Motor	Multi Folder (D615)
		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	

SC725-34	B	Dynamic Roller Lift Motor Error	Multi Folder (D615)
		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	

SC725-35	B	Registration Roller Release Motor Error	Multi Folder (D615)
		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	

SC725-36	B	FM2 Direct-Send JG Motor	Multi Folder (D615)
		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	

SC725-37	B	FM6 Pawl Motor	Multi Folder (D615)
		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	

SC725-38	B	Fold Plate Motor Error	Multi Folder (D615)
		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	

SC783-3	B	1st Fold Motor Error	Multi Folder (D615)
		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 (D615)
		The motor drive PCB detected an error at the motor.	
		▪ Motor harness or connector loose, broken, defective ▪ Motor or motor drive board defective	

SC725-41	B	Crease Motor Error	Multi Folder (D615)
		The motor drive PCB detected an error at the motor.	
		▪ Motor harness or connector loose, broken, defective ▪ Motor or motor drive board defective	

SC725-71	D	Horizontal Transport Motor Error	Multi Folder (D615)
		The motor drive PCB detected an error at the motor.	
		▪ Motor harness or connector loose, broken, defective ▪ Motor or motor drive board defective	

SC725-72	D	Horizontal exit motor error
		An error occurred on the motor drive board.
		▪ Motor current overload ▪ Motor drive board defective (replace motor)

SC725-73	D	Top Tray Exit Motor	Multi Folder (D615)
		The motor drive PCB detected an error at the motor.	
		▪ Motor harness or connector loose, broken, defective ▪ Motor or motor drive board defective	

SC725-74	D	Entrance JG Motor	Multi Folder (D615)
		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	

SC740-10	B	Cover interposer tray bottom plate motor error
		After the motor starts to raise the bottom plate, the bottom plate position sensor does not detect the plate at the specified time (3 s). After the motor starts to lower the bottom plate, the bottom plate HP sensor does not detect the bottom plate.
		▪ Bottom plate position sensor, disconnected, defective ▪ Bottom plate HP sensor disconnected, defective

2.9 SC800: OVERALL SYSTEM

2.9.1 SC800:

SC816	D	Energy save I/O subsystem error
		The energy save I/O subsystem is defective or this system detected a controller board error.
		▪ Reboot the machine. ▪ Replace the controller board.

SC817	D	Monitor error	GW
		This is a file detection and electronic file signature check error when the boot loader attempts to read the self-diagnostic module, system kernel, or root system files from the OS Flash ROM, or the items on the SD card in the controller slot are false or corrupted.	
		▪ OS Flash ROM data defective ▪ SD card data defective	
		1. Change the controller firmware. 2. Use another SD card.	

Error Codes

Code	Meaning
0x0000 0000	BIOS boot error
0x0000 0001	Primary boot start load error
0x0000 0002	Secondary boot load error (Boot3.Elf)
0x0000 0003	Self-diagnostic module error (Diag.Elf)
0x0000 0004	Kernel start error (Netbsd)
0x0000 0005	Root file system file read error (Rootfs)

0xffff ffff	Other error

Example: Data in the self-diagnostic module, system kernel, or root system files are corrupted or do not exist in OS flash ROM or on the SD card
Files in the self-diagnostic module, kernel, or root file system on the SD card have been falsified or altered

- Before discarding the SD card, try to update the data on the card. If the error occurs again, the card may be defective.
- Be sure to use an SD card that contains the correct electronic signature.

<table>
<tr><td rowspan="10">SC819</td><td rowspan="10">D</td><td colspan="2">Fatal kernel error</td></tr>
<tr><td colspan="2">Due to a control error, a RAM overflow occurred during system processing. One of the following messages was displayed on the operation panel.</td></tr>
<tr><td>0x5032</td><td>HAIC-P2 error</td></tr>
<tr><td>0x5245</td><td>Link-up fail</td></tr>
<tr><td>0x5355</td><td>L2 Status Time Out</td></tr>
<tr><td>0x696e</td><td>gwinit died</td></tr>
<tr><td>0x766d</td><td>Vm_pageout: VM is full</td></tr>
<tr><td>554C</td><td>USB loader defect</td></tr>
<tr><td>Other</td><td></td></tr>
<tr><td></td><td></td><td></td><td>▪ System program defective
▪ Controller board defective
▪ Optional board defective
▪ Replace controller firmware</td></tr>
</table>

SC820	D	0008	Self-diagnostic Error: CPU: System Call Exception	GW
		0612	Self-diagnostic Error: CPU: ASIC Interrupt Error	GW
		▪ 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.		

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	D	Self-diagnostics error: ASIC	GW
[0B00]		ASIC register check error	
		A write-verify check occurred in the ASIC.	
		▪ ASIC device	
		▪ Controller board defective	
[0B06]		ASIC detection error	
		The I/O ASIC for system control was not detected.	
		▪ Defective ASIC ▪ Defective North Bridge and PCII/F	
		▪ Controller board 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.

SC822	B	Self-diagnostics error: HDD	GW
[3003]		HDD timeout	
		Check performed only when HDD is installed: ▪ HDD device was busy for over 31 seconds. ▪ A diagnostic command was set for the HDD, but the device remained busy for over 6 seconds.	
		▪ Defective HDD device ▪ Defective HDD connector ▪ Defective ASIC device	
		▪ Replace or uninstall the HDD device. ▪ Replace the HDD connector. ▪ Replace the controller board.	
[3004]		Diagnostics command error	
		Diagnostic command issued an error.	
		▪ Defective HDD device	
		▪ Replace or remove the HDD device.	
[3013]		HDD timeout (First machine)	
		HDD device was busy for over 31 seconds, or Mandolin was not detected. A diagnostic command is set for the HDD, but the device remains was busy for over 6 seconds.	
		▪ Defective HDD device ▪ Defective HDD connector ▪ Defective ASIC device	
		▪ Replace or remove the HDD device. ▪ Replace the HDD connector ▪ Replace the controller board	

[3014]	Diagnostics command error (First machine)
	Diagnostic command issued an error because Mandolin was not detected, or there was a w/r/c error in the HDD register
	▪ Defective HDD device
	▪ Replace the HDD device.

SC823	B	Self-diagnostics error: NIC
[6101]		MAC address check sum error
		The result of the MAC address check sum did not match the check sum stored in ROM.
		▪ Defective SEEP ROM ▪ Defective I2C bus (connection)
		▪ Replace the controller board
[6104]		PHY IC error
		The PHY IC on the controller was not recognized.
		▪ Defective PHY chip ▪ Defective ASIC MII I/F
		▪ Replace the controller board
[6105]		PHY IC loop-back error
		An error occurred during the loop-back test for the PHY IC on the controller.
		▪ Defective PHY chip ▪ Defective MAC of ASIC (SIMAC/COMIC/CELLO) ▪ Defective I/F with the PHY board ▪ Defective soldered connection on the PHY board
		▪ Replace the controller board

SC824	D	Self-diagnostics error: NVRAM (resident)	GW
[1401]		NVRAM verify error	
		No NVRAM installed or NVRAM is damaged.	
		▪ No NVRAM device ▪ Damaged NVRAM device ▪ NVRAM backup battery exhausted ▪ NVRAM socket damaged	
		▪ Replace the NVRAM	

SC829	D	Self-diagnostic Error: Optional RAM
		The optional RAM returned an error during the self-diagnostic test.
		▪ Replace the optional memory board ▪ Controller board defective

Note

- For more details about SC 833, SC834 and other errors, execute SP5990 to print an SMC report so you can read the error code. The error code is not displayed on the operation panel. The additional error codes (0F30, 0F31, etc. are listed in the SMC report.

SC833	D	Self-diagnostic error: Engine I/F ASIC	GW
[0F30]		ASIC (Mandolin) for engine control could not be detected. After the PCI was configured, the device ID for the ASIC could not be checked.	
		▪ Defective ASIC (Mandolin) for system control ▪ Defective North Bridge and AGPI/F	
		▪ Replace the motherboard (engine I/F board).	

[50B1]	Could not initialize or read the bus connection.
	▪ Defective connection bus ▪ Defective SSCG
	▪ Replace the motherboard (engine I/F board).
[50B2]	SSCG register value was incorrect.
	▪ Defective connection bus ▪ Defective SSCG
	▪ Replace the motherboard (engine I/F board).

SC834	D	Self-diagnostic error: optional memory	GW
[5101]		An error occurred after write/verify check for optional RAM on the motherboard..	
		▪ Defective memory device	
		▪ Replace the motherboard (engine I/F board).	

SC838	D	Self-diagnostic error: Clock generator	GW
[2701]		A verify error occurred when setting data was read from the clock generator via the I2C bus	
		▪ Defective clock generator ▪ Defective I2C bus ▪ Defective I2C port on the CPU	
		▪ Replace the controller board.	

SC840	D	EEPROM access error	GW
		A read error occurred during I/O processing. The failure of the 3rd attempt to read caused this error.	
		▪ Defective EEPROM	
		▪ Replace the EEPROM.	

SC841	D	EEPROM read error	GW
		Mirrored data of the EEPROM is different from the original data in EEPROM.	
		▪ Data in the EEPROM was overwritten for some reason.	
		▪ Cycle the machine off/on	

SC842	C	Nand-Flash updating verification error	GW
		A write error for the module written in Nand-Flash occurred while the remote ROM and ROM were being updated.	
		▪ Damaged Nand-Flash	
		▪ Cycle the machine off/on	

SC850	B	Network I/F error	GW
		▪ Network not operating.	
		▪ Cycle the machine off/on	

SC851	B	IEEE 1394 I/F error	
		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	B	Bluetooth device connection error	GW
		The Bluetooth interface unit was installed while the machine was turned on.	
		▪ Cycle the machine off/on ▪ Confirm that the Bluetooth interface unit was installed correctly. ▪ Cycle the machine off/on again.	

SC854	B	Bluetooth device removed	GW
		The Bluetooth interface unit was removed while the machine was turned on.	
		▪ Cycle the machine off/on ▪ Confirm that the Bluetooth interface unit was installed correctly. ▪ Cycle the machine off/on again.	

SC855	B	Hardware Problem:wireless LAN board	GW
		The wireless LAN board can be accessed, but an error was detected.	
		▪ Loose connection ▪ Defective wireless LAN board	
		▪ Check wireless LAN card connection ▪ Replace wireless LAN board	

SC857	D	USB I/F Error 1	GW
		The USB driver is unstable and caused an error. The USB I/F cannot be used.	
		▪ USB board or controller board defective	

SC858	B	Data encryption conversion error	GW
		These are errors of the HDD Data Encryption Option D377.	
00		Key Acquisition	
		Key could be acquired.	
		▪ Replace the controller board	
01		HDD Key Setting Error	
		The key was acquired but the HDD could not be set.	
		▪ Turn the machine power off/on several times. ▪ Replace the controller board.	
02		NVRAM Read Error	
		NVRAM data conversion failed (mismatch with nvram.conf)	
		▪ Replace the NVRAM	
30		NVRAM Before Replace Error **DFU**	
		May occur during development.	
		▪ Turn the machine power off/on several times. ▪ Replace the controller board.	
31		Other Error	
		An unexpected error occurred while data was being converted. This error is the same as SC991. See SC991 below.	

SC859	B	Data encryption conversion errors	GW
		Data encryption on the HDD failed.	
01		HDD encrypted data restoration error	
		Data could not be restored after encryption.	
		▪ HDD connection loose, broken, defective ▪ Format HDD ▪ HDD defective	
02		Power interrupt error	
		Power supply was interrupted during data encryption.	
		▪ Cycle the machine off/on	
08		HDD Check Error	
		Data conversion was attempted with no HDD unit present. ▪ Confirm that HDD unit installed correctly ▪ Initialize HDD with SP5832-1 **Note**: After installation, a new HDD should be formatted with SP5832-1	
09		Power Loss During Data Conversion	
		Data conversion stopped before NVRAM/HDD data was converted.	
		▪ Format HDD with SP5832-1	
10		Data Read Command Error	
		More than two illegal DMAC communications were returned.	
		▪ HDD defective ▪ Format HDD with SP5832-1 ▪ Replace HDD	

SC860	B	HDD startup error at power on	GW
		HDD is connected but a driver error is detected. The driver did not respond with the status of the HDD within 30 sec.	
		▪ HDD is not initialized ▪ Level data is corrupted ▪ Initialize the HDD with SP5-832-001. ▪ HDD is defective	

SC861	B	HDD Error 2: HDD Startup	GW
		The hard disks were detected at power on, but the disks were not detected within 30s 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 ▪ Controller defective	

SC862	D	Bad sector overflow	GW
		There more 100 bad sectors in image storage area of the HDD.	
		▪ Format HDD with SP4911-2 ▪ HDD defective	

SC863	D	HDD data read failure	GW
		The data written to the HDD cannot be read normally, due to bad sectors generated during operation.	
		▪ HDD defective ▪ Controller defective	
		Note: If the bad sectors are generated at the image partition, the bad sector information is written to NVRAM, and the next time the HDD is accessed, these bad sectors will not be accessed for read/write operation.	

SC864	D	HDD data CRC error	GW
		During HDD operation, the HDD cannot respond to a CRC error query. Data transfer did not execute normally while data was being written to the HDD.	
		▪ Format HDD ▪ HDD defective	

SC865	D	HDD access error	GW
		An error was detected during operation of the HDD.	
		▪ HDD defective.	

866	B	SD card authentication error	GW
		A correct license was not found in the SD card.	
		▪ Wrong type of SD card ▪ SD card data is corrupted.	
		▪ Used correct SD card ▪ Replace SD card	

SC867	D	No SD card
		When the machine was turned on, there was no SD card in the boot slot.
		▪ Insert the SD card ▪ Cycle the machine off/on

SC868	D	SD card access error	GW
		An error occurred while an SD card was used.	
		▪ SD card not inserted correctly ▪ SD card defective ▪ Controller board defective	

SC870	B	Address book error	GW
		Address book data stored on the hard disk was detected as abnormal when it was accessed from either the operation panel or the network.	
		▪ Defective software program ▪ Defective HDD ▪ Incorrect path to the server ▪ Incorrect encryption setting or encryption key ▪ Damaged address book data	
		▪ Mount the media that stores the address book data ▪ Cycle the machine off/on. ▪ Initialize the address book data with SP5-846-050. ▪ Cycle machine off/on, and then do SP5-832-006. ▪ Replace the HDD.	

SC872	D	HDD mail RX data error	GW
		An HDD error was detected immediately after power on. ▪ The HDD may be defective or the machine was accidentally powered off while the HDD was being accessed.	
		▪ Cycle the machine off/on ▪ Reformat the HDD with SP5832-7 (Mail RX Data) ▪ Replace the HDD	

SC873	D	HDD mail TX error	GW
		An error was detected on the HDD immediately after the machine was turned on, or power was turned of while the machine used the HDD.	
		▪ Do SP5832-007 to format the HDD. ▪ HDD defective.	

SC874	D	Delete all error 1 (DOS)	GW
		A data error was detected for the HDD/NVRAM after the "Delete All" option was used. **Note**: The source of this error is the Data Overwrite Security Unit running from an SD card.	
		▪ Cycle the machine off/on. ▪ Confirm that DOS has been enabled with SP5878.. ▪ HDD defective.	

SC875	D	Delete al error 2: Data area	GW
		An error occurred while the machine deleted data from the HDD **Note**: The source of this error is the Data Overwrite Security Unit running from an SD card.	
		▪ Cycle the machine off/on	

SC876	D	Log Data Error	GW
		An error was detected in the handling of the log data at power on or during machine operation. This can be caused by switching the machine off while it is operating.	
01		Log Data Error 1	
		▪ Damaged log data file in the HDD	
		▪ Initialize the HDD with SP5-832-004.	
02		Log Data Error 2	
		▪ An encryption module not installed	
		▪ Replace or set again the encryption module. ▪ Disable the log encryption setting with SP9-730-004 ("0" is off.).	
03		Log Data Error 3	
		▪ Invalid log encryption key due to defective NVRAM data	
		▪ Initialize the HDD with SP5-832-004. ▪ Disable the log encryption setting with SP9-730-004 ("0" is off.)	
04		Log Data Error 4	
		▪ Unusual log encryption function due to defective NVRAM data	
		▪ Initialize the HDD with SP5-832-004.	
05		Log Data Error 5	
		▪ Installed NVRAM or HDD which is used in another machine.	
		▪ Reinstall the previous NVRAM or HDD. ▪ Initialize the HDD with SP5-832-004.	
99		Log Data Error 99	
		▪ Other than the above causes	
		▪ Ask your supervisor.	

SC877	B	Data Overwrite Security error	GW
		An error occurred, preventing successful execution of the Data Overwrite Security function, even though it has been enabled with SP5898..	
		▪ Cycle the machine off/on ▪ Replace NVRAM	

SC878	D	Chip errors	GW
00		TPM electronic recognition error	
01		USB flash error	
02		TPM error	
03		TCSD error	
		▪ Incorrect updating for the system firmware ▪ Incorrect operating of the USB flash ▪ Defective flash ROM on the controller board	
		▪ Replace the controller board.	

SC880	D	File Format Converter Error (MLB)	GW
		A request for access to the file format converter board (MLB) was not answered within the specified time.	
		▪ Board defective	

SC881	D	Authentication area error	GW
		Authentication application error is detected.	
		Error data in an authentication application reaches the management limit.	
		▪ Turn the main power switch off and on.	

SC899	D	Software performance error	GW
		If the processing program shows abnormal performance and the program is abnormally ended, this SC is issued.	
		▪ Controller board defective ▪ Software defective	
		▪ Replace the controller board. ▪ Turn the main switch off and on. ▪ Update the firmware on the controller.	

2.10 SC900: MISCELLANEOUS

2.10.1 SC900

SC900	D	Electric counter error	GW
		The total count contains something that is not a number.	
		▪ NVRAM incorrect type ▪ NVRAM defective ▪ NVRAM data scrambled ▪ Unexpected error from external source	
		▪ Check the connection between the NVRAM and controller. ▪ Replace the NVRAM. ▪ Replace the controller board.	

SC901	D	Mechanical total counter error
		The mechanical counter is not connected.
		▪ Mechanical total counter defective ▪ Mechanical total counter connector not connected

HDD Status Codes Displayed on Debug Console

Display	Meaning
(-1)	HDD not connected
(-2)	HDD not ready
(-3)	No level
(-4)	Partition type incorrect
(-5)	Error returned during level read or check
(-6)	Error returned during level read or check
(-7)	"filesystem" repair failed

(-8)	"filesystem" mount failed
(-9)	Drive does not answer command
(-10)	Internal kernel error
(-11)	Size of drive is too small
(-12)	Specified partition does not exist
(-13)	Device file does not exist

Recovery Procedure 1

If the machine returns SC codes for HDD errors (SC860 ~ SC865), please follow the recovery procedures described for these SC codes.

Recovery Procedure 2

If the machine does not return one of the five HDD errors (SC860 ~ SC865), turn the machine off and on. If this does not solve the problem, then initialize the NetFile partition on the HDD with SP5832 011 (HDD Formatting – Ridoc I/F).

NetFiles: Jobs printed from the document server using a PC and DeskTopBinder

Before initializing the NetFile partition on the HDD please inform the client that:

1. Received faxes on the delivery server will be lost
2. All captured documents will be lost
3. DeskTopBinder/Print Job Manager/Desk Top Editor job history will be cleared
4. Documents stored on the document server will not be lost.
5. The first time the network accesses the machine, the management information must be reconfigured (this will require a significant amount of time).
6. Execute SP5832 011 then turn the machine off and on.

Recovery Procedure 3

If "Procedure 2" does not solve the problem, execute SP5832 001 (HDD Formatting - All), then turn the machine off and on.

Executing SP5832 001 erases all document and address book data stored on the hard disks. Be sure to consult with the customer before executing this SP code.

Recovery Procedure 4

If "Recovery Procedures 1 to 3" fail to correct the problem, replace the HDD.

SC910	B	External Controller Error 1
SC911		External Controller Error 2
SC912		External Controller Error 3
SC913		External Controller Error 4
SC914		External Controller Error 5
		The external controller alerted the machine about an error.
		▪ For more, refer to the instructions for the external controller.

SC915	A	External Controller Error 6
		Egret board error
		▪ The external controller alerted the machine about an error.
		▪ Replace the Egret controller board.

SC919	B	External Controller Error 6	GW
		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, of BREAK signal from the other station was detected.	
		▪ Power outage at the EFI controller. ▪ EFI controller was rebooted. ▪ Connection to EFI controller loose.	
		▪ Cycle the machine off/on	

SC920	B	Printer application error	GW
00		No response when PM started up	
01		Timeout error during PM operation	
02		Working memory error	
03		Cannot start filter process	
04		Abnormal exit from filter process	
		An error was detected in the printer application program and operation cannot continue.	
		▪ Defective software ▪ Unexpected hardware resource (e.g., memory shortage)	
		1. Software err, cycle the machine off/on 2. Insufficient memory, add more memory	

SC921	B	Printer font error	GW
		A necessary font is not found when starting up the printer application.	
		▪ A requested font is not found in the SD card.	
		▪ Cycle the machine off/on	

SC925	B	NetFile function error	GW
00		HDD is defective	
01		NetFile management file is broken	
		The NetFile file management on the HDD cannot be used, or a NetFile management file is corrupted and operation cannot continue. The HDDs are defective and they cannot be debugged or partitioned, so the Scan Router functions (delivery of received faxes, document capture, etc.), Web services, and other network functions cannot be used. HDD status codes are displayed below the SC code.	
		▪ Refer to the four procedures below (Recovery from SC925).	

Here is a list of HDD status codes:

Display	Meaning
(-1)	HDD not connected
(-2)	HDD not ready
(-3)	No label
(-4)	Partition type incorrect
(-5)	Error returned during label read or check
(-6)	Error returned during label read or check
(-7)	"filesystem" repair failed
(-8)	"filesystem" mount failed
(-9)	Drive does not answer command
(-10)	Internal kernel error
(-11)	Size of drive is too small
(-12)	Specified partition does not exist
(-13)	Device file does not exist

Recovery from SC 925

Procedure 1

If the machine shows SC codes for HDD errors (SC860 to SC865) with SC 925, do the recovery procedures for SC860 to SC865.

Procedure 2

If the machine does not show one of the five HDD errors (SC860 to SC865), turn the machine power off and on. If this is not the solution for the problem, then initialize the NetFile partition on the HDD with SP5832-011 (HDD Formatting – Ridoc I/F).

NetFiles: Jobs printed from the document server using a PC and DeskTopBinder

- Before you initialize the NetFile partition on the HDD, tell the customer that:
- Received faxes on the delivery server will be erased
- All captured documents will be erased
- DeskTopBinder/Print Job Manager/Desk Top Editor job history will be erased
- Documents on the document server, and scanned documents, will not be erased.

- The first time that the network gets access to the machine, the management information must be configured again (this will use a lot of time).

Before you initialize the Netfile partition with SP5832-011, do these steps:

1. Go into the User Tools mode and do "Delivery Settings" to print all received fax documents that are scheduled for delivery. Then erase them.
2. In the User Tools mode, do Document Management> Batch Delete Transfer Documents.
3. Do SP5832-011, then turn the machine power off and on.

Procedure 3

If "Procedure 2" is not the solution for the problem, do SP5832-001 (HDD Formatting – All), then turn the machine power off and on.

SP5832-001 erases all document and address book data on the hard disks. Ask the customer before you do this SP code.

Procedure 4

If "Procedure 3" is not the solution for the problem, replace the HDD.

SC953	D	Scanner image setting error
		The settings required for image processing using the scanner are not sent from the IPU.
		▪ Software defective

SC954	D	Printer image setting error
		The settings required for image processing using the printer controller are not sent from the IPU.
		▪ Software defective

SC955	D	Memory setting error
		The settings that are required for image processing using the memory are not sent from the IPU.
		▪ Software defective

SC964	D	Printer ready error
		The print ready signal is not generated for more than 17 seconds after the IPU received the print start signal.
		▪ Software defective

SC965	B	Print Start Error
		During print processing, another command to start printing was received.
		Software bug

SC984	D	Print image data transfer error
		After a data transfer begins from the controller to the engine via the PCI bus, the transfer does not end within 15 s.
		▪ Controller (SIMAC) board defective ▪ BICU defective ▪ BICU/controller disconnected

SC985	D	Scanned image data transmission error
		After a data transfer begins from the engine to the controller via the PCI bus, the transfer does not end within 3 s.
		▪ Controller (SIMAC) board defective ▪ BICU defective ▪ BICU/controller disconnected

SC986	D	Software error 1
		The write parameter received by the write module at the beginning of the setting table is NULL.
		▪ Controller (SIMAC) board defective ▪ BICU defective ▪ BICU/controller disconnected

SC990	D	Software performance error	GW
		The software makes an unexpected operation.	
		▪ Defective software ▪ Defective controller ▪ Software error	
		▪ Cycle the machine off/on. ▪ Reinstall the controller firmware ▪ Reinstall the main firmware	

SC991	C	Software continuity error	GW
		The software has attempted to perform an unexpected operation. However, unlike SC 990, the object of the error is continuity of the software.	
		▪ Software program error ▪ Internal parameter incorrect ▪ Insufficient working memory	
		▪ This SC is not displayed on the LCD (logging only).	

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
		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
		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	D	CPM setting error	GW
01		▪ Defective BCU ▪ NVRAM Replacement error	
		▪ Install the previous NVRAM. ▪ Input the serial number with SP5-811-004, and turn the main power switch off and on.	
02		▪ Defective NVRAM ▪ Defective controller	
		▪ Update the controller firmware. ▪ Install a new NVRAM, and turn off and on the main power switch after SC995-002 has occurred.	
03		▪ Incorrect type controller installed ▪ Defective controller	
		▪ Replace the controller with the correct type.	
04		▪ Incorrect model controller installed.	
		▪ Replace the controller with the correct model.	

SC997	B	Application function selection error	GW
		The application selected by the operation panel key operated abnormally (No response, abnormal ending).	
		▪ Software (including the software configuration) defective ▪ An option required by the application (RAM, DIMM, board) is not installed. ▪ Nesting of the fax group addresses is too complicated.	
		▪ Check the devices necessary for the application program. If necessary devices have not been installed, install them. ▪ Check that application programs are correctly configured. ▪ For a fax operation problem, simplify the nesting of the fax group addresses. ▪ Take necessary countermeasures specific to the application program. If the logs can be displayed on the operation panel, see the logs.	

SC998	D	Application start error	GW
		No applications start within a specified time after the power is turned on.	
		▪ Loose connection of RAM-DIMM, ROM-DIMM ▪ Defective controller ▪ Software problem	
		▪ Check the setting of SP5-875-001. If the setting is set to "1 (OFF)", change it to "0 (ON)". ▪ Check if the RAM-DIMM and ROM-DIMM are correctly connected. ▪ Reinstall the controller system firmware. ▪ Replace the controller board.	

Note 1

If a problem always occurs in a specific condition (for example. printer driver setting, image file), the problem may be caused by a software error. In such a case, the following data and information need to be sent back to your product specialist. Please understand that it may take some time to get a reply on how to solve the problem, because in some cases the design staff in Japan must analyze the data.

- Symptom / Possible Causes / Action taken
- Summary sheet (SP mode "Printer SP", SP1-004 [Print Summary])
- SMC - All (SP5-990-001)
- SMC - Logging (SP5-990-004)
- Printer driver settings used when the problem occurs
- All data displayed on the screen (SC code, error code, and program address where the problem is logged.)
- Image file which causes the problem, if possible

2.10.2 ADDITIONAL SC CODES PRINTED IN SMC REPORT

These codes are also used in the SMC report. Codes that have the same number in this series are identified by an additional 4-digit hexadecimal number.

820	0001	TLB conversion (store) exception error	▪ Unexpected error in CPU device: ▪ Controller board defective ▪ Boot monitor or self-diagnostic program corrupted
820	0002	TLB miss (load) exception error	
820	0003	TLB miss (store) exception error	
820	0004	Read address exception error	
820	0005	Write address exception error	
820	0006	Command bus exception error	
820	0007	Data bus exception error	
820	0008	System call exception error	
820	0009	Break exception error	
820	000A	Illegal command exception error	
820	000B	Potential sensor exception error	
820	000C	Overflow exception error	

820	000D	UTLB miss exception error	
820	0010	Allocation 0 error	
820	0011	Allocation 1 error	
820	0012	Allocation 2 error	
820	0013	Allocation 3 error	
820	0014	Allocation 4 error	
820	0015	Allocation 5 error	
820	00FF	Non-initialization allocation error	▪ CPU defective ▪ Local bus defective ▪ Controller board defective
820	0601	Read address exception error	▪ CPU device error ▪ Controller board defective
820	0602	Write address exception error	
820	0605	System call exception error	
820	0606	Break point exception error	
820	0607	Illegal command exception error	
820	060A	Allocation 0 mask exception error	▪ CPU device error ▪ ASIC device error ▪ Controller board defective
820	060B	Allocation 1 mask exception error	
820	060C	Allocation 2 mask exception error	
820	060D	Allocation 3 mask exception error	
820	060E	Allocation 4 mask exception error	
820	0610	CPU timer 2 allocation set error	▪ CPU device error ▪ Controller board defective
820	0612	ASIC allocation error	▪ ASIC device error ▪ Controller board defective ▪ Peripheral device defective

820	06FF	CPU master clock error	▪ CPU device error ▪ Error in CPU initialization data (ASIC error) ▪ Controller board defective
820	0702	Command cache error	▪ CPU cache defective ▪ Controller board defective ▪ Memory error (insufficient speed)
820	0709	Data cache error	▪ CPU device error ▪ Boot mode setting for CPU error ▪ Controller defective ▪ Insufficient memory
820	070A	Data cache clear error	
820	0801	TLB virtual address error	▪ CPU device defective (controller board defective)
820	0804	TLB global error	
820	0807	UTLB miss error	
820	0808	TLB read miss error	
820	0809	TLB write miss error	
820	080A	TLB mode file error	
820	4002	Single-precision calculation error	▪ CPU error (controller board defective)
820	4003	Double-precision calculation error	
820	4004	Exception error	
820	4005	Exception mask error	
822	3003	HDD timeout	▪ HDD defective ▪ HDD connector disconnected, defective ▪ ASIC device error (controller board defective)
822	3004	Self-diagnostic command error	▪ HDD defective
823	6101	MAC address SUM error	▪ NIB (PHY) board defective

823	6104	PHY chip ID illegal	▪ Controller board defective
823	6105	PHY loopback error	
824	1401	NVRAM verify error	▪ NVRAM defective
826	1501	Clock error	▪ Optional NVRAM defective
826	15FF	RTC non-detection error	▪ Incompatible NVRAM installed ▪ NVRAM battery defective
826	0201	Resident memory verify error	▪ Memory on controller board defective ▪ RAM DIMM defective
828	0101	Boost trap code (CODE) error	▪ Software storage error (re-install software) ▪ Controller board defective
828	0104	ROM FS error	▪ ROM device error
828	0105	Forgery prevention error	▪ Forgery prevention chip defective ▪ Forgery prevention chip error ▪ Replace the controller, ROM, or RAM DIMM
829	0301	Option memory 0 verify error	▪ Controller board internal memory error ▪ RAM DIMM defective
829	0302	Option memory 0 configuration information error	

835	1102	Verify error	▪ Loopback connector error (controller board defective)
835	110C	DMA verify error	▪ Loopback connector error
			▪ Controller board defective
835	1120	Loopback connector non-detection	▪ Loopback connector not set
			▪ Loopback connector error
			▪ Controller board defective
836	1601	Font ROM 0 error	
837	1602	Font ROM 1 error	
838	2701	Verify error	
856	D	IEEE802 11b card connection board error	Not used.

SC870	B	Address book data error
		The address book in the hard disk is accessed. An error is detected in the address book data; address book data is not read; or data is not written into the address book. To recover from the error, do any of the following countermeasures: ▪ Format the address book by using SP5-832-008 (all data in the address book–including the user codes and counters–is initialized) ▪ Initialize the user data by using SP5-832-006 and -007 (the user codes and counters are recovered when the main switch is turned on). ▪ Replace the hard disk (the user codes and counters are recovered when the main switch is turned on).
		▪ Data corruption ▪ Defective hard disk ▪ Defective software

SC900	C	Electrical Total Counter Error
		The total counter contains data that is not a number.
		▪ NVRAM disturbed unexpectedly ▪ NVRAM defective ▪ NVRAM data corrupted

SC920	D	Printer error
		The printer program cannot be continued.
		▪ Defective hardware ▪ Data corruption ▪ Defective software

SC925	D	Net file error
		The management file for net files is corrupted; net files are not normally read. Note: Netfile are jobs to be printed from the document server using a PC and the Desk Top Binder software
		▪ Defective hardware ▪ Data corruption ▪ Defective software

SC992	C	Other system SCs
		The controller received an unknown SC code from the engine.
		▪ Contact your product specialist.

SC993	D	Network error
		The ASIC program of GW controller cannot be continued.
		▪ Defective ASIC ▪ Defective GW controller

APPENDIX:

SERVICE PROGRAM MODE TABLES

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
89	01/03/2013	Added SP5083-001.

3. APPENDIX: SERVICE PROGRAM MODE TABLES

3.1 SERVICE TABLE KEY

Notation	What it means
[range/step]	Example: [–9 to +9/0.1 mm] The default setting can be adjusted in 0.1mm steps in the range ±9.
Italics	Comments added for reference.
*	An asterisk marks the SP's that are reset to their factory default settings after an NVRAM reset.
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

3.2 SP1000 FEED

1001	Leading Edge Registration
	Adjusts the printing leading edge registration using the trimming area pattern (SP2902-003, No.18). [–9 to +9/**0**/0.1mm] Specification: 3±2mm

1002	Side-to-Side Registration	
	Adjusts printing side-to-side registration for each feed station, using test pattern (SP2902-003, No.18). These SP's should be adjusted after replacing the laser synchronization detector or the laser optical unit.	
1	Tray-1	[–9 to +9/**0**/0.1 mm]
2	Tray-2	
3	Tray-3	
4	Tray-4 (Japan Only)	
5	By-pass Tray	
6	LCT	
7	Duplex Tray	

1003	Registration Buckle Adjustment
	Adjusts the registration motor timing. This timing determines the amount of paper buckle at registration. (A higher setting causes more buckling.) [–9 to +9/**0**/1 mm]
1	Tray LCT
2	Duplex Tray
3	By-pass Tray
4	Thick Paper Tray
5	Thick Paper Duplex Tray

1007	By-pass Feed Paper Size Display
	Use this SP to confirm the size of the paper detected in the by-pass tray if paper is skewing during feeding.

1008	Duplex Fence Adjustment
	Adjusts the distance between front and rear fences. A smaller value shortens the distance. If the fences are too far apart, skewing may occur in the duplex tray. If the fences are too close, the paper may be creased in the duplex unit. [–5 to +5/**0**/0.1 mm]

1102	Fusing Temperature Adjustment
	Adjusts the temperature of the fusing units.
1	Duplex Actual Temperature [0 to 1 /**0**/1]
2	Duplex Balance Temp (Center Thermistor) [-30 to 0/**-15**/1]
3	Duplex Balance Temp (End Thermistor) [-30 to 0/**-15**/1]

1103	Fusing Idling
	IdlingTime (Normal)
1	D131: [0 to 300 /**0**/1sec] For only TWN [0 to300/**8**/1sec] D132: [0 to 300 /**26**/1sec] For only TWN [0 to300/**28**/1sec] D133: [0 to 300 /**160**/1sec]
	IdlingTime (Low)
2	D131: [0 to 300 /**66**/1sec] For only TWN [0 to300/**68**/1sec] D132: [0 to 300 /**86**/1sec] For only TWN [0 to300/**88**/1sec] D133: [0 to 300 /**200**/1sec]
	IdlingTime (LowPower)
3	D131/D133: [0 to 300 /**0**/1sec] D133: [0 to 300 /**15**/1sec]
4	IdlingTime (LowVoltage)**Japan only**
	For only (DOM): [0 to 300 /**8**/1sec]
5	IdlingTime (CapacitatorLowVoltage) **Japan only**
	For only (DOM): [0 to 300 /**90**/1sec]

1105	Fusing Temperature Adjustment
	Adjusts the fusing temperature of the hot roller for plain paper, OHP or thick paper.
1	Normal Time (Center Thermistor)
	Fusing temperature during the ready condition and during printing. D131/D132: [180 to 205/**190**/1 degree C] D133: [180 to 205/**185**/1 degree C]
2	Normal Time (End Thermistor)
	Fusing temperature during the ready condition D131/D132: [150 to 205/**190**/1 degree C] D133: [150 to 200/**185**/1 degree C]

3	OHP (Center Thermistor)
	Fusing temperature during printing: D131/D132: [150 to 205/**190**/1 degree C] D133: [150 to 200/**170**/1 degree C]
4	OHP (End Thermistor)
	Fusing temperature during printing: D131/D132: [150 to 205/**190**/1 degree C] D133: [150 to 200/**170**/1 degree C]
5	Thick Paper (Center Thermistor)
	Fusing temperature during printing: D131/D132: [180 to 205/**200**/1 degree C] D133: [150 to 200/**195**/1 degree C]
6	Thick Paper (End Thermistors)
	Fusing temperature during printing: D131/D132: [180 to 205/**200**/1 degree C] D133: [150 to 200/**195**/1 degree C]
7	Normal Paper (Center Thermistor)
	Fusing temperature during printing: D131/D132: [150 to 230/**190**/1 degree C] D133: [150 to 200/**185**/1 degree C]
8	Normal Paper (End Thermistor)
	Fusing temperature during printing: D131/D132: [150 to 205/**190**/1 degree C] D133: [150 to 200/**185**/1degree C]
9	Small Size – Normal Paper (Center)
	Fusing temperature at center of hot roller when printing on normal paper: D131/D132: [150 to 205/**190**/1 degree C] D133: [150 to 200/185/1 degree C]

10	Small Size – Thick Paper (Center)
	Fusing temperature at center of hot roller when printing on thick paper: D131/D132: [150 to 205/**190**/1 degree C] D133: [150 to 200/**195**/1 degree C]
11	Label (Center Thermistor)
	D131/D132: [150 to 205/**200**/1 degree C] D133: [150 to 205/**195**/1 degree C]
12	Label (End Thermistor)
	D131/D132: [150 to 205/**200**/1 degree C] D133: [150 to 205/**195**/1 degree C]
13	Tab Sheet (Center Thermistor)
	D131/D132: [150 to 205/**200**/1 degree C] D133: [150 to 205/**195**/1 degree C]
14	Tab Sheet (End Thermistor)
	D131/D132: [150 to 205/**200**/1 degree C] D133: [150 to 205/**195**/1 degree C]

1106	Fusing Temperature Display
1	Center Temperature
	Shows the temperature of the hot roller detected by the thermistor at the center of the hot roller.
2	End Temperature
	Shows the temperature of the hot roller detected by the thermistors at the ends of the hot roller.
3	Pressure Roller Temperature
	Shows the temperature of the hot roller detected by the thermistors at the pressure roller.

1107	Start Fusing Temp. Time Ad.
	This SP allows you to set when to start the fusing temperature adjustment for the center and end heating lamps.
1	Center Lamp Temperature
	D131/D132: [150 to 205/**205**/1 deg C] D133: [150 to 190/190/1 deg C]
2	End Lamp Temperature
	D131/D132: [150 to 205/**205**/1 deg C] D133: [150 to 190/190/1 deg C]
3	Center Lamp Actual Time
	D131/D132: [0 to 120/**60**/1 sec.] D133: [0 to 60/10/1 sec.]
4	End Lamp Actual Time
	D131/D132: [0 to 120/**55**/1 sec] For Only TWN [0 to 120/**60**/1 sec] D133: [0 to 60/**10**/1 sec]
5	Center Lamp Temp (Small Size Paper)
	D131/D132: [180 to 205/**205**/1 deg C] D133: [175 to 190/**190**/1 deg C]
6	End Lamp Actual Time (Small Size Paper)
	D131/D132: [0 to 120/**60**/1 sec.] D133: [0 to 60/**10**/1 sec]
7	Center Lamp Temp (Thick Paper)
	D131/D132: [180 to 205/**205**/1 deg C] D133: [175 to 200/**200**/1 deg C]
8	End Lamp Actual Time (Thick Paper)
	D131: [0 to 120/**0**/1 sec.] D132: [0 to 120/**5**/1 sec.] D133: [0 to 120/**10**/1 sec.]

9	Capapcitor Heater Temperature **Japan only**
	Capacitator for Check Start Fusing Temperature
	[170 to 205/**200**/1 deg C]
10	Capacitor Heater Actual time **Japan only**
	Capacitator for Check Start Fusing Lamp ON Time
	[0 to 120/**0**/1 sec.]
11	Center Lamp Temp (Label)
	D131/D132: [150 to 205/**200**/1 degree C] D133: [150 to 205/**195**/1 degree C]
12	Center Lamp Actual Time
	[0 to 120/**0**/1 degree C]
13	End Lamp Temp (Label)
	D131/D132: [150 to 205/**200**/1 degree C] D133: [150 to 205/**195**/1 degree C]
14	Center Lamp Actual Time (Label)
	[0 to 120/**0**/1 degree C]
15	Center Lamp Temp (Tab Sheet)
	D131/D132: [150 to 205/**200**/1 degree C] D133: [150 to 205/**195**/1 degree C]
16	Center Lamp Actual Time (Tab Sheet)
	[0 to 120/**0**/1 degree C]
17	End Lamp Temp (Tab Sheet)
	D131/D132: [150 to 205/**200**/1 degree C] D133: [150 to 205/**195**/1 degree C]
18	End Lamp Actual Time (Tab Sheet)
	[0 to 120/**0**/1 degree C]

19	Center Lamp Temperature
	D131/D132: [150 to 205/**200**/1 degree C] D133: [150 to 205/**195**/1 degree C]
20	End Lamp Temperature
	D131/D132: [150 to 205/**200**/1 degree C] D133: [150 to 205/**195**/1 degree C]
21	Center Lamp Actual Time
	[0 to 120/**60**/1 degree C]
22	End Lamp Actual Time
	[0 to 120/**60**/1 degree C]
23	Capacitor Heater Temperature
	D131: [170 to 205/**200**/1 degree C] D132: [190 to 205/**195**/1 degree C] D133: [150 to 205/**200**/1 degree C]
24	Capacitor Heater Actual Time
	[0 to 120/**0**/1 degree C]

1109	Measure Nip Width	
1	Execute	0 or 1
2	Adjust Value	[200 to 400/**300**/10mm]

1112	Auto Process Control
	Sets the temperature of the hot roller for auto process control to start. [70 to 150/**140**/1°C] DFU

1159	Fusing Jam: SC Setting
	This SP determines what the machine does if paper jams occur in the fusing unit for three consecutive sheets of paper. 0: (default): A jam alert is shown on the screen. The customer can remove the jam and the machine works normally after that. 1: SC559 occurs. The technician must remove the jam.

1802	CPM Setting **DFU**
	[0 to 255/**80/**1 Step]

1901	CPM Down Setting for Special Paper
	Selects the speed (copies per minute) for copying on thick paper or tab sheets. A slower speed makes fusing better. This setting has no effect on fusing temperature.
1	Thick Paper CPM
	D131/D132: [0 to 4/**2**/1 step] D133: [0 to 4/3/1 step] 0: 25 cpm 1: 35 cpm 2: 40 cpm 3: 45 cpm 4: 55 cpm
2	Tab Sheet CPM
	[0 to 4/**0**/1 step] 0: 25 cpm 1: 35 cpm 2: 40 cpm 3: 45 cpm 4: 55 cpm
3	Label CPM (0:25/1:35/2:40/3:45/4:55)
	[0 to 4/**0**/1 step] 0: 25 cpm 1: 35 cpm 2: 40 cpm 3: 45 cpm 4: 55 cpm
4	Special Paper CPM (0:25/1:35/2:40/3:45/4:55)
	[0 to 4/**0**/1 step] 0: 25 cpm 1: 35 cpm 2: 40 cpm 3: 45 cpm 4: 55 cpm

1902	Fusing Web Motor Control
1	Fusing Web Used Area Display/Setting
	Displays the percentage of the web consumption in 1% steps (0% to 100%). This setting must be reset to zero after the web is replaced. [0 to 120/**0**/1 %]
2	Fusing Web Motor Operation Interval
	Adjusts the interval of copy operation time (seconds) after which the web motor is driven. D131: [5 to 50/**18**/1 s] D132: [5 to 50/**15**/1 s] D133: [5 to 50/**14**/1 s]
4	Web Near End Value
	Adjusts the timing of the web near end alert by changing the amount of web that has been used before the alert is triggered. [0 to 100/**80**/1 %]
5	Web Roll Coefficient
	Determines the coefficient of the web take-up time from cleaning toner from the roller while taking into consideration the take-up time for web buckle. DFU [10 to 20/**9**/1]
6	Web Length (0: 20m 1: 22.7m 2:28.5m 3:32m)
	Set the length of web. [0 to 3 / **x** /1] D131/b/d: x = **3**, D133: x = **2**
7	Web Motor Counter: Continuous
	[0 to 255/**0**/1 Step]
8	Web Motor Counter: Total
	[0 to 255/**0**/1 Step]

1903	Web Job End
1	Yes/No
	This determines whether the web motor is driven at the end of a job. [0 to 1/1] 0: Off 1: On Enable when too much paper dust is causing copies to blacken.
2	Job End Condition (Continuous PPC Time)
	At the end of a job, the web motor is driven if the job lasted longer than the value of this SP mode. Only valid if SP1903-001 is set to 'On'. [1 to 99/**7**/1s]
3	Job End Frequency
	If the web motor is driven at the end of a job, this SP determines how many times the web motor operation is executed. [1 to 5/**2**/1]

1904	By-pass Tray Paper Size Correction
1	Minimum Size
	Calibrates the minimum paper width position of the sensor (100 mm). Move the side fences to the 100 mm position then press Execute.
2	Maximum Size
	Calibrates the maximum paper width position of the sensor (A3). Move the side fences to the A3 position then press Execute.

1905	Thick Paper – By-pass Tray
	Adjusts the by-pass feed clutch operation for thick paper. [0 to 1/**1**/1] 1: On: 30 ms 0: Off:
	This setting switches the by-pass feed clutch on for 30 ms when the registration motor turns on. It only happens when thick paper is selected, to help this paper pass through the registration rollers.

1906	Temperature/Humidity Sensor
	Temperature Sensor

1907	Pre-Fusing Idling On/Off
	Pre-fusing idling: The hot roller turns freely to increase its temperature before thick paper or OHP goes through the fusing unit. [0 to 1/1/1] 0: Pre-fusing idling is not done. 1: The fusing motor turns the hot roller with no paper in the fusing unit. This ensures that the hot roller reaches the correct temperature. It is only done for thick paper or OHP. In this mode, the paper stops at the registration roller, then roller resumes its rotation after the hot roller reaches the correct temperature.
1	Thick Mode (1:ON/0:OFF)
	Thick Paper Normal Size
2	Thick Mode: Small Paper Size (1:ON/0:OFF)
	Thick Paper Small Size
3	Normal Mode (1:ON/0:OFF)
	Normal Paper Normal Size
4	Normal Mode: Small Paper Size (1:ON/0:OFF)
	Normal Paper Small Size

5	Middle Thick (1:ON/0:OFF)
	Middle Thick Paper Normal Size
6	Middle Thick: Small Paper Size (1:ON/0:OFF)
	Middle Thick Paper Small Size
7	Label (1:ON/0:OFF)
	Label
8	Envelope (1:ON/0:OFF)
	Envelope

1908	Pre-Fusing Idling
1	1:ON/0:OFF
2	Low Temp. Standby (Pre-Idling) **D133 Only**
	[0 to 180 /**0**/ 1sec]
3	Low Temp. Sleep Mode (Pre-Idling) **D133 Only**
	[0 to 180/**60**/ 1sec]

1909	LowSpeedMode
1	LowSpeedMode (Not used)
2	LowSpeedMode ProcessControl(Not used)

1910	Capacitator Status: **Japan only**
1	Latest Capacity
2	Current Voltage
3	Charge Time
4	Worn-out Counter
5	Charged Power

1911	Capacitor Discharge Stop Voltage **Japan Only**
	[1 to 20/**7**/1 Step]

1912	Capacitor Worn-out Detection **Japan Only**
1	AC Input Voltage Display
	[0 to 50/**100**/1 Step]
2	Worn-out Counter
	[30 to 255/**30**/1]
3	AC Input Voltage
	[80 to 100/**99**/1 Step]
4	Capacitor Capacity
	[50 to 150/**70**/1 Step]

1920	Capacitator Charge Setting: **Japan only**

1921	Not Used

1922	Not Used

1923	HV Fusing Temp Cont
	0: OFF/1: ON

1924	10 Sec. Recovery Temperature: **Japan only**
	Temperature Sensor [15 to 25/**20**/1]

1925	Idling Setting: **Japan only**
1	Power On Middle Thick 0 or 1
2	Power On Thick 0 or 1

1926	Capacitator Discharge: S-Size: **Japan only**

1927	Capacitator Discharge Setting: **Japan only**

1928	Heater OFF During Feeding Heater OFF Time
	[5 to 60/**60/**1]

1929	Capacitor OFF: Feeding 1:ON 0:OFF **Japan Only**
	[0 to 1/**1/**1]

1930	Web Operation
1	Fusing Idling 1:ON 0:OFF
	[0 to 1/**0**/1]
2	Fusing Idling Operation Times
	[1 to 5/**2**/1]

1931	Normal Paper Setting Control
1	1:ON 0:OFF
	[0 to 1/**0**/1]
2	Capacitor Voltage
	[15 to 25/**22**/1 Step]

3.3 SP2000 DRUM

2001	Charge Roller Bias Adjustment
1	Applied Voltage for Image Processing
	Adjusts the voltage applied to the grid plate during copying when auto process control is off. [600 to 1500/**900**/10 V] After replacing the charge corona wire or the drum, reset to the factory default setting.
2	ID Sensor Pattern: Adjustment of Applied Voltage
	Adjusts the voltage applied to the grid plate when the ID sensor pattern is created. [600 to 1500/**800**/10 V]
3	Setting for Total Bias Current
	Adjusts the total current applied to the charge corona wire. DFU [900 to 1500/**1300**/10 μA]
4	Setting for Total Bias Current of Grid
	Adjusts the voltage applied to the grid plate during copying when auto process control is on. [600 to 1500/**900**/10 V] This voltage changes every time auto process control starts up (every time the machine is switched on).
5	Total Bias Grid Voltage: OHP Total
	Adjusts the voltage applied to the grid plate when OHP mode is selected. [600 to 1500/**650**/10 V] Use this if there is a copy quality problem when making OHP's.
6	Total Bias Grid Current: Photo Mode Total
	Adjusts the voltage applied to the grid plate when Photo mode is selected. [1400 to 2800/**1500**/10 μA]

2101	Printing Erase Margin
	These settings adjust the erase margin for the leading, trailing, left, and right edges.
1	Leading Edge
	[0 to 9/**2.5**/0.1 mm], Specification: 3±2 mm
2	Trailing Edge
	[0 to 9/**2**/0.1 mm], Specification: 3±2 mm
3	Left Edge
	[0 to 9/**2**/0.1 mm], Specification: 2±1.5 mm
4	Right Edge
	[0 to 9/**2**/0.1 mm], Specification: 2±1.5 mm

2104	Small Pitch Banding Reduction
1	Reduction Mode 0
	Switches on/off the setting that corrects uneven images generated during 1200 dpi printing. [0 to 1/1] 1: On 0: Off Unevenness may appear in dot patterns or narrowly spaced horizontal lines, i.e. some areas may appear lighter or darker than others.
2	Reduction Mode 0
	Adjusts the amount of correction for uneven images generated during 1200 dpi printing. [–20 to +10/**0**/1]

3	Reduction Mode 0
	Switches on/off the setting that corrects uneven images generated during 1200 dpi copying. [0 to 1/**0**/1] 1: On 0: Off
4	Reduction Mode 0
	Adjusts the amount of correction of uneven image generated during 1200 dpi copying. [–20 to +10/**0**/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 outputs in printer mode.	
1	Matrix Size (>600 dpi)	[0 to 128/**18**/1]
2	Threshold Value (>600 dpi)	[0 to 128/**4**/1]
3	Matrix Size (<400 dpi)	[0 to 128/**18**/1]
4	Threshold Value (<400 dpi)	[0 to 128/**4**/1]

2114	Binary Edge Pro	
	Allows setting a parameter for binary edge processing for the printer application with FCI switched off. The value for this SP is enabled only when the printer is initialized. In all other cases, the data registered in the software are enabled. This SP allows adjustment of image quality if the desired effect cannot be achieved with the default settings for edge processing. However, some settings could cause defective images on white paper.	
1	Leading Edge Pixel (Level - 1200 dpi)	[2 to 15/**7**/1]
2	Trailing Edge Pixel (Level - 1200 dpi)	[2 to 15/**14**/1]
3	Continuous Pixel (Level - 1200 dpi)	[2 to 15/**15**/1]
4	Independent Dot Pixel (Level - 1200 dpi)	[2 to 15/**15**/1]
5	Leading Edge Pixel (Level - 600 dpi)	[2 to 15/**7**/1]
6	Trailing Edge Pixel (Level - 600 dpi)	[2 to 15/**15**/1]
7	Continuous Pixel (Level - 600 dpi)	
8	Independent Dot Pixel (Level - 600 dpi)	

2115	Main Scan Beam Pitch Adjustment	
	A label attached to the LD unit service part lists the correct settings. Refer to these settings when adjusting the beam pitch for LD0 to LD3.	
1	Pitch Adjustment Between LD0 and LD2	[-100 to 100/**0**/1 um]
2	Pitch Adjustment Between LD1 and LD3	[-100 to 100/**0**/1 um]
3	Pitch Adjustment Between LD0 and LD1	[-999 to 999/**0**/1 um]
4	Main Scan: Front Between LD0 and LD1	[-100 to 100/**0**/1 um]
5	Main Scan: Rear Between LD0 and LD1	[-100 to 100/**0**/1 um]

2201	Development Bias
1	Dev. Bias (Image)
	Adjusts the development bias for copying when process control is off [100 to 800/**550**/10 V] Adjust as a temporary measure to compensate for an aging drum until the old drum can be replaced.
2	ID Sensor Pattern
	Adjusts the development bias used to create the ID sensor pattern. DFU [100 to 800/**360**/10 V] This SP and SP2201-004 must be changed together by the same amount.
3	OHP
	Adjusts the development bias for copying with OHP sheets. [100 to 800/**300**/10 V]
4	ID Sensor Pattern (Dev. Potential)
	Adjusts the development potential to create the ID sensor pattern. DFU [140 to 380/**240**/10 V] This SP and SP2201-002 must be changed together by the same amount.
5	Vb Target Voltage
	Sets the Vb target development bias voltage (Vb). DFU [100 to 800/**550**/1 V]

2207	Forced Toner Supply
	Rotates the toner bottle to supply toner to the toner supply unit. Press Execute to force toner supply. 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.

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 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
	Adjusts the toner supply rate. [50 to 2000/**850**/5 mg per sec] Increasing this value reduces the time the toner supply clutch remains on. Use a lower value if the user tends to make many copies that have large areas of black.

2210	ID Sensor Pattern Interval
	Adjusts the time interval between making ID sensor patterns onto the drum for Vsp/Vsg detection. [0 to 200/**10**/1] Reduce the interval for copies that contain a high proportion of black.

2220	Vref Manual Setting
	Adjusts the TD sensor reference voltage (Vref) manually. [1 to 4/**2.5**/0.01 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, do the following: ▪ Check the value of SP2220 in both the machine containing the test unit and the machine that you are going to move it to. ▪ Install the test development unit, then input the VREF for this unit into SP2220. ▪ After the test, put back the old development unit, and change SP2220 back to the original value.

2223	Vt Display
	Displays the current TD sensor output voltage. [0 to 5 / **4** / 0.02 V]

2301	Trans Current Adj
	Adjusts the current applied to the transfer belt during copying. Note: If this SP is too high, toner on the paper can go back to the drum.
1	Main Area: Image: Front Side
	D131: [10 to 200/**50**/1 μA] D132: [10 to 200/**65**/1 μA] D133: [10 to 200/**80**/1 μA]
2	Main Area: Image: Back Side
	D131: [10 to 200/**50**/1 μA] D132: [10 to 200/**65**/1 μA] D133: [10 to 200/**80**/1 μA]
3	By-pass Image Area: Front Side
	D131/D132: [10 to 200/**75**/1 μA] D133: [10 to 200/**80**/1 μA]

4	Postcard (Japan Only)
	[10 to 200/**165**/1 µA]
5	Paper Interval
	[10 to 200/**15**/1 µA]
6	Tab Paper
	D131/D132: [10 to 200/**75**/1 µA] D133: [10 to 200/**80**/1 µA]
7	Thick Paper: Front Side
	[10 to 200/**120**/1 µA]
8	Thick Paper: Back Side
	D131/D132: [10 to 200/**75**/1 µA] D133: [10 to 200/**80**/1 µA]
9	OHP: Front Side
	[10 to 200/**120**/1 µA]
10	Tracing Paper: Front Side
	D131: [10 to 200/**50**/1 µA] D132: [10 to 200/**65**/1 µA] D133: [10 to 200/**80**/1 µA]
11	Image Leading Edge: Front
	D131: [10 to 200/**50**/1 µA] D132: [10 to 200/**65**/1 µA] D133: [10 to 200/**80**/1 µA]
12	Image Trailing Edge: Front
	D131: [10 to 200/**50**/1 µA] D132: [10 to 200/**65**/1 µA] D133: [10 to 200/**80**/1 µA]

13	Image Leading Edge: Back
	D131: [10 to 200/**50**/1 µA] D132: [10 to 200/**65**/1 µA] D133: [10 to 200/**80**/1 µA]
14	Image Trailing Edge: Back
	D131/D132: [10 to 200/**75**/1 µA] D133: [10 to 200/**80**/1 µA]
15	Bypass: Image Leading Edge
	D131/D132: [10 to 200/**75**/1 µA] D133: [10 to 200/**80**/1 µA]
16	Bypass: Image Trailing Edge
	[10 to 200/**165**/1 µA]
17	Leading Edge: Postcard
	[10 to 200/**165**/1 µA]
18	Image Trailing Edge: Postcard
	D131/D132: [10 to 200/**75**/1 µA] D133: [10 to 200/**80**/1 µA]
19	Image Leading Edge: Tab Paper
	D131/D132: [10 to 200/**75**/1 µA] D133: [10 to 200/**80**/1 µA]
20	Trailing Edge: Tab Paper
	[10 to 200/**120**/1 µA]
21	Image Leading Edge: Thick Paper
	[10 to 200/**120**/1 µA]

22	Image Trailing Edge: Thick Paper
	D131/D132: [10 to 200/**75**/1 µA] D133: [10 to 200/**80**/1 µA]
23	Image Leading Edge: OHP
	D131/D132: [10 to 200/**75**/1 µA] D133: [10 to 200/**80**/1 µA]
24	Image Trailing Edge: OHP
	D131/D132: [10 to 200/**75**/1 µA] D133: [10 to 200/**80**/1 µA]
25	Image Leading Edge: Tracing Paper
	[10 to 200/**120**/1 µA]
26	ImageTrailing Edge: Tracing Paper
	[10 to 200/**120**/1µA]
27	Label
	D131: [10 to 200/**50**/1µA] D132: [10 to 200/**65**/1µA] D133: [10 to 200/**80**/1µA]
28	Image Leading Edge: Label
	D131: [10 to 200/**50**/1µA] D132: [10 to 200/**65**/1µA] D133: [10 to 200/**80**/1µA]
29	Image Trailing Edge: Label
	D131: [10 to 200/**50**/1µA] D132: [10 to 200/**65**/1µA] D133: [10 to 200/**80**/1µA]

30	Envelope
	D131: [10 to 200/**50**/1μA] D132: [10 to 200/**65**/1μA] D133: [10 to 200/**80**/1μA]
31	Image Leading Edge: Envelope
	D131: [10 to 200/**50**/1μA] D132: [10 to 200/**65**/1μA] D133: [10 to 200/**80**/1μA]
32	Image Trailing Edge: Envelope
	D131: [10 to 200/**50**/1μA] D132: [10 to 200/**65**/1μA] D133: [10 to 200/**80**/1μA]

2506	Cont. Op. Time Cleaning Setting
1	Operation Setting
	Determines whether multiple copy jobs are stopped at regular intervals for: 0) Stopping and reversing the drum motor to clean the cleaning blade edge, and 1) creating an ID sensor pattern to correct toner density control. [0 to 1/1] 0: No 1: Yes The interval is set with SP2506-002. Use if the drum gets dirty or images get too pale or too dark during a long job.
2	Time Setting
	Selects the interval at which multi-copy jobs are stopped. [1 to 100/**15**/1 min.]

2507	ID Sen Patt Du
1	Operation Setting
	Determines whether an ID sensor pattern is created during copy jobs. [0 to 1/**0**/1] 0: Off 1: On
2	No. of Sheets
	Selects the interval (number of copies) between ID sensor patterns when 1 is selected for SP2507-001 [1 to 10,000/**100**/1]

2602	PTL Setting (1st /2nd Copy Side)
	Turns the PTL off and on. The PTL (Pre-Transfer Lamp) decreases the charge on the drum to make better separation of the paper from the drum, and prevents stripper pawl marks on the leading edges of copies. **Note**: ▪ The PTL operates only when copying with plain paper or translucent paper. It does not operate when copying with OHP, index sheets, or thick paper. ▪ If blurring occurs in images at the leading edges of copies, switch SP2602-001 off (set to "0").
1	1st Side ON/OFF Setting
	Turns the PTL lamp on/off during transfer to the front side of the paper at normal speed. This setting is always off when thick paper or OHPs are fed. [0 to 1/1] 0: Off 1: On The timing can be adjusted with SP2602-002.

2	1st Side OFF Timing
	Adjusts the length of the space from the leading edge where PTL quenching is applied to the front side at normal speed. For example, if you select +3, then quenching will be done 3 mm from the leading edge on the front side. [-10 to 20/**3**/1 mm]
3	2nd Side ON/OFF Setting
	Turns the PTL lamp on/off during transfer to the front side of the paper at normal speed. [0 to 1/1] 0: Off 1: On
4	2nd Side OFF Timing
	Adjusts the length of the space from the leading edge where PTL quenching is applied to the back side at normal speed. For example, if you select +3, then quenching will be done 3 mm from the leading edge on the back side. [-10 to 20/**3**/1 mm]

2801	TD Sensor Initial Setting
1	Press the EXECUTE button to do the TD sensor initial setting. This SP mode controls the voltage applied to the TD sensor to make the TD sensor output about 3.0 V. When SP2967 is on, the TD sensor output is set to about 2.5 V. **Note**: Execute this SP only after replacing the TD sensor or developer.
2	Developer Lot No. Input
	Use this SP to enter the developer lot number embossed on the developer package when installing developer in a new machine, or replacing developer in a used machine.

2803	Charge Cleaner Start Time
1	Press EXECUTE button to clean the charge corona wire manually. When copy density across the paper is uneven, clean the wire with this mode.

2804	Charge Cleaner
1	Operation Mode
	Determines whether the charge corona wire is cleaned at regular intervals. [0 to 1/1] 0: No 1: Yes The time interval between cleaning is set with SP2804-002.
2	Number of Sheets
	Sets the interval (number of sheets printed) between charge corona wire cleanings. [100 to 10,000/**5000**/100]

2901	Humidity Control
1	0: OFF 1:ON
	[0 or 1/ **0** / -]
2	Humidity Thresh: Trans. Bias
	[0 to 100 / **70** / 1%]

2902	Test Pattern Printing
	Test Pattern
	Produces the printer test patterns. (See "Test Pattern Printing" in the Main Chapters.) [0 to 26 / **0** / 1]

2906	TD Sensor Ctrl Voltage and Check
1	TD Sensor Ctrl Voltage Setting
	Adjustment mode for production. DFU [4.0 to 12.0/**9.7**/0.1 V]
2	Automatic Adjustment Setting
	Displays the TD sensor data stored when SP2801 (TD Sensor Initial Settings) is executed. [4.0 to 12.0/**9.7**/0.1 V]

2909	Main Scan Magnification
	Adjusts magnification in the main scan direction for copying. [–2.0 to +2.0/**0**/0.1%]

2910	Writing Sub Scan Magnification
	Adjusts magnification in the main scan direction for copying. [–1.0 to +1.0/**0**/0.1%]

2912	Drum Reverse Rotation – Reverse Interval
	Determines the frequency of drum reverse rotation for blade cleaning. [0 to 6/**0**/1 min.]

2913	Temperature & Humidity Display
	Displays the internal temperature of the machine. [-128 to 127/**0**/ 1°C]

2920	LD Off Check
	Checks if the LD turns off or on when the front door is opened. DFU [0 to 1/1] 0: On 1: Off

2930	Transfer Idle Cleaning
	When resolution changes from 400 to 600 dpi, the LD writes a pattern on the drum. Toner is applied, and this must be cleaned off the belt. This SP mode determines whether bias is applied to the transfer belt cleaning bias roller at this time. DFU [0 to 1/1] 0: Off 1: On Switching this function on adds 3 s to the job time.

2931	Transfer Current On/Off Timing: LCT
1	On Timing: La1 (Front)
	Adjusts on transfer current ON timing for front side copying. [–30 to +30/**20**/1 mm]
2	La1f (Front)
	Adjusts the area where the transfer is applied for the leading edge during front side copying. [0 to +20/**0**/1 mm]
3	Lc1r (Front)
	Adjusts the area where the transfer current is applied for the trailing edge during front side copying. [0 to +20/**0**/1 mm]
4	Off Timing: Lc1 (Front)
	Adjusts the transfer current OFF timing for front side copying. [–30 to +30/**20**/1 mm]

5	On Timing: La2 (Back)
	Adjusts on transfer current ON timing for back side copying. [–30 to +30/**0**/1 mm]
6	Leading Edge: La2f (Back)
	Adjusts the area where the transfer current is applied for the leading edge during back side copying. [0 to +20/**0**/1 mm]
7	Trailing Edge: Lc2r (Back)
	Adjusts the area where the transfer current is applied for the trailing edge during back side copying. [0 to +20/**0**/1 mm]
8	On Timing: Lc2 (Back)
	Adjusts the transfer current ON timing for back side copying. [–30 to +30/**20**/1 mm]
9	On Timing: Thick Paper
	Adjusts on transfer current ON timing for copying thick paper from the LCT. [–30 to +30/**0**/1 mm]
10	Leading Edge: Thick Paper
	Adjusts the area where the transfer current is applied for the leading edge during copying with thick paper from the LCT. [0 to +20/**0**/1 mm]
11	Trailing Edge: Thick Paper
	Adjusts the area where the transfer current is applied for the trailing edge during copying with thick paper from the LCT. [0 to +20/**0**/1 mm]
12	Timing: Thick Paper Lc
	Adjusts the transfer current OFF timing for copying thick paper from the LCT. [–30 to +30/**15**/1 mm]

13	On Timing: M-Thick
	Adjusts the transfer current ON timing for copying with M-thick paper from the LCT. [–30 to +30/**0**/1 mm]
14	Leading Edge: M-Thick
	Adjusts the area where the transfer current is applied for the leading edge during copying with M-thick paper from the LCT. [0 to +20/**0**/1 mm]
15	Trailing Edge:M-Thick
	Adjusts the area where the transfer current is applied for the trailing edge during copying with M-thick paper from the LCT. [0 to +20/**0**/1 mm]
16	Off Timing: M-Thick
	Adjusts the transfer current OFF timing for copying with M-thick paper from the LCT. [–30 to +30/**15**/1 mm]
17	On Timing: After Punch
	Adjusts the transfer current ON timing for copying with punch from the LCT. [–30 to +30/**20**/1 mm]
18	Leading Edge: After Punch
	Adjusts the area where transfer current is applied for the leading edge during copying with punch. [0 to +20/**0**/1 mm]
19	Trailing Edge: After Punch
	Adjusts the area where transfer current is applied for the trailing edge during copying with punch. [0 to +20/**0**/1 mm]

20	Off Timing: After Punch
	Adjusts the transfer current OFF timing for copying with punch from the LCT. [–30 to +30/**-16**/1 mm]

2932	Transfer Current On/Off Timing: Tray1
1	On Timing: La1 (Front)
	Adjusts on transfer current ON timing for front side copying. [–30 to +30/**20**/1 mm]
2	La1f (Front)
	Adjusts the area where the transfer is applied for the leading edge during front side copying. [0 to +20/**0**/1 mm]
3	Lc1r (Front)
	Adjusts the area where the transfer current is applied for the trailing edge during front side copying. [0 to +20/**0**/1 mm]
4	Off Timing: Lc1 (Front)
	Adjusts the transfer current OFF timing for front side copying. [–30 to +30/**20**/1 mm]
5	On Timing: La2 (Back)
	Adjusts on transfer current ON timing for back side copying. [–30 to +30/**0**/1 mm]
6	Leading Edge: La2f (Back)
	Adjusts the area where the transfer current is applied for the leading edge during back side copying. [0 to +20/**0**/1 mm]

7	Trailing Edge: Lc2r (Back)
	Adjusts the area where the transfer current is applied for the trailing edge during back side copying. [0 to +20/**0**/1 mm]
8	On Timing: Lc2 (Back)
	Adjusts the transfer current ON timing for back side copying. [–30 to +30/**20**/1 mm]
9	On Timing: Thick Paper
	Adjusts on transfer current ON timing for copying thick paper f. [–30 to +30/**0**/1 mm]
10	Leading Edge: Thick Paper
	Adjusts the area where the transfer current is applied for the leading edge during copying with thick paper. [0 to +20/**0**/1 mm]
11	Trailing Edge: Thick Paper
	Adjusts the area where the transfer current is applied for the trailing edge during copying with thick paper.. [0 to +20/**0**/1 mm]
12	Timing: Thick Paper Lc
	Adjusts the transfer current OFF timing for copying thick paper. [–30 to +30/**15**/1 mm]
13	On Timing: M-Thick
	Adjusts the transfer current ON timing for copying with M-thick paper. [–30 to +30/**0**/1 mm]
14	Leading Edge: M-Thick
	Adjusts the area where the transfer current is applied for the leading edge during copying with M-thick paper. [0 to +20/**0**/1 mm]

15	Trailing Edge:M-Thick
	Adjusts the area where the transfer current is applied for the trailing edge during copying with M-thick paper. [0 to +20/**0**/1 mm]
16	Off Timing: M-Thick
	Adjusts the transfer current OFF timing for copying with M-thick paper. [–30 to +30/**15**/1 mm]
17	On Timing: After Punch
	Adjusts the transfer current ON timing for copying with punch. [–30 to +30/**20**/1 mm]
18	Leading Edge: After Punch
	Adjusts the area where transfer current is applied for the leading edge during copying with punch. [0 to +20/**0**/1 mm]
19	Trailing Edge: After Punch
	Adjusts the area where transfer current is applied for the trailing edge during copying with punch. [0 to +20/**0**/1 mm]
20	Off Timing: After Punch
	Adjusts the transfer current OFF timing for copying with punch. [–30 to +30/**-16**/1 mm]

2933	Transfer Current On/Off Timing: Tray2
1	On Timing: La1 (Front)
	Adjusts on transfer current ON timing for front side copying. [–30 to +30/**20**/1 mm]
2	La1f (Front)
	Adjusts the area where the transfer is applied for the leading edge during front side copying. [0 to +20/**0**/1 mm]
3	Lc1r (Front)
	Adjusts the area where the transfer current is applied for the trailing edge during front side copying. [0 to +20/**0**/1 mm]
4	Off Timing: Lc1 (Front)
	Adjusts the transfer current OFF timing for front side copying. [–30 to +30/**20**/1 mm]
5	On Timing: La2 (Back)
	Adjusts on transfer current ON timing for back side copying. [–30 to +30/**0**/1 mm]
6	Leading Edge: La2f (Back)
	Adjusts the area where the transfer current is applied for the leading edge during back side copying. [0 to +20/**0**/1 mm]
7	Trailing Edge: Lc2r (Back)
	Adjusts the area where the transfer current is applied for the trailing edge during back side copying. [0 to +20/**0**/1 mm]

8	On Timing: Lc2 (Back)
	Adjusts the transfer current ON timing for back side copying. [–30 to +30/**20**/1 mm]
9	On Timing: Thick Paper
	Adjusts on transfer current ON timing for copying thick paper f. [–30 to +30/**0**/1 mm]
10	Leading Edge: Thick Paper
	Adjusts the area where the transfer current is applied for the leading edge during copying with thick paper. [0 to +20/**0**/1 mm]
11	Trailing Edge: Thick Paper
	Adjusts the area where the transfer current is applied for the trailing edge during copying with thick paper.. [0 to +20/**0**/1 mm]
12	Timing: Thick Paper Lc
	Adjusts the transfer current OFF timing for copying thick paper. [–30 to +30/**15**/1 mm]
13	On Timing: M-Thick
	Adjusts the transfer current ON timing for copying with M-thick paper. [–30 to +30/**0**/1 mm]
14	Leading Edge: M-Thick
	Adjusts the area where the transfer current is applied for the leading edge during copying with M-thick paper. [0 to +20/**0**/1 mm]
15	Trailing Edge:M-Thick
	Adjusts the area where the transfer current is applied for the trailing edge during copying with M-thick paper. [0 to +20/**0**/1 mm]

16	Off Timing: M-Thick
	Adjusts the transfer current OFF timing for copying with M-thick paper. [–30 to +30/**15**/1 mm]
17	On Timing: After Punch
	Adjusts the transfer current ON timing for copying with punch. [–30 to +30/**20**/1 mm]
18	Leading Edge: After Punch
	Adjusts the area where transfer current is applied for the leading edge during copying with punch. [0 to +20/**0**/1 mm]
19	Trailing Edge: After Punch
	Adjusts the area where transfer current is applied for the trailing edge during copying with punch. [0 to +20/**0**/1 mm]
20	Off Timing: After Punch
	Adjusts the transfer current OFF timing for copying with punch. [–30 to +30/**-16**/1 mm]

2934	Transfer Current On/Off Timing: Tray3
1	On Timing: La1 (Front)
	Adjusts on transfer current ON timing for front side copying. [–30 to +30/**20**/1 mm]
2	La1f (Front)
	Adjusts the area where the transfer is applied for the leading edge during front side copying. [0 to +20/**0**/1 mm]
3	Lc1r (Front)
	Adjusts the area where the transfer current is applied for the trailing edge during front side copying. [0 to +20/**0**/1 mm]
4	Off Timing: Lc1 (Front)
	Adjusts the transfer current OFF timing for front side copying. [–30 to +30/**20**/1 mm]
5	On Timing: La2 (Back)
	Adjusts on transfer current ON timing for back side copying. [–30 to +30/**0**/1 mm]
6	Leading Edge: La2f (Back)
	Adjusts the area where the transfer current is applied for the leading edge during back side copying. [0 to +20/**0**/1 mm]
7	Trailing Edge: Lc2r (Back)
	Adjusts the area where the transfer current is applied for the trailing edge during back side copying. [0 to +20/**0**/1 mm]

8	On Timing: Lc2 (Back)
	Adjusts the transfer current OFF timing for back side copying. [–30 to +30/**20**/1 mm]
9	On Timing: Thick Paper
	Adjusts on transfer current ON timing for copying thick paper f. [–30 to +30/**0**/1 mm]
10	Leading Edge: Thick Paper
	Adjusts the area where the transfer current is applied for the leading edge during copying with thick paper. [0 to +20/**0**/1 mm]
11	Trailing Edge: Thick Paper
	Adjusts the area where the transfer current is applied for the trailing edge during copying with thick paper.. [0 to +20/**0**/1 mm]
12	Timing: Thick Paper Lc
	Adjusts the transfer current OFF timing for copying thick paper. [–30 to +30/**15**/1 mm]
13	On Timing: M-Thick
	Adjusts the transfer current ON timing for copying with M-thick paper. [–30 to +30/**0**/1 mm]
14	Leading Edge: M-Thick
	Adjusts the area where the transfer current is applied for the leading edge during copying with M-thick paper. [0 to +20/**0**/1 mm]
15	Trailing Edge:M-Thick
	Adjusts the area where the transfer current is applied for the trailing edge during copying with M-thick paper. [0 to +20/**0**/1 mm]

16	Off Timing: M-Thick
	Adjusts the transfer current OFF timing for copying with M-thick paper. [–30 to +30/**15**/1 mm]
17	On Timing: After Punch
	Adjusts the transfer current ON timing for copying with punch. [–30 to +30/**20**/1 mm]
18	Leading Edge: After Punch
	Adjusts the area where transfer current is applied for the leading edge during copying with punch. [0 to +20/**0**/1 mm]
19	Trailing Edge: After Punch
	Adjusts the area where transfer current is applied for the trailing edge during copying with punch. [0 to +20/**0**/1 mm]
20	Off Timing: After Punch
	Adjusts the transfer current OFF timing for copying with punch. [–30 to +30/**-16**/1 mm]

2935	Transfer Current On/Off Timing: Tray 4 **Japan Only**

2936	Transfer Current On/Off Timing: Bypass Tray
1	On Timing: La1 (Front)
	Adjusts on transfer current ON timing for front side copying. [–30 to +30/**20**/1 mm]
2	La1f (Front)
	Adjusts the area where the transfer is applied for the leading edge during front side copying. [0 to +20/**0**/1 mm]
3	Lc1r (Front)
	Adjusts the area where the transfer current is applied for the trailing edge during front side copying. [0 to +20/**0**/1 mm]
4	Off Timing: Lc1 (Front)
	Adjusts the transfer current OFF timing for front side copying. [–30 to +30/**20**/1 mm]
5	On Timing: La2 (Back)
	Adjusts on transfer current ON timing for back side copying. [–30 to +30/**0**/1 mm]
6	Leading Edge: La2f (Back)
	Adjusts the area where the transfer current is applied for the leading edge during back side copying. [0 to +20/**0**/1 mm]
7	Trailing Edge: Lc2r (Back)
	Adjusts the area where the transfer current is applied for the trailing edge during back side copying. [0 to +20/**0**/1 mm]

8	On Timing: Lc2 (Back)
	Adjusts the transfer current ON timing for back side copying. [–30 to +30/**20**/1 mm]
9	On Timing: Thick Paper
	Adjusts on transfer current ON timing for copying thick paper f. [–30 to +30/**0**/1 mm]
10	Leading Edge: Thick Paper
	Adjusts the area where the transfer current is applied for the leading edge during copying with thick paper. [0 to +20/**0**/1 mm]
11	Trailing Edge: Thick Paper
	Adjusts the area where the transfer current is applied for the trailing edge during copying with thick paper.. [0 to +20/**0**/1 mm]
12	Off Timing: Thick Paper Lc
	Adjusts the transfer current OFF timing for copying thick paper. [–30 to +30/**20**/1 mm]
13	On Timing: OHP
	Adjusts on transfer current ON timing for copying with OHP. [–30 to +30/**0**/1 mm]
14	Leading Edge: OHP
	Adjusts the area where the transfer current is applied for the leading edge during copying with OHP. [0 to +20/**0**/1 mm]
15	Trailing Edge: OHP
	Adjusts the area where the transfer current is applied for the trailing edge during copying with OHP. [0 to +20/**0**/1 mm]

16	Off Timing: OHP
	Adjusts the transfer current OFF timing for copying with OHP. [–30 to +30/**20**/1 mm]
17	On Timing: M-Thick
	Adjusts the transfer current ON timing for copying with M-thick paper. [–30 to +30/**0**/1 mm]
18	Leading Edge: M-Thick
	Adjusts the area where the transfer current is applied for the leading edge during copying with M-thick paper. [0 to +20/**0**/1 mm]
19	Trailing Edge: M-Thick
	Adjusts the area where the transfer current is applied for the trailing edge during copying with M-thick paper. [0 to +20/**0**/1 mm]
20	Off Timing: M-Thick
	Adjusts the transfer current OFF timing for copying with M-thick paper. [–30 to +30/**15**/1 mm]
21	On Timing: After Punch
	Adjusts the transfer current ON timing for copying with punch. [–30 to +30/**20**/1 mm]
22	Leading Edge: After Punch
	Adjusts the area where transfer current is applied for the leading edge during copying with punch. [0 to +20/**0**/1 mm]
23	Trailing Edge: After Punch
	Adjusts the area where transfer current is applied for the trailing edge during copying with punch. [0 to +20/**0**/1 mm]

24	Off Timing: After Punch
	Adjusts the transfer current OFF timing for copying with punch. [–30 to +30/**-16**/1 mm]
25	ON Timing: Label La1
	[-30 to 30/**20**/1]
26	Label La1
	[0 to 20/**0**/1]
27	Bypass Label Lc1
	[0 to 20/**0**/1]
28	OFF Timing: Label Lc1
	[-30 to 30/**20**/1]
29	ON Timing: Envelope La1
	[-30 to 30/**20**/1]
30	Envelope La1
	[0 to 20/**0**/1]
31	Envelope Lc1
	[0 to 20/**0**/1]
32	OFF Timing: Envelope Lc1
	[-30 to 30/**20**/1]

2940	Reface Mode
	Determines if a blade bend prevention pattern is made when the ID sensor pattern is made. This setting controls the pattern count. **DFU** [0 to 100/**0**/1] Increase the setting if the rotation of the drum is not smooth, that is, when drum rotation is making noise.

2950	Vh Pattern Creation Setting **DFU**
	Creates the Vh pattern (standard drum potential for half-tone) on the drum during process control.
1	Exposure Level
	[0 to 15/**7**/1]
2	Offset Light Amount
	[-100 to 0/**-45**/1]

2960	Process Interval **DFU**
	[0 to 7/**0**/1 sec]

2961	Developer Adjust Mode **DFU**

2962	Automatic Adjustment of Drum Conditions
	Push [Execute] to execute the process control cycle manually. Note: This SP executes only if SP3901 is enabled.

2963	Installation Mode
	Use the keyboard display to enter the lot number of the developer. (The lot number is embossed on the top edge of the developer pack.) Press "Execute" to initialize the developer and force toner supply to the toner hopper at machine installation. **Important**: After you replace developer in a machine that has been already installed, do not use SP2963 to initialize the developer. Use SP2801 (TD Sensor Initial Setting) to initialize the TD sensor.
1	Execute
2	Developer Lot Number Input

2966	Drum Conditions: Periodic Adjustment
	Sets the time interval between automatic adjustments. [1 to 24/**24**/1 hour]

2967	Developer Density Adjustment Mode
	Determines whether the amount of toner is checked during auto process control with only the TD sensor. With this feature on, the machine uses the TD sensor only. [0 to 1/**0**/1] 0: Off 1: On During auto process control execution after the main switch is turned on, the toner amount in the development unit is normally checked and adjusted using the ID sensor. However, in some environments, such as where there could be traces ammonia in the air, copies could appear dirty or too dark because the ID sensor reading is not reliable.

2968	Toner Exit Mode
	Press Execute to force used toner into the toner collection bottle. The moving components of the cleaning and toner collection areas will rotate for about 60 sec. with the transfer belt released.

2969	Toner Bottle Revolution Count
1	Copy Count Setting
	Sets the standard number of copies by using the number of toner bottle rotations. **DFU** [500 to 112/**100**/1]
2	Count Reset
	Press "Execute" to reset the toner bottle rotation count. **DFU**
3	Copy Count Display
	Used to check the number of toner bottle rotations. [0 to 0xFFFF/**0**/0]
4	Copy Count History 1
	[0 to 0xFFFF/**0**/0]
5	Copy Count History 2
	[0 to 0xFFFF/**0**/0]
6	Copy Count History 3
	[0 to 0xFFFF/**0**/0]
7	Copy Count History 4
	[0 to 0xFFFF/**0**/0]
8	Copy Count History 5
	[0 to 0xFFFF/**0**/0]

9	Copy Count History 6
	[0 to 0xFFFF/**0**/0]
10	Copy Count History 7
	[0 to 0xFFFF/**0**/0]

2970	Transfer Belt Resistance: Display **DFU**
	[0 to 0xFFFF/**0**/0 Mohm]

2971	Trans. Interval Output **DFU**
1	Voltage
	[0 to 0xFFFF/**0**/0 V]
2	Current
	[0 to 0xFFFF/**0**/0 μA]

2972	Toner Bottle Cool. Fan Drive Control
	Switches fan control On/Off. [0 to 1/1] 0: Off. The toner bottle fan switches off when the machine's operation switch is turned off and when the machine enters the night mode. 1: On: Toner bottle fan remains on. Switch on in an extremely hot environment to prevent the toner from overheating and clumping.

2973	Development Motor Speed Setting
	[0 to 3/**0**/1]

2974	PCU Cool Fan Drive Ctrl
	[0 to 1/**0**/1]

2975	Main Intake Fan Drive Ctrl
	[0 to 1/**0**/1]

2976	Development Fan Drive Ctrl
	[0 to 1/**0**/1]

2977	Main Exhaust Fan Drive Setting
	[0 to 2/**1**/1]

2980	Paper Interval Trans Curr ON Timing
	[80 to 500/**170**/10]

2986	Refresh Mode
	Use these SPs configure how refresh mode operates.
1	Interval
	Sets the number of prints between refresh mode executions (even during a job). If set to "0" refresh mode does not execute. [0 to 25/**0**/1]
2	Level
	Sets the toner consumption level. [0 to 4/**2**/1]
3	Repetitions
	Sets the number of times toner is consumed during refresh mode execution. [1 to 3/2/1]
4	Execute Mode
	Applies the settings of SP2986-2 and SP2986-3 for execution of the refresh mode. These settings do not take effect until this SP code is set. [0 to 4/**2**/1]

3.4 SP3000 PROCESSING

3001	ID Sensor Initial Setting
1	ID Sensor PWM Setting
	Recovers the machine when an SC is logged because the 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/**70**/1]
2	ID Sensor Initialization
	Performs the ID sensor initial setting. The ID sensor output for the bare drum (VSG) is adjusted to 4.0 ± 0.2V. Press "Execute". This SP mode should be performed after: (1) Replacing or cleaning the ID sensor, (2) Replacing the NVRAM, (3) Clearing NVRAM, (4) Replacing the BICU board.

3103	ID Sensor Output Display
1	Vsg
	Displays the current value of the ID sensor output after checking the bare drum surface. [0 to 5/**0**/0.01 V]
2	Vsp
	Displays the current value of the ID sensor output after checking the ID sensor pattern image. [0 to 5/**0**/0.01 V]
3	Vpdp
	Displays the current 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. [0 to 5/**0**/0.01 V] If the ID sensor output is abnormal, an SC is logged: SC378-00 logged: Vsp/Vsg/Vsdp = 0.00/0.00/0.00, or 5.00/5.00/5.00

3901	Auto Process Control On/Off Setting
	Determines whether the machine checks and corrects the 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.

3902	Drum Condition Display
1	Auto Process Control On/Off
	Displays whether auto process control is switched on or off (0:Off, 1:On) When auto processing control is turned on, displays only when the potential sensor is calibrated correctly. Auto process control is not executed when this SP is switched off. [0 to 1/**1**/1] 0: Off 1: On
2	Vd
	Displays drum dark potential, the standard potential, electrical potential of the black areas after exposure. [100 to 970/**800**/1]
3	Vh
	Displays standard halftone drum potential, used for laser power adjustment. [100 to 500/**300**/1]
4	Vg
	Displays the charge grid voltage resulting from the latest Vd adjustment. [0 to 0xFFFF/**0**/1]
5	LD Level
	Displays the LD power correction value as a result of the latest Vh adjustment. [-127 to 127/**0**/3]
6	ID Sensor Pattern Potential
	Displays Vid, the latest drum surface voltage measured on the ID sensor pattern. [0 to 0xFFFF/**0**/1]

7	Vql
	Displays the drum potential after quenching. [0 to 0xFFFF/**0**/1]
8	Vl
	Shows the standard electrical potential of white areas on the drum after exposure. [-32767 to 32768/**0**/1]

3903	Drum Rotation Time Extension Mode
1	(0:OFF/1:ON)
	Turns on the drum rotation mode. This increases the time that the drum turns freely after the machine is turned on. After this function is turned on with this SP, it will be enabled only when SP3904 001 is set to "2". If SP3904 001 is set to "0" or "1", the extra drum rotation mode will not be enabled. [0 to 1/**0**/1] 0: Extra drum rotation mode is off (default) 1: After auto process control, the drum continues to turn until the fusing unit gets to its operation temperature. Use this setting to decrease out-of-focus copy images when the machine is used immediately after power-on.
2	Drum Rotation Time
	Sets the amount of time the drum turns in the drum rotation mode before the first copy after the machine is turned on. SP3903-001 must be on or this setting has no effect. [120 to 600/**240**/1]

3904	Warm Up Short Mode
	Controls when corona wire cleaning is done to adjust the length of time that is necessary for startup. D131/D132: [0 to 2/**0**/1] D133: [0 to 2/**2**/1] 0: Charge corona wire not cleaned when the machine is turned on. Warmup Time: 30 sec. (Short Process Control is done) 1: Charge corona wire cleaned only when the machine is turned on. Warmup Time: 30 sec. + 40 sec. (for cleaning) = 70 sec. (Short Process Control is done) 2: Normal startup procedure at power on: Warmup Time: 240 sec. (Full process control is done) ▪ Potential sensor calibrated ▪ Drum starts to turn when fusing unit gets to the warmup temperature (not done during Short Process Control) ▪ Potential sensor readings are used to adjust development bias, grid voltage, laser diode. ▪ ID sensor calibrated (not done during Short Process Control) ▪ TD sensor calibrated (not done during Short Process Control)

3905	Exclusion Time (90 cpm): Interval Setting
	Sets the length of time for the machine to wait before executing process control after the the machine recovers from the Off Mode [0 to 24/**2**/1]

3.5 SP4000 SCANNER

4008	Sub Scan Magnification Adj
	Fine adjusts the magnification in the sub scan direction for scanning by changing the speed of the scanner motor. [–1.0 to +1.0/0.1 %] Setting a lower value reduces the speed of the motor and lengthens the image in the sub scan direction (direction of paper feed). Setting a higher value increases the speed of the motor speed and shortens the image in the sub scan direction.

4010	Sub Scan Registration Adj
	Adjust the registration of the leading edge for scanning in the sub scan direction. [-3.0 to +3.0/0.1mm] This setting ensures that the point where the original strikes the registration roller matches the point where the F-GATE signal will trigger the start of scanning in the main scan direction. Setting a larger value shifts the image away from the leading edge, and a smaller value shifts the image toward the leading edge.

4011	Main Scan Registration Adj
	Adjusts the side-to-side registration for scanning in the main scan direction across the page. [–2.5 to 2.5/0.1mm] Setting a negative value shifts the image toward the left edge, and setting a positive value shifts the image toward the right edge.

4012	Set Scale Mask	
	These settings adjust the margins (erase margins) of the scanned area on the sheet. The leading, trailing, right, and left margins can be set independently.	
1	Book: Sub Scan: Leading Edge	[0 to 3/0.1 mm]
2	Book: Sub Scan: Trailing Edge	
3	Book: Main Scan: Leading Edge (Rear)	
4	Book: Main Scan: Trailing Edge (Front)	
5	ADF: Sub Scan: Leading Edge	
7	ADF: Main Scan: Leading Edge (Rear)	
8	ADF: Main Scan: Trailing Edge (Front)	

4013	Scanner Free Run
	Switches on/off a scanner free run. The scanning area is A3. Press "On" or "Off".
1	Book Mode: Lamp Off
	Performs a scanner free run with the exposure lamp off.
2	Book Mode: Lamp On
	Performs a scanner free run with the exposure lamp on.

4014	Scan
	Execute 1 scan with HP detection On.

4020	DF Dust Check
	This feature checks the ADF exposure glass for dust that can cause black lines in copies. If dust is detected, a message is displayed, but the process does not stop.
1	Dust Detect: On/Off: Front
	Issues a warning if there is dust on the narrow scanning glass of the ADF when the original size is detected before a job starts. This function can detect dust on the white plate above the scanning glass. Sensitivity of the level of detection is adjusted with SP4020-2. [0 to 1/1] 0: Off. No dust warning. 1: On. Dust warning. This warning does not stop the job. **Note:** Before switching this setting on, clean the ADF scanning glass and the white plate above the scanning glass.
2	Detect Level: Front
	Adjusts the sensitivity for dust detection on the ADF scanning glass. This SP is available only after SP4020-1 is switched on. [0 to 8/1] ▪ If you see black streaks in copies and no warning has been issued, raise the setting to increase the level of sensitivity. ▪ If warnings were issued and you see no black streaks in copies, lower the setting. ▪ Dust that triggers a warning could move be removed from the glass by the originals in the feed path. If the dust is removed by passing originals, this is not detected and the warning remains on.
3	Correction Level: Front
	Sets the level for vertical line correction (the black vertical lines caused by dust on the ADF exposure glass). [0 to 4/1] 0: No vertical line correction. 1-7: Enables and sets the level for vertical line correction. If you select a higher number, this can decrease the unwanted lines caused by dust. But, it can also erase thin vertical lines of the original.

11	Dust Detect: On/Off: Rear
	Adjusts the sensitivity for dust detection on the ADF scanning glass. This SP is available only after SP4020-2 is switched on. [0 to 1/1] ▪ If you see black streaks in copies when no warning has been issued, raise the setting to increase the level of sensitivity. ▪ If warnings are issued when you see no black streaks in copies, lower the setting. Dust that triggers a warning could move be removed from the glass by the originals in the feed path. If the dust is removed by passing originals, this is not detected and the warning remains on.
12	Detect Level: Rear
	Sets the level for vertical line correction (the black vertical lines caused by dust on the ADF exposure glass). [0 to 8/1] 0: No vertical line correction. 1-7: Enables and sets the level for vertical line correction. If you select a higher number, this can decrease the unwanted lines caused by dust. But, it can also erase thin vertical lines of the original.

4301	Operation Check APS Sensor
	Displays the APS sensor output signals when an original is placed on the exposure glass. If a non-standard size is placed on the glass, asterisks (*) are displayed.

4303	Min Size for APS
	Selects whether or not the copier determines that the original is A5/HLT size when the APS sensor does not detect the size. [0 to 1/1] 0: Not detected 1: A5 SEF (5 1/2" x 8 1/2") If "1" is selected, paper sizes that cannot be detected by the APS sensors are detected as A5 SEF. If "0" is selected, "Cannot detect original size" will be shown.

4305	8K/16K Detection
	Changes APS size detection [0 to 3 / 0 / 1] 0 : Normal 1 : A4-LEF LT-SEF If the paper is LEF, detects A4, if SEF detects LT 2 : LT-LEF A4 SEF If paper is LEF, detects LT, if SEF detects A4. 3: 8-kai, 16-kai ▪ A3, B4 > 8-kai SEF ▪ A4 SEF, B5 SEF, A5 SEF > 16-kai SEF ▪ A4 LEF, B5 LEF, A5 LEF > 16-kai LEF

4400	Original Edge Mask Setting	
	This SP sets the mask area to remove shadows when scanning originals from the exposure glass in Book mode. **Note:** "LE" denotes "leading edge" and "TE" denotes "trailing edge".	
1	Book:Sub Scan:Leading Edge	[0 to 3/0/0.1 mm]
2	Book:Sub Scan:Trailing Edge	
3	Book:Main Scan:Leading Edge (Rear)	
4	Book:Main Scan:Trailing Edge (Front)	

5	ADF: Sub Scan: Leading Edge	[0 to 3/2/0.1 mm]
7	ADF: Main Scan: Leading Edge (Rear)	[0 to 3/0/0.1 mm]
8	ADF: Main Scan: Trailing Edge (Front)	

4417	IPU Test Pattern Setting	
	0	Scanned Image
	1	Gradation: Main Scan A
	2	Gradation: Main Scan B
	3	Gradation: Main Scan C
	4	Gradation: Main Scan D
	5	Gradation: Sub Scan (1)
	6	Grid Pattern (1)
	7	Slant Grid Pattern
	8	Gradation K
	9	Check Pattern 16
	10	Gray Patch 16 (1)
	11	Gray Patch 16 (2)
	12	Gray Patch 64
	13	Grid Pattern (2)
	14	Color Patch K
	15	Gray Pattern (1)
	16	Gray Pattern (2)
	17	Gray Pattern (3)
	18	Shading Pattern
	19	Thin Line Pattern

	20	Scanned + Grid Pattern
	21	Scanned + Gray Scale
	22	Scanned + Color Patch
	23	Scanned + Slant Grid C
	24	Scanned + Slant Grid D
	25	Gray Scale 18 Text
	26	Gray Scale 18 Photo
	27	Gray Scale 256 Text
	28	Gray Scale 256 Photo

4429	Select Copy Data Security
1	Copying [0 to 3/ **3** / 1]
2	Scanning [0 to 3/ **3** / 1]
3	Fax Operation [0 to 3/ **3** / 1]

4450	Scan Image Pass Selection
	This SP controls black subtraction and shading correction in scanned images.
1	Black Subtraction ON/OFF
	Determines whether black subtraction is done. [0 to 1/**1**/1] 0: Black subraction OFF 1: Black subtraction ON
2	SH ON/OFF
	Determines whether shading correction is done. [0 to 1/**1**/1] 0: Shading correction OFF 1: Shading correction ON

4460	Digital AE	
	This SP sets the lower limit and level for background removal when background removal is selected with a scanner application.	
1	Low Limit Value	[0 to 1023/**364**/1]
2	Background level	[0 to 1023/**512**/1]

4550	Scanning: Text/Drawing
4551	Scanning: Text
4552	Scanning: Test Dropout Color
4553	Scanning: Text/Photo
4554	Scanning: Photo
4565	Scanning: Grayscale
4570	Scanning: Color Text/Photo
4571	Scanning: Color Gloss Photo
4572	Scanning: Auto Color
5	MTF: 0(Off) 1-15 (Weak – Strong)
	Sets the MTF level (Modulation Transfer Function) designed to improve image contrast. Set higher for stronger effect, lower for weaker effect. [0 to 15/8/1]
6	Smoothing: 0(x1) 1 – 7 (Weak – Strong)
	Use to remove "jaggies" if they appear. Set higher for smoother. [0 to 7/4/1]
7	Brightness: 1-255
	Set higher for darker, set lower for lighter. [1 to 255/128/1]

8	Contrast: 1-255
	Set higher for more contrast, set lower for less contrast. [1 to 255/128/1]
9	Ind Dot Erase: 0(Off) 1-7 (Weak – Strong)
	This SP sets the level for removing dots when a color original is scanned with a scanner software application. The higher the setting, the greater the effect applied for removing background dots. [0 to 7/0/1]

4580	FAX Application: Text/Chart
4581	FAX Application: Text
4582	FAX Application: Text/Photo
4583	FAX Application: Photo
4584	FAX Application: Original 1
4585	FAX Application: Original 2
5	MTF: 0(Off) 1-15 (Weak – Strong)
	Sets the MTF level (Modulation Transfer Function) designed to improve image contrast. Set higher for stronger effect, lower for weaker effect. [0 to 15/8/1]
6	Smoothing: 0(x1) 1 – 7 (Weak – Strong)
	Use to remove "jaggies" if they appear. Set higher for smoother. [0 to 7/4/1]
7	Brightness: 1-255
	Set higher for darker, set lower for lighter. [1 to 255/128/1]
8	Contrast: 1-255
	Set higher for more contrast, set lower for less contrast. [1 to 255/128/1]

9	Ind Dot Erase: 0(Off) 1-7 (Weak – Strong)
	This SP sets the level for removing dots when a color original is scanned with a scanner software application. The higher the setting, the greater the effect applied for removing background dots. [0 to 7/0/1]

4600	
1	SBU_ID
	Displays the SBU ID code confirmed by reading the SBU after the SBU adjusts automatically at power on. [0 to FFh/1]
2	GASBU_N_ID
	Displays the GASBU_N ID code confirmed by reading the SBU after the SBU adjusts automatically at power on. [0 to FFh/1]
3	VSP_F_ID
	Displays the VSB5100_F ID code confirmed by reading the SBU after the SBU adjusts automatically at power on. [0 to FFh/1]
4	VSP_L_ID
	Displays the VSB5100_L ID code confirmed by reading the SBU after the SBU adjusts automatically at power on. [0 to FFh/1]

4602	Scanner Memory Access
	[0 to 0xFFF/**0**/1]

4607	Gray Balance Adjust (Both Sides
	This SP affects gray balance adjustment for both sides of the paper.
1	Execute
	Select "1" to execute gray balance adjustment. [1 to 0/**0**/1] 0:OFF 1:ON
2	Confirm
	Select "1" to confirm whether gray balance adjustment was done., [1 to 0/**0**/1] 0:OFF 1:ON

4608	GB Ad Detection Level **DFU**
	[0 to 1023/**512**/1]
1	SBU:R
2	SBU:G
3	SBU:B
4	CIS:R
5	CIS:G
6	CIS:B

4609	Gray Balance Adj Value: R **DFU**
	Displays the reference voltage for Red adjusted by gray balance adjustment.
4610	Gray Balance Adj Value: G **DFU**
	Displays the reference voltage for Green adjusted by gray balance adjustment.
4611	Gray Balance Adj Value: B **DFU**
	Displays the reference voltage for Blue adjusted by gray balance adjustment.
1	Book Scan
2	DF Scan

4623	Black Level Ad Value **DFU**
	[0 to 16383/**0**/1]
1	R:FE
2	R:FO
3	R:LE
4	R:LO

4624	Black Level Ad Value **DFU**
	[0 to 16383/**0**/1]
1	G:FE
2	G:FO
3	G:LE
4	G:LO

4625	Black Level Adj Value **DFU**
	[0 to 16383/**0**/1]
1	B:FE
2	B:FO
3	B:LE
4	B:LO

4628	Analog Gain Range Adj Value (R) **DFU**
1	R:F
2	R:L

4629	Analog Gain Range Adj Value (G) **DFU**
1	G:F
2	G:L

4630	Analog Gain Range Adj Value (B) **DFU**
1	B:K
2	B:L

4631	Analog Gain Adj Value (R) **DFU**
1	R:FE
2	R:F0
3	R:LE
4	R:LO

4632	Digital Gain Adj Value (G) **DFU**
1	R:FE
2	R:FO
3	R:LE
4	R:LO

4633	Digital Gain Adj Value (B) **DFU**
1	B:FE
2	B:FO
3	B:LE
4	B:LO

4635	SSCG Noise Cancel
1	Correction ON/OFF
2	Ad ON/OFF

4636	SSCG Correction
1	Execution
2	Error Flag
3	SSCG Result Apply Execution
4	SSCG Result Apply Execution

4637	SSCG Correction Adj Value
1	R:FE
2	R:FO
3	G:FE
4	G:FO
5	B:FE
6	B:FO
7	R:LE
8	R:LO
9	G:LE
10	G:LO
11	B:LE
12	B:LO

4638	SSCG Correction Adj Value
1	Last: R:FE

2	Last: R:FO
3	Last: G:FE
4	Last: G:FO
5	Last: B:FE
6	Last: B:FO
7	Last: R:LE
8	Last: R:LO
9	Last: G:LE
10	Last: G:LO
11	Last: B:LE
12	Last: B:LO

4639	SSCG Correction Adj Value
1	Factory Setting: R:FE
2	Factory Setting: R:FO
3	Factory Setting: G:FE
4	Factory Setting: G:FO
5	Factory Setting: B:FE
6	Factory Setting: B:FO
7	Factory Setting: R:LE
8	Factory Setting: R:LO
9	Factory Setting: G:LE
10	Factory Setting: G:LO
11	Factory Setting: B:LE
12	Factory Setting: B:LO

4640	SSCG Correction Adj Value
1	Before Adj: R:FE
2	Before Adj: R:FO
3	Before Adj: G:FE
4	Before Adj: G:FO
5	Before Adj: B:FE
6	Before Adj: B:FO
7	Before Adj: R:LE
8	Before Adj: R:LO
9	Before Adj: G:LE
10	Before Adj: G:LO
11	Before Adj: B:LE
12	Before Adj: B:LO
13	After Adj: R:FE
14	After Adj: R:FO
15	After Adj: G:FE
16	After Adj: G:FO
17	After Adj: B:FE
18	After Adj: B:FO
19	After Adj: R:LE
20	After Adj: R:LO
21	After Adj: G:LE
22	After Adj: G:LO
23	After Adj: B:LE
24	After Adj: B:LO

4646	Scan Adjust Error **DFU**
1	White Level: F
2	White Level: L
3	Black Level: F
4	Black Level: L
5	FL Correction

4647	Error Flag: Scanner Hardware **DFU**
	[0 to 1023/**0**/1]

4673	Black Level Adj Value **DFU**
	[0 to 16383/**0**/1]
1	Factory Setting: R:FE
2	Factory Setting: R:FO
3	Factory Setting: R:LE
4	Factory Setting: R:LO

4674	Black Level Adj Value **DFU**
	[0 to 16383/**0**/1]
1	Factory Setting: G:FE
2	Factory Setting: G:FO
3	Factory Setting: G:LE
4	Factory Setting: G:LO

4675	Black Level Adj Value **DFU**
	[0 to 16383/**0**/1]
1	Factory Setting: B:FE
2	Factory Setting: B:FO
3	Factory Setting: B:LE
4	Factory Setting: B:LO

4677	Analog Gain Range Adj Value **DFU**
1	Factory Setting: R:F
2	Factory Setting: R:L

4678	Analog Gain Range Adj Value **DFU**
1	Factory Setting: G:F
2	Factory Setting: G:L

4679	Analog Gain Range Adj Value **DFU**
1	Factory Setting: B:F
2	Factory Setting: B:L

4680	Digital Gain Range Adj Value **DFU**
1	Factory Setting: R:FE
2	Factory Setting: R:FO
3	Factory Setting: R:LE
4	Factory Setting: R:Lo

4681	Digital Gain Range Adj Value **DFU**
1	Factory Setting: G:FE
2	Factory Setting: G:FO
3	Factory Setting: G:LE
4	Factory Setting: G:Lo

4682	Digital Gain Range Adj Value **DFU**
1	Factory Setting: B:FE
2	Factory Setting: B:FO
3	Factory Setting: B:LE
4	Factory Setting: B:Lo

4690	White Level Peak Data **DFU**
1	R:FE
2	R:FO
3	R:LE
4	R:LO

4691	White Level Peak Data **DFU**
1	G:FE
2	G:FO
3	G:LE
4	G:LO

4692	White Level Peak Data **DFU**
1	B:FE
2	B:FO
3	B:LE
4	B:LO

4693	Black Level Data **DFU**
1	R:FE
2	R:FO
3	R:LE
4	R:LO

4694	Black Level Data **DFU**
1	G:FE
2	G:FO
3	G:LE
4	G:LO

4695	Black Level Data **DFU**
1	B:FE
2	B:FO
3	B:LE
4	B:LO

4700	CIS ID Display
	Reads and displays the ID of the CIS board at power.

4709	CIS GB Chart Level R
	Displays the GB chart level for Red signal: [0 to 1023 / **-** / 1 digit]
4710	CIS GB Chart Level G
	Displays the GB chart level for Green signal: [0 to 1023 / **-** / 1 digit]
4711	CIS GB Chart Level B
	Displays the GB chart level for Blue signal: [0 to 1023 / **-** / 1 digit]

4712	CIS GB Adj Value R **DFU**
4713	CIS GB Adj Value G **DFU**
4714	CIS GB Adj Value B **DFU**
	[-512 to 512 / 0 / -]

4745	CIS Image Level ErrorFlag
	Displays the image error flag.
4746	CIS GB Adj ErrorFlag
	Displays the GB adjustment error flag.
4747	CIS Hardware Error Flag
	Displays the CIS error flag.

4748	CIS M-Scan White Level: Avg. R
1	Leading Edge
	Displays the average level of the main scan white for the leading edge of Red signal. [0 to 255 / - / 1 digit]
2	Trailing Edge
	Displays the average level of the main scan white for the trailing edge of Red signal. [0 to 255 / - / 1 digit]

4749	CIS M-Scan White Level: Avg. G
1	Leading Edge
	Displays the average level of the main scan white for the leading edge of Green signal. [0 to 255 / - / 1 digit]
2	Trailing Edge
	Displays the average level of the main scan white for the trailing edge of Green signal. [0 to 255 / - / 1 digit]

4750	CIS M-Scan White Level: Avg. B
1	Leading Edge
	Displays the average level of the main scan white for the leading edge of Blue signal. [0 to 255 / - / 1 digit]
2	Trailing Edge
	Displays the average level of the main scan white for the trailing edge of Blue signal. [0 to 255 / - / 1 digit]

4760	CIS Pixel Interporlation **DFU**
	Pattern Cycle
	[0 to 127/47/1]

4761	CIS Pixel Interporlation **DFU**
	Halftone Area Threshold Level
	[0 to 1023/**120**/1]

4762	CIS Pixel Interporlation **DFU**
	Pixel Accuracy Matchine
	[0 to 1023/**120**/1]

4763	CIS Pixel Interporlation **DFU**
	Brightness Adj Weight
	[0 to 1023/**120**/1]

4764	CIS Pixel Interporlation **DFU**
	Threshold Value Area A
	[0 to 1023/**120**/1]

4765	CIS Pixel Interporlation **DFU**
	Threshold Value Area B
	[0 to 1023/**120**/1]

4766	CIS Pixel Interporlation **DFU**
	One Dimension Matching
	[0 to 1023/**120**/1]

4767	CIS Pixel Interporlation **DFU**
	Right and Left Pixel Weight
	[0 to 15/**8**/1]

4768	CIS Pixel Interporlation **DFU**
	Substitution Pixel Count
	[0 to 3/**2**/1]

4787	CIS White Level Peak Data R **DFU**
	Factory Setting
	[0 to 255/**0**/1]

4788	CIS White Level Peak Data G **DFU**
	Factory Setting
	[0 to 255/**0**/1]

4789	CIS White Level Peak Data B **DFU**
	Factory Setting
	[0 to 255/**0**/1]

4790	CIS White Level Peak Data R **DFU**
	[0 to 255/**0**/1]

4791	CIS White Level Peak Data G **DFU**
	[0 to 255/**0**/1]

4792	CIS White Level Peak Data G **DFU**
	[0 to 255/**0**/1]

4793	Black Level Data R
4794	Black Level Data G
4795	Black Level Data B
Chip 1 to 24	Displays the current red data of black level for each color signal and chip. [0 to 255 / **-** / 1 digit]

4796	Low Density Color **DFU**

4797	Digital AE: Rear Side **DFU**
1	Low Limit Value [0 to 1023/ **364** / 1 digit]
2	Background level [0 to 1023/ **512** / 1 digit]

4798	CIS LED Duty **DFU**

4799	CIS TEST Pattern
1	Select
	[0 to 4 / **0** / 1]
2	Even Output Level Setting
	[0 to 1023 / **512** / 1 digit]
3	Odd Output Level Setting
	[0 to 4095/**0**/1]

4800	DF Density Adj Value **DFU**
1	RED [0 to 255 / **94** / 1 digit]
2	GREEN [0 to 255 / **91** / 1 digit]
3	BLUE [0 to 255 / **85** / 1 digit]

4802	Scanner Free run
1	DF mode :Lamp Off
	Execute the scanner free run with the lamp off.
2	DF mode :Lamp On
	Execute the scanner free run with the lamp on.

4804	Home Position Operation
	Executes the homing movement of the scanner carriage unit.

4806	FL Correction ON/OFF
	Turns on or off the FL correction for each color.. [0 or 1 / **0** / 1] 0: OFF, 1: ON
1	RED
2	GREEN
3	BLUE

4903	Filter Settings
	These SP codes adjust the sharpness and granularity of printed images.
1	Ind Dot Erase: Text
	[0 to 7 / **0** / 1] 0:Softest 1:Soft Mode 4:Normal 6:Sharp Mode 7: Sharpest
2	Ind Dot Erase: Copy/Original
	[0 to 7 / **0** / 1] 0:Softest 1:Soft Mode 4:Normal 6:Sharp Mode 7:Sharpest

4905	Select Gradation Level **DFU**

4907	SBU Test Pattern
1	Select Test Pattern
	0: Normal 1: Fixed Value 2: Main Scan Grayscale 3: Sub Scan Grayscale 4: Checked Pattern
2	Set Output Level
	Output level in case of setting SP4-907-1 to 1. [0 to 1023/**512**/1]

4918	Man Gamma Adj **DFU**

4991	IPU Image Pass Selection **DFU**
	[0 to 11/**2**/1]

4993	High Light Correction **DFU**
	[0 to 9/**4**/1]
1	Sensitivity Selection
2	Range Selection

4994	Text/Photo Detect Level Ad.
	[0 to 2/**1**/1]

4996	White Paper Detect Level
	Sets the detection level for blank paper. The higher the setting that you enter, the greater the sensitivity of detection. [0 to 6/**3**/1]

3.6 SP5000 MODE: SP5024 TO SP5816

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]

5037	Status Lamp Mode **Not Used**
	0: OFF / 1: ON

5045	Accounting Counter
	Selects the counting method if the meter charge mode is enabled with SP5-930-1. **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.

5055	Display IP Address
	Switches the banner display of MFP device display on and off. [0 to 1 / 0 / 1] [OFF] ON

5071	Set Bypass Paper Size Display
	When this SP is enabled, a pop-up will appear and tell the operator whether the size of the paper in the bypass tray matches the size of the paper selected on the operation panel display. [0 to 1/**0**/1] 0:Disabled 1:Enables

5074	Home Screen for User **DFU**
2	Home Screen Login Setting
91	(0:OFF 1:SDK 2:Reserve)
	[0 to 2/**0**/1] 0:Disabled 1:SDK app 2:Legacy app (reserved)
92	Product ID
	Enter the type of application registered under SP5075-1. This registers the SDK product ID or the legacy ID.
93	Application Screen ID
	Enter the ID to be displayed for SP5075-1, -2 [0 to 255/0/1]

5075	USB Keyboard
	Enables use of an external keyboard equipped with a USB connector. [0 to 1/**0**/1] 0:Disabled 1:Enabled

5083	Toner End LED Blink Control
001	Sets whether the LED will blink or remain OFF at Toner End. [0 to 1/**0**/1] 0:LED Remains OFF 1:LED Blinks

5101	Warm-up Level Setting **Not Used**

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.

5113	Optional Counter Type
1	Default Optional Counter Type
	Selects the type of counter: 0: None 1: Key Card (RK3, 4) 2: Key Card Down 3: Pre-paid Card 4: Coin Lock 5: MF Key Card 11: Exp Key Card (Add) 12: Exp Key Card (Deduct) **Note**: Items 1, 2, 3, 5, 5 are for **Japan Only**
2	External Optional Counter Type
	Enables the SDK application. This lets you select a number for the external device for user access control. **Note:** "SDK" refers to software on an SD card. [0 to 3/1] 0: None 1: Expansion Device 1 2: Expansion Device 2 3: Expansion Device 3

5114	Optional Counter I/F
	This SP sets the machine for the MF Key Card Extension. **0**: OFF, 1: ON

5118	Disable Copying
	Temporarily denies access to the machine. **Japan Only** [0 to 1/1] 0: Release for normal operation 1: Prohibit access to machine

5120	Mode Clear Opt. Counter Removal
	Do not change. **Japan Only** [0 to 2/ 0 / 1] 0: Yes. Normal reset 1: Standby. Resets before job start/after completion 2: No. Normally no reset

5121	Counter Up Timing **SSP**
	Determines whether the optional key counter counts up at paper feed-in or at paper exit. [0 to 1/1] 0: Feed count, 1: No feed count

5126	Set F-size Document
	Sets the original size that the machine detects for F sizes. [0 to 2/1] 0: 8hf x 13 1: 8hf x 13qr 2: 8 x 13 **Note:** hf = 1/2, qr = 1/4

5127	APS OFF Mode
	This SP can be used to switch APS (Auto Paper Select) off when a coin lock or pre-paid key card device is connected to the machine. [0 to 1/1] 0: On, 1: Off

5129	F Paper Size Selection
	Sets the paper size that the machine detects when the 8 x 13 dial setting on a paper cassette is used (LT/DLT version). [0 to 2/1] 0: 8 x 13 1: 8hf x 13 2: 8qr x 13 **Note**: hf = 1/2, qr = 1/4

5131	Paper Size Type Selection
	Selects the paper size type (for originals and copy paper). (Only needs to be adjusted if the optional printer controller is installed) [0 to 3/1] 0: JP 1: NA 2: EU, AA, TWN, KOR 3: CH (China) After changing the value, turn the power switch off and on.

5150	Bypass Length Setting

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

5165	Z-Fold Position
	Adjusts how paper is Z-folded. **Note**: In the notations below, "T" denotes "SEF". For example, "A3T" is "A3 SEF".
1	A3T
	NA: [2.5 to 25.4/**2.5**/1 mm] Other: [2 to 25/**2**/1 mm]
2	B4T
	NA: [2.5 to 40.6/**2.5**/1 mm] Other: [2 to 40/**2**/1 mm]
3	A4T
	NA: [2.5 to 10.2/**2.5**/1 mm] Other: [2 to 10/**2**/1 mm]
4	DLTT
	NA: [2.5 to 20.3/**2.5**/1 mm] Other: [2 to 20/**2**/ 1mm]
5	LGT
	NA: [25. to 30.6/**2.5**/1 mm] Other: [2 to 35/**2**/1 mm]
6	LTT
	NA: [2.5 to 2.5/**2.5**/1 mm] Other: [2 to 2/**2**/1 mm]
7	12x18
	NA: [2.5 to 5.1/**2.5**/1 mm] Other: [2 to 5/**2**/1 mm]
8	Other
	NA: [2.5 to 2.5/**2.5**/ 1 mm] Other: [2 to 2/**2**/1 mm]

5167	Fax Printing Mode at Optional Counter Off
	Determines the Fax print mode when the optional counter is off. 0: Print automatically. 1: Not do auto-print.

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.

5179	By-pass tray paper size error display
	Set the by-pass tray paper size error display to ON/OFF. 0: OFF / 1: ON

5188	Copy NV Version
	Copies NV version to another NVRAM. **Note**: NVRAM version management automatically initializes the NV for each machine.

5191	Mode Set
	This setting determines whether the machine is allowed to move into energy save mode. **1**: Allowed 0: Not allowed

5195	Limitless SW
	Selects the paper feed mode priority (productivity or tray). This 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

5196	90 Degree Rotation (Copy)

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 finishing 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)

5212	Page Numbering
3	Duplex Printout Left/Right Position
	Horizontally positions the page numbers printed on both sides during duplexing. [-10 to +10/1 mm] 0 is center, minus is left, + is right.
4	Duplex Printout High/Low Position
	Vertically positions the page numbers printed on both sides during duplexing. [-10 to +10/1 mm] 0 is center, minus is down, + is up.

5227	Page Numbering (Bates Stamp)
201	Allow Page No. Entry
	This SP specifies the number of digits to display for the entry of the starting page number. [2 to 9/**9**/1]
202	Zero Surplus Setting
	This setting determines whether page numbers are prefixed with excess zeros when the number is smaller than the number of assigned digits. For example, with this setting on and 3 digits have been specified, the number "3" appears as "003". With this setting off, the number "3" will appear as a "3" without the zeros. [0 to 1/0/1] 0:No zero surplus 1:Zero surplus allowed

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).
1	Setting	Enables/disables the settings for 002 and 003. [0 to 1/1] 0: Disable, 1: Enable
3	Rule Set (Start)	The start of summer time.
4	Rule Set (End)	The end of summer time.

5401	Access Control **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.
103	Default Document ACL
	Used to assign the default access user access privileges to their own documents on the document server.
104	Authentication Time
	Standard setting "0" equals 60 sec. [0 to 255/0/1 sec.]
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(Type TF) Unique ID
240	Detail Option: Unique ID

5402	Access Control **Not Used**
101-170	SDJK1 Limit Settings

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
4	Simplified Certification
	Determines whether easy LDAP certification is done. [0 or 1 / **1** / 1] 1: On, 0: Off
5	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.
6	Detail Option

5412	Krb Certification

5413	Lockout Setting
1	Lockout On/Off
	Switches the local address book account lock on/off. [0 or 1 / **0** / -] 0: Off, 1: On
2	Lockout Threshold
	Sets a limit on the frequency of lockouts for account lockouts. [1 to 10 / **5** / 1/step]
3	Cancellation On/Off
	Determines whether the system waits the prescribed time for input of a correct user ID and password after an account lockout has occurred. [0 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.
4	Cancellation Time
	Determines the length of time that the system waits for correct input of the user ID and password after a lockout has occurred. This setting is used only if SP5413-3 is set to "1" (on). [1 to 999 / **60** / 1 min./step]

5414	Access Mitigation
1	Mitigation On/Off
	Switches on/off masking of continuously used IDs and passwords that are identical. [0 or 1 / **0** / -] 0: Off, 1: On
2	Mitigation Time
	Sets the length of time for excluding continuous access for identical user IDs and passwords. [0 to 60 / **15** / 1 min./step]

5415	Password Attack
1	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]
2	Detect Time
	Sets the time limit to stop a password attack once such an attack has been detected. [1 to 10 / 5 / 1 sec./step]

5416	Access Information
1	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]
2	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]
3	Monitor Interval
	Sets the processing time interval for referencing user ID and password information. [1 to 10 / **3** / 1 sec./step]

5417	Access Attack
1	Access Permissible Number
	Sets a limit on access attempts when an excessive number of attempts are detected for MFP features. [0 to 500 / **100** / 1/step]
2	Attack Detect Time
	Sets the length of time when the frequency of access to MFP features are monitored. [10 to 30 / **10** / 1 sec./step]
3	Productivity Fall Wait
	Sets the wait time to slow down the speed of certification when an excessive number of access attempts have been detected. [0 to 9 / **3** / 1 sec./step]

4	Attack Max Number
	Sets a limit on the number of requests received for certification in order to slow down the certification speed when an excessive number of access attempts have been detected. [50 to 200 / **200** / 1 attempt/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.
1	Copy
	Determines whether certification is required before a user can use the copy applications. [0 or 1/ **0** /1] 0: On, 1: Off
11	Document Server
	Determines whether certification is required before a user can use the document server. [0 or 1/ **0** /1] 0: On, 1: Off
21	FAX
	Switches fax authentication off and on. [0 to 1/**0**/1] 0:Authenticate 1:Do not authenticate
31	Scanner
	Determines whether certification is required before a user can use the scanner applications. [0 or 1/ **0** /1] 0: On, 1: Off

41	Printer	
	Determines whether certification is required before a user can use the printer applications. [0 or 1/ **0** /1] 0: On, 1: Off	
51	SDK1	Determines whether certification is required before a user can use the SDK application. [0 or 1 / **0** / 1] 0: ON. 1: OFF
61	SDK2	
71	SDK3	
81	Browser	
	Switches browser authentication off and on. [0 to 1/**0**/1] 0:Authenticate 1:Do not authenticate	

5430	Auth Dialog Message Change
1	Message Change On/Off
2	Message Text Download
3	Message Text ID
	[0 to 1/0/1 0: OFF 1: ON

5431	External Auth User Preset
	Allows or does not allow the copying for each data. [0 or 1 / 1 / -] 0: Not allowed copying, 1: Allowed copying
10	Tag
11	Entry
12	Group
20	Mail

30	Fax
31	FaxSub
32	Folder
33	ProtectCode
34	SmtpAuth
35	LdapAuth
36	Smb Ftp Fldr Auth
37	AcntAcl
38	Document Acl
40	CertCrypt
50	User Limit Count

5481	Authentication Error Code
	These SP codes determine how the authentication failures are displayed.
1	System Log Disp
	Determines whether an error code appears in the system log after a user authentication failure occurs. [0 or 1/ **0** /1] 0: Off, 1: On
2	Panel Disp
	Determines whether an error code appears on the operation panel after a user authentication failure occurs. [0 or 1/ **0** /1] 0: Off, 1: On

5490	MF Key Card
	Sets operation of the MF key card. [0 to 1/0/1] 1: Allowed 0: Not allowed 1: Certification executes with a user code (9999 9999). Printing executes and the counter increments for the user code. 0: Certification executes without a user code but printing is cancelled.

5491	Optional Counter **Not Used**

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
	Sets the error alarm level. **Japan only DFU** [0 to 255 / 50 / 100 copies per step]

5507	Supply Alarm	
1	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)	
2	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.	
3	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.	
80	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**	
1	Jam Remains	Enables/disables initiating a call. [0 to 1/1] 0: Disabled, 1: Enabled
2	Continuous Jams	
3	Continuous Door Open	
11	Jam Detection: Time Length	
	Sets the length of time to determine the length of an unattended paper jam. [03 to 30/1] This setting is enabled only when SP5508-4 is enabled (set to 1).	
12	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 SP5508-4 is enabled (set to 1).	
13	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 SP5508-4 is enabled (set to 1).	

5513	Parts Alarm Level Count **Japan Only**
1	Normal
	Sets the parts replacement alarm counter to sound for the number of copies. [1 to 9999 / 350 / 1]
2	DF
	Sets the parts replacement alarm counter to sound for the number of scanned originals. [1 to 9999 / 350 / 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.	
1	SC Call	[0 to 1/1/1] 0: Off, 1: On
2	Service Parts Near End Call	
3	Service Parts End Call	
4	User Call	
6	Communication Test Call	[0 or 1 / **1** / -] 0: Off 1: On
7	Machine Information Notice	
8	Alarm Notice	
10	Supply Automatic Ordering Call	[0 to 1/0/1]
11	Supply Management Report Call	
12	Jam/Door Open Call	[0 to 1/1/1]

5730	Extended Function Setting **Not Used**

5734	PDF Setting
	This SP limits the types of files that can be used with Scan-to-File, Scan-toFax, and Web Download. [0 to 1/**0**/1] 0:Setting not fixed 1:Setting fixed 0: Allows setting clear write PDF, PDF/A, or encoded PDF on the application screen. 1: PDF/A can be selected on the application screen, but PDF, Clear Write PDF, or encoded PDF are grayed-out and cannot be selected.

5741	Node Authentication Timeout
	This is the SP that sets the length of time that the machine waits for a response from NCS after the machine sends a request for authentication from its hook-up module. [1 to 255/60/1 sec.]

5743	Network Security Level
101	Main Reference
	Returns the current setting for the network security level. Returns one of the following five possible levels: ▪ Custom ▪ Level 0 ▪ Level 1 ▪ FIPS ▪ Level 2
102	Main: Setting
	Returns the current setting for the network system security level. Returns one of the following five possible levels: ▪ Custom (default) ▪ Level 0 ▪ Level 1 ▪ FIPS Level 2

5745	Eco Count Time **DFU**
	Counter used for debugging. 00:00 (Min.:Sec.)

5749	Import/Export
1	Export
101	Import
251	Export Result Print (SP)
252	Import Result Print (SP)

5792	MCS Debug SW **DFU**

5793	ECS Debug SW **DFU**

5795	SRM Debug SW **DFU**

5801	Memory Clear
	Resets NVRAM data to the default settings. Before executing any of these SP codes, print an SMC Report.
1	All Clear
	Initializes items 2 to 15 below.
2	Engine
	Initializes all registration settings for the engine and copy process settings.
3	SCS
	Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information.
4	IMH

	Clears Image Memory Handler which manages memory and HDD access.
5	MCS
	Initializes the automatic delete time setting for stored documents. (MCS: Memory Control Service)
6	Copier application
	Initializes all copier application settings.
7	Fax application
	Initializes the fax reset time, job login ID, all TX/RX settings, local storage file numbers, and off-hook timer.
8	Printer application
	Initializes the printer defaults, programs registered, the printer SP bit switches, and the printer CSS counter.
9	Scanner application
	Initializes the defaults for the scanner and all the scanner SP modes.
10	Web Service
	Deletes the Netfile (NFA) management files and thumbnails, and initializes the Job login ID. Netfiles are jobs to be printed from the document server using a PC and the DeskTopBinder software
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.
12	R-FAX
	Initializes the job login ID, SmartDeviceMonitor for Admin, job history, and local storage file numbers.
14	Clear DCS Setting
	Initializes the DCS (Delivery Control Service) settings.

15	Clear UCS Setting
	Initializes the UCS (User Information Control Service) settings.
16	MIRS Setting
	Initializes the MIRS (Machine Information Report Service) settings.
17	CCS
	Initializes the CCS (Certification and Charge-control Service) settings.
18	Memory Clr
	Initializes the SRM (System Resource Manager) settings.
19	LCS
	Initializes the LCS (Log Count Service) settings.
20	Web Uapl
	Clears Web application utlity settings.
21	ECS
	Initializes the ECS settings.
23	ACIS
	Initializes ACIS settings.
24	Browser
	Initializes browser settings.

5802	Printer Free Run
	Make 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 ☛ p.3-283

5804	Output Check☛ p.3-293

5807	Area Selection
	[1 to 7/**1**/1 Step] 1:Japan 2:NA 3:EU 4:China 5:Taiwan 6:Asia 7:Korea

5810	Fusing SC Clear
	When the machine detects a serious problem in the fusing unit, it will issue a Level A (fatal error) SC code. The machine is disabled and the operator cannot reset the SC until the machine has been released from the error with this SC code. Touch [EXECUTE] to release the machine for servicing.

5811	Machine Serial Number Set SSP
	Use this SP to the serial number for the machine and BICU, and to display the ID number for Novita.
1	Set (machine)
	[0 to 255/**0**/1]
4	Set BICU
	[0 to 255/**0**/1]
5	Display: Novita
	[0 to 255/**0**/1]

5812	Service Tel. No. Setting
1	Service
	Inputs the telephone number of the CE (displayed when a service call condition occurs.)
2	Facsimile
	Use this to input the fax number of the CE printed on the Counter Report (UP mode).
3	Supply
	Displayed on the initial SP screen.
4	Operation
	Sales representative telephone number.

5816	Remote Service	CTL	
	I/F Setting		
1	Selects the remote service setting. [0 to 2 / **2** / 1 /step] 0: Remote service off 1: CSS remote service on 2: @Remote service on		
	CE Call		
2	Performs the CE Call at the start or end of the service. [0 or 1 / **0** / 1 /step] 0: Start of the service 1: End of the service **Note:** This SP is activated only when SP 5816-1 is set to "2".		
	Function Flag		
3	Enables or disables the remote service function. [0 to 1 / **0** / 1 /step] 0: Disabled, 1: Enabled **Note:** This SP setting is changed to "1" after @Remote registor has been completed.		
4	Communication Test Call		
	This executes a test call from the machine to the service center after all the @Remote settings have been completed.		
5	Device Information Call		
	Passes all the information about internal settings of the machine to the @Remote service center.		
	SSL Disable		
7	Uses or does not use the RCG certification by SSL when calling the RCG. [0 to 1 / **0** / 1 /step] 0: Uses the RCG certification 1: Does no use the RCG certification		

8	RCG Connect Timeout	
	Specifies the connect timeout interval when calling the RCG. [1 to 90 / **10** / 1 second /step]	
9	RCG Write Timeout	
	Specifies the write timeout interval when calling the RCG. [1 to 100 / **60** / 1 second /step]	
10	RCG Read Timeout	
	Specifies the read timeout interval when calling the RCG. [1 to 100 / **60** / 1 second /step]	
11	Port 80 Enable	
	Enables/disables access via port 80 to the SOAP method. [0 or 1 / **0** / –] 0: Disabled, 1: Enabled	
12	@Remote Communication Permission Setting	
	This SP code is designed to allow the operator to disable @Remote communication the printer function manually before copying confidential or sensitive documents. This prevents the contents of the copied documents from inadvertently being printed or leaked over the network to an outside destination. [0 to 2/**1**/1] 0: Disabled. Machine is not temporarily disconnected from network. 1: Enabled. Machine is temporarily disconnected from network and the machine will not print while confidential or sensitive documents are being copied. 2: Control mode. Only some SP codes can be used to acquire or write data.	
13	RFU (Remote Frimware Update) Timing	
	Selects the RFU timing. [0 or 1 / **1** / –] 0: RFU is executed whenever update request is received. 1: RFU is executed only when the machine is in the sleep mode.	

14	RCG Error Cause	
	Displays the cause of an RCG error. Where Cumin is used, normally displays "0". [0 to 1/**0**/1] 0:Normal condition 1:Error If "1" is displayed, this means that the authentication from client to server failed when the network re-booted. To restore normal operation, cycle the machine off/on to return a "0" (normal condition).	
21	RCG – C Registed	
	This SP displays the Embedded RC Gate installation end flag. 0: Installation not completed 1: Installation completed	
22	RCG – C Regist Detail	
	This SP displays the Embedded RC Gate installation status. 0: RCG device not registered 1: RCG device registered 2: Device registered	
23	Connect Type (N/M)	
	This SP displays and selects the Embedded RC Gate connection method. [0 or 1 / **0** / 1 /step 0: Internet connection 1: Dial-up connection	
61	Cert. Expire Timing **DFU**	
	Proximity of the expiration of the certification.	
62	Use Proxy	
	This SP setting determines if the proxy server is used when the machine communicates with the service center.	

63	Proxy Host	
	This SP sets the address of the proxy server used for communication between Embedded RC Gate-N and the gateway. Use this SP to set up or display the customer proxy server address. The address is necessary to set up Embedded RC Gate-N. **Note**: The address display is limited to 128 characters. Characters beyond the 128 character are ignored. This address is customer information and is not printed in the SMC report.	
64	Proxy Port Number	
	This SP sets the port number of the proxy server used for communication between Embedded RC Gate-N and the gateway. This setting is necessary to set up Embedded RC Gate-N. **Note**: This port number is customer information and is not printed in the SMC report.	
65	Proxy User Name	
	This SP sets the HTTP proxy certification user name. **Note**: The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored. This name is customer information and is not printed in the SMC report.	
66	Proxy Password	
	This SP sets the HTTP proxy certification password. **Note**: ▪ The length of the password is limited to 31 characters. Any character beyond the 31st character is ignored. ▪ This name is customer information and is not printed in the SMC report.	

67	CERT: Up State		
	Displays the status of the certification update.		
	0	The certification used by Embedded RC Gate is set correctly.	
	1	The certification request (setAuthKey) for update has been received from the GW URL and certification is presently being updated.	
	2	The certification update is completed and the GW URL is being notified of the successful update.	
	3	The certification update failed, and the GW URL is being notified of the failed update.	
	4	The period of the certification has expired and new request for an update is being sent to the GW URL.	
	11	A rescue update for certification has been issued and a rescue certification setting is in progress for the rescue GW connection.	
	12	The rescue certification setting is completed and the GW URL is being notified of the certification update request.	
	13	The notification of the request for certification update has completed successfully, and the system is waiting for the certification update request from the rescue GW URL.	
	14	The notification of the certification request has been received from the rescue GW controller, and the certification is being stored.	
	15	The certification has been stored, and the GW URL is being notified of the successful completion of this event.	
	16	The storing of the certification has failed, and the GW URL is being notified of the failure of this event.	
	17	The certification update request has been received from the GW URL, the GW URL was notified of the results of the update after it was completed, but a certification error has been received, and the rescue certification is being recorded.	

	18	The rescue certification of No. 17 has been recorded, and the GW URL is being notified of the failure of the certification update.	
68	CERT: Error		
	Displays a number code that describes the reason for the request for update of the certification.		
	0	Normal. There is no request for certification update in progress.	
	1	Request for certification update in progress. The current certification has expired.	
	2	An SSL error notification has been issued. Issued after the certification has expired.	
	3	Notification of shift from a common authentication to an individual certification.	
	4	Notification of a common certification without ID2.	
	5	Notification that no certification was issued.	
	6	Notification that GW URL does not exist.	
69	CERT: Up ID		
	The ID of the request for certification.		
83	Firmware Up Status		
	Displays the status of the firmware update.		
85	Firm Up User Check		
	This SP setting determines if the operator can confirm the previous version of the firmware before the firmware update execution. If the option to confirm the previous version is selected, a notification is sent to the system manager and the firmware update is done with the firmware files from the URL.		
86	Firmware Size		
	Allows the service technician to confirm the size of the firmware data files during the firmware update execution.		

87	CERT: Macro Ver.	
	Displays the macro version of the @Remote certification.	
88	CERT: PAC Ver.	
	Displays the PAC version of the @Remote certification.	
89	CERT: ID2 Code	
	Displays ID2 for the @Remote certification. Spaces are displayed as underscores (_). Asteriskes (*) indicate that no @Remote certification exists. "000000_____" indicates "Common certification".	
90	CERT: Subject	
	Displays the common name of the @Remote certification subject. CN = the following 17 bytes. Spaces are displayed as underscores (_). Asterisks (*) indicate that no @Remote certification exists. "000000_____" indicates "Common certification".	
91	CERT: Serial No.	
	Displays serial number for the @Remote certification. Asterisks (*) indicate that no @Remote certification exists.	
92	CERT: Issuer	
	Displays the common name of the issuer of the @Remote certification. CN = the following 30 bytes. Asteriskes () indicate that no @Remote certification exists.	
93	CERT: Valid Start	
	Displays the start time of the period for which the current @Remote certification is enabled.	
94	CERT: Valid End	
	Displays the end time of the period for which the current @Remote certification is enabled.	

95	Server ON Check	
	Determines how the Server On Check is conducted. [0 to 1/**0**/1] 0: Precision check 1: Mitigation check **Note**: "0" is used for GW/NRS connection ands "1" is used for GW/Emulator connection.	
96	GW Host **DFU**	
	A debug tool.	
97	GW URL Path **DFU**	
	A debug tool.	
99	Debug Rescue/WURL Set **DFU**	
	A debug tool.	
102	CERT: Encrypt Level	
	Displays the strength of encryption used for NRS authentication. The displayed value is not the value acquired from the authentication domain, rather it is the value stored in NVRAM when authentication is written. When NRS starts up, if there is a mismatch between this SP setting and the authentication encryption, then the SP value is updated. [1 to 2/**1**/1]	
150	Selection Country	
	Not used	
151	Line Type Automatic Judgment	
	Not used	
152	Line Type Judgment Result	
	Not used	
153	Selection Dial/Push	
	Not used	

154	Outside Line/Outgoing Number	
	Not used	
156	Dial Up User Name	
	Not used	
157	Dial Up Password	
	Not used	
161	Local Phone Number	
	Not used	
162	Connection Timing Adjustment: Incoming	
	Not used	
163	Access Point	
	Not used	
164	Line Connecting	
	Not used	
173	Modem Serial Number	
	Not used	
174	Retransmission Limit	
	Not used	
186	RCG-CM Debug Bit SW **DFU**	
	A debug tool.	
187	FAX TX Priorit	
	Not used	
200	Manual Polling	
	Not used	

	Regist: Status	
201	Displays a number that indicates the status of the @Remote service device. 0: Neither the @Remote device nor Embedded RCG Gate is set. 1: The Embedded RCG Gate is being set. Only Box registration is completed. In this status, @Remote device cannot communicate with this device. 2: The Embedded RCG Gate is set. In this status, the @Remote device cannot communicate with this device. 3: The @Remote device is being set. In this status the Embedded RCG Gate cannot be set. 4: The @Remote module has not started.	
202	Letter Number	
	Allows entry of the request number needed for the Embedded RCG Gate.	
203	Confirm Execute	
	Executes the confirmation request to the @Remote Gateway.	
204	Confirm Result	
	Displays a number that indicates the result of the confirmation executed with SP5816-203. 0: Succeeded 1: Confirmation 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: Confirmation executing	
205	Confirm Place	
	Displays the result of the notification sent to the device from the Gateway in answer to the confirmation request. Displayed only when the result is registered at the Gateway.	

206	Register Execute		
	Executes "Embedded RCG Registration".		
207	Register Result		
	Displays a number that indicates the registration result. 0: Succeeded 2: Registration in progress 3: Proxy error (proxy enabled) 4: Proxy error (proxy disabled) 5: Proxy error (Illegal user name or password) 6: Communication error 7: Certification update error 8: Other error 9: Registration executing		
208	Error Code		
	Displays a number that describes the error code that was issued when either SP5816-204 or SP5816-207 was executed.		
	Cause	**Code**	**Meaning**
	Illegal Modem Parameter	-11001	Chat parameter error
		-11002	Chat execution error
		-11003	Unexpected error
	Operation Error, Incorrect Setting	-12002	Inquiry, registration attempted without acquiring device status.
		-12003	Attempted registration without execution of an inquiry and no previous registration.
		-12004	Attempted setting with illegal entries for certification and ID2.
	-	-12005	@Remote communication is prohibited. The device has an Embedded RC gate-related problem.

		-12006	A confirmation request was made after the confirmation had been already completed.	
		-12007	The request number used at registration was different from the one used at confirmation.	
		-12008	Update certification failed because mainframe was in use.	
	Error Caused by Response from GW URL	-2385	Attempted dial up overseas without the correct international prefix for the telephone number.	
		-2387	Not supported at the Service Center	
		-2389	Database out of service	
		-2390	Program out of service	
		-2391	Two registrations for same device	
		-2392	Parameter error	
	-	-2393	RCG device not managed	
		-2394	Device not managed	
		-2395	Box ID for RCG device is illegal	
		-2396	Device ID for RCG device is illegal	
		-2397	Incorrect ID2 format	
		-2398	Incorrect request number format	
209	Instl Clear			
	Releases the setting on a machine that has been set for use with Cumin.			
250	CommLog Print	Prints the communication log.		

3.7 SP5000 MODE: SP5821 TO SP5990

5821	Remote Service Address	CTL
2	RCG IP Address	
	Sets the IP address of the RCG (Remote Communication Gate) destination for call processing at the remote service center.	
3	RCG Port Number	
	Sets the RCG port number of the destination for processing calls to the @Remote service center. [0 to 65 535/443/1]	
4	RCG URL Path	
	Sets the URL path of the destination for processing calls to the @Remote service center. 17 Numeric characters allowed (0 to 17)	

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	CTL
1	IPv4 Address (Ethernet/IEEE 802.11)	
	Allows you to confirm and reset the IPv4 address for Ethernet and wireless LAN (802.11): aaa.bbb.ccc.ddd	
2	Subnet Mask (Ethernet/IEEE 802.11)	
	Allows you to confirm and reset the IPv4 subnet mask for Ethernet and wireless LAN (802.11): aaa.bbb.ccc.ddd	
3	Default Gateway (Ethernet/IEEE 802.11)	
	Allows you to confirm and reset the IPv4 default gateway used by the network for Ethernet and wireless LAN (802.11): aaa.bbb.ccc.ddd	
6	DHCP (Ethernet/IEEE 802.11)	
	Allows you confirm and change the setting that determines whether the IP address is used with DHCP on an Ethernet or wireless (802.11) LAN network. [0 to 1 / **1** / 1] 0: Not used (manual setting) 1: Used	
21	Active IPv4 Address	
	Allows you to confirm the IPv4 address that was used when the machine started up with DHCP.	
22	Active IPv4 Subnet Mask	
	Allows you to confirm the IPv4 subnet mask setting that was used when the machine started up with DHCP.	
23	Active IPv4 Gateway Address	
	Allows you to confirm the IPv4 default gateway setting that was used when the machine started up with DHCP.	
50	1284 Compatibility (Centro)	
	Enables or disables 1284 Compatibility. [0 or 1 / **1** / 1 / step] 0: Disabled, 1: Enabled	

52	ECP (Centro)
	Enables or disables ECP Compatibility. [0 or 1 / **1** / 1 / step] 0: Disabled, 1: Enabled **Note**: This SP is activated only when SP5-828-50 is set to "1".
65	Job Spooling
	Enables/disables Job Spooling. [0 or 1 / **0** / 1 / step] 0: Disabled, 1: Enabled
66	Job Spooling Clear: Start Time
	Treatment of the job when a spooled job exists at power on. 0: ON (Data is cleared) **1**: OFF (Automatically printed)
69	Job Spooling (Protocol)
	Validates or invalidates the job spooling function for each protocol. **0**: Validates 1: Invalidates bit0: LPR bit1: FTP bit2: IPP bit3: SMB bit4: BMLinkS bit5: DIPRINT bit6: sftp bit7: (Reserved)
87	@Remote Protocol Cnt
90	TELNET (0: OFF 1: ON)
	Enables or disables the Telnet protocol. [0 or 1 / **1** / –] 0: Disable, 1: Enable

91	Web (0: OFF 1: ON)
	Enables or disables the Web operation. [0 or 1 / **1** / –] 0: Disable, 1: Enable
145	Active IPv6 Link Local Address
	This is the IPv6 local address link referenced on the Ethernet or wireless LAN 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	Active IPv6 Stateless Address 1
149	Active IPv6 Stateless Address 2
151	Active IPv6 Stateless Address 3
153	Active IPv6 Stateless Address 4
155	Active IPv6 Stateless Address 5
	SP codes 147 to 155 are the IPv6 status addresses (1 to 5) referenced on the Ethernet or wireless LAN 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 Address
	This SP is the IPv6 manually set address referenced on the Ethernet or wireless LAN 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. 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 Supplies Link visible
	Displays or does not display the link to Consumable Supplier on the top page and link page of the web system. [0 to 1 / **1** / 1] 0: Not display, 1:Display
239	Web 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"
249	DHCPv6 DUID	

5831	Initial Setting Mode Clear
	Press [EXECUTE] to restore the inisial settings of all SP codes to their initial (factory) settings. **Note**: This SP does not reset time settings or user tool settings.

5832	HDD
	Enter the SP number for the partition to initialize, then press #. When the execution ends, cycle the machine power off and on.
1	HDD Formatting (All)
2	HDD Formatting (IMH)
3	HDD Formatting (Thumbnail)
4	HDD Formatting (Job Log)
5	HDD Formatting (Printer Fonts)
6	HDD Formatting (User Info)
7	Mail RX Data
8	Mail TX Data
9	HDD Formatting (Data for Design)
10	HDD Formatting (Log)
11	HDD Formatting (Ridoc I/F) (for Ridoc Desk Top Binder)

5836	Capture Setting
	Capture Function (0:Off 1:On)
1	With this function disabled, the settings related to the capture feature cannot be initialized, displayed, or selected. [0 to 1/1] 0: Disable, 1: Enable
	Panel Setting
2	Determines whether each capture related setting can be selected or updated from the initial system screen. [0 to 1/1] 0: Disable, 1: Enable The setting for SP5836-001 has priority.
72	Reduction for Copy B&W Text [0 to 6/1] 0: 1, 1: 1/2, 2: 1/3, 3: 1/4, 6: 2/3
73	Reduction for Copy B&W Other [0 to 6/1] 0: 1, 1: 1/2, 2: 1/3, 3: 1/4, 6: 2/3
75	Reduction for Printer B&W [0 to 6/1] 0: 1, 1: 1/2, 2: 1/3, 3: 1/4, 6: 2/3
82	Format for Copy B&W Text [0 to 3/1] 0:JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR
83	Format for Copy B&W Other [0 to 3/1] 0:JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR
85	Format for Printer B&W [0 to 3/1] 0:JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR

91	Default for JPEG [5 to 95/1] Sets the JPEG format default for documents sent to the document management server with the MLB, with JPEG selected as the format. Enabled only when optional File Format Converter (MLB: Media Link Board) is installed.
101	Primary srv IP address
	Sets the IP address of the PC designated to operate as the primary capture server (CS). [000.000.000.000]
102	Primary srv scheme
	Sets the IO device of the primary CS remotely. Max. characters: 6
103	Primary svr port number
	Use to set the IO device for the primary CS remotely. [1 to 65535/80/1]
104	Primary srv URL path
	Use to set the IO device for the primary CS remotely. Max. characters: 16
111	Secondary srv IP address
	Sets the IP address of the PC designated to operate as the secondary capture server (CS). [000.000.000.000]
112	Secondary srv scheme
	Sets the IO device of the secondary CS remotely. Max. characters: 6
113	Secondary srv port number
	Sets the IO device of the secondary CS remotely. Max. characters: 6

114	Secondary srv URL path
	Sets the IO device of the secondary CS remotely. Max. characters: 6
120	Default Reso Rate Switch
	Sets the IO device of the CS remotely. [0 to 1/0/1]
122	Reso: Copy (Mono)
	Sets the IO device of the CS remotely: [0 to 6/3/1] 0: 600dpi, 1: 400dpi, 2: 300dpi, 3: 200dpi, 4: 150dpi, 5: 100dpi, 6: 75dpi
124	Reso: Print (Mono)
	Sets the IO device of the CS remotely: [0 to 6/3/1] 0: 600dpi, 1: 400dpi, 2: 300dpi, 3: 200dpi, 4: 150dpi, 5: 100dpi, 6: 75dpi
126	Reso: Fax (Mono)
	0: 600dpi, 1: 400dpi, 2: 300dpi, 3: 200dpi, 4: 150dpi, 5: 100dpi, 6: 75dpi
127	Reso: Scan (Color)
	0: 600dpi, 1: 400dpi, 2: 300dpi, 3: 200dpi, 4: 150dpi, 5: 100dpi, 6: 75dpi
128	Reso: Scan (Mono)
	0: 600dpi, 1: 400dpi, 2: 300dpi, 3: 200dpi, 4: 150dpi, 5: 100dpi, 6: 75dpi
141	All addr Info Switch
	Expands the scope of used resources and performance. Switch this off if this feature is not being used. [0 to 1/1/1] 1: ON 0: OFF

	Stand-by Doc Max Number
142	Expands the scope of used resources and performance. Switch this off if this feature is not being used. [0 to 1/1/1] 1: ON 2: OFF

5840	[IEEE 802.11]	CTL
6	Channel Max	
	Sets the maximum number of channels available for data transmission via the wireless LAN. The number of channels available varies according to location. The default settings are set for the maximum end of the range for each area. Adjust the upper 4 bits to set the maximum number of channels. **DFU** **Note:** Do not change the setting. [1 to 11 or 13 / **11 or 13** / 1 /step] Europe/Asia: 1 to 13 NA/ Asia: 1 to 11	
	Channel Min	
7	Sets the minimum number of channels available for data transmission via the wireless LAN. The number of channels available varies according to location. The default settings are set for the minimum end of the range for each area. Adjust the lower 4 bits to set the minimum number of channels. **DFU** **Note:** Do not change the setting. [1 to 11 or 13 / **1** / 1 /step] Europe: 1 to 13 NA/ Asia: 1 to 11	

8	Transmission Speed
	0 x 00 to 0 x FF / **0 x FF to Auto** / -] **0 x FF to Auto** [Default] 0 x 11 - 55M Fix 0 x 10 - 48M Fix 0 x 0F - 36M Fix 0 x 0E - 18M Fix 0 x 0D - 12M Fix 0 x 0B - 9M Fix 0 x 0A - 6M Fix 0 x 07 - 11M Fix 0 x 05 - 5.5M Fix 0 x 08 - 1M Fix 0 x 13 - 0 x FE (reserved) 0 x 12 - 72M (reserved) 0 x 09 - 22M (reserved)
11	WEP key Select
	Selects the WEP key. [00 to 11 / **00** / 1 binary] 00: Key #1 01: Key #2 (Reserved) 10: Key #3 (Reserved) 11: Key #4 (Reserved)
42	Fragment Thresh
	Adjusts the fragment threshold for the IEEE802.11 card. [256 to 2346 / **2346** / 1] This SP is displayed only when the IEEE802.11 card is installed.
43	11g CTS to Self
	Determines whether the CTS self function is turned on or off. [0 to 1 / **1** / 1] 0: Off, 1: On This SP is displayed only when the IEEE802.11 card is installed.

44	11g Slot Time
	Selects the slot time for IEEE802.11. [0 to 1 / 0 / 1] 0: 20 μm, 1: 9 μm
45	WPA Debug Lvl
	Selects the debug level for WPA authentication application. [1 to 3 / **3** / 1] 1: Info, 2: warning, 3: error This SP is displayed only when the IEEE802.11 card is installed.

5841	Supply Name Setting
	Press the [User Tools] key. These names appear when the user presses the Inquiry button on the User Tools screen.
1	Toner Name Setting: Black
7	Org Stamp
11	Staple Std 1
12	Staple Std 2
13	Staple Std 3
14	Staple Std 4
21	Staple Bind 1
22	Staple Bind 2
23	Staple Bind 3

5842	GWS Analysis Setting **DFU**
	This settings select the output mode for debugging information as each network file is processed.
1	Setting 1
	Default: **00000000** Do not change Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software
2	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
1	Transfer Rate
	Sets the speed for USB data transmission. [Full Speed] [Auto Change]
2	Vendor ID
	Sets the vendor ID: Initial Setting: 0x05A Ricoh Company [0x0000 to 0xFFFF/1] **DFU**
3	Product ID
	Sets the product ID. [0x0000 to 0xFFFF/1] **DFU**

	Device Release No.
4	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.
5	Fixed USB Port
	Selects the PnP name standardization mode. [0 to 2 / **0** / 1/step] 0: Disable 1: Level 1 2: Level 2
6	PnP Model Name
	Specifies PnP name for USB device.
7	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	CTL
	Provides items for delivery server settings.	
1	FTP Port No.	
	Sets the FTP port number used when image files to the Scan Router Server. [0 to 65535 / **3670** / 1 /step]	
2	IP Address (Primary)	
	Use this SP to set the Scan Router Server address. The IP address under the transfer tab can be referenced by the initial system setting. Range: **000.000.000.000** to 255.255.255.255	
6	Delivery Error Display Time	
	Use this setting to determine the length of time the prompt message is displayed when a test error occurs during document transfer with the NetFile application and an external device. [0 to 999 / **300** / 1 second /step]	
8	IP Address (Secondary)	
	Specifies the IP address assigned to the computer designated to function as the secondary delivery server of Scan Router. This SP allows only the setting of the IP address without reference to the DNS setting. Range: **000.000.000.000** to 255.255.255.255	
9	Delivery Server Model	
	Allows changing the model of the delivery server registered by the I/O device. [0 to 4/ **0** / 1 /step] 0: Unknown 1: SG1 Provided 2: SG1 Package 3: SG2 Provided 4: SG2 Package	

10	Delivery Svr Capability
	Changes the capability of the registered that the I/O device registered. [0 to 255 / **0** / 1 /step]
	Bit7 = 1 Comment information exits
	Bit6 = 1 Direct specification of mail address possible
	Bit5 = 1 Mail RX confirmation setting possible
	Bit4 = 1 Address book automatic update function exists
	Bit3 = 1 Fax RX delivery function exists
	Bit2 = 1 Sender password function exists
	Bit1 = 1 Function to link MK-1 user and Sender exists
	Bit0 = 1 Sender specification required (if set to 1, Bit6 is set to "0")
11	Delivery Svr Capability (Ext)
	Changes the capability of the registered that the I/O device registered. [0 to 255 / **0** / 1 /step] Bit7 = 1 Address book usage limitation (Limitation for each authorized user) Bit6 = 1 RDH authorization link Bit5 to 0: Not used
13	Server Scheme (Primary) **DFU**
	This is used for the scan router program.
14	Server Port Number (Primary) **DFU**
	This is used for the scan router program.
15	Server URL Path (Primary) **DFU**
	This is used for the scan router program.
16	Server Scheme (Secondary) **DFU**
	This is used for the scan router program.

17	Server Port Number (Secondary) **DFU**
	This is used for the scan router program.
18	Server URL Path (Secondary) **DFU**
	This is used for the scan router program.
22	Rapid Sending Control
	Enables or disables the prevention function for the continuous data sending error. [0 to 1 / **0** / -] 0: Disable, 1: Enable

5846	UCS Settings	CTL
1	Machine ID (For Delivery Server)	
	Displays the unique device ID in use by the delivery server directory. The value is only displayed and cannot be changed. This ID is created from the NIC MAC or IEEE 1394 EUI. The ID is displayed as either 6-byle or 8-byte binary.	
2	Machine ID Clear (For Delivery Server)	
	Clears the unique ID of the device used as the name in the file transfer directory. Execute this SP if the connection of the device to the delivery server is unstable. After clearing the ID, the ID will be established again automatically by cycling the machine off and on.	
3	Maximum Entries	
	Changes the maximum number of entries that UCS can handle. If a value smaller than the present value is set, the UCS managed data is cleared, and the data (excluding user code information) is displayed. [2000 to 20000/ **2000** /1 /step]	

6	Delivery Server Retry Timer
	Sets the interval for retry attempts when the delivery server fails to acquire the delivery server address book. [0 to 255 / **0** / 1 /step]
7	Delivery Server Retry Times
	Sets the number of retry attempts when the delivery server fails to acquire the delivery server address book. [0 to 255 / **0** / 1 /step]
8	Delivery Server Maximum Entries
	Sets the maximum number account entries of the delivery server user information managed by UCS. [2000 to 50000 / **2000** / 1/step]
10	LDAP Search Timeout
	Sets the length of the timeout for the search of the LDAP server. [1 to 255 / **60** / 1 /step]
20	WSD Maximum Entries
21	Fold Auth Change
22	Initial Value of Upper Limit Count
40	Addr Book Migration (SD => HDD) **Not Used**
	Fill Addr Acl Info.

41	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 a new HDD. 3. Turn the machine on. 4. The address book and its initial data are created on the HDD automatically. 5. However, at this point the address book can be accessed by only the system administrator or key operator. 6. Enter the SP mode and do SP5846-041. After this SP executes successfully, any user can access the address book.
	Addr Book Media
43	Displays the slot number where an address book data is in. [0 to 30 / **-** /1] 0: Unconfirmed 1: SD Slot 1 2: SD Slot 2 4: USB Flash ROM 20: HDD 30: Nothing
	Initialize Local Addr Book
47	Clears the local address book information, including the user code.
	Initialize Delivery Addr Book
48	Clears the distribution address book information, except the user code.
	Initialize LDAP Addr Book
49	Clears the LDAP address book information, except the user code.
	Initialize All Addr Book

50	Clears all directory information managed by UCS, including all user codes.
	Backup All Addr Book
51	Uploads all directory information to the SD card.
	Restore All Addr Book
52	Downloads all directory information from the SD card.
	Clear Backup Info
53	Deletes the address book data from the SD card in the service slot. Deletes only the files that were uploaded from this machine. This feature does not work if the card is write-protected. **Note**: After you do this SP, go out of the SP mode, and then turn the power off. Do not remove the SD card until the Power LED stops flashing.
	Search Option
60	This SP uses bit switches to set up the fuzzy search options for the UCS local address book. Bit: Meaning 0: Checks both upper/lower case characters 1: Japan Only 2: Japan Only 3: Japan Only 4 to 7: Not Used
	Complexity Option 1
62	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to **upper case** and sets the length of the password. [0 to 32 / **0** / 1 /step] **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.
	Complexity Option 2 **DFU**
63	Complexity Option 3 **DFU**

64	Complexity Option 4 **DFU**
65	FTP Auth Port Setting
91	Specifies the FTP port for getting a distribution server address book that is used in the identification mode. [0 to 65535 / **3671** / 1 /step]
	Encryption Stat
94	Shows the status of the encryption function for the address book data.

5847	Resolution Reduction
	5847-002 through 5847-006 changes the default settings of image data sent externally by the Net File page reference function. [0 to 2/1] 5847 21 sets the default for JPEG image quality of image files controlled by NetFile. "Repository" refers to jobs to be printed from the document server with a PC and the DeskTopBinder software.
2	Rate for Copy B&W Text
3	Rate for Copy B&W Other
5	Rate for Printer B&W
7	Rate for Printer B&W 1200dpi
	For SP5847-2 to -7: [0 to 6/1] 0: 1x 1: 1/2x 2: 1/3x 3: 1/4x 4: 1/6x 5: 1/8x **6: 2/3x1** "6: 2/3x" applies to -3, -5 only.
21	Network Quality Default for JPEG
	Sets the default value for the quality of JPEG images sent as NetFile pages. This function is available only with the MLB (Media Link Board) option installed. [5 to 95/1]

5848	Web Service
	5847 2 sets the 4-bit switch assignment for the access control setting. Setting of 0001 has no effect on access and delivery from Scan Router. 5847 100 sets the maximum size of images that can be downloaded. The default is equal to 1 gigabyte.
2	Acc. Ctrl.: Repository (only Lower 4 Bits)
	0000: No access control 0001: Denies access to DeskTop Binder.
3	Acc. Ctrl.: Doc. Svr. Print (Lower 4 Bits)
	Switches access control on/off. 0000: OFF, 0001: ON
4	Acc. Ctrl.: User Directory (Lower 4 Bits)
	Switches access control on/off. 0000: OFF, 0001: ON
7	Access Ctrl: Comm. Log Fax (Lower 4bits)
	Switches access control on/off. 0000: OFF, 0001: ON
9	Acc. Ctrl.: Job Control (Lower 4 Bits)
	Switches access control on/off. 0000: OFF, 0001: ON
11	Acc. Ctrl: Device Management (Lower 4 Bits)
	Switches access control on/off. 0000: OFF, 0001: ON
21	Acc. Ctrl: Delivery (Lower 4 Bits)
	Switches access control on/off. 0000: OFF, 0001: ON

22	Acc. Ctrl: User Administration (Lower 4 Bits)
	Switches access control on/off. 0000: OFF, 0001: ON
99	Repository: Download Image Setting
100	Repository: Download Image Max. Size
	[1 to 1024/1 K]
210	Setting: Log Type: Job 1
	Switches access control on/off. 0000: OFF, 0001: ON
211	Setting: Log Type: Job 2
	Switches access control on/off. 0000: OFF, 0001: ON
212	Setting: LogType Access
	Switches access control on/off. 0000: OFF, 0001: ON
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.
1	Display
	The "Counter Clear Day" has been changed to "Installation Date" or "Inst. Date".
2	Switch to Print
	Determines whether the installation date is printed on the printout for the total counter. [0 to 1/1] 0: No Print, 1: Print
3	Total Counter
	Displays the total count from the day set with SP5849-001. [0 to 9999 9999]

5850	Address Book Function
	Not used

5851	Bluetooth Mode
	Sets the operation mode for the Bluetooth unit. Press either key. [**0**: Public] [1: Private]

5853	Stamp Data Download
	Push [Execute] to download the fixed stamp data from the machine ROM onto the hard disk. Then these stamps can be used by the system. If this is not done, the user will not have access to the fixed stamps ("Confidential", "Secret", etc.). You must always execute this SP after replacing the HDD or after formatting the HDD. Always switch the machine off and on after executing this SP.

5856	Remote ROM Update
	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	CTL
1	On/Off (1:ON 0:OFF)	
	Switches the debug log feature on and off. The debug log cannot be captured until this feature is switched on. **0**: OFF, 1: ON	
2	Target (2: HDD 3: SD)	
	Selects the storage device to save debug logs information when the conditions set with SP5-858 are satisfied. [2 to 3 / **2** / 1 /step] **2**: HDD, 3: SD Card	
5	Save to HDD	
	Saves the debug log of the input SC number in memory to the HDD. 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.	
6	Save to SD Card	
	Saves the debug log of the input SC number in memory to the SD card.	
9	Copy HDD to SD Card (Latest 4 MB)	
10	Copy HDD to SD Card (Latest 4 MB Any Key)	
11	Erase HDD Debug Data	
12	Erase SD Card Debug Data	
13	Free Space on SD Card	

14	Copy SD to SD (Latest 4 MB)
15	Copy SD to SD (Latest 4 MB Any Key)
16	Make HDD Debug
17	Make SD Debug

5858	Debug Save When
	These SPs select the content of the debugging information to be saved to the destination selected by SP5857-002. SP5858-003 stores one SC specified by number.
1	Engine SC Error (0:OFF 1:ON)
	Stores SC codes generated by copier engine errors.
2	Controller SC Error (0:OFF 1:ON)
	Stores SC codes generated by GW controller errors.
3	Any SC Error (0:OFF 1:ON)
	[0 to 65535 / 0 / 1]
4	Jam (0:OFF 1:ON)
	Stores jam errors.

5859	Debug Log Save Function	
1	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]
2	Key 2	
3	Key 3	
4	Key 4	
5	Key 5	
6	Key 6	
7	Key 7	

8	Key 8	
9	Key 9	
10	Key 10	

5860	SMTP/POP3/IMAP4
20	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.
21	MDN Response RFC2298Compliance
	Determines whether RFC2298compliance is switched on for MDN reply mail. [0 to 1/1] 0: No, 1: Yes
22	SMTP Auth. From Field Replacement
	Determines whether the FROM item of the mail header is switched to the validated account after the SMTP server is validated. [0 to 1/1] 0: No. "From" item not switched. 1: Yes. "From" item switched.
25	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

	S/MIME: MIME Header Settings
26	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
	S/MIME: Authentication Check
28	Determines whether the destination is authenticated for sending S/MIME mail. [0 to 1/**0/**1] 0: No Checking 1: Checking

5866	E-Mail Report
	This SP controls operation of the email notification function.
1	Report Validity
	Enables or disables the e-mail notification to @Remote. [0 or 1 / **0** / 1] 0: Enable, 1: Disable
5	Add Date Field
	Disables and re-enables the addition of a date field to the email notification. [0 to 1/0/1]

5870	Common Key Info Writing **Not Used**
	Writes to flash ROM the common proof for validating the device for NRS specifications.
1	Writing
3	Initialize
	Initializes the set certification. When the GW controller board is replaced with a new one for repair, you must execute the "Initiralize (-003)" and "Writing (-001)" just after the new board replacement. **NOTE:** Turn off and on the main power switch after the "Initiralize (-003)" and "Writing (-001)" have been done.
4	Common KeyInfo Writing (2048 bit)
	Wrties the authentication data used for @Remote into the flash ROM.

5873	SD Card Appli Move
	Allows you to move applications from one SD card another.
1	Move Exec
	Executes the move from one SD card to another.
2	Undo Exec
	This is an undo function. It cancels the previous execution.

5875	SC Auto Reboot
	This SP determines whether the machine reboots automatically when an SC error occurs. **Note:** The reboot does not occur for Type A and C SC codes.
1	Reboot Setting
	[0 to 1/0/1] 0: On, 1: Off On: default: 0 (Reboots automatically) The machine reboots automatically when the machine issues an SC error and logs the SC error code. If the same SC occurs again, the machine does not reboot. OFF: 1 (Does not reboot automatically. Changing this setting to "0" sets the machine to reboot automatically after an SC occurs.
2	Reboot Type
	This setting determines how the machine reboots after an SC code is issued. [0 to 1/0/1] 0: Allows manual reboot, 1: Automatic reboot

5876	Security Clear
	This SP clears all security settings, security settings for NCS only, or security settings for UCS only.
1	All Clear
11	Clear NCS Security Setting
15	Clear UCS Security Setting

5878	Option Setup
	This SP enables the DOS application (Data Overwrite Security). Do this SP after installing Data Overwrite Security Unit.)
1	Data Overwrite Security
	Enables the Data Overwrite Security unit. Touch [EXECUTE] on the operation panel. Then cycle the machine off/on.
2	HDD Encryption
	Enables the Copy Data Security unit. Touch [EXECUTE] on the operation panel. Then cycle the machine off/on.

5881	Fixed Phase Block Erasing
	Touch [EXECUTE] on the operation panel. Then erase all the fixed phase block.

5885	Set WIM Function **DFU**	
20	Doc Svr Acc Ctrl	
	Bit	Meaning
	0	Forbid all document server access (1)
	1	Forbid user mode access (1)
	2	Forbid print function (1)
	3	Forbid fax TX (1)
	4	Forbid scan sending (1)
	5	Forbid downloading (1)
	6	Forbid delete (1)
	7	Reserved

50	Doc Svr Format
51	Doc Svr Trans
100	Set Signature
101	Set Encryption
	Determines whether the scanned documents with the WIM are encrypted when they are transmitted by an e-mail. [0 or 1 / **0** / -] 0: Not encrypted, 1: Encrypted
200	Detect Memory Leak
201	Doc Server Timeout

5887	SD Get Counter	CTL
	This SP determines whether the ROM can be updated.	
	This SP sends a text file to an SD card inserted in SD card Slot 2 (lower slot). The operation stores. The file is stored in a folder created in the root directory of the SD card called SD_COUNTER. The file is saved as a text file (*.txt) prefixed with the number of the machine. 1. Insert the SD card in SD card Slot 2 (lower slot). 2. Select SP5887 then touch [EXECUTE]. 3. Touch [Execute] in the message when you are prompted.	

5888	Personal Information Protect
	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)

5893	SDK Application Counter **DFU**
	Displays the counter name of each SDK application.
1	SDK-1
2	SDK-2
3	SDK-3
4	SDK-4
5	SDK-5
6	SDK-6

5894	External Charge Unit Setting Switch Charge Mode
	[0 to 2/0/1]

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.

5913	Switchover Permission Time
	If no key is pressed when there is an application with display control rights, these SP settings allow the system to shift to the application standing by after the specified time as elapse. This SP switches the switchover permission timer on/off. [0 to 1/1/1] 0: OFF 1: ON

5915	Mechanical Counter Detection
	Displays whether the mechanical counter is installed in the machine. [0 to 2] 0: Not detected 1: Detected 2: Unknown

5952	Fact Adjust Mode

5959	Paper Size
1	Tray 1
	Select a paper size for the tray 1. [0 or 1 / **NA: 1, Others: 0** / 1] 0: A4, 1: $8_{1/2}$x11
5	Tray 4 (LCT) **Japan only**
6	Cover Sheet

5967	Copy Server: Set Function
	Enables and disables the document server. This is a security measure that prevents image data from being left in the temporary area of the HDD. After changing this setting, you must switch the main switch off and on to enable the new setting. [0 to 1/1] 0: ON, 1: OFF

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)

5985	Device Setting	
	The NIC and USB support features are built into the GW controller. Use this SP to enable and disable these features. In order to use the NIC and USB functions built into the controller board, these SP codes must be set to "1".	
1	On Board NIC	0: Disable, 1: Enable
2	On Board USB	

5990	SP Print Mode
	Prints the SMC report. In the SP mode, press Copy Window to move to the copy screen, select the paper size, then press Start. Select A4/LT (Sideways) or larger to ensure that all the information prints. Press SP Window to return to the SP mode, select the desired print, and press Execute.
1	All (Data List)
2	SP (Mode Data List)
3	User Program Data
4	Logging Data
5	Diagnostic Report
6	Non-Default (Prints only SPs set to values other than defaults.)
7	NIB Summary
8	Capture Log
21	Copier User Program
22	Scanner SP
23	Scanner User Program
24	SDK/J Summary
25	SDK/J Application Info
26	Printer SP

5992	SP Text Mode
	Prints the SMC report to a file on an SD card inserted into the SD card slot onr the right side of the machine operation panel.
1	All (Data List)
2	SP (Mode Data List)
3	User Program Data
4	Logging Data
5	Diagnostic Report
6	Non-Default (Prints only SPs set to values other than defaults.)
7	NIB Summary
8	Capture Log
21	Copier User Program
22	Scanner SP
23	Scanner User Program
24	SDK/J Summary
25	SDK/J Application Info
26	Printer SP

3.8 SP6000 PERIPHERALS

6006	ADF Reg. Ad.
1	ADF Main Reg. Adj:Front Adjusts the side-to-side registration for the front in ADF mode. [–3 to +3/**0**/0.1 mm]
2	ADF Main Reg. Adjusts the side-to-side registration for the back in ADF mode. [–3 to +3/**0**/0.1 mm]
3	ADF L-Edge Registration (Front) Adjusts the vertical registration for the front in ADF mode. [–5 to +5/**0**/0.1 mm]
4	ADF L-Edge Registration (Back) Adjusts the vertical registration for the back in ADF mode. [–5 to +5/**0**/0.1 mm]
5	ADF Buckle Adjustment 1 Adjusts the roller timing at the skew correction sensor/entrance roller. A higher setting causes more buckling. [–3 to +3/**0**/0.1 mm]
6	ADF Buckle Adjustment 2 Adjusts the roller timing at the interval sensor/scanning roller. A higher setting causes more buckling. [3 to -2/**0**/0.1 mm]
7	ADF Trailing Edge Erase Margin (Front) These settings adjust the erase margin for the trailing edges for the front. [–5 to +5/**-1**/0.1 mm]
8	ADF Trailing Edge Erase Margin (Back) These settings adjust the erase margin for the trailing edges for the back. [–5 to +5/**-1**/0.1 mm]

6007	ADF Input Chk ☛ p.3-297

6008	ADF Output Check ☛ p.3-298

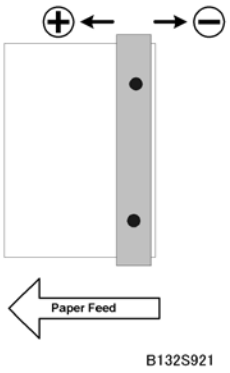
6009	DF Free Run
	Performs an ADF free run in duplex original mode.
1	Simplex
2	Simplex (Stamp)

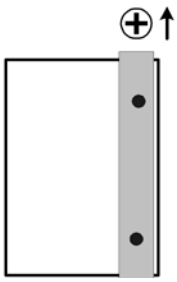
6010	Stamp Position Adj.
	Adjust the position of "Finished" stamp. [-5 to 5 / **0** / 0.1 mm]

6016	ADF Org Size Priority
	Allows selection of alternate settings for automatic original size detection. [0 to 255/**0**/1]

6017	ADF Mag. Ad.
	Allows settings for the speed of the sheet through. [-5 to 5/**0**/0.1]

6020	ADF Mag Adj
	If the original is small (B6, A5, HLT), the delay sensor detects the leading edge of the sheet and delays the original at the entrance roller for the prescribed number of pulses to buckle the leading edge and correct skew. [0 to 1/1] 0: Delay skew correction only for small originals 1: Delay skew correction for all originals, regardless of size. (May reduce the scanning speed of the ADF)

6101	Punch Hole Position Adjustment	
	Adjusts the punch hole positions in the direction of paper feed. NA: North America JPN: Japan EU: Europe NEU: Northern Europe (Scandinavia)	
1	JPN/EU: 2-Hole	[-7.5 to +7.5/0.5 mm] + Value: Shifts punch unit in the direction of feed. - Value: Shift punch unit against direction of feed.  B132S921
2	JPN/NA: 3-Hole	
3	EU: 4-Hole	
4	NEU: 4-Hole	
5	NA: 2-Hole	
6	JPN: 1-1Hole	

6102	Punch Hole Position Adjustment	
	Adjusts the punch position perpendicular to the direction of feed. [-2 to +2/**0**/0.4 mm] + Value: Shifts punch unit toward back of the finisher. - Value: Shift punch unit toward front of the finisher. NA: North America JPN: Japan EU: Europe NEU: Northern Europe (Scandinavia)	
1	JPN: 2-Hole	
2	JPN/NA: 3-Hole	
3	EU: 4-Hole	
4	NEU: 4-Hole	

5	NA: 2-Hole	

6103	Skew Correction: Buckle Adj.	
	This SP corrects punch hole alignment by correcting the skew of each sheet. To do this, it adjusts the amount of time the finisher entrance roller remains off while the exit roller of the machine remains on. This buckles the leading edge of the sheet slightly against the finisher entrance roller while it remains off.	
1	A3 SEF	[-5 to +5/**0**/0.25 mm]
2	B4 SEF	+ Value: Increases the time that the finisher entrance roller remains off. - Value: Descreases the time that the finisher entrance roller remains off.
3	A4 SEF	
4	A4 LEF	
5	B5 SEF	
6	B5 LEF	
7	DLT SEF	
8	LG SEF	
9	LT SEF	
10	LT LEF	
11	12*18	
12	Other	

6104	Skew Correction Control	
	This SP determines whether the finisher entrance roller stops to correct skew when paper enters the finisher.	
1	A3 SEF	[0 to 1/**0**/1] 0: No adjustment. Quickly restores the default setting if you forget what the other settings do. 0: Paper stops for skew correction 1: Paper does not stop
2	B4 SEF	
3	A4 SEF	
4	A4 LEF	
5	B5 SEF	
6	B5 LEF	
7	DLT SEF	
8	LG SEF	
9	LT SEF	
10	LT LEF	
11	12*18	
12	Other	

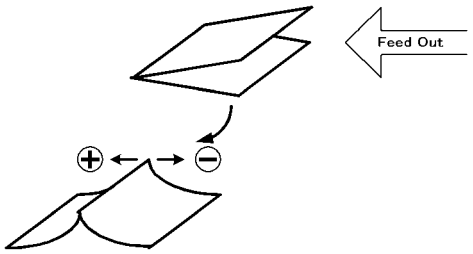
6105	Jogger Fence Fine Adjust	
	This SP adjusts the distance between the jogger fences and the sides of the stack on the finisher stapling tray. The adjustment is done perpendicular to the direction of paper feed.	
1	A3 SEF	[-1.5 to +1.5/0/0.5 mm] + Value: Increases the distance between jogger fences and the sides of the stack. - Value: Decreases the distance between the jogger fences and the sides of the stack.
2	B4 SEF	
3	A4 SEF	
4	A4 LEF	
5	B5 SEF	
6	B5 LEF	

7	DLT SEF	
8	LG SEF	
9	LT SEF	
10	LT LEF	
11	12*18	
12	Other	

6106	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 optional output jogger unit. 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. [-1.5 to +1.5 / **0** / 0.5 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.	
1	A3 SEF	The settings are done for each paper size. SEF denotes "Short Edge Feed". LEF denotes "Long Edge Feed".
2	B4 SEF	
3	A4 SEF	
4	A4 LEF	
5	B5 LEF	
6	A5 LEF	
7	DLT SEF	
8	LG SEF	
9	LT SEF	
10	LT LEF	
11	HLT LEF	

12	Other	

6109	Staple Position Adjustment	
	Use this SP to shift the position of the stapling done by the corner stapler of the finisher. 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. ▪ The settings are done for each paper size. [-3.5 to +3.5 / **0** / 0.5 mm]	
1	A3 SEF	The settings are done for each paper size. SEF denotes "Short Edge Feed". LEF denotes "Long Edge Feed".
2	B4 SEF	
3	A4 SEF	
4	A4 LEF	
5	B5 SEF	
6	B5 LEF	
7	DLT SEF	
8	LG SEF	
9	LT SEF	
10	LT LEF	
11	12*18	
12	Other	

6113	Folder Position Adj. (Sub-Scan)	
	This SP corrects the folding postion when paper is stapled and folded.	
1	A3 SEF	[-3 to +3/0.2 mm] + Value: Shifts staple position toward the crease. - Value: Shifts staple position away from the crease.  B132S924
2	B4 SEF	
3	A4 SEF	
4	B5 SEF	
5	DLT SEF	
6	LG SEF	
7	LT SEF	
8	12*18	
9	Other	

6114	Folding Number	
1	A3 SEF	This SP sets the number of times the folding rollers are driven forward and reverse to sharpen the crease of a folded booklet before it exits the folding unit of the Booklet Finisher. When set at the default (0): ▪ The folding blade pushes the center of the stack into the nip of the folding roller. ▪ The folding rollers rotate ccw to crease the booklet, reverse cw, then rotate ccw again to crease the booklet fold twice before feeding to the folding unit exit rollers. [1 to 6/0/1] 0:2, 1:5, 2:10, 3:15, 4:20, 5:25, 6:30 (passes)
2	B4 SEF	
3	A4 SEF	
4	B5 SEF	
5	DLT SEF	
6	LG SEF	
7	LT SEF	
8	12*18	
9	Other	

6115	Pre-stack Number	
1	A4 LEF	This SP sets the number of sheets sent to the pre-stack tray. With this SP set to the default (3): 3 sheets are sent to the pre-stack tray. When the 4th sheet feeds, the 4th sheet and 3 sheets from the pre-stack tray are sent to the stapling tray together. **Note**: You may need to adjust this setting or switch it off when feeding thick or slick paper. [0 to 4/**3**/1] 0: None 1: 1 sheet 2: 2 sheets 3: 3 sheets 4: 4 sheets
2	LT LEF	
3	B5 LEF	
4	10.5"x7.25"	
5	A4 SEF	
6	LT SEF	
7	B5 SEF	
8	10.5*7.25	
9	Other	

6118	Jogger Off/On	
1	A3 SEF	This SP switches the jogging operation of the output jogger unit attached to the side of the finisher off and on. [0 to 1/0/1] 0: Off, 1: On **Note**: After installation of the Output Jogger Unit B703, this SP must be set to "1" for the jogging motor to operate the jogging fences.
2	B4 SEF	
3	A4 SEF	
4	A4 LEF	
5	LT LEF	
6	B5 LEF	
7	DLT SEF	
8	LG SEF	
9	LT SEF	
10	LT LEF	
11	HLT LEF	
12	Other	

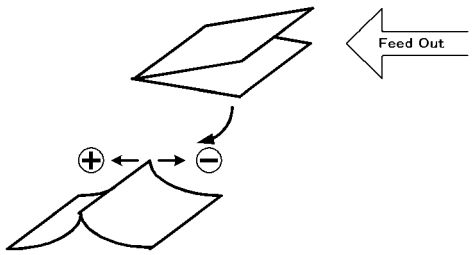
6120	Finisher Free Run
	Selects the free run mode during testing.
1	Free Run 1 VIC (D610)
	Stapling Mode: Stapling only
2	Free Run 2 VIC (D610)
	All Modes: All finisher operations tested
3	Free Run 3 VIC (D610)
	Packing Mode: Before you move the finisher to a new location, do this SP. When you switch on the machine after you moved it, the finisher automatically goes to the ready condition

6121	Finisher Input Check: Fin 1 (D612/D611) ☛ p.3-299

6122	Finisher Input Check: Fin 2 (D610) ☛ p.3-304

6124	Finisher Output Check: Fin 1 (D612/D611) ☛ p.3-302

6125	Finisher Output Check: Fin 2 (D610) ☛ p.3-306

6126	Fold Position Setting (D612)	
	This SP corrects the folding position when paper is stapled and folded in the D612Booklet Finisher.	
1	A3 SEF	[-3 to +3/**0**/0.2 mm] ▪ + Value: Shifts staple position toward the crease. ▪ - Value: Shifts staple position away from the crease.  B132S924
2	B4 SEF	
3	A4 SEF	
4	B5 SEF	
5	DLT SEF	
6	LG SEF	
7	LT SEF	
8	12*18 SEF	
9	Custom Size	

6127	Staple Jogging Times Fin 2 (D610)		
	Touch [1:+1 Time] to have the jogger fences press against the sides of the stack on the staple tray one more time to align the stack for corner stapling. [0:Default] or [1:+1 Time]		
1	A3 SEF	7	DLT SEF
2	B4 SEF	8	LG SEF
3	A4 SEF	9	LT SEF
4	A4 LEF	10	LT LEF
5	B5 SEF	11	Other
6	B5 LEF		

6250	Input Check: Sort Tray
	These SP codes turn on the electrical components of the finisher individually for testing.
1	SortTray Transport Sensor
2	SortTray Shift Sensor
3	SortTray Lower Limit Sensor
4	SortTray Paper Height Sensor
5	SortTray Door Switch

6251	Output Check: Sort Tray
	Turn on the electrical components of the finisher individually for test purposes.
1	SortTray Transport Motor: Continuous
2	SortTray Transport Motor: 1 Operation
3	SortTray Shift Tray Motor: 1 Operation
4	SortTray Tray Lift Motor: Up
5	SortTray Tray Lift Motor: Down
6	SortTray Tray Lift Motor: 1 Operation

6252	Free Run: SortTray
	Turn on the electrical components of the finisher individually for test purposes.

6301	Fine Adjust Z-Fold 1 (D615)	
1	1st Fold A3 SEF	[-4 to 4 / **0** / 0.2 mm]
2	1st Fold B4 SEF	
3	1st Fold A4 SEF	
4	1st Fold DLT SEF	
5	1st Fold LG SEF	
6	1st Fold LT SEF	
7	1st Fold 12*18	
8	1st Fold Other	
9	2nd Fold A3 SEF	
10	2nd Fold B4 SEF	
11	2nd Fold A4 SEF	
12	2nd Fold DLT SEF	
13	2nd Fold LG SEF	
14	2nd Fold LT SEF	
15	2nd Fold 12*18	
16	2nd Fold Other	

6309	Input Check: Folder (D615)☛ p.3-307

6310	Output Check: Folder (D615) ☛ p.3-308

6311	FM1 Z-Fold: Fine Ad 1st Fld (D615)	
1	Free Run 1	
2	Free Run 2	
3	Free Run 3	
4	Free Run 4	

6312	FM1 Z-Fold: Fine Ad 1st Fld (D615)	
1	A3 SEF	
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	[-4 to 4 / **0** / 0.2 mm]
6	LT SEF	
7	12*18	
8	8-Kai	
19	Other	

6313	FM1 Z-Fold: Fine Ad 2nd Fld (D615)	
1	A3 SEF	[-4 to 4 / **0** / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12*18	
8	8-Kai	
19	Other	

6314	FM2 Equal 1/2:Fine Ad Fld (D615)	
1	A3 SEF	[-4 to 4 / **0** / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12x18	
8	8-Kai	
9	B5 SEF	
11	13"x19"	
12	12.6"x19.2"	
13	12.6"x18.5"	

14	13"x18"	
15	SRA3	
16	SRA4	
17	226x310	
18	310x432	
19	Other	
21	A3 SEF (Multi Sheet)	
22	B4 SEF (Multi Sheet)	
23	A4 SEF (Multi Sheet)	
24	DLT SEF (Multi Sheet)	
25	LG SEF (Multi Sheet)	
26	LT SEF (Multi Sheet)	
27	12x18 (Multi Sheet)	
28	8-Kai (Multi Sheet)	
29	B5 SEF (Multi Sheet)	
31	13x19 (Multi Sheet)	
39	Custom (Multi Sheet)	

6315	FM3 Equal 3rds: Fine Ad 1st (D615)	
1	A3 SEF	[-4 to 4 / **0** / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12*18	
8	8-Kai	
9	B5 SEF	
19	Other	
22	B4 SEF (Multi Sheet)	
23	A4 SEF (Multi Sheet)	
25	LG SEF (Multi Sheet)	
26	LT SEF (Multi Sheet)	
29	B5 SEF (Multi Sheet)	
39	Custom (Multi Sheet)	

6316	FM3 Equal 3rds: Fine Ad 2nd (D615)	
1	A3 SEF	[-4 to 4 / **0** / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12*18	
8	8-Kai	
9	B5 SEF	
19	Other	
22	B4 SEF (Multi Sheet)	
23	A4 SEF (Multi Sheet)	
25	LG SEF (Multi Sheet)	
26	LT SEF (Multi Sheet)	
29	B5 SEF (Multi Sheet)	
39	Custom (Multi Sheet)	

6317	FM4 3rds 1 Flap: Fine Ad 1st (D615)	
1	A3 SEF	[-4 to 4 / **0** / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12*18	
8	8-Kai	
9	B5 SEF	
19	Other	
21	A3 SEF (Multi Sheet)	
22	B4 SEF (Multi Sheet)	
23	A4 SEF (Multi Sheet)	
25	LG SEF (Multi Sheet)	
26	LT SEF (Multi Sheet)	
29	B5 SEF (Multi Sheet)	
39	Custom (Multi Sheet)	

6318	FM4 3rds 1 Flap: Fine Ad 2nd (D615)	
1	A3 SEF	[-4 to 4 / **0** / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12*18	
8	8-Kai	
9	B5 SEF	
19	Other	
21	A3 SEF (Multi Sheet)	
22	B4 SEF (Multi Sheet)	
23	A4 SEF (Multi Sheet)	
24	DLT SEF (Multi Sheet)	
25	LG SEF (Multi Sheet)	
26	LT SEF (Multi Sheet)	
29	B5 SEF (Multi Sheet)	
39	Custom (Multi Sheet)	

6319	FM5 4ths V: Fine Adj 1st (D615)	
1	A3 SEF	[-4 to 4 / **0** / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12*18	
8	8-Kai	
9	B5 SEF	
19	Other	

6320	FM5 4ths V: Fine Adj 2nd (D615)	
1	A3 SEF	[-4 to 4 / **0** / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12*18	
8	8-Kai	
9	B5 SEF	
19	Other	

6321	FM6 4ths 2 Flap: Fine Adj 1st (D615)	
1	A3 SEF	[-4 to 4 / **0** / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
8	8-Kai	
9	B5 SEF	
19	Other	

6322	FM6 4ths 2 Flap: Fine Adj 2nd (D615)	
1	A3 SEF	[-4 to 4 / **0** / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
8	8-Kai	
9	B5 SEF	
19	Other	

6323	FM6 4ths 2 Flap: Fine Adj 3rd (D615)	
1	A3 SEF	[-4 to 4 / **0** / 0.2 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12*18	
8	8-Kai	
9	B5 SEF	
19	Other	

6324	Jogger Fence Position Adjust (D615)	
1	A3 SEF	[-2 to 2 / **0** / 0.5 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12*18	
8	8-Kai	
9	B5 SEF	
19	Other	

6325	Registration Buckle Adjust (D615)	
1	A3 SEF	[-4 to 2 / **0** / 1 mm]
2	B4 SEF	
3	A4 SEF	
4	DLT SEF	
5	LG SEF	
6	LT SEF	
7	12*18	
8	8-Kai	
9	B5 SEF	
19	Other	

6326	Registration Buckle Adjust Select
	Adjusts the registration motor timing. This timing determines the amount of paper buckle at registration. (A higher setting causes more buckling.)

6327	Top Tray Full Set: Enable
	Switches to the top tray full sensor off/on [0 to 1/**0**/1] 0:Full Detect ON 1:Full Detect OFF

6328	Top Tray Full Set: Limit Output
	Limits the number of pages to be on the top tray to trigger the the tray full alert. [0 to 250/0/1]

6350	Mail Box Input Check	
1	Paper Detect Sn 1	Turn on the electrical components of the finisher individually for testing.
2	Vertical Transport Sn 1: Bin1	
3	Paper Overflow Sn 1	
4	Paper Detect Sn 2	
5	Vertical Transport Sn2: Bin3	
6	Paper Overflow Sn 2	
7	Paper Detect Sn 3	
8	Paper Overflow Sn 3	
9	Paper Detect Sn 4	
10	Vertical Transport Sn3: Bin5	
11	Paper Overflow Sn 4	
12	Paper Detect Sn 5	
13	Paper Overflow Sn 5	Turn on the electrical components of the finisher individually for testing.
14	Paper Detect Sn 6	
15	Vertical Transport Sn4: Bin7	
16	Paper Overflow Sn 6	
17	Paper Detect Sn 7	
18	Paper Overflow Sn 7	
19	Paper Detect Sn 8	
20	Vertical Transport Sn 5:Bin9	
21	Paper Overflow Sn 8	

22	Paper Detect Sn 9	
23	Paper Overflow Sn 9	
24	Door Open Switch	

6351	Mail Box Output Check	
1	Vertical Transport Motor	Turn on the electrical components of the finisher individually for testing.
2	Junction Gate SOL 1	
3	Turn Gate SOL 1	
4	Turn Gate SOL 2	
5	Turn Gate SOL 3	
6	Turn Gate SOL 4	
7	Turn Gate SOL 5	
8	Turn Gate SOL 6	
9	Turn Gate SOL 7	
10	Turn Gate SOL 8	

6352	Mail Box Free Run
	Free Run 1

6450	Cover Feeder Size Change	
1	All A3	[0 to 1 / **0** / 1]
2	EU, CHN: 8.5x13	[0 to 2 / **0** / 1]
3	NA: 8.5x14	[0 to 1 / **0** / 1]
4	NA: 11x8.5	[0 to 1 / **0** / 1]
5	NA: 8.5x11	[0 to 1 / **0** / 1]
6	EU, CHN: 8K	[0 to 1 / **0** / 1]
7	EU, CHN: 16K (267x195)	[0 to 1 / **0** / 1]
8	EU, CHN: 16K (195x267)	[0 to 1 / **0** / 1]

6451	Cover Feeder Input Check	
1	Paper Feed Cover Sensor	[0 to 1 / **0** / 1]
2	Bottom Plate HP Sensor	[0 to 1 / **0** / 1]
3	Paper Near End Sensor	[0 to 1 / **0** / 1]
4	Paper Set Sensor	[0 to 1 / **0** / 1]
5	Bottom Plate HP Sensor	[0 to 1 / **0** / 1]
6	Grip Sensor	[0 to 1 / **0** / 1]
7	Guide Plate Set Sensor	[0 to 1 / **0** / 1]
8	Exit Sensor	[0 to 1 / **0** / 1]
9	Paper Set Sensor	[0 to 1 / **0** / 1]
10	Width Sensor 1	[0 to 1 / **0** / 1]
11	Width Sensor 2	[0 to 1 / **0** / 1]
12	Width Sensor 3	[0 to 1 / **0** / 1]

13	Length Sensor 1	[0 to 1 / **0** / 1]
14	Length Sensor 2	[0 to 1 / **0** / 1]
15	Length Sensor 3	[0 to 1 / **0** / 1]

6801	Stamp Unit
	Sets the stamp unit to set or unset. [0 to 1/1] 0: set, 1: unset

6830	Extra Staples
	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.
1	0 to 50 (Initial: 0) [0 to 50 /0/1]
2	0 to 50 (Initial: 0) [0 to 50 /0/1]

6890	Punch Function Enabled Z-Fold
	Switches punchin off/on. [0 to 1/**1**/0] 0:Punch Off 1:Punch On

6900	ADF Bottom Lift
	Sets the timing for raising and lowering the bottom plate of the ADF. [0 to 1/1] 0: Original set, 1: Copy start

6910	Intermittent Shading
1	ON/OFF
	Select ON or OFF of the intermittent shading in running the copy app. 0: OFF (do shading every time) / 1: ON
2	Interval
	Set the interval 1 to the shading in doing intermittent shading. [0 to 60 / **5** / 1]

3.9 SP7000 DATA LOGS

7001	Main Motor Operation Time
	Displays the total drum rotation time.

7401	Total SC Counter
	Displays the total number of SCs logged.
1	SC Counter
2	Total SC Counter

7403	SC History
	Displays the latest 10 service call codes
1	Latest
2	Latest 1
3	Latest 2
4	Latest 3
5	Latest 4
6	Latest 5
7	Latest 6
8	Latest 7
9	Latest 8
10	Latest 9

7404	SC991 History
	Displays the latest 10 service call codes

7502	Total Paper Jam
	Displays the total number of copy jams.
1	Jam Counter
2	Total Jam Counter

7503	Total Original Jam
	Displays the total number of copy jams.
1	Original Jam Counter
2	Total Original Jam Counter

7504	Paper Jam Loc
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.	
1	At Power On
3	1st Paper Feed SN: Late
4	2nd Paper Feed SN: Late
5	3rd Paper Feed SN: Late
6	4th Paper Feed SN: Late
7	LCT Paper Feed SN: Late
8	1st Vertical Transport SN: Late
9	2nd Vertical Transport SN: Late

10	3rd Vertical Transport SN: Late
11	4th Vertical Transport SN: Late
12	Relay SN: Late
13	Registration SN: Late
14	Fusing Exit SN: Late
15	Exit Unit Entrance SN: Late
16	Paper Exit SN: Late
17	LCT Paper Feed SN: Late
18	LCT Relay SN: Late
19	Duplex Entrance SN: Late
20	Duplex Transport SN 1: Late
21	Duplex Transport SN 2: Late
22	Duplex Transport SN 3: Late
23	Duplex Exit SN: Late
24	LCT Relay SN: Late3
34	By-pass Paper Feed SN: Late
45	Sort Tray: Paper Exit SN: Late
46	Sort Tray: Tray Lift Motor
47	Sort Tray: Shift Tray Motor
53	1st Paper Feed SN: Lag
54	2nd Paper Feed SN: Lag
55	3rd Paper Feed SN: Lag
56	4th Paper Feed SN: Lag
58	1st Vertical Transport SN: Lag
59	2nd Vertical Transport SN: Lag

60	3rd Vertical Transport SN: Lag
61	4th Vertical Transport SN: Lag
62	Relay SN: Lag
63	Registration SN: Lag
66	Paper Exit SN: Lag
69	Duplex Entrance SN: Lag
71	Duplex Transport SN 2: Lag
72	Duplex Transport SN 3: Lag
74	LCT Relay SN: Lag
84	By-pass Paper Feed SN: Lag
101	Finisher: Entrance Sensor
102	Finisher: Proof Tray Exit Sensor
103	Finisher: Exit Sensor
104	Finisher: Staple Entrance Sensor
105	Finisher: Exit After Jogging
109	Finisher: Shift Tray Motor
110	Finisher: Jogger Fence Motor
111	Finisher: Shift Roller Motor
112	Finisher: Stapler Shift Motor
115	Finisher: Feed Out Belt Motor
116	Finisher: Paper Punch Motor
119	Finisher: Main Machine Setting Incorrect
121	Finisher: Entrance Jam
122	Finisher: Proof Tray Exit
123	Finisher: Shift Tray Exit

124	Finisher: Stapler Exit
125	Finisher: Exit After Jogging
128	Finisher: Paper Folding
129	Finisher: Shift Tray Motor
130	Finisher: Jogger Fence Motor
131	Finisher: Shift Roller Motor
132	Finisher: Stapler Shift Motor
133	Finisher: Stapler Motor
134	Finisher: Folder Plate Motor
136	Finisher: Paper Punch Motor
139	Finisher: Main Machine Setting Incorrect
151	Fin: Entrance Sensor
152	Fin: Proof Tray Exit Sn
153	Fin: Shift Exit Sn
154	Fin: Stapler Exit
155	Fin: Pre-Stack
156	Fin: Feed Out
158	Fin: Upper Trans Motor
159	Fin: Shift Tray Motor
160	Fin: Positioning Roller Motor
161	Fin: Jogger Fence Motor
162	Fin: Stack Plate Motor (Center)
163	Fin: Stack Plate Motor (Front)
164	Fin: Stack Plate Motor (Rear)
165	Fin: Shift Motor

166	Fin: Drag Drive Motor
167	Fin: Shift Tray Jogger Motor
168	Fin: Shift Tray Jogger Retraction Motor
169	Fin: Exit Guide Motor
170	Fin: Staple Hammer Motor
171	Fin: Stapler Movement Motor
172	Fin: Stapler Rotation Motor
173	Fin: Stack Feed-Out Belt Motor
174	Fin: Punch Motor
175	Fin: Top Fence Motor
176	Fin: Bottom Fence Motor
197	Fin: Main Machine Setting Incorrect
198	Plocmatic Jam
199	GBC Jam
201	Mail Bin: Vertical Transport Sn 1
202	Mail Bin: Vertical Transport Sn 2
203	Mail Bin: Vertical Transport Sn 3
204	Mail Bin: Vertical Transport Sn 4
205	Mail Bin: Vertical Transport Sn 5
251	Cover Interposer: Paper Feed Sn
252	Cover Interposer: V-Transport Path
253	Cover Interposer: Bottom Plate Pos. Sn

7505	Original Jam Detection
	Displays the list of possible locations where an original jam could have occurred. These jams are caused by the failure of a sensor to activate.
1	At Power On
3	Separation Sensor: Off
4	Skew Correction Sensor: Off
5	Interval Sensor: Off
6	Registration Sensor: Off
7	Original Exit Sensor: Off
53	Skew Correction Sensor: On
54	Registration Sensor: On
55	Interval Sensor: On
56	Registration Sensor: Off
57	Original Exit Sensor: On

7506	Jam Count by Paper Size	
	Displays the total number of jams by paper size.	
5	A4 LEF	Displays the total number of jams by paper size.
6	A5 LEF	
14	B5 LEF	
38	LT LEF	
44	HLT LEF	
132	A3	Displays the total number of jams by paper size.
133	A4 SEF	
134	A5 SEF	

141	B4 SEF	
142	B5 SEF	
160	DLT SEF	Displays the total number of jams by paper size.
164	LG SEF	
166	LT SEF	
172	HLT SEF	
255	Others	

7507	Plotter Jam History	
1	Last	Displays the copy 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.
2	Latest 1	
3	Latest 2	
4	Latest 3	
5	Latest 4	
6	Latest 5	
7	Latest 6	
8	Latest 7	
9	Latest 8	
10	Latest 9	

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

7508	Original Jam History	
	Displays the original jam history of the transfer unit in groups of 10, starting with the most recent 10 jams. Display contents are as follows: CODE is the SP7-505-* number. SIZE is the paper size code in hex. (See "Paper Size Hex Codes" below.) TOTAL is the total jam error count (SP7003) DATE is the date the previous jam occurred	
1	Last	Sample Display: CODE: 007 SIZE: 05h TOTAL: 0000334 DATE: Mon Mar 15 11:44:50 2000
2	Latest 1	
3	Latest 2	
4	Latest 3	
5	Latest 4	
6	Latest 5	
7	Latest 6	
8	Latest 7	
9	Latest 8	
10	Latest 9	

Paper Size Hex Codes

These codes are displayed by SP7507 and SP7508.

Paper Size	Code (hex)	Paper Size	Code (hex)
A4 LEF	05	B4 SEF	8D
A5 LEF	06	B5 SEF	8E
B5 LEF	0E	DLT SEF	A0
LT LEF	26	LG SEF	A4
HLT LEF	2C	LT SEF	A6
A3 SEF	84	HLT SEF	AC
A4 SEF	85	Others	FF
A5 SEF	86		

7509	Paper Jam Loc: Fold Unit
46	Paper Feed: Late
47	Paper Feed: Lag
48	Pressure Timing SN: Late
49	Pressure Timing SN: Lag
50	Contact Timing SN: Late
51	Contact Timing SN: Lag
52	2nd Stopper Motor: Late
53	2nd Stopper Motor: Lag
54	Paper Exit Sensor 1: Late
55	Paper Exit Sensor 1: Lag
58	Paper Exit Sensor 3: Late
59	Paper Exit Sensor 3: Lag
60	Brushless Motor
61	Lower Stopper Motor Jam

62	Upper Stopper Motor Jam
64	Main Machine Setting Incorrect
96	Entrance SN: Late
97	Entrance SN: Lag
98	Top Tray Exit SN: Late
99	Top Tray Exit SN: Lag
100	Horizontal Path Exit SN: Late
101	Horizontal Path Exit SN: Lag
102	1st Stopper HP SN: Late
103	1st Stopper HP SN: Lag
104	2nd Stopper HP SN: Late
105	2nd Stopper HP SN: Lag
106	3rd Stopper HP SN: Late
107	3rd Stopper HP SN: Lag
108	Skew Correction Jam
109	Folded Paper Path Jam
111	Entrance JG Motor Jam
112	Fold JG Motor Jam
113	1st Stopper Motor Jam
114	2nd Stopper Motor Jam
115	3rd Stopper Motor Jam
116	Dynamic Roller Trans. M Jam
117	Regist. Roller Release M Jam

118	Fold Plate Motor Jam
119	Jogger Fence Motor Jam
120	Positioning Roller Motor Jam
121	Direct-Send JG Motor Jam
122	FM6 Pawl Motor Jam
144	Fold Unit: Main Machine Setting Incorrect

7617	Parts PM Counter Display
1	Normal
2	DF

7618	Parts PM Counter Reset **Japan Only**
1	Normal
	Clears the counter of SP7617- 1.
2	DF
	Clears the counter of SP7617- 2

7621	Display PM Count
	0 to 99999999
7622	Clear PM Count
	This SP clears the PM counts for the components below.
7623	Unit PM Target
	0 to 99999999

7624	Part Replacement Operation ON/OFF
7625	Pg Count History: Latest 1
	0 to 99999999
7626	Pg Count History: Latest 2
	0 to 99999999
7627	Pg Count History: Latest 3
	0 to 99999999
1	Developer
2	Hot Roller
3	Pressure Roller
4	Hot Roller Bearings
5	Pressure Roller Bearings
6	Hot Roller Strippers
7	Cleaning Roller
8	Cleaning Roller Bearings
9	Web Roll
10	Web Cleaning Roller
11	Web Bushings
12	Development Filter
13	Toner Recycling Unit
14	Pressure Release Filter
15	Charge Corona Wire
16	Grid Plate

17	Cleaning Pad
18	Cleaning Blade
19	Cleaning Brush
20	Transfer Belt
21	Transfer Belt Cleaning Blade
22	Ozone Filter
23	ADF Pick-up Roller
24	ADF Feed Belt
25	ADF Separation Roller
26	Feed Roller-Tray1
27	Pick-up Roller-Tray1
28	Separation Roller-Tray1
29	Feed Roller-Tray2
30	Pick-up Roller-Tray2
31	Separation Roller-Tray2
32	Feed Roller-Tray3
33	Pick-up Roller-Tray3
34	Separation Roller-Tray3
35	Feed Roller-Tray4
36	Pick-up Roller-Tray4
37	Separation Roller-Tray4
38	Feed Roller-LCT

39	Pick-up Roller-LCT
40	Separation Roller-LCT
41	Feed Belt Cover Feeder
42	Pick-up Roller Cover Feeder
43	Separation Roller Cover Feeder
44	ADF Transport Belt
45	Thermistor Fusing Unit Rear
46	Thermistor Fusing Unit Center
47	Dust Filter
48	Custom 1
49	Custom 2
50	Custom 3
51	Custom 4
52	Custom Tray 1 1
53	Custom Tray 1 2
54	Custom Tray 2 1
55	Custom Tray 2 2
56	Custom Tray 3 1
57	Custom Tray 3 2
58	Custom Tray 4 1
59	Custom Tray 4 2
60	Custom Tray LCT 1

61	Custom Tray LCT 2
62	Custom ADF 1
63	Custom ADF 2
64	Custom Cover Feeder 1
65	Custom Cover Feeder 2

7628	Clear PM Counter Clear Exceeded Counts
	Clear the PM counter of all the PM parts that exceed the timing of exchanging.
1	Clear Exceeded Counts
	Clears only the exceeded counts.
2	Reset All Counts
	Clears all counts.

7801	ROM No./Firmware Version
	Displays firmware information for main machine and all other connected devices.

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.

7826	MF Error Counter **Japan Only**
	Displays the number of counts requested of the card/key counter.
1	Error Total
	A request for the count total failed at power on. This error will occur if the device is installed but disconnected.
2	Error Staple
	The request for a staple count failed at power on. This error will occur if the device is installed but disconnected.

7827	MF Error Counter Clear
	Press [Execute] to reset to 0 the values of SP7826. **Japan Only**

7832	Self-Diagnose Result Display
	Push [#] to display a list of error codes. Nothing is displayed if no errors have occurred.

7834	Clear Pixel Coverage Data.
	Push [EXECUTE] to clear the coverage data.
1	Last & Average
2	Toner Bottles In Use
3	Page Counts (2 Prev. Toner Bottles)
4	Pixel Coverage Clear
255	All Clear

7836	Total Memory Size
	Displays the contents of the memory on the controller board.

7852	ADF Glass Dust Check
1	Dust Detection Counter [0 to 65535/**0**/1]
2	Dust Counter Clear Counter [0 to 65535/**0**/1]
3	Dust Detection Counter: Back [0 to 65536/**0**/1]

7901	Assert Info.
1	File Name
2	Number of Lines
3	Location

7954	Consumption Rate Counter
	Shows the consumption rate, expressed as a percentage (%).
1	Developer
2	Hot Roller
3	Pressure Roller
4	Hot Roller Bearings
5	Pressure Roller Bearings
6	Hot Roller Srippers
7	Cleaning Roller
8	Cleaning Roller Bearings
9	Web Roll
10	Web Cleaning Roller
11	Web Bushings
12	Development Filter
13	Toner Recycling Unit
14	Pressure Release Filter
15	Charge Corona Wire
16	Grid Plate
17	Cleaning Pad
18	Cleaning Blade
19	Cleaning Brush
20	Transfer Belt

21	Transfer Belt Cleaning Blade
22	Ozone Filter
23	ADF Pick-up Roller
24	ADF Feed Belt
25	ADF Separation Roller
26	Feed Roller – Tray1
27	Pick – up Roller – Tray1
28	Separation Roller – Tray 1
29	Feed Roller – Tray 1
30	Pick - up Roller – Tray 2
31	Separation Roller – Tray 2
32	Feed Roller – Tray 3
33	Pick-up Roller – Tray 3
34	Separation Roller – Tray 3
35	Feed Roller Tray 4
36	Pick - up Roller – Tray 4
37	Separation Roller – Tray 4
38	Feed Roller – LCT
39	Pick – up Roller - LCT
40	Separation Roller - LCT
41	Feed Belt Cover Feeder

42	Pick – up Roller Cover Feeder
43	Separation Roller Cover Feeder
44	ADF Transport Belt
45	Thermistor Fusing Unit Rear
46	Thermistor Fusing Unit Center
47	Dust Filter
48	Custom 1
49	Custom 2
50	Custom 3
51	Custom 4
52	Custom Tray 1 1
53	Custom Tray 1 2
54	Custom Tray 2 1
55	Custom Tray 2 2
56	Custom Tray 3 1
57	Custom Tray 3 2
58	Custom Tray 4 1
59	Custom Tray 4 2
60	Custom Tray LCT 1
61	Custom Tray LCT 2
62	Custom ADF 1
63	Custom ADF 2
64	Custom Cover Feeder 1
65	Custom Cover Feeder 2

3.10 SP8000 DATA LOG2

Many of these counters are provided for features that are currently not available, such as sending color faxes, and so on. However, here are some Group 8 codes that when used in combination with others, can provide useful information.

SP Numbers	What They Do
SP8211 to SP8216	The number of pages scanned to the document server.
SP8401 to SP8406	The number of pages printed from the document server
SP8691 to SP8696	The number of pages sent from the document server

Specifically, the following questions can be answered:

- How is the document server actually being used?
- What application is using the document server most frequently?
- What data in the document server is being reused?

Most of the SPs in this group are prefixed with a letter that indicates the mode of operation (the mode of operation is referred to as an 'application'). Before reading the Group 8 Service Table, make sure that you understand what these prefixes mean.

PREFIX	WHAT IT MEANS	
T:	Total: (Grand Total).	Grand total of the items counted for all applications (C, F, P, etc.)..
C:	Copy application.	Totals (pages, jobs, etc.) executed for each application when the job was not stored on the document server.
P:	Print application.	
S:	Scan application.	

PREFIX	WHAT IT MEANS	
L:	Local storage (document server)	Totals (jobs, pages, etc.) for the document server. The L: counters work differently case by case. Sometimes, they count jobs/pages stored on the document server; this can be in document server mode (from the document server window), or from another mode, such as from a printer driver or by pressing the Store File button in the Copy mode window. Sometimes, they include occasions when the user uses a file that is already on the document server. Each counter will be discussed case by case.
O:	Other applications (external network applications, for example)	Refers to network applications such as Web Image Monitor. Utilities developed with the SDK (Software Development Kit) will also be counted with this group in the future.

The Group 8 SP codes are limited to 17 characters, forced by the necessity of displaying them on the small LCDs of printers and faxes that also use these SPs. Read over the list of abbreviations below and refer to it again if you see the name of an SP that you do not understand.

Key for Abbreviations

ABBREVIATION	WHAT IT MEANS
/	"By", e.g. "T:Jobs/Apl" = Total Jobs "by" Application
>	More (2> "2 or more", 4> "4 or more"
AddBook	Address Book
Apl	Application
B/W	Black & White
Bk	Black
C	Cyan
ColCr	Color Create
ColMode	Color Mode
Comb	Combine
Comp	Compression
Deliv	Delivery
DesApl	Designated Application. The application (Copy, Fax, Scan, Print) used to store the job on the document server, for example.
Dev Counter	Development Count, no. of pages developed.
Dup, Duplex	Duplex, printing on both sides
Emul	Emulation
FC	Full Color
FIN	Post-print processing, i.e. finishing (punching, stapling, etc.)
Full Bleed	No Margins
GenCopy	Generation Copy Mode

ABBREVIATION	WHAT IT MEANS
GPC	Get Print Counter. For jobs 10 pages or less, this counter does not count up. For jobs larger than 10 pages, this counter counts up by the number that is in excess of 10 (e.g., for an 11-page job, the counter counts up 11-10 =1)
IFax	Internet Fax
ImgEdt	Image Edit performed on the original with the copier GUI, e.g. border removal, adding stamps, page numbers, etc.
K	Black (YMCK)
LS	Local Storage. Refers to the document server.
LSize	Large (paper) Size
Mag	Magnification
MC	One color (monochrome)
NRS	New Remote Service, which allows a service center to monitor machines remotely. "NRS" is used overseas, "CSS" is used in Japan.
Org	Original for scanning
OrgJam	Original Jam
Palm 2	Print Job Manager/Desk Top Editor: A pair of utilities that allows print jobs to be distributed evenly among the printers on the network, and allows files to moved around, combined, and converted to different formats..
PC	Personal Computer
PGS	Pages. A page is the total scanned surface of the original. Duplex pages count as two pages, and A3 simplex count as two pages if the A3/DLT counter SP is switched ON.
PJob	Print Jobs
Ppr	Paper
PrtJam	Printer (plotter) Jam
PrtPGS	Print Pages

ABBREVIATION	WHAT IT MEANS
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] **Note:** The L: counter is the total number of times the other applications are used to send a job to the document server, plus the number of times a file already on the document server is used.
8002	C:Total Jobs	
8003	F:Total Jobs	
8004	P:Total Jobs	
8005	S:Total Jobs	
8006	L: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 a copy job on the document server is printed, SP8022 also increments, and when a print job stored on the document server is printed, SP8024 also increments.
- When an original is both copied and stored on the document server, the C: and L: counters both increment.
- When a print job is stored on the document server, only the L: counter increments.
- When the user presses the Document Server button to store the job on the document server, only the L: counter increments.
- When the user enters document server mode and prints data stored on the document server, only the L: counter increments.
- When an image received from Palm 2 is received and stored, the L: counter increments.
- When the customer prints a report (user code list, for example), the O: counter increments.

8011	T:Jobs/LS	These SPs count the number of jobs stored to the document server by each application, to reveal how local storage is being used for input. [0 to 9999999/ 0 / 1] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8012	C:Jobs/LS	
8013	F:Jobs/LS	
8014	P:Jobs/LS	
8015	S:Jobs/LS	
8016	L:Jobs/LS	
8017	O:Jobs/LS	

- When a scan job is sent to the document server, the S: counter increments. When you enter document server mode and then scan an original, the L: counter increments.
- When a print job is sent to the document server, the P: counter increments.
- When a network application sends data to the document server, the O: counter increments.
- When an image from Palm 2 is stored on the document server, the O: counter increments.

8021	T:Pjob/LS	These SPs reveal how files printed from the document server were stored on the document server originally. [0 to 9999999/ 0 / 1] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8022	C:Pjob/LS	
8023	F:Pjob/LS	
8024	P:Pjob/LS	
8025	S:Pjob/LS	
8026	L:Pjob/LS	
8027	O:Pjob/LS	

- When a copy job stored on the document server is printed with another application, the C: counter increments.
- When an application like DeskTopBinder merges a copy job that was stored on the document server with a print job that was stored on the document server, the C: and P: counters both increment.
- When a job already on the document server is printed with another application, the L: counter increments.
- When a scanner job stored on the document server is printed with another application, the S:

counter increments. If the original was scanned from within document server mode, then the L: counter increments.

- When images stored on the document server by a network application (including Palm 2), are printed with another application, the O: counter increments.
- When a copy job stored on the document server is printed with a network application (Web Image Monitor, for example), the C: counter increments.

8031	T:Pjob/DesApl
8032	C:Pjob/DesApl
8033	F:Pjob/DesApl
8034	P:Pjob/DesApl
8035	S:Pjob/DesApl
8036	L:Pjob/DesApl
8037	O:Pjob/DesApl
	These SPs reveal what applications were used to output documents from the document server. [0 to 9999999/ 0 / 1] The L: counter counts the number of jobs printed from within the document server mode screen at the operation panel.

- When documents already stored on the document server are printed, the count for the application that started the print job is incremented.
- When the print job is started from a network application (Desk Top Binder, Web Image Monitor, etc.) the L: counter increments.

8041	T:TX Jobs/LS
8042	C:TX Jobs/LS
8043	F:TX Jobs/LS
8044	P:TX Jobs/LS
8045	S:TX Jobs/LS
8046	L:TX Jobs/LS
8047	O:TX Jobs/LS
	These SPs count the applications that stored files on the document server that were later accessed for transmission over the telephone line or over a network (attached to an e-mail). [0 to 9999999/ 0 / 1] **Note:** Jobs merged for sending are counted separately. The L: counter counts the number of jobs scanned from within the document server mode screen at the operation panel.

- When a stored copy job is sent from the document server, the C: counter increments.
- When images stored on the document server by a network application or Palm2 are sent as an e-mail, the O: counter increments.

8051	T:TX Jobs/DesApl
8052	C:TX Jobs/DesApl
8053	F:TX Jobs/DesApl
8054	P:TX Jobs/DesApl
8055	S:TX Jobs/DesApl
8056	L:TX Jobs/DesApl
8057	O:TX Jobs/DesApl
	These SPs count the applications used to send files from the document server over the telephone line or over a network (attached to an e-mail). Jobs merged for sending are counted separately. [0 to 9999999/ 0 / 1] The L: counter counts the number of jobs sent from within the document server mode screen at the operation panel.

- If the send is started from Desk Top Binder or Web Image Monitor, for example, then the O: counter increments.

8061	T:FIN Jobs
	[0 to 9999999/ 0 / 1] These SPs total the finishing methods. The finishing method is specified by the application.
8062	C:FIN Jobs
	[0 to 9999999/ 0 / 1] These SPs total finishing methods for copy jobs only. The finishing method is specified by the application.
8063	F:FIN Jobs
	[0 to 9999999/ 1] These SPs total finishing methods for fax jobs only. 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.	
8065	S:FIN Jobs	
	[0 to 9999999/ 0 / 1] These SPs total finishing methods for scan jobs only. The finishing method is specified by the application. **Note:** Finishing features for scan jobs are not available at this time.	
8066	L:FIN Jobs	
	[0 to 9999999/ 0 / 1] These SPs total finishing methods for jobs output from within the document server mode screen at the operation panel. The finishing method is specified from the print window within document server mode.	
8067	O:FIN Jobs	
	[0 to 9999999/ 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.	
1	Sort	Number of jobs started in Sort mode. When a stored copy job is set for Sort and then stored on the document server, the L: counter increments. (See SP8066 1)
2	Stack	Number of jobs started out of Sort mode.
3	Staple	Number of jobs started in Staple mode.
4	Booklet	Number of jobs started in Booklet mode. If the machine is in staple mode, the Staple counter also increments.
5	Z-Fold	Number of jobs started In any mode other than the Booklet mode and set for folding (Z-fold).
6	Punch	Number of jobs started in Punch mode. When Punch is set for a print job, the P: counter increments. (See SP8064 6.)

7	Other	Reserved. Not used.
8	Inside-Fold	
9	Three-in-Fold	
10	Three-Out-Fold	
11	Four-Fold	
12	Kannon-Fold	
13	Perfect Bind	
14	Ring Bind	

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.
8072	C:Jobs/PGS
	[0 to 9999999/ 0 / 1] These SPs count and calculate the number of copy jobs by size based on the number of pages in the job.
8073	F:Jobs/PGS
	[0 to 9999999/ 0 / 1] These SPs count and calculate the number of copy jobs by size based on the number of pages in the job.
8074	P:Jobs/PGS
	[0 to 9999999/ 0 / 1] These SPs count and calculate the number of print jobs by size based on the number of pages in the job.

8075	S:Jobs/PGS		
	[0 to 9999999/ 0 / 1] These SPs count and calculate the number of scan jobs by size based on the number of pages in the job.		
8076	L:Jobs/PGS		
	[0 to 9999999/ 0 / 1] These SPs count and calculate the number of jobs printed from within the document server mode window at the operation panel, by the number of pages in the job.		
8077	O:Jobs/PGS		
	[0 to 9999999/ 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.		
1	1 Page	8	21 to 50 Pages
2	2 Pages	9	51 to 100 Pages
3	3 Pages	10	101 to 300 Pages
4	4 Pages	11	301 to 500 Pages
5	5 Pages	12	501 to 700 Pages
6	6 to 10 Pages	13	701 to 1000 Pages
7	11 to 20 Pages	14	1001 to Pages

- For example: When a copy job stored on the document server is printed in document server mode, the appropriate L: counter (SP8076 0xx) increments.
- Interrupted jobs (paper jam, etc.) are counted, even though they do not finish.
- If a job is paused and re-started, it counts as one job.
- If the finisher runs out of staples during a print and staple job, then the job is counted at the time the error occurs.
- For copy jobs (SP 8072) and scan jobs (SP 8075), the total is calculated by multiplying the number of sets of copies by the number of pages scanned. (One duplex page counts as 2.)
- The first test print and subsequent test prints to adjust settings are added to the number of pages of the copy job (SP 8072).

- When printing the first page of a job from within the document server screen, the page is counted.

8111	T:FAX TX Jobs
	[0 to 9999999/ 0 / 1] These SPs count the total number of jobs (color or black-and-white) sent by fax, either directly or using a file stored on the document server, on a telephone line.
8113	F:FAX TX Jobs
	[0 to 9999999/ 0 / 1] These SPs count the total number of jobs (color or black-and-white) sent by fax directly on a telephone line.
1	B/W
2	Color

- These counters count jobs, not pages.
- This SP counts fax jobs sent over a telephone line with a fax application, including documents stored on the document server.
- If the mode is changed during the job, the job will count with the mode set when the job started.
- If the same document is faxed to both a public fax line and an I-Fax at a destination where both are available, then this counter increments, and the I-Fax counter (812x) also increments.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8121	T:IFAX TX Jobs
	[0 to 9999999/ 0 / 1] These SPs count the total number of jobs (color or black-and-white) sent, either directly or using a file stored on the document server, as fax images using I-Fax.
8123	F:IFAX TX Jobs
	[0 to 9999999/ 0 / 1] These SPs count the number of jobs (color or black-and-white) sent (not stored on the document server), as fax images using I-Fax.
1	B/W
2	Color

- The counters for color are provided for future use; the color fax feature is not available at this time.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8131	T:S-to-Email Jobs	
	[0 to 9999999/ 0 / 1] These SPs count the total number of jobs scanned and attached to an e-mail, regardless of whether the document server was used or not.	
8135	S:S-to-Email Jobs	
	These SPs count the number of jobs scanned and attached to an e-mail, without storing the original on the document server.	
1	B/W	Count for the number of jobs with black-and-white.
2	Color	Count for the number of jobs with color.
3	ACS	Count for the number of jobs using ACS mode.

- These counters count jobs, not pages.
- If the job is stored on the document server, after the job is stored it is determined to be color or black-and-white then counted.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- If several jobs are combined for sending to the Scan Router, Scan-to-Email, or Scan-to-PC, or if one job is sent to more than one destination. each send is counted separately. For example, if the same document is sent by Scan-to-Email as well as Scan-to-PC, then it is counted twice (once for Scan-to-Email and once for Scan-to-PC).

8141	T:Deliv Jobs/Svr	
	[0 to 9999999/ 0 / 1] These SPs count the total number of jobs scanned and sent to a Scan Router server.	
8145	S:Deliv Jobs/Svr	
	These SPs count the number of jobs scanned in scanner mode and sent to a Scan Router server.	
1	B/W	Count for the number of jobs with black-and-white.
2	Color	Count for the number of jobs with color.
3	ACS	Count for the number of jobs using ACS mode.

- These counters count jobs, not pages.
- The jobs are counted even though the arrival and reception of the jobs at the Scan Router server cannot be confirmed.
- If even one color image is mixed with black-and-white images, then the job is counted as a "Color" job.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be delivered, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8151	T:Deliv Jobs/PC	
	[0 to 9999999/ 0 / 1] These SPs count the total number of jobs scanned and sent to a folder on a PC (Scan-to-PC). **Note:** At the present time, 8151 and 8155 perform identical counts.	
8155	S:Deliv Jobs/PC	
	These SPs count the total number of jobs scanned and sent with Scan-to-PC.	
1	B/W	Count for the number of jobs with black-and-white.
2	Color	Count for the number of jobs with color.
3	ACS	Count for the number of jobs using ACS mode.

- These counters count jobs, not pages.
- If the job is cancelled during scanning, it is not counted.
- If the job is cancelled while it is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8161	T: PC FAX TX Jobs
8163	F: PC FAX TX Jobs

8171	T: Deliv Jobs/WSD	
	Total jobs for WSD (WS-Scanner for Web Services Devices).	
8175	S: Deliv Jobs/WSD	
8181	T: Scan to Media Jobs	
8185	S: Scan to Media Jobs	
	Total number of jobs scanned for WSD.	
	001	B/W
	002	Color
	003	ACS

8191	T:Total Scan PGS
8192	C:Total Scan PGS
8193	F:Total Scan PGS
8195	S:Total Scan PGS
8196	L:Total Scan PGS
	These SPs count the pages scanned by each application that uses the scanner to scan images. [0 to 9999999/ 0 / 1]

- SP 8191 to 8196 count the number of scanned sides of pages, not the number of physical pages.
- These counters do not count reading user stamp data, or reading color charts to adjust color.
- Previews done with a scanner driver are not counted.
- A count is done only after all images of a job have been scanned.
- Scans made in SP mode are not counted.

Examples:

- If 3 B5 pages and 1 A3 page are scanned with the scanner application but not stored, the S: count is 4.
- If both sides of 3 A4 sheets are copied and stored to the document server using the Store File

button in the Copy mode window, the C: count is 6 and the L: count is 6.

- If both sides of 3 A4 sheets are copied but not stored, the C: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8201	T:LSize Scan PGS
	[0 to 9999999/ 0 / 1] These SPs count the total number of large pages input with the scanner for scan and copy jobs. **Note:** These counters are displayed in the SMC Report, and in the User Tools display.
8203	F:LSize Scan PGS
	This SP counts the total number of large pages input with the scanner for fax jobs only. Note: These counters are displayed in the SMC Report, and in the User Tools display.
8205	S:LSize Scan PGS
	[0 to 9999999/ 0 / 1] These SPs count the total number of large pages input with the scanner for scan jobs only. **Note:** These counters are displayed in the SMC Report, and in the User Tools display.

8211	T:Scan PGS/LS
8212	C:Scan PGS/LS
8213	F:Scan PGS/LS
8215	S:Scan PGS/LS
8216	L:Scan PGS/LS
	These SPs count the number of pages scanned into the document server. [0 to 9999999/ 0 / 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen

- Reading user stamp data is not counted.
- If a job is cancelled, the pages output as far as the cancellation are counted.
- If the scanner application scans and stores 3 B5 sheets and 1 A4 sheet, the S: count is 4.
- If pages are copied but not stored on the document server, these counters do not change.
- If both sides of 3 A4 sheets are copied and stored to the document server, the C: count is 6 and the L: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8221	ADF Org Feeds
	[0 to 9999999/ 0 / 1] These SPs count the number of pages fed through the ADF for front and back side scanning.
1	Front
	Number of front sides fed for scanning: With an ADF that can scan both sides simultaneously, the Front side count is the same as the number of pages fed for either simplex or duplex scanning. With an ADF that cannot scan both sides simultaneously, the Front side count is the same as the number of pages fed for duplex front side scanning. (The front side is determined by which side the user loads face up.)
2	Back
	Number of rear sides fed for scanning: With an ADF that can scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex scanning. With an ADF that cannot scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex rear-side scanning.

- When 1 sheet is fed for duplex scanning the Front count is 1 and the Back count is 1.
- If a jam occurs during the job, recovery processing is not counted to avoid double counting. Also, the pages are not counted if the jam occurs before the first sheet is output.

8231	Scan PGS/Mode
	[0 to 9999999/ 0 / 1] These SPs count the number of pages scanned by each ADF mode to determine the work load on the ADF.
1	Large Volume
	Selectable. Large copy jobs that cannot be loaded in the ADF at one time.
2	SADF
	Selectable. Feeding pages one by one through the ADF.
3	Mixed Size
	Selectable. Select "Mixed Sizes" on the operation panel.
4	Custom Size
	Selectable. Originals of non-standard size.
5	Platen
	Book mode. Raising the ADF and placing the original directly on the platen.

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.
- If the user selects "Mixed Sizes" for copying in the platen mode, the Mixed Size count is enabled.
- In the SADF mode if the user copies 1 page in platen mode and then copies 2 pages with SADF, the Platen count is 1 and the SADF count is 3.

8241	T:Scan PGS/Org
	[0 to 9999999/ 0 / 1] These SPs count the total number of scanned pages by original type for all jobs, regardless of which application was used.
8242	C:Scan PGS/Org
	[0 to 9999999/ 0 / 1] These SPs count the number of pages scanned by original type for Copy jobs.
8243	F:Scan PGS/Org
	[0 to 9999999/ 0 / 1] These SPs count the number of pages scanned by original type for Fax jobs.
8245	S:Scan PGS/Org
	[0 to 9999999/ 0 / 1] These SPs count the number of pages scanned by original type for Scan jobs.
8246	L:Scan PGS/Org
	[0 to 9999999/ 0 / 1] These SPs count the number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen

	8241	8242	8243	8245	8246
1: Text	Yes	Yes	Yes	Yes	Yes
2: Text/Photo	Yes	Yes	Yes	Yes	Yes
3: Photo	Yes	Yes	Yes	Yes	Yes
4: GenCopy, Pale	Yes	Yes	No	Yes	Yes
5: Map	Yes	Yes	No	Yes	Yes
6: Normal/Detail	Yes	No	Yes	No	No
7: Fine/Super Fine	Yes	No	Yes	No	No
8: Binary	Yes	No	No	Yes	No
9: Grayscale	Yes	No	No	Yes	No
11: Other	Yes	Yes	Yes	Yes	Yes

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.

8251	T:Scan PGS/ImgEdt
8252	C:Scan PGS/ImgEdt
8255	S:Scan PGS/ImgEdt
8256	L:Scan PGS/ImgEdt
8257	O:Scan PGS/ImgEdt
	These SPs show how many times Image Edit features have been selected at the operation panel for each application. Some examples of these editing features are: ▪ Erase> Border ▪ Erase> Center ▪ Image Repeat ▪ Centering ▪ Positive/Negative [0 to 9999999/ 0 / 1] **Note:** The count totals the number of times the edit features have been used. A detailed breakdown of exactly which features have been used is not given.

- The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen.

8281	T:Scan PGS/TWAIN
8285	S:Scan PGS/TWAIN
	These SPs count the number of pages scanned using a TWAIN driver. These counters reveal how the TWAIN driver is used for delivery functions. [0 to 9999999/ 0 / 1] **Note:** At the present time, these counters perform identical counts.

8291	T:Scan PGS/Stamp
8293	F:Scan PGS/Stamp
8295	S:Scan PGS/Stamp

8301	T:Scan PGS/Size
	[0 to 9999999/ 0 / 1] These SPs count by size the total number of pages scanned by all applications. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-441].
8302	C:Scan PGS/Size
	[0 to 9999999/ 0 / 1] These SPs count by size the total number of pages scanned by the Copy application. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-442].
8303	F:Scan PGS/Size
	[0 to 9999999/ 0 / 1] These SPs count by size the total number of pages scanned by the Fax application. Use these totals to compare original page size (scanning) and output page size [SP 8-443].
8305	S:Scan PGS/Size
	[0 to 9999999/ 0 / 1] These SPs count by size the total number of pages scanned by the Scan application. Use these totals to compare original page size (scanning) and output page size [SP 8-445].

8306	L:Scan PGS/Size
	[0 to 9999999/ 0 / 1] These SPs count by size the total number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen. Use these totals to compare original page size (scanning) and output page size [SP 8-446].
1	A3
2	A4
3	A5
4	B4
5	B5
6	DLT
7	LG
8	LT
9	HLT
10	Full Bleed
254	Other (Standard)
255	Other (Custom)

8311	T:Scan PGS/Rez
	[0 to 9999999/ 0 / 1] These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings.
8315	S:Scan PGS/Rez
	[0 to 9999999/ 0 / 1] These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings. **Note:** At the present time, 8311 and 8315 perform identical counts.
1	1200dpi to
2	600dpi to 1199dpi
3	400dpi to 599dpi
4	200dpi to 399dpi
5	to 199dpi

- Copy resolution settings are fixed so they are not counted.

8381	T:Total PrtPGS
8382	C:Total PrtPGS
8383	F:Total PrtPGS
8384	P:Total PrtPGS
8385	S:Total PrtPGS
8386	L:Total PrtPGS
8387	O:Total PrtPGS
	These SPs count the number of pages printed by the customer. The counter for the application used for storing the pages increments. [0 to 9999999/ 0 / 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.

- 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 copy machine.

8401	T:PrtPGS/LS
8402	C:PrtPGS/LS
8403	F:PrtPGS/LS
8404	P:PrtPGS/LS
8405	S:PrtPGS/LS
8406	L:PrtPGS/LS
	These SPs count the number of pages printed from the document server. The counter for the application used to print the pages is incremented. The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel. [0 to 9999999/ 0 / 1]

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the L: count.

8411	Prints/Duplex
	This SP counts the amount of paper (front/back counted as 1 page) used for duplex printing. Last pages printed only on one side are not counted. [0 to 9999999/ 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.
8422	C: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 copier application.
8423	F: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 fax application.
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.
8425	S: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 scanner application.
8426	L: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 from within the document server mode window at the operation panel.
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

1	Simplex> Duplex	
2	Duplex> Duplex	
3	Book> Duplex	
4	Simplex Combine	
5	Duplex Combine	
6	2-in-1	2 pages on 1 side (2-Up)
7	4-in-1	4 pages on 1 side (4-Up)
8	6-in-1	6 pages on 1 side (6-Up)
9	8-in-1	8 pages on 1 side (8-Up)
10	9-in-1	9 pages on 1 side (9-Up)
11	2-in-1	16 pages on 1 side (16-Up)
12	Booklet	
13	Magazine	
14	2-in-1 + Booklet	
15	4-in-1 + Booklet	
16	6-in-1 + Booklet	
17	8-in-1 + Booklet	
18	9-in-1 + Booklet	
19	2-in-1 + Magazine	
20	4-in-1 + Magazine	
21	6-in-1 + Magazine	
22	8-in-1 + Magazine	
23	9-in-1 + Magazine	
24	16-in-1 + 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.
8432	C:PrtPGS/ImgEdt
	[0 to 9999999/ 0 / 1] These SPs count the total number of pages output with the three features below with the copy application.

8434	P:PrtPGS/ImgEdt
	[0 to 9999999/ 0 / 1] These SPs count the total number of pages output with the three features below with the print application.
8436	L:PrtPGS/ImgEdt
	[0 to 9999999/ 0 / 1] These SPs count the total number of pages output from within the document server mode window at the operation panel with the three features below.
8437	O:PrtPGS/ImgEdt
	[0 to 9999999/ 0 / 1] These SPs count the total number of pages output with the three features below with Other applications.
1	Cover/Slip Sheet
	Total number of covers or slip sheets inserted. The count for a cover printed on both sides counts 2.
2	Series/Book
	The number of pages printed in series (one side) or printed as a book with booklet right/left pagination.
3	User Stamp
	The number of pages printed where stamps were applied, including page numbering and date stamping.

8441	T:PrtPGS/Ppr Size
	[0 to 9999999/ 0 / 1] These SPs count by print paper size the number of pages printed by all applications.
8442	C:PrtPGS/Ppr Size
	[0 to 9999999/ 0 / 1] These SPs count by print paper size the number of pages printed by the copy application.
8443	F:PrtPGS/Ppr Size
	[0 to 9999999/ 0 / 1] These SPs count by print paper size the number of pages printed by the fax application.
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.
8445	S:PrtPGS/Ppr Size
	[0 to 9999999/ 0 / 1] These SPs count by print paper size the number of pages printed by the scanner application.
8446	L:PrtPGS/Ppr Size
	[0 to 9999999/ 0 / 1] These SPs count by print paper size the number of pages printed from within the document server mode window at the operation panel.

8447	O:PrtPGS/Ppr Size
	[0 to 9999999/ 0 / 1] These SPs count by print paper size the number of pages printed by other applications.
1	A3
2	A4
3	A5
4	B4
5	B5
6	DLT
7	LG
8	LT
9	HLT
10	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.	
1	Bypass	Bypass Tray
2	Tray 1	Copier
3	Tray 2	Copier
4	Tray 3	Paper Tray Unit (Option)

5	Tray 4	Paper Tray Unit (Option)
6	Tray 5	LCT (Option)
7	Tray 6	Currently not used.
8	Tray 7	Currently not used.
9	Tray 8	Currently not used.
10	Tray 9	Currently not used.
11	Tray 10	Currently not used.
12	Tray 11	Currently not used.
13	Tray 12	Currently not used.
14	Tray 13	Currently not used.
15	Tray 14	Currently not used.
16	Tray 15	Currently 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.
8462	C:PrtPGS/Ppr Type
	[0 to 9999999/ 0 / 1] These SPs count by paper type the number pages printed by the copy application.

8463	F:PrtPGS/Ppr Type
	[0 to 9999999/ 0 / 1] These SPs count by paper type the number pages printed by the fax application.
8464	P:PrtPGS/Ppr Type
	[0 to 9999999/ 0 / 1] These SPs count by paper type the number pages printed by the printer application.
8466	L:PrtPGS/Ppr Type
	[0 to 9999999/ 0 / 1] These SPs count by paper type the number pages printed from within the document server mode window at the operation panel.
1	Normal
2	Recycled
3	Special
4	Thick
5	Normal (Back)
6	Thick (Back)
7	OHP
8	Other

8471	PrtPGS/Mag
	[0 to 9999999/ 0 / 1] These SPs count by magnification rate the number of pages printed.
1	- 49%
2	50% to 99%
3	100%
4	101% to 200%
5	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.
- Magnification adjustments performed automatically during Auto Reduce/Enlarge copying are counted.
- The magnification rates of blank cover sheets, slip sheets, etc. are automatically assigned a rate of 100%.

8481	T:PrtPGS/TonSave
8484	P:PrtPGS/TonSave
	These SPs count the number of pages printed with the Toner Save feature switched on. **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	
	These SPs count by printer emulation mode the total number of pages printed. [0 to 9999999/ 0 / 1]	
8514	P:PrtPGS/Emul	
	These SPs count by printer emulation mode the total number of pages printed. [0 to 9999999/ 0 / 1]	
1	RPCS	
2	RPDL	
3	PS3	
4	R98	
5	R16	
6	GL/GL2	
7	R55	
8	RTIFF	
9	PDF	
10	PCL5e/5c	
11	PCL XL	
12	IPDL-C	
13	BM-Links	**Japan Only**
14	Other	
15	IPDS	

- 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
	These SPs count by finishing mode the total number of pages printed by all applications. [0 to 9999999/ 0 / 1]
8522	C:PrtPGS/FIN
	These SPs count by finishing mode the total number of pages printed by the Copy application. [0 to 9999999/ 0 / 1]
8523	F:PrtPGS/FIN
	[0 to 9999999/ 1] These SPs count by finishing mode the total number of pages printed by the Fax application.
8524	P:PrtPGS/FIN
	These SPs count by finishing mode the total number of pages printed by the Print application. [0 to 9999999/ 0 / 1]
8525	S:PrtPGS/FIN
	These SPs count by finishing mode the total number of pages printed by the Scanner application. [0 to 9999999/ 0 / 1]
8526	L:PrtPGS/FIN
	These SPs count by finishing mode the total number of pages printed from within the document server mode window at the operation panel. [0 to 9999999/ 0 / 1]
1	Sort
2	Stack
3	Staple
4	Booklet
5	Z-Fold

6	Punch	
7	Other	
8	Inside Fold	Half-Fold (FM2) (Multi Fold Unit)
9	Three-IN-Fold	Letter Fold-in (FM4) (Multi Fold Unit)
10	Three-OUT-Fold	Letter Fold-out (FM3) (Multi Fold Unit)
11	Four Fold	Double Parallel Fold (FM5) (Multi Fold Unit)
12	KANNON-Fold	Gate Fold (FM6) (Multi Fold Unit)
13	Perfect-Bind	Perfect Binder D391 Not Used
14	Ring-Bind	Ring Binder D392 Not used

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 **Japan Only**

8544	P: GPC Counter **Japan Only**

8551	T: PrtBooks/FIN Not Used
8552	O: PrtBooks/FIN Not Used
8554	P: PrtBooks/FIN Not Used

8556	L: PrtBooks/FIN Not Used	
1	Perfect-Bind	
2	Ring-Bind	

8561	T: A Sheet of Paper
8562	C: A Sheet of Paper
8563	F: A Sheet of Paper
8564	P: A Sheet of Paper
8566	L: A Sheet of Paper
8567	O: A Sheet of Paper
	Provide statistics on the usage of large paper sizes and duplexing.
1	Total: Over A3/DLT
2	Total: UnderA3/DLT
3	Duplex: OverA3/DLT
4	Duplex: Under A3/DLT

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 copy machine. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.

8591	O:Counter
	[0 to 9999999/ 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.

1	A3/DLT
2	Duplex

8601	T: Coverage Counter
8602	D: Coverage Counter
8603	F: Coverage Counter
8604	P: Coverage Counter
8606	L: Coverage Counter
	Provide a breakdown about coverage.
1	B/W
2	B/W Printed Pgs

8617	SDK Apli Counter **DFU**
	SDK 1 to 6

8621	Func Use Counter **Not Used**
	001 to 064: Function 001 to 064

8631	T:FAX TX PGS
	[0 to 9999999/ 0 / 1] These SPs count by color mode the number of pages sent by fax to a telephone number.
8633	F:FAX TX PGS
	[0 to 9999999/ 0 / 1] These SPs count by color mode the number of pages sent by fax to a telephone number.
1	BW
2	Color

- If a document has color and black-and-white pages mixed, the pages are counted separately as B/W or Color.
- At the present time, this feature is provided for the Fax application only so SP8631 and SP8633 are the same.
- The counts include error pages.
- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.
- Polling transmissions are counted but polling RX are not.
- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8641	T:FAX TX PGS
	[0 to 9999999/ 0 / 1] These SPs count by color mode the number of pages sent by fax to as fax images using I-Fax.
8643	F:FAX TX PGS
	[0 to 9999999/ 0 / 1] These SPs count by color mode the number of pages sent by Fax as fax images using I-Fax.
1	BW
2	Color

- Pages counted separately as B/W or Color.
- At the present time, this feature is provided for the Fax application only so SP8641 and SP8643 are the same.
- The counts include error pages.
- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.
- Polling transmissions are counted but polling RX are not.
- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8651	T:S-to-Email PGS
	[0 to 9999999/ 0 / 1] These SPs count by color mode the total number of pages attached to an e-mail for both the Scan and document server applications. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.

8655	S:S-to-Email PGS	
	[0 to 9999999/ 0 / 1] These SPs count by color mode the total number of pages attached to an e-mail for the Scan application only. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
1	B/W	
2	Color	Color MFP machines only

- For SP8651 and SP8655 the count for B/W and Color pages is done after the document is stored on the HDD. If the job is cancelled before it is stored, the pages are not counted.
- If Scan-to-Email is used to send a 10-page document to 5 addresses, the count is 10 (the pages are sent to the same SMTP server together).
- If Scan-to-PC is used to send a 10-page document to 5 folders, the count is 50 (the document is sent to each destination of the SMB/FTP server).
- Due to restrictions on some devices, if Scan-to-Email is used to send a 10-page document to a large number of destinations, the count may be divided and counted separately. For example, if a 10-page document is sent to 200 addresses, the count is 10 for the first 100

destinations and the count is also 10 for the second 100 destinations, for a total of 20.).

8661	T:Deliv PGS/Svr
	[0 to 9999999/ 0 / 1] These SPs count by color mode the total number of pages sent to a Scan Router server by both Scan and LS applications. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.
8665	S:Deliv PGS/Svr
	[0 to 9999999/ 0 / 1] These SPs count by color mode the total number of pages sent to a Scan Router server by the Scan application. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.

- The B/W and Color counts are done after the document is stored on the HDD of the Scan Router server.
- If the job is canceled before storage on the Scan Router server finishes, the counts are not done.
- The count is executed even if regardless of confirmation of the arrival at the Scan Router server.

8671	T:Deliv PGS/PC
	[0 to 9999999/ 0 / 1]
	These SPs count by color mode the total number of pages sent to a folder on a PC (Scan-to-PC) with the Scan and LS applications. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.

8675	S:Deliv PGS/PC
	[0 to 9999999/ 0 / 1] These SPs count by color mode the total number of pages sent with Scan-to-PC with the Scan application. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.
1	B/W
2	Color

8681	T:PCFAX TXPGS
8683	F:PCFAX TXPGS
	[0 to 9999999/ 0 / 1] These SPs count the number of pages sent by PC Fax. These SPs are provided for the Fax application only, so the counts for SP8681 and SP8683 are the same.

- This counts pages sent from a PC using a PC fax application, from the PC through the copier to the destination.
- When sending the same message to more than one place using broadcasting, the pages are only counted once. (For example, a 10-page fax is sent to location A and location B. The counter goes up by 10, not 20.)

8691	T:TX PGS/LS
8692	C:TX PGS/LS
8693	F:TX PGS/LS
8694	P:TX PGS/LS
8695	S:TX PGS/LS
8696	L:TX PGS/LS
	These SPs count the number of pages sent from the document server. The counter for the application that was used to store the pages is incremented. [0 to 9999999/ 0 / 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the count.
- If several documents are merged for sending, the number of pages stored is counted for the application that stored them.

8701	TX PGS/Port
	[0 to 9999999/ 0 / 1] These SPs count the number of pages sent by the physical port used to send them. For example, if a 3-page original is sent to 4 destinations via ISDN G4, the count for ISDN (G3, G4) is 12.
1	PSTN-1
2	PSTN-2
3	PSTN-3
4	ISDN (G3,G4)
5	Network

8711	T:Scan PGS/Comp
	[0 to 9999999/ 1] These SPs count the number of compressed pages scanned into the document server, counted by the formats listed below.
1	JPEG/JPEG2000
2	TIFF (Multi/Single)
3	PDF
4	Other
5	PDF/Comp
6	PDF/A

8715	S:Scan PGS/Comp
	[0 to 9999999/ 1] These SPs count the number of compressed pages scanned by the scan application, counted by the formats listed below.
1	JPEG/JPEG2000
2	TIFF (Multi/Single)
3	PDF
4	Other

8721	T: Deliv: PGS/WSD	
	Total number of pages sent via WSD (WS-Scanner for Web Services Devices).	
	001	B/W
	002	Color

8725	S: Deliv PGS/WSD	
	Total number of pages sent via WSD (WS-Scanner for Web Services Devices).	
	001	B/W
	002	Color

8721	T: Deliv PGS/WSD	
8725	S: Deliv PGS/WSD	
8731	T: Scan PGS/Media	
8735	S: Scan PGS/Media	
1	B/W	
2	Color	

8741	RX PGS/Port
	[0 to 9999999/ 0 / 1] These SPs count the number of pages received by the physical port used to receive them.
1	PSTN-1
2	PSTN-2
3	PSTN-3
4	ISDN (G3,G4)
5	Network

8771	Dev Counter
	[0 to 9999999/ 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.

8791	LS Memory Remain
	This SP displays the percent of space available on the document server for storing documents. [0 to 100/ 0 / 1]

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]

- 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

8811	Eco Counter
1	Eco Total
4	Duplex
5	Combine
8	Duplex (%)
9	Combine (%)
10	Paper Cnt (%)
101	Eco Total: Last
104	Duplex: Last
105	Combine: Last
108	Duplex (%): Last
109	Combine (%): Last
110	Paper Cnt (%): Last

8851	Cvr Cnt: 0 - 10%	
8861	Cvr Cnt: 11 - 20%	
8871	Cvr Cnt: 21 – 30%	
8881	Cvr Cnt: 31%	
	[0 to 9999999] These SPs count the percentage of dot coverage for black.	
11	0 – 2%	Bk
21	3 – 4%	Bk
31	5 – 7%	Bk
41	8 – 10%	Bk

8861	Toner Coverage 11-20%
	[0 to 9999999] These SPs count the percentage of dot coverage for black and other color toners

8871	Toner Coverage 21-30%		
	[0 to 9999999] These SPs count the percentage of dot coverage for black and other color toners.		
1	K	Black toner	
2	M	Magenta toner	**Not Used**
3	C	Cyan toner	
4	Y	Yellow toner	

8881	oner Coverage 31 -%		
	[0 to 9999999] These SPs count the percentage of dot coverage for black and other color toners.		
1	K	Black toner	
2	M	Magenta toner	**Not Used**
3	C	Cyan toner	
4	Y	Yellow toner	

8891	Page/Toner Bottle	Total number of pages per toner bottle.

8901	Coverage Display (Toner Bottle: Previous) **DFU**

8911	Coverage Display (Toner Bottle: Before Previous) **DFU**

8921	Cvr Cnt/Total	Total number of pages to date.

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.
1	Operation Time
	Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).
2	Standby Time
	Engine not operating. Includes time while controller saves data to HDD. Does not include time spent in Energy Save, Low Power, or Off modes.
3	Energy Save Time
	Includes time while the machine is performing background printing.
4	Low Power Time
	Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.
5	Off Mode Time
	Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.
6	SC
	Total down time due to SC errors.

7	PrtJam
	Total down time due to paper jams during printing.
8	OrgJam
	Total down time due to original jams during scanning.
9	Supply PM Wait End
	Total down time due to toner end.

8951	AddBook Register
	These SPs count the number of events when the machine manages data registration.
1	User Code
	User code registrations. [0 to 9999999/ 0 / 1]
2	Mail Address
	Mail address registrations. [0 to 9999999/ 0 / 1]
4	Group
	Group destination registrations. [0 to 9999999/ 0 / 1]
6	F-Code
	F-Code box registrations. [0 to 9999999/ 0 / 1]
7	Copy Program
	Copy application registrations with the Program (job settings) feature. [0 to 255 / 0 / 255]

9	Printer Program
	Printer application registrations with the Program (job settings) feature. [0 to 255 / 0 / 255]
10	Scanner Program
	Scanner application registrations with the Program (job settings) feature. [0 to 255 / 0 / 255]

8961	Electry Status
1	Ctrl Standby Time
2	STR Time
3	Main Power Off Time
4	Reading and Printing Time
5	Printing Time
6	Reading Time
7	Eng Wait Time
8	Low Power Time
9	Silent State Time

8999	Admin Counter List	
1	Total	
2	Copy: Full Color	
3	Copy: BW	
4	Copy: Single Color	
5	Copy: Two Color	
6	Printer: Full Color	
7	Printer: BW	

8	Printer: Single Color	
9	Printer: Two Color	
10	Fax Print: BW	
11	Fax Print: Single Color	
12	A3/DLT	
13	Duplex	
14	Coverage: Color (%)	
15	Coverage: BW (%)	
16	Coverage: Color Print Page	
17	Coverage: BW Print Page	
20	Full Color: GPC	
101	Transmission Total: Color	
102	Transmission Total: BW	
103	Fax Transmission	
104	Scanner Transmission: Color	
105	Scanner Transmission: BW	

3.11 PRINTER SP TABLES

1001	Bit Switch			
1	Bit Switch 1 Settings		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	No I/O Timeout	0: Disable	1: Enable
		Enable: The MFP I/O Timeout setting will have no effect. I/O Timeouts will never occur.		
	bit 4	SD Card Save Mode	0: Disable	1: Enable
		Enable: Print jobs will be saved to an SD Card in the GW SD slot.		
	bit 5	DFU	-	-
	bit 6	DFU	-	-
	bit 7	[RPCS,PCL]: Printable area frame border	0: Disable	1: Enable
		Enable: The machine prints all RPCS and PCL jobs with a border on the edges of the printable area.		

1001	Bit Switch			
2	Bit Switch 2 Settings		0	1
	bit 0	DFU	-	-
	bit 1	DFU	-	-
	bit 2	Applying a collation Type	Shift Collate	Normal Collate
		A collation type (shift or normal) will be applied to all jobs that do not already have a "Collate Type" configured. **Note**: If #5-0 is enabled, this Bit Switch has no effect.		
	bit 3	[PCL5e/c,PS]: PDL Auto Switching	0: Enable	1: Disable
		Disable: The MFPs ability to change the PDL processor mid-job. Some host systems submit jobs that contain both PS and PCL5e/c. If Auto PDL switching is disabled, these jobs will not be printed properly.		
	bit 4	**DFU**	-	-
	bit 5	**DFU**	-	-
	bit 6	**DFU**	-	-
	bit 7	**DFU**	-	-

1001	Bit Switch			
3	Bit Switch 3 Settings		0	1
	bit 0	**DFU**	-	-
	bit 1	**DFU**	-	-
	bit 2	[PCL5e/c]: Legacy HP compatibility	0: Disable	1: Enable
		Enable: Uses the same left margin as older HP models such as HP4000/HP8000. In other words, the left margin defined in the job (usually "<ESC>*r0A") will be changed to "<ESC>*r1A"		

	bit 3	**DFU**	-	-
	bit 4	**DFU**	-	-
	bit 5	**DFU**	-	-
	bit 6	**DFU**	-	-
	bit 7	**DFU**	-	-

1001	Bit Switch		
4	Bit Switch 4 Settings **DFU**	-	-

1001	Bit Switch			
5	Bit Switch 5 Settings		0	1
	bit 0	Show "Collate Type", "Staple Type" and "Punch Type" buttons on the operation panel.	Disable	Enable
		If enabled, users will be able to configure a Collate Type, Staple Type, and Punch Type from the operation panel. The available types will depend on the device and configured options. After enabling the function, the settings will appear under: "User Tools > Printer Features > System"		
	bit 1	DFU	-	-
	bit 2	DFU	-	-
	bit 3	[PS] PS Criteria	Pattern3	Pattern1
		Change the number of PS criterion used by the PS interpreter to determine whether a job is PS data or not. Pattern3: includes most PS commands. Pattern1: A small number of PS tags and headers		
	bit 4	Increase max number of the stored jobs to 1000 jobs.	Disable (100)	Enable (1000)

		Enable: Changes the maximum number of jobs that can be stored on the HDD via Job Type settings to 1000. The default is 100.		
	bit 5	Face-up output	Disable	Enable
		Enable: All print jobs will be output face-up in the destination tray.		
	bit 6	Method for determining the image rotation for the edge to bind on.	Disable	Enable
		Enable: the image rotation will be performed as they were in the specifications of older models for the binding of pages of mixed orientation jobs. The old models are below: - PCL: Pre-04A models - PS/PDF/RPCS: Pre-05S models		
	bit 7	Letterhead mode printing	Disable	Enable (Duplex)
		Routes all pages through the duplex unit. Disable: Simplex pages or the last page of an odd-paged duplex job, are not routed through the duplex unit. This could result in problems with letterhead/pre-printed pages. Only affects pages specified as Letterhead paper.		

1001	Bit Switch		
6	Bit Switch 6 Settings **DFU**	-	-

1001	Bit Switch			
7	Bit Switch 7 Settings		0	1
	bit 0	Print path	Disable	Enable
		Enable: Simplex pages (in mixed simplex/duplex PS/PCL5 jobs only) and the last page of an odd paged duplex job (PS, PCL5, PCL6), are always routed through the duplex unit. Not having to switch paper paths increases the print speed slightly.		
	bit 1	**DFU**	-	-
	bit 2	**DFU**	-	-
	bit 3	**DFU**	-	-
	bit 4	**DFU**	-	-
	bit 5	**DFU**	-	-
	bit 6	**DFU**	-	-
	bit 7	**DFU**	-	-

1001	Bit Switch			
8	Bit Switch 8 Settings		0	1
	bit 0	**DFU**	-	-
	bit 1	**DFU**	-	-
	bit 2	**DFU**	-	-

	bit 3	[PCL,PS]: Allow BW jobs to print without requiring User Code	Disable	Enable
		Enable: BW jobs submitted without a user code will be printed even if usercode authentication is enabled. **Note**: Color jobs will not be printed without a valid user code.		
	bit 4	**DFU**	-	-
	bit 5	**DFU**	-	-
	bit 6	**DFU**	-	-
	bit 7	**DFU**	-	-

1001	Bit Switch		
9	Bit Switch 9 Settings **DFU**	-	-
10	Bit Switch A Settings **DFU**	-	-
11	Bit Switch B Settings **DFU**	-	-
12	Bit Switch C Settings **DFU**	-	-

1003	Clear setting
1	Initialize Printer System Initializes the settings in the printer feature settings of UP mode.
3	Delete Program **DFU**

1004	Print Summary
	Touch [Execute] to print the printer summary sheets.

1005	Display Version.
	Printer Application Version
	Displays the version of the controller firmware.

1006	Sample/Locked Print
	This SP disables/enables use of the document server. [0 or 1/ **0** /1] 0: Enabled. Document server can be used. 1: Disabled. Document server cannot be used.

1110	Media Print Device Setting
	Sets which tray given priority for paper feed
	The bypass tray is "0". [0 to 4/**1**/1] 0: Bypass 1:Tray 1 2:Tray 2 3:Tray 3 4:LCT

1111	All Jobs Delete Mode
	This switch determines whether all SCS jobs in progress are included in the SMC report when SP5990 is executed.
	[0 to 1/**1**/1] 1:Jobs included 0:Jobs not included

3.12 SCANNER SP TABLES

3.12.1 SP-1XXX SYSTEM AND OTHERS

1001	Scan Nv Version
	Displays the scanner firmware version stored in NVRAM in a 9-digit format: Func. Name_Model Name_History No.

1005	Erase Margin (Remote Scan)
	Creates an erase margin for all edges of the scanned image. If the machine has scanned the edge of the original, create a margin. [0 to 5/ **0** /1 mm]

1009	Remote Scan Disable
	This SP switches the TWAIN scanner function on/off. This is one of the scanner application functions. [0 or 1 / **0** / 1] 0: ON (enabled- 1: OFF (disabled)

1010	Non Display Clear Light PDF
	This SP switches the Clear Light PDF display off/on. [0 or 1 / **0** / 1] 0: Display ON 1: Display OFF

1011	Org Count Display
	This SP codes switches the original count display on/off. [0 or 1 / **0** / 1] 0: OFF (no display) 1: ON (count displays)

1012	User Info Release
	This SP code sets the machine to release or not release the following items at job end] ▪ Destination (E-mail/Folder/CS) ▪ Sender name ▪ Mail Text ▪ Subject line ▪ File name [0 or 1 / **1** / 1] 1: Release 0: Do not release

1013	Scan to Media Device Setting
	This SP code enables/disables the multi-media function. [0 or 1 / **0** / 1] 0: Disable 1: Enable

1015	Add Date/Time to File Name
	Determnes whether the date and time are added to the ends of he names of files sent by email. [0 to 1/**1**/1] 0:Disable adding 1:Enable adding

3.12.2 SP1-XXX SCANNING IMAGE QUALITY

2021	Compression Level (Grayscale)
1	Comp 1: 5-95
	[5 to 95 / **20** / 1]
2	Comp 2: 5-95
	[5 to 95 / **40** / 1]
3	Comp 3: 5-95
	[5 to 95 / **65** / 1]
4	Comp 4: 5-95
	[5 to 95 / **80** / 1]
5	Comp 5: 5-95
	[5 to 95 / **95** / 1]

2024	Compression ratio of Clear Light PDF	CTL
	Selects the compression ratio for clearlight PDF for the two settings that can be selected at the operation panel.	
1	Compression Ratio (Normal)	[5 to 95 / **25** / 1 /step]
2	Compression Ratio (High)	[5 to 95 / **20** / 1 /step]

2025	Compression Level of Clear Light PDF JPEG2000
1	Compression Ratio (Normal) JPEG2000
2	Compression Ratio (High) JPEG2000

3.13 INPUT/OUTPUT CHECK

3.13.1 COPIER 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 0 to 7, reading right to left.

1. Enter the SP mode and select SP5803.
2. Enter the number (1 to 13) 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.
   The meaning of the display is as follows.

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.

5-803-001 BCU-eIO1-PORTA

Bit	Description	0	1
7	Duplex. entrance sensor.	Paper	No Paper
6	Duplex. exit sensor.	Paper	No Paper
5	Duplex. jogger HP sensor.	Feeler	No feeler
4	Duplex. transport sensor. 1	Paper	No Paper
3	Duplex. transport sensor. 2	Paper	No Paper
2	Duplex. transport sensor. 3	Paper	No Paper
1	Duplex. unit set sensor.	Set	Not set
0	Fusing release sensor.		Released

5-803-002 BCU-eIO1-PORTB

Bit	Description	0	1
7	Exit Unit Entrance Sensor	Paper	No Paper
6	Feed out exit sensor	Paper	No Paper
5	Exit unit set sensor	Set	Not set
4	Web end sensor		Web end
3	-	-	-
2	-	-	-
1	-	-	-
0	-	-	-

5-803-003 BCU-eIO1-PORTE

Bit	Description	0	1
7	Toner collection lock sensor	Locked	
6	-	-	-
5	Door open	Open	Closed
4	-	-	-
3	-	-	-
2	Drum motor lock	-	Locked
1	Fusing/exit motor lock	Locked	-
0	Development motor lock	-	Locked

5-803-004 BCU-eIO2-PORTB

Bit	Description	0	1
7	-	-	-
6	Bypass paper end sensor	Paper	No Paper
5	-	-	-
4	Exit tray full sensor		Full
3	Guide plate open sensor	Closed	Open
2	Cooling box fan lock	Locked	-
1	Toner collection bottle motor lock	Locked	-
0	Charge power pack leak	Prevention operating	-

5-803-005 BCU-eIO2-PORTC

Bit	Description	0	1
7	Key car: copy possible	Copy	No copy
6	Total counter set sensor	Not set	Set
5	Toner end sensor	No toner	Toner
4	60 cpm unit set	Set	Not set
3	Capacitor set	Set	Not set
2	-	-	-
1	Grid power pack leak	Short prevention operating	
0	-	-	-

5-803-006 BCU-eIO3-PORTC

Bit	Description	0	1
7	Aux. fan lock	Locked	
6	Key counter set 2	Not set	Set
5	Aux. input	-	-
4	Backlight	ON	OFF
3	Key counter set sensor	Set	Not set
2	Fusing/exit jam sensor	No Paper	Paper
1	Fusing unit set sensor	Set	-
0	Copy/printer model detect	-	Copy

5-803-007 BCU-eIO3-PORTD

Bit	Description	0	1
7	Paper sensor 1	Paper	No Paper
6	Paper sensor 2	Paper	No Paper
5	Paper sensor 3	Paper	No Paper
4	Paper sensor 4	Paper	No Paper
3	Vertical transport sensor 1	Paper	No Paper
2	Vertical transport sensor 2	Paper	No Paper
1	Vertical transport sensor 3	Paper	No Paper
0	Vertical transport sensor 4	Paper	No Paper

5-803-008 BCU-eIO3-PORTE

Bit	Description	0	1
7	DIP SW 1	ON	OFF
6	DIP SW2	ON	OFF
5	DIP SW3	ON	OFF
4	DIP SW4	ON	OFF
3	DIP SW5	ON	OFF
2	DIP SW6	ON	OFF
1	DIP SW7	ON	OFF
0	DIP SW8	ON	OFF

5-803-009 BCU-eIO3-PORTF,P

Bit	Description	0	1
7	Scanner fan 1 lock detect	-	Locked
6	Scanner fan 3 lock detect	-	Locked
5	Scanner fan 4 lock detect	-	Locked
4	-	-	-
3	-	-	-
2	BCU ID3	-	-
1	BCU ID2	-	-
0	BCU ID1	-	-

5-803-010 BCU-eIO2-IMON

Bit	Description	0	1
7	-	-	-
6	-	-	-
5	-	-	-
4	-	-	-
3	Registration sensor	Paper	No Paper
2	Relay sensor	Paper	No Paper
1	-	-	-
0	-	-	-

5-803-011 PFB-eIO1-PORTB

Bit	Description	0	1
7	Paper height sensor: Tray 1	-	30-50% remains
6	Paper height sensor: Tray 2	-	30-50% remains
5	Paper height sensor: Tray 3	-	30-50% remains
4	Paper height sensor: Tray 4	-	30-50% remains
3	Near end sensor: Tray 1	-	< 30% remains
2	Near end sensor: Tray 2	-	< 30% remains
1	Near end sensor: Tray 3	-	< 30% remains
0	Near end sensor: Tray 4	-	< 30% remains

5-803-012 PFB-eIO1-PORTC

Bit	Description	0	1
7	Paper size sensor 5: Tray 3	Sensor E On	
6	Paper size sensor 4: Tray 3	Sensor D On	
5	Paper size sensor 3: Tray 3	Sensor C On	
4	Paper size sensor 2: Tray 3	Sensor B on	
3	Paper size sensor 1: Tray 3	Sensor A on	
2	Toner collection motor lock	Locked	
1	Rear fence HP sensor		HP
0	Rear fence open sensor	Open	Closed

5-803-013 PFB-eIO1-PORTD

Bit	Description	0	1
7	Paper size sensor 5: Tray 4	Sensor E On	
6	Paper size sensor 4: Tray 4	Sensor D On	
5	Paper size sensor 3: Tray 4	Sensor C On	
4	Paper size sensor 2: Tray 4	Sensor B on	
3	Paper size sensor 1: Tray 4	Sensor A on	
2	Tray set sensor (right)	Set	Not set
1	Tandem set sensor (left)	Set	Not set
0	Tandem set sensor (right)		Down

5-803-014 PFB-eIO1-PORTE

Bit	Description	0	1
7	Paper size sensor 5: Tray 2	Sensor E On	
6	Paper size sensor 4: Tray 2	Sensor D On	
5	Paper size sensor 3: Tray 2	Sensor C On	
4	Paper size sensor 2: Tray 2	Sensor B on	
3	Paper size sensor 1: Tray 2	Sensor A on	
2	Tray type detect	Tray 3	Tray 4
1	LCT low right door open	Open	
0	-		

5-803-015 PFB-eIO1-PORTF

Bit	Description	0	1
7	Used toner bottle set	Set	Not set
6	User toner bottle full		Full
5	-		
4	-		
3	-		
2	-		
1	-		
0	-		

5-803-016 PFB-eIO1-PORTG

Bit	Description	0	1
7	Near end (tandem LCT)	-	< 25% remains
6	Paper height sensor 1 (tandem LCT)	-	< 50% remains
5	Paper height sensor 2 (tandem LCT)	-	< 75% remains
4	Paper height sensor 3 (tandem LCT)	-	about 75% over
3	-	-	-
2	-	-	-
1	-	-	-
0	-	-	-

5-803-017 PFB-eIO1-PORTM

Bit	Description	0	1
7	Paper end sensor: Tray 1	Paper	-
6	Paper end sensor: Tray 2	Paper	-
5	Paper end sensor: Tray 3	Paper	-
4	Paper end sensor: Tray 4	Paper	-
3	1st lift sensor: Tray 1	Up	-
2	1st lift sensor: Tray 2	Up	-
1	1st lift sensor: Tray 3	Up	-
0	1st lift sensor: Tray 4	Up	-

5-803-018 PFB-eIO1-PORTP

Bit	Description	0	1
7	Rear fence closed (tandem LCT)		Closed
6	Rear fence open (tandem LCT)		Open
5	Front fence closed (tandem LCT)		Closed
4	Front fence open (tandem LCT)		Open
3	Rear fence postion sensor		Down
2	Right tray paper sensor (tandem LCT)	Paper	No Paper
1	Left tray paper end sensor	Paper	No Paper
0	Rear fence HP sensor		HP

3.13.2 COPIER OUTPUT CHECK: SP5804

Important

- Motors keep turning in this 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 5804.
2. Select the SP number that corresponds to the component you wish to check. (Refer to the table on the next page.)
3. Press On then press Off to test the selected item.

Note

- You cannot exit and close this display until you press off to switch off the output check currently executing. Do not keep an electrical component switched on for a long time.

SP5804 Output Check Table

5804	Output Check
	Turns on the electrical components individually for testing. This is the output check for the main machine.
1	Feed Motor 1
2	Feed Motor 2
3	Feed Motor 3
4	Feed Motor 4
5	By-pass Feed Clutch
6	LCT Feed Motor
9	Pick-up SOL 1
10	Pick-up SOL 2
11	Pick-up SOL 3
12	Pick-up SOL 4
13	By-pass Pick-up SOL
14	LCT Pick-up SOL

17	Reverse Release SOL 1
18	Reverse Release SOL 2
19	Reverse Release SOL 3
20	Reverse Release SOL 4
22	Tandem Connection Release SOL
23	Left Tandem Lock SOL
24	Tandem Transport Motor
27	Relay Motor
28	Main Motor
31	Fusing Exit Motor
32	Fusing Removal Motor
39	Registration Motor
40	Guide Plate Release SOL
41	Exit Junction SOL
43	Inverter Duplex Motor
44	Duplex Transport Motor
45	Duplex Entrance Gate SOL
46	Inverter Jogger SOL
47	Duplex Transport CL
48	Duplex Jogger
52	Toner Supply CL
53	Development Motor
54	Used Toner Motor
55	Web Motor
56	Toner Bottle Motor

57	Transfer/Separation SOL
62	Quenching Lamp
63	Charge Corona
64	Grid Wire
67	Development Bias
69	Transfer Bias
70	ID Sensor LED
73	Toner Bottle Fan
74	Development Unit Fan
75	Duplex Unit Fan
76	Main Ventilation Fan
77	Main Suction Fan
78	Main Vacuum Fan
79	OPC Fan
80	FIN Juction SOL (Proof)
81	FIN Juction SOL (Stapler)
82	FIN End Roller SOL
84	Total Counter
85	FIN Main Motor 1
86	FIN Main Motor 2
87	FIN Exit Motor
88	FIN Staple Motor
89	FIN Punch Motor
90	LD DC Lamp
92	FIN Tray Lift Motor

93	FIN Jogger Motor
94	FIN Staple Transport Motor
95	FIN Exhaust Motor
96	FIN Shift Motor
97	FIN Staple Slant Motor
98	Status Lamp (Green)
99	Status Lamp (Red)
100	PTL
200	Scanner Fanmotor
202	Scanner Lamp
203	Scanner Motor

3.13.3 ADF INPUT CHECK: SP6007

1. Open SP mode SP6007.
2. Select the SP number that corresponds to the component you wish to check. (Refer to the table below.)
3. Press On then press Off to test the selected item. You cannot exit and close this display until you click Off to switch off the output check currently executing.

6007	ADF Input Check		
	Description	Reading	
		0	1
1	Original Length Sensor 1 (B5)	No paper	Paper detected
2	Original Length Sensor 2 (A4)	No paper	Paper detected
3	Original Length Sensor 3 (LG)	No paper	Paper detected
4	Original Width Sensor 1	No paper	Paper detected
5	Original Width Sensor 2	No paper	Paper detected
6	Original Width Sensor 3	No paper	Paper detected
7	Original Width Sensor 4	No paper	Paper detected
8	Original Width Sensor 5	No paper	Paper detected
9	Original Set Sensor	No paper	Paper detected
10	Separation Sensor	No paper	Paper detected
11	Skew Correction Sensor	No paper	Paper detected
12	Interval Sensor	No paper	Paper detected
13	Registration Sensor	No paper	Paper detected
14	Exit Sensor	No paper	Paper detected
15	Feed Cover Sensor	Open	Close
16	DF Position Sensor	Open	Close
18	Pick-up Roller HP Sensor	Not HP	HP

20	APS Start Sensor	Not Start	Start
21	Bottom Plate HP Sensor	Not HP	HP
22	Bottom Plate Posirion Sensor	Not Correct Position	Correct Position

3.13.4 ADF OUTPUT CHECK: SP6008

1. Open SP mode SP6008.
2. Select the SP number that corresponds to the component you wish to check. (Refer to the table below.)
3. Press On then press Off to test the selected item. You cannot exit and close this display until you click Off to switch off the output check currently executing.

6008	ADF Output Check
	Turns on the ADF electrical components individually for testing.
1	Feed Motor: Forward
2	Feed Motor: Reverse
3	Transport Motor: Forward
4	Exit Motor: Forward
8	Stamp Solenoid
9	Pick-up Motor: Forward
10	Bottom Plate Motor: Reverse

3.13.5 FINISHER 1 INPUT CHECK: SP6121

Finisher 1: D611/D612

6121	Bit	Description	Reading	
			0	1
1	Entrance Sensor		Paper not detected	Paper detected
2	Proof Exit Sensor		Paper not detected	Paper detected
3	Proof Full Detection Sensor		Not Full	Full
4	Trailing Edge Detection: Shift		Paper not detected*1	Paper detected*1
5	Staple Exit Sensor		Paper not detected	Paper detected
6	Shift HP Sensor		Not HP	HP
7	Shift Exit Sensor		Paper not detected	Paper detected
8	Exit Guide Plate HP Sensor		Not HP	HP
9	Paper Detection Sensor: Staple		Paper not detected	Paper detected
10	Paper Detection Sensor: Shift		Paper not detected	Paper detected
11	Paper Full Sensor: 2000-Sheet		Not Full	Full
12	Oscillating Back Roller HP Sensor		Not HP	HP
13	Jogger HP Sensor		Not HP	HP
14	Exit Junction Gate HP Sensor		HP	Not HP
15	Staple Tray Paper Sensor		Paper not detected	Paper detected

6121	Bit	Description	Reading	
			0	1
16	Staple Moving HP Sensor		Not HP	HP
17	Skew HP Sensor		Not HP	HP
18	Limit SW		Not Limit	Limit
19	DOOR SW		Closed	Open
20	Stapler 1 Rotation		Not HP	HP
21	Staple Detection		Staple not detected	Staple detected
22	Staple Leading Edge Detection		Staple not detected	Staple detected
23	Punch Moving HP Sensor		Not HP	HP
24	Punch Registration HP Sensor		Not HP	HP
25	Punch Registratioin Detection Sensor		Paper not detected	Paper detected
26	Punch Chad Full Sensor		Not Full	Full
27	Punch HP		Not HP	HP
28	Punch Selection DIPSW 1		See *1	
29	Punch Selection DIPSW 2		See *1	
30	Stack Junction Gate Open/Closed HP Sensor		Not HP	HP
31	Leading Edge Detection Sensor		Paper not detected	Paper detected
32	Drive Roller HP Sensor		Not HP	HP
33	Arrival Sensor		Paper not detected	Paper detected
34	Rear Edge Fence HP Sensor		Not HP	HP

6121	Bit	Description	Reading	
			0	1
35	Folder Cam HP Sensor		Not HP	HP
36	Folder Plate HP Sensor		Not HP	HP
37	Folder Pass Sensor		Paper not detected	Paper detected
38	Saddle Full Sensor: Front		Paper not detected*2	Paper detected*2
39	Saddle Full Sensor: Rear		Paper not detected*2	Paper detected*2
40	Saddle Stitch Stapler 1 Rotation: Front		Not HP	HP
41	Saddle Stitch Detection: Front		Staple not detected	Staple detected
42	Saddle Stitch Leading Edge Detection: Front		Staple not detected	Staple detected
43	Saddle Stitch Stapler 1 Rotation: Rear		Not HP	HP
44	Saddle Stitch Detection: Rear		Staple not detected	Staple detected
45	Saddle Stitch Leading Edge Detection: Rear		Staple not detected	Staple detected
46	Full Sensor: 3000-Sheet		Not Full	Full
47	Exit Jogger HP Sensor: Front		Not used in the machine	
48	Exit Jogger HP Sensor: Rear		Not used in the machine	
49	Exit Jogger HP Sensor: Upper		Not used in the machine	

*1: Combination of DIP SW 1 and SW 2

DIP SW 1	DIP SW 2	Punch Type
0	0	Japan
1	0	Europe
0	1	North America
1	1	North Europe

*2: Please refer to "Lower Tray (B804 Only)" in the Service Manual for the "2000/3000 (Booklet) Finisher".

3.13.6 FINISHER 1 OUTPUT CHECK: SP6124

6124	Finisher Output Check: Finisher 1 (Finisher D611/D612)	
1	Entrance Motor	Turn on the electrical components of the finisher individually for test purposes.
2	Upper Feed Motor	
3	Lower Feed Motor	
4	Exit Motor	
5	Knock Roller Motor	
6	Shift Motor	
7	Exit Guide Plate Open / Close Motor	
8	Tray Lift Motor	
9	Stack Roller Motor	
10	Jogger Motor	
11	Stack Feed-out Motor	Turn on the electrical components of the finisher individually for test purposes.
12	Staple Moving Motor	
13	Staple Skew Motor	
14	End Stapler Motor	
15	Upper Junction Gate Solenoid	

16	Lower Junction Gate Solenoid	
17	Knock Solenoid	
18	Trailing Edge Hold Solenoid	
19	Saddle Stitch Hold Solenoid	
20	Stack Junction Gate Open / Close	
21	Trailing Edge Fence Moving Motor	Turn on the electrical components of the finisher individually for test purposes.
22	Saddle Stitch Staple Motor: Front	
23	Saddle Stitch Staple Motor: Rear	
24	Folder Plate Motor	
25	Folder Roller Motor	
26	Clamp Roller Motor	
27	Punch Motor	
28	Punch Moving Motor	
29	Punch Registration Detection Motor	
30	Exit Jogger Motor: Front	
31	Exit Jogger Motor: Rear	
32	Exit Jogger Release Motor	

3.13.7 FINISHER 2 INPUT CHECK: SP6122

6122	Finisher Input Check: Finisher 2 (Finisher D610)	
1	Entrance Sensor	
2	Proof Exit Sensor	
3	Shift Exit Sensor	
4	Staple Exit Sensor	
5	Tray Lower Sensor	
6	Tray Near Lower Sensor	
7	Stack Feed-out HP Sensor	
8	Jogger HP Sensor	
9	Shift HP Sensor	
10	Stapler Moving HP Sensor	
11	Staple HP Sensor	
12	Staple Cartfidge Sensor	
13	Staple Tray Paper Sensor	
14	Door Sensor	
15	Punch Unit Sensor	
16	Punch HP1 Sensor	
17	Punch Chad Full Sensor	
18	Paper Detection Sensor: Staple	
19	Paper Detection Sensor: Shift	
20	Stapler Cartridge Set Sensor	
21	Proof Full Sensor	
22	Staple Moving HP Sensor	

23	Stape Waste Hopper Sensor	
24	Pre-stack Tray Paper Sensor	
25	Hold HP Sensor	
26	Exit Guide HP Sensor	
27	Stapler Reverse Sensor	
28	Stapler Sensor	
29	Front Hold HP Sensor	
30	Rear Hold HP Sensor	
31	Knock Hold HP Sensor	
32	Reverse Drive HP Sensor	
33	Paper Sensor	
34	Tray Lower Sensor	
35	Punch HP 2 Sensor	
36	Shift Jogger Sensor	
37	Shift Jogger HP Sensor	
38	Shift Jogger Release HP Sensor	
39	Front Door Safety Switch	
40	Top Fence HP Sensor	
41	Bottom Fence HP Sensor	
42	Lower Tray Full Sn (Z-Folded Paper)	

3.13.8 FINISHER 2 OUTPUT CHECK: SP6125

6125	Finisher Output Check: Finisher 2 (Finisher D610)	
1	Main Motor	Turn on the electrical components of the finisher individually for test purposes. See " Finisher 2 Output Check: SP6125"
2	Shift Tray Exit Motor	
3	Proof Junction Gate SOL	
4	Shift Relay Motor	
5	Jogger Motor	
6	Stapler Moving Motor	
7	Stapler Motor	
8	Punch Motor	
9	Stapler Solenoid	
10	Knock Roller Motor	
11	Stack Feed-out Motor	Turn on the electrical components of the finisher individually for test purposes. See "Finisher 2 Output Check: SP6125"
12	Shift Motor	
13	Staple Lift Motor	
14	Staple Exit Motor	
15	Exit Motor	
16	Hold Motor	
17	Pre-stack Solenoid	
18	Guide Solenoid	
19	Stapler Release Solenoid	
20	Front Hold Motor	
21	Rear Hold Motor	Turn on the electrical components of the finisher individually for test
22	Reverse Drive Motor	

23	Reverse Feed Motor	purposes. See " Finisher 2 Output Check: SP6125"
24	Exit Jogger Motor	
25	Exit Jogger Release Motor	
26	Jogger Top Fence Motor	
27	Jogger Bottom Fence Motor	

3.13.9 FOLDER INPUT CHECK: SP6309

6309	Fold Unit (D615) Input Check	
1	Entrance Sensor	Turn on the electrical components of the finisher individually for test purposes.
2	Entrance JG HP Sensor	
4	Registration Sensor	
5	Dynamic Roller HP Sensor	
6	Registration Roller HP Sensor	
7	Fold Plate HP Sensor	
8	Jogger Fence HP Sensorr	
9	Positioning Roller HP Sensor	
10	1st Stopper Paper Sensor	
11	1st Stopper HP Sensor	
12	2nd Stopper Paper Sensor	
13	2nd Stopper HP Sensor	
14	3rd Stopper Paper Sensor	
15	3rd Stopper HP Sensor	
16	Direct-Send JG HP Sensor	
17	FM6 Pawl HP Sensor	

18	Top Tray Paper Path Sensor	
19	Top Tray Exit Sensor	
20	Horizontal Path Exit Sensor	
21	Top Ttay Full Sensor	
23	Door Open Switch	
24	Horizontal Path Paper Sensor	
25	Vertical Path Paper Sensor	
26	Bypass Entrance Paper Sensor	
27	Bypass Exit Paper Sensor	

3.13.10 FOLDER OUTPUT CHECK: SP6310

6310	Fold Unit (D615) Output Check	
1	Horizontal Transport Motor	Turn on the electrical components of the finisher individually for test purposes.
2	Top Tray Transport Motor	
3	Top Tray Exit Motor	
4	Dynamic Roller Transport Motor	
5	Registration Roller Transport Motor	
7	Entrance JG Motor	
8	1st Stopper Motor	
9	2nd Sopper Motor	
10	3rd Stopper Motor	
11	Dynamic roller Lift Motor	
12	Registration Roller Release Motor	
13	Fold Plate Motor	

14	Jogger Fence Motor	Turn on the electrical components of the finisher individually for test purposes.
15	Positioning Roller Motor	
16	Direct-Send JG Motor	
17	FM6 Pawl Motor	
18	1st Fold Motor	
19	2nd Fold Motor	
20	Crease Motor	
21	Bypass JG Solenoid	
22	Exit JG Solenoid	
23	Top Tray JG Solenoid	
24	LE Stop Pawl Solenoid	
25	Reverse JG Solenoid	

D619

FAX OPTION TYPE 9002

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

FAX OPTION TYPE 9002 (D619)

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READ THIS FIRST

Important Safety Notices

⚠WARNING

- Never install telephone wiring during a lightning storm.
- Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
- Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
- Use caution when installing or modifying telephone lines.
- Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
- Do not use a telephone or cellular phone to report a gas leak in the vicinity of the leak.

⚠CAUTION

- Before installing the fax unit, switch off the main switch, and disconnect the power cord.
- The fax unit contains a lithium battery. 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 batteries in accordance with the manufacturer's instructions and local regulations.

Note

- **Note for Australia**:
- Unit must be connected to Telecommunication Network through a line cord that meets the requirements of ACA Technical Standard TS008.

Symbols and Abbreviations

Conventions Used in this Manual

This manual uses several symbols.

Symbol	What it means
☛	Refer to section number
	Screw
	Connector
	E-ring
	Clip ring
	Clamp



Cautions, Notes, etc.

The following headings provide special information:

⚠WARNING

- Failure to obey warning information could result in serious injury or death.

⚠CAUTION

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

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.
- Always obey these guidelines to avoid serious problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine. bold is added for emphasis.

Note

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

1. INSTALLATION

1.1 FAX OPTION TYPE 9002 (D619)

1.1.1 ACCESSORIES

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

No.	Description	Q'ty
1.	FCU	1
2.	Interface Board	1
3.	Fax Function Key Decal	1
4.	Ferrite Core	1
5.	Screws (Blue M3 x 6)	7
6.	Speaker Unit	1
7.	Clamp	2
8.	Telephone Cable (NA only)	1
9.	FCC Decal (NA Only)	1
10.	Serial Number Decal	1
11.	Multi-Language Decals	1 *1
12.	EMC Address Decal	1*1
13.	Gasket	
*1	EU only	

1.1.2 BEFORE YOU BEGIN

Before installing this fax unit:

- Print out all data in the printer buffer.
- Turn off the main power switch and disconnect the power cord and the network cable.

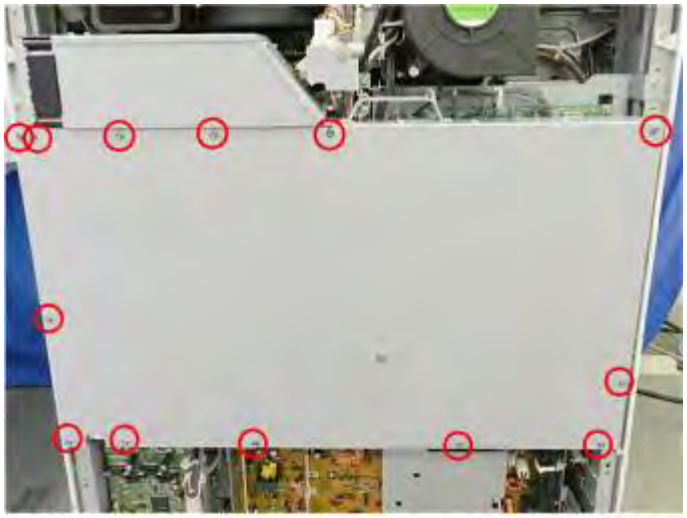
1.1.3 INSTALLATION

FCU Installation



d619i001

1. Remove the rear upper cover [A] (x2).
2. Remove the rear lower cover [B] (x2).



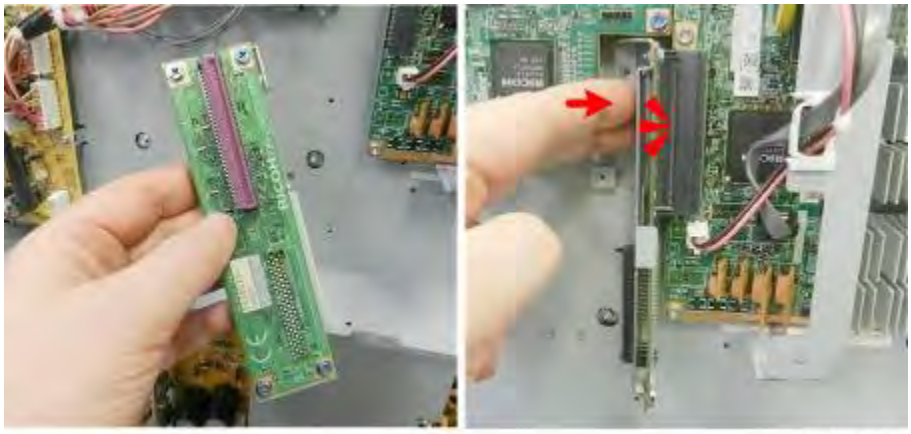
d619i002

3. Remove the controller box cover (x13).



d619i003

4. The fax unit is installed in the shaded area above (below the IPU and the controller board).



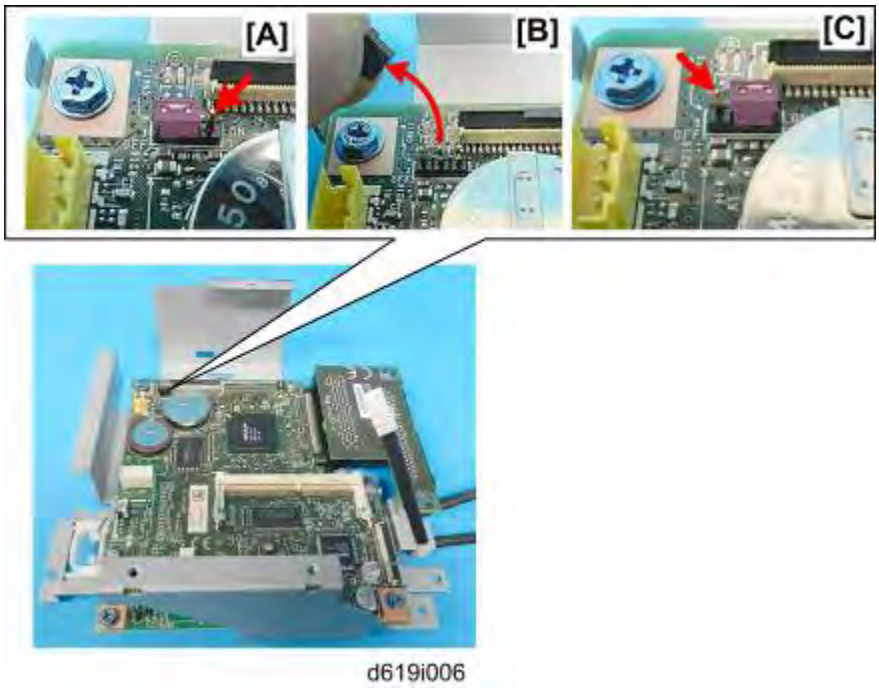
d619i004

5. Attach the interface board to the edge connector of the controller board (x1).



d619i005

6. Fasten the interface board bracket to the frame (x2).



d619i006

7. Locate the jumper [A] on the FCU. There are two bare pins visible next to the "ON" notation on the board. (This is the OFF position.)
8. Remove the jumper [B].
9. Move the jumper one set of pins to the right and re-set it on the pins so that a bare set of pins [C] is visible next to the "OFF" notation. (This is the ON position.)

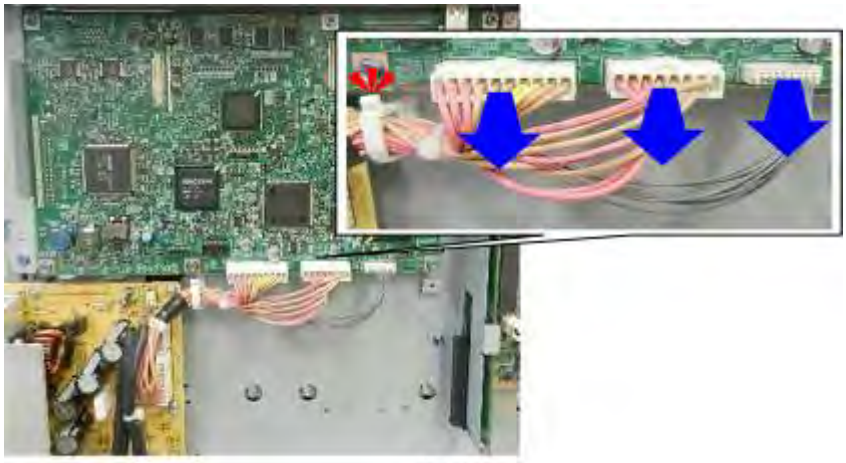
Important

- If the jumper is not moved from the OFF to the ON position, the machine will return SC672 (Controller Startup Error) when the machine is powered on.



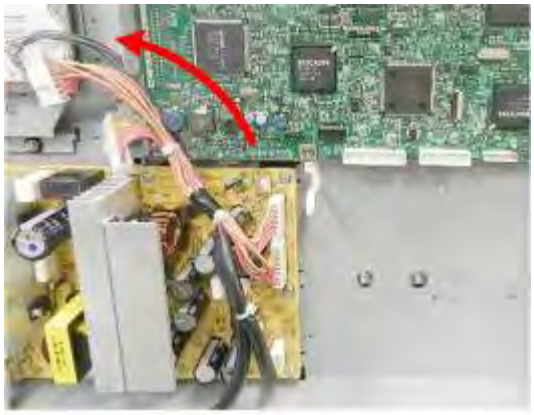
d619i061

10. Attach the gasket to the bracket.



d619i007

11. Disconnect the bottom edge of the IPU (x3, x1).



d619i008

12. Move the harnesses to the left.



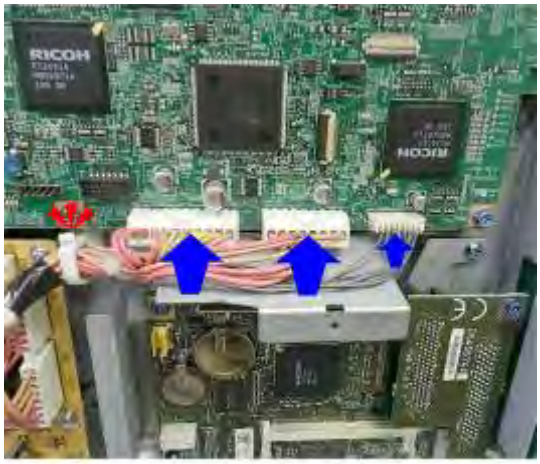
d619i009

13. Connect the FCU by its edge connector (x1).



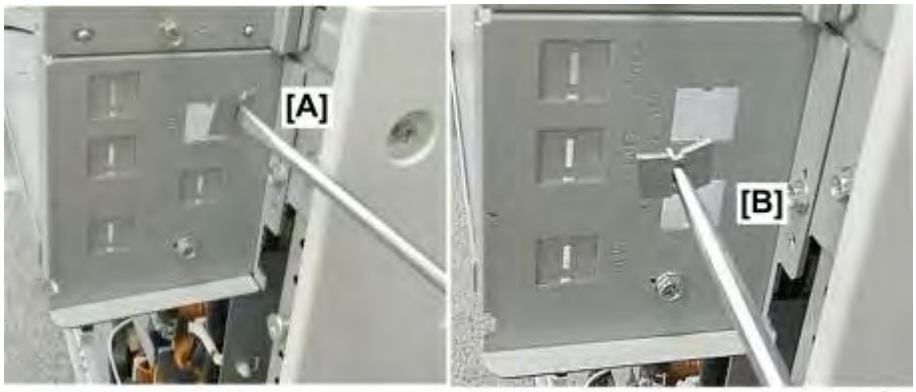
d619i010

14. Fasten the FCU to the frame (x3).



d619i011

15. Re-connect the bottom edge of the IPU (x1, x3).



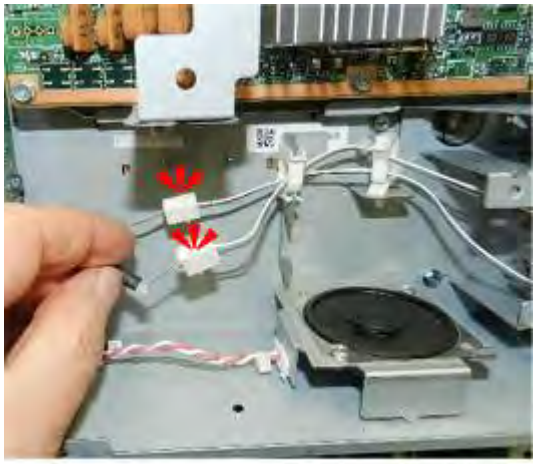
d619i012

16. Use a flathead screwdriver to break out cutouts [A] ("LINE 1") and [B] ("TEL").



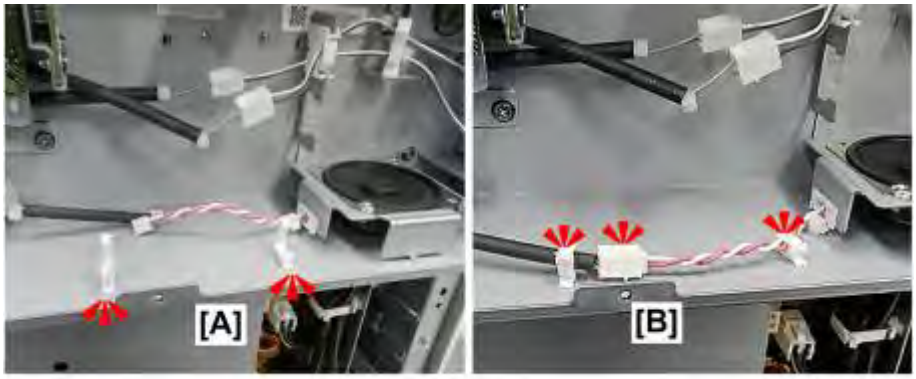
d619i015

17. Set the speaker unit in the corner of the controller box, and then fasten it to the frame (x2).



d619i016

18. Connect the top harnesses (x2).



d619i017

19. Set the clamps [A] (x2).
20. Connect the speaker (x1, x2).
21. Reattach:
    - Controller box cover (x13).
    - Rear lower cover (x2).
    - Rear upper cover (x2).

Decal Attachment



1. Attach the fax function decal [A] to **F5**.

   Important

   - After fax installation, the fax function is assigned to F5. This is the default. You can change the function key assignment with User Tools.

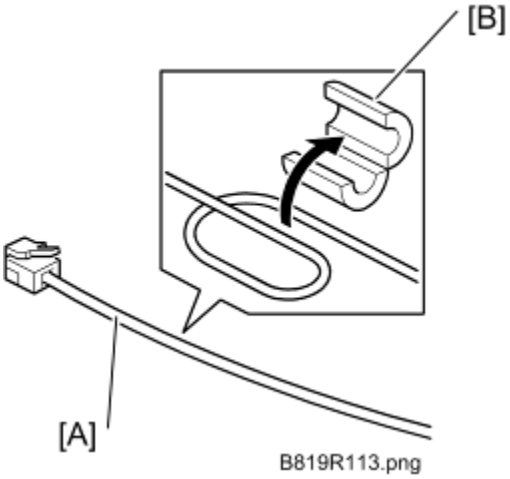
2. Attach the multi-language decal [B] (EU only).
3. Attach the serial number decal under the copier serial number decal on the rear cover of the machine.
4. Attach the FCC decal to the rear cover of the machine (NA only).
5. Connect the power plug to an outlet.

   Important

   - Make sure that the power outlet is grounded.

6. Turn the machine on. In the bottom left corner of the screen, a message will tell you that the SRAM is being formatted.
7. When the reformat is finished, cycle the machine off and on again.
8. Enter User Tools and make sure that the date and time settings are set correctly.

Line Connection and Settings



B819R113.png

1. Loop one end of the telephone cable [A] once, then clamp it with the ferrite core (K3 NF-75(N)BK0) [B] as shown.

   Note

   - Attach the ferrite core at least 9 cm (3.5 in.) from the connector.

2. Connect the telephone cable to the "LINE 1" jack.

1.2 G3 INTERFACE UNIT TYPE 9002 (D619)

1.2.1 ACCESSORIES

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

No.	Description	Q'ty
1.	G3 Interface Unit	1
2.	G3 Connector Bracket	1
3.	CCUIF Harness	1
4.	Screws (Blue M3 x 6)	5
5.	Edge Saddle Clamp	1
6.	Clamp	1
7.	Ferrite Core (Large)	1
8.	Ferrite Core (Middle)	1
9.	Ferrite Core (Small)	1
10.	FFC (Flexible Flat Cable)	1
11.	Telephone Cable (NA Only)	1
12.	FCC Decal (NA Only)	1
13.	EMC Address Decal (EU Only)	1

1.2.2 BEFORE YOU BEGIN

Before installing this fax unit:

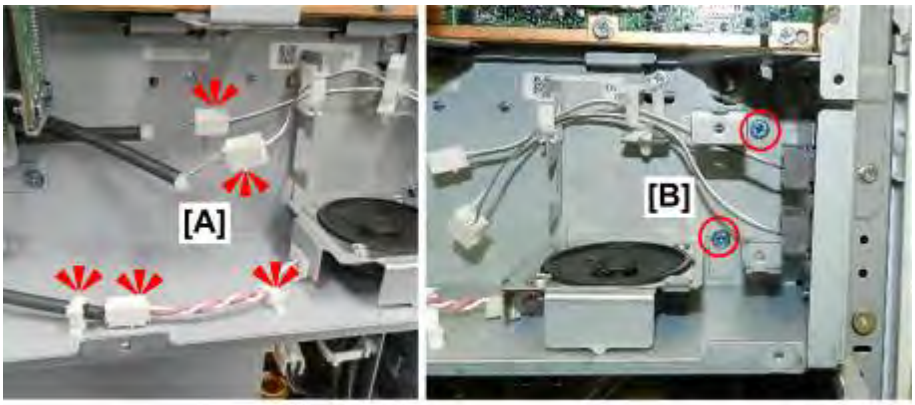
- Print out all data in the printer buffer.
- Turn off the main power switch and disconnect the power cord and the network cable.

These installation instructions describe how to install the fax option with one G3 option unit and two G3 option units.



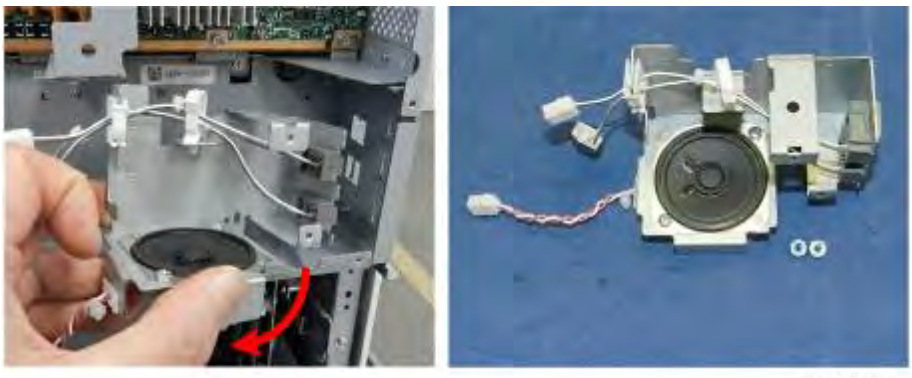
d619i035

If you are adding one (or two) G3 options units to a fax unit that has already been installed, you must first remove the FCU [A] unit and the speaker unit [B]. Once both units have been removed, you can follow either installation below for one G3 interface unit or two G3 interface units.



d619i036

1. Disconnect the FCU and speaker unit [A] (x3, x1).
2. Disconnect speaker unit [B] (x2).



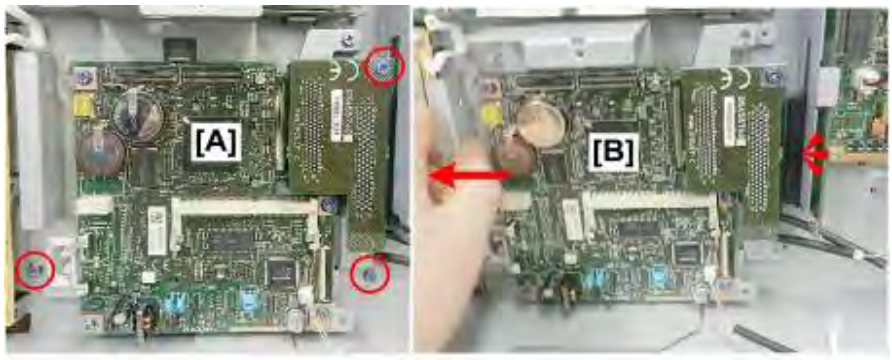
d619i037

3. Remove the speaker unit and set it on a flat clean surface.



d619i038

4. Disconnect the bottom edge of the IPU (x1, x3).



d619i039

5. Disconnect the FCU bracket (x3).
6. Pull the FCU bracket [B] to the left to disconnect it from the interface bracket on the right, and then remove it.



d619i040

7. Set the FCU bracket on a clean flat surface.
8. Follow either procedure below to re-install the FCU and speaker unit with one or two G3 interface units.

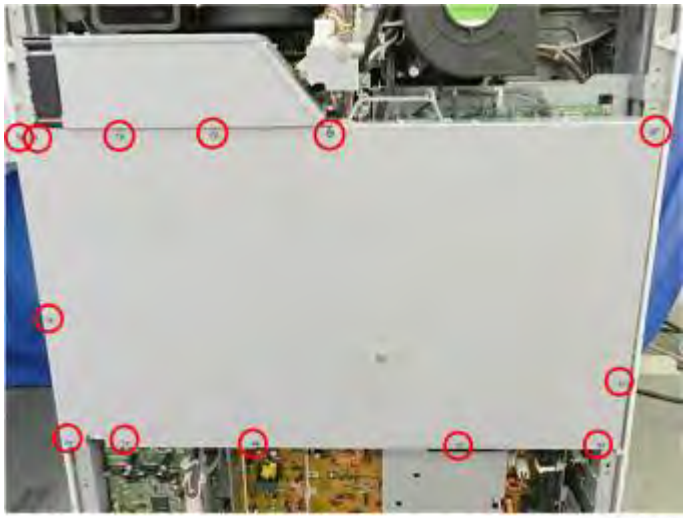
1.2.3 INSTALLATION

One G3 Interface Unit Installation



d619i001

1. Remove the rear upper cover [A] (x2).
2. Remove the rear lower cover [B] (x2).



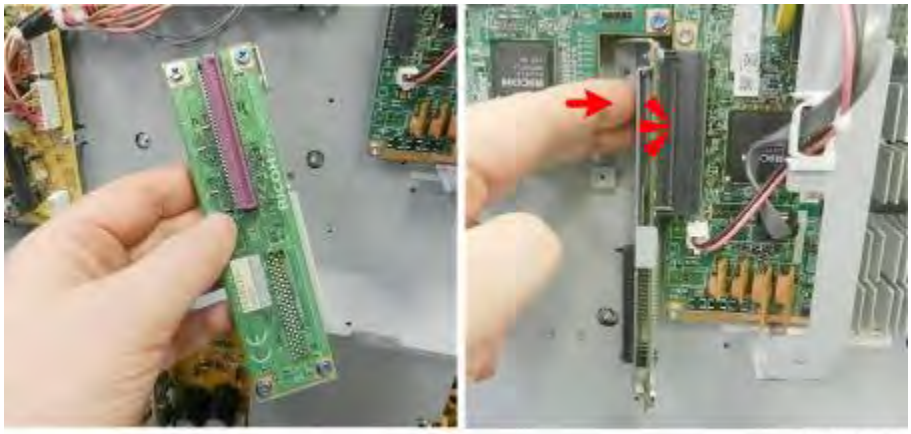
d619i002

3. Remove the controller box cover (x13).



d619i003

4. The fax unit is installed in the shaded area above (below the IPU and the controller board).



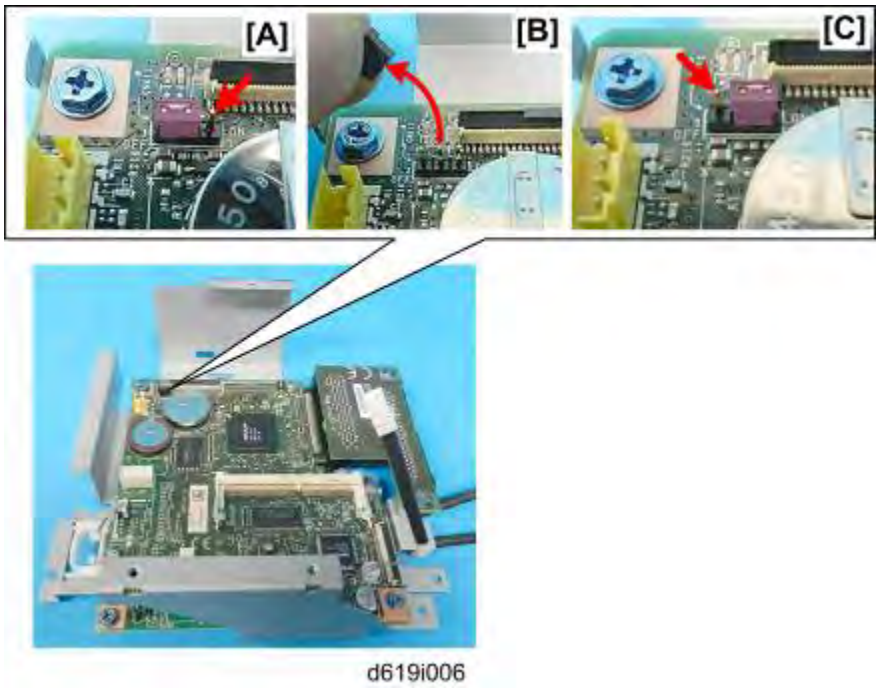
d619i004

5. Attach the interface board to the edge connector of the controller board.



d619i005

6. Fasten the interface board bracket to the frame (x2).



d619i006

7. Locate the jumper [A] on the FCU. There are two bare pins visible next to the "ON" notation on the board. (This is the OFF position.)
8. Remove the jumper [B].
9. Move the jumper one set of pins to the right and re-set it on the pins so that a bare set of pins [C] is visible next to the "OFF" notation. (This is the ON position.)

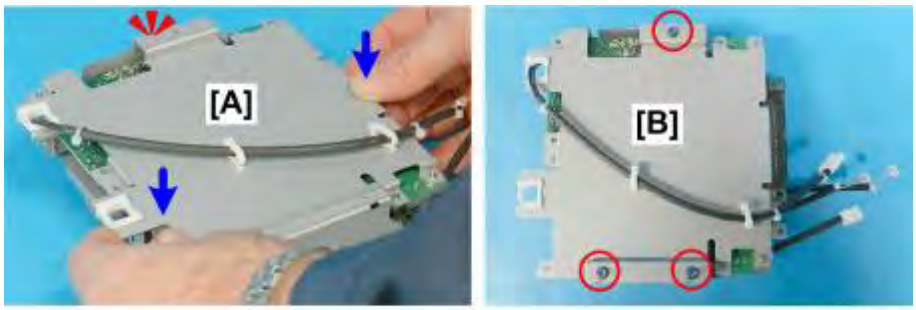
Important

- If the jumper is not moved from the OFF to the ON position, the machine will return SC672 (Controller Startup Error) when the machine is powered on.



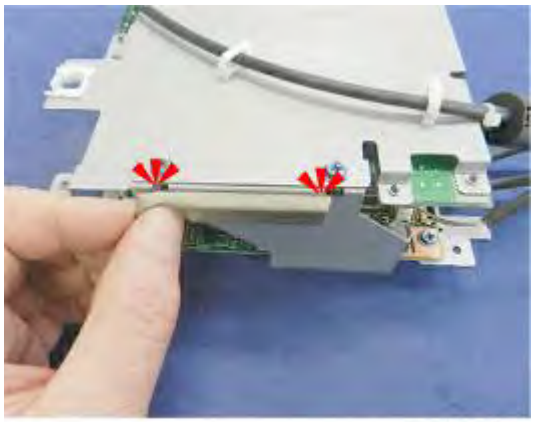
d619i019

10. Position the FCU [A] and G3 unit [B] as shown.

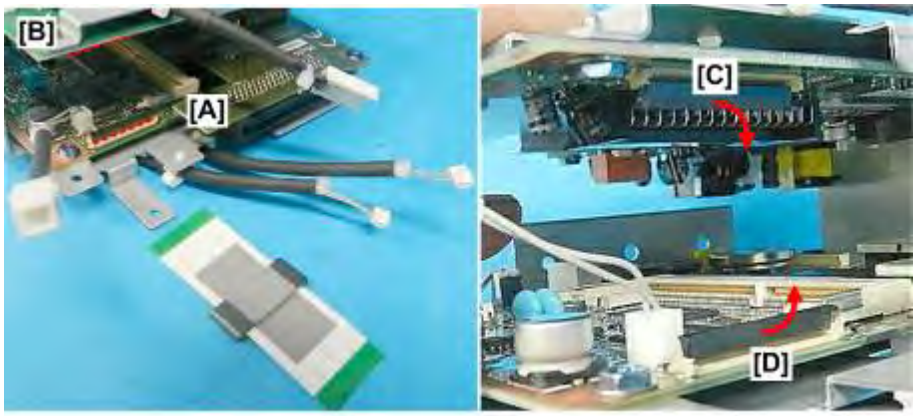


d619i020

11. Set the G3 unit [A] on the FCU.
12. Fasten the G3 unit [B] to the FCU (x3).

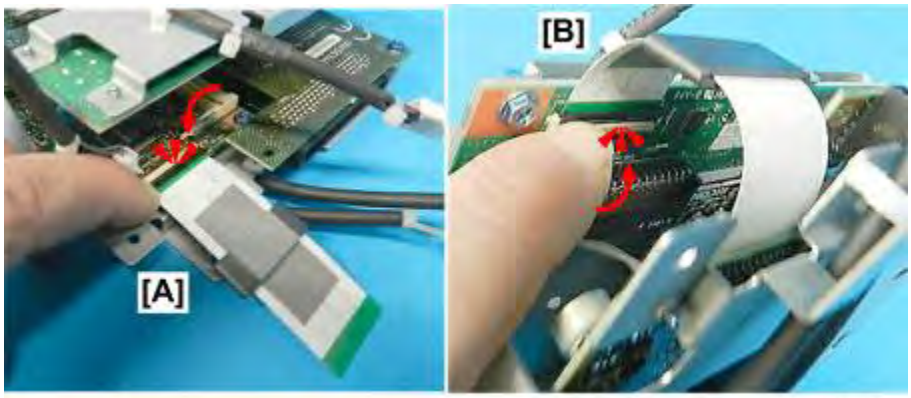

d619i020a

13. Attach the gasket to the bracket.



d619i021

14. The FCU [A] and G3 unit [B] are connected with an FFC.
15. Lower the FFC connector tab on the G3 unit [C] and raise the FFC connector tab on the FCU [D].

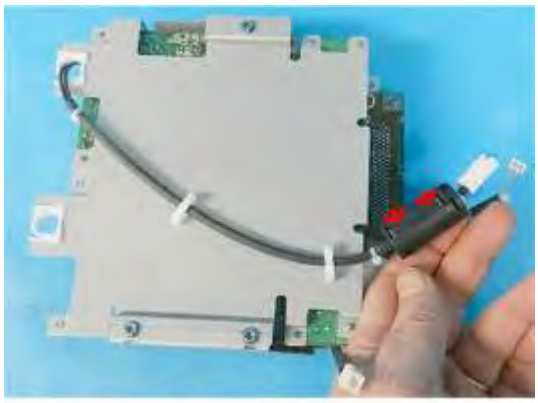


d619i022

16. With its green side facing up, set one edge of the FFC into the slot of the FCU [A] and lock it (x1).
17. With its green side facing down, set the other edge of the FFC into the slot of the G3 interface unit [B] and lock it (x1).

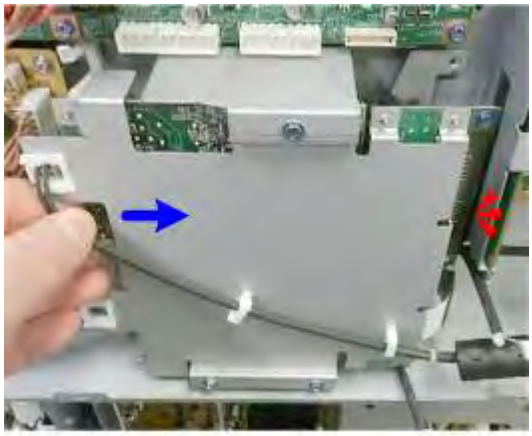

d619i023

18. Confirm that both green sides on either edge of the FFC are facing one another.



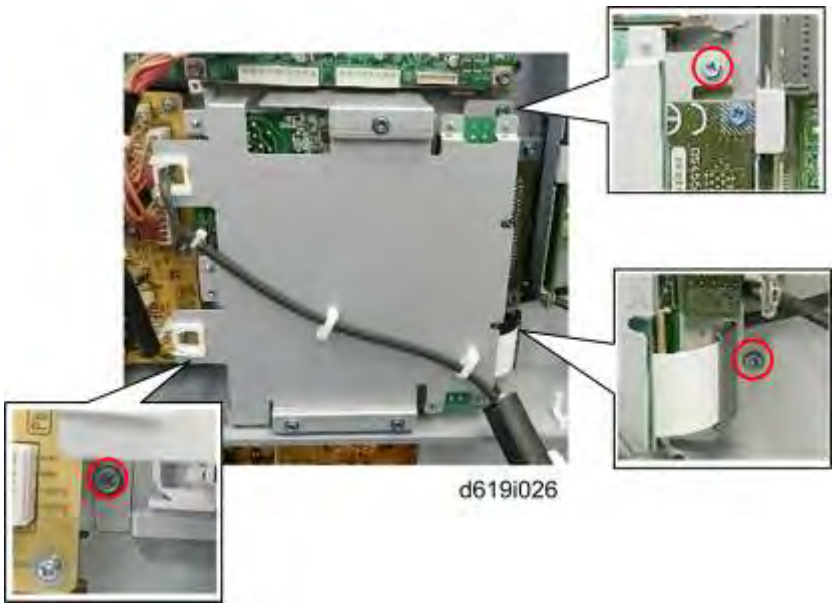
d619i024

19. Attach the small ferrite core to the cable.



d619i025

20. Set the FCU in the machine and then push it slowly to the right until its edge connector locks into the interface board edge connector.



d619i026

21. Fasten the FCU to the back of the machine (x3).



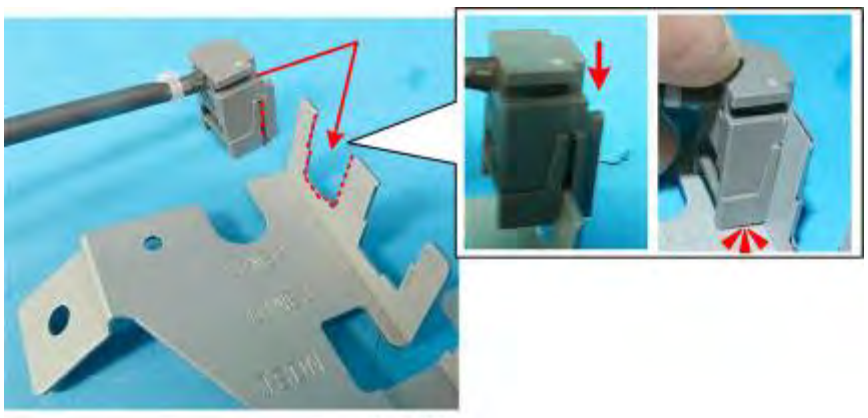
d619i027

22. Reattach the bottom edge of the IPU (x3, x1).



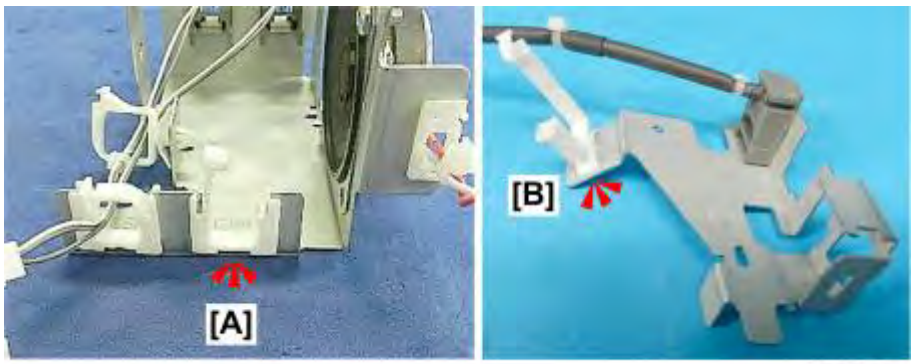
d619i509

23. Remove the three cut-outs from the controller box with a flat-headed screwdriver: LINE 1, TEL, and LINE 2.



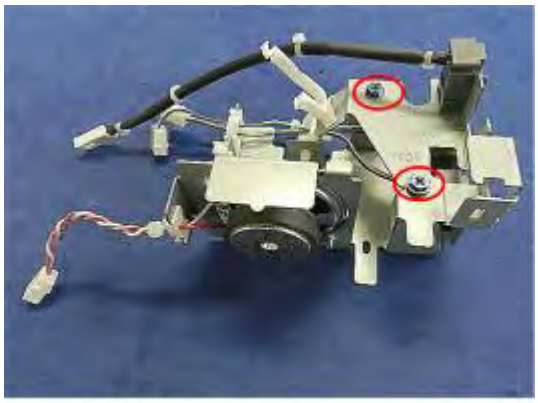
d619i028

24. Set the modular jack in the groove of the G3 connector bracket.
25. Push the head of the jack down so it locks in place.



d619i029

26. Attach the saddle clamp [A] to the G3 bracket.
27. Attach the post of the other clamp [B] to the slanted arm of the bracket.



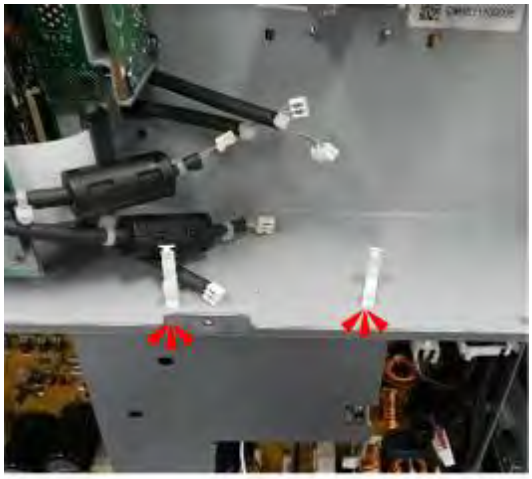
d619i034

28. Attach the modular jack bracket to the speaker unit (x2).



d619i030

29. Attach the large ferrite core and clamp the modular jack harness (x2)..



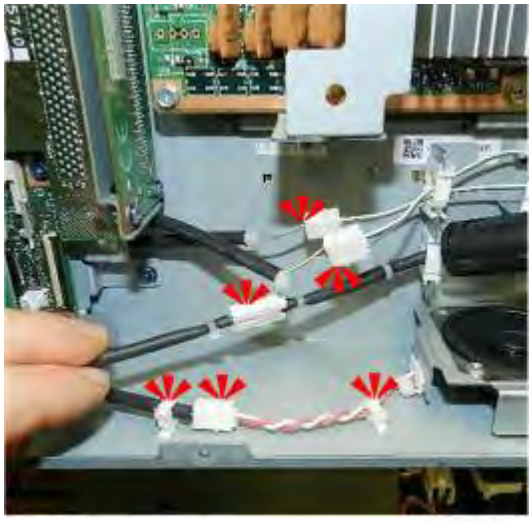
d619i031

30. Set the two small clamps provided with the fax unit.



d619i032

31. Set the speaker unit in the lower right corner (below the controller board) and fasten it to the back of the machine (x2).



d619i033

32. Connect the harnesses between the speaker unit and the FCU/G3 (x4, x2).
33. Reattach:
    - Controller box cover (x 13).
    - Rear lower cover (x 2).
    - Rear upper cover (x 2).

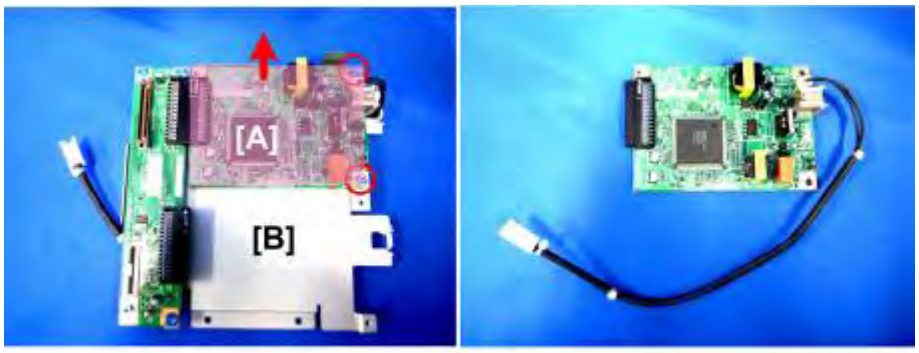
Two G3 Interface Units Installation

1. Do Steps 1 through 9 of the previous procedure.



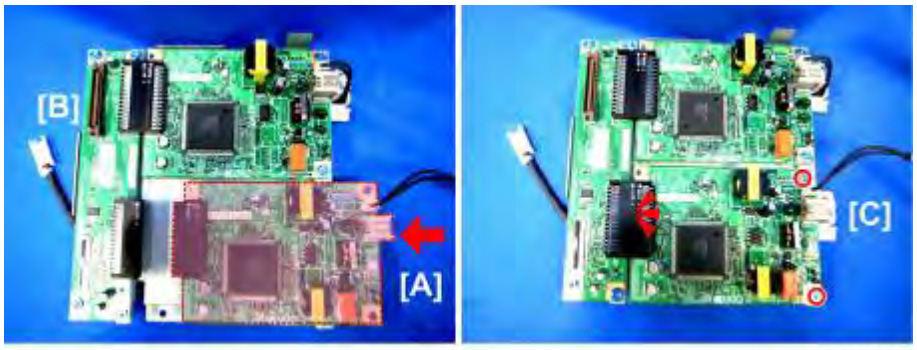
D418i551

2. Release the three clamps on the second G3 unit.



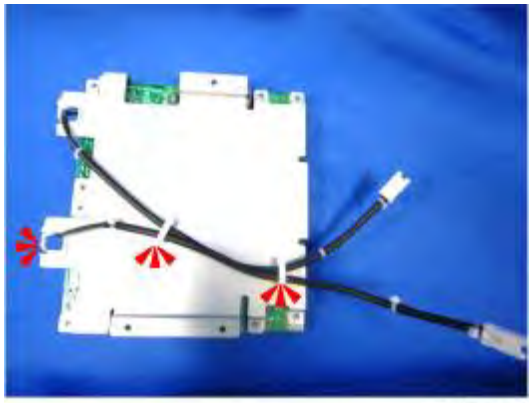
d418i552

3. Remove the G3 board [A] from the second G3 interface unit [B] (x 2).



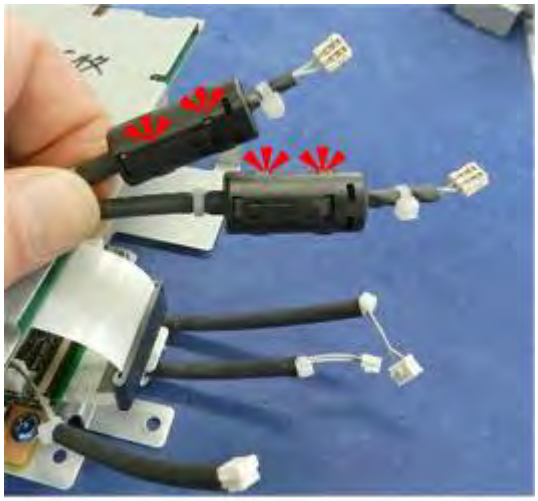
D418i554

4. Push the G3 board [A] into the edge connector of the first G3 interface unit [B] (x1).
5. Make sure that the edge connection is secure.
6. Fasten the board from the 2nd G3 unit (x2).



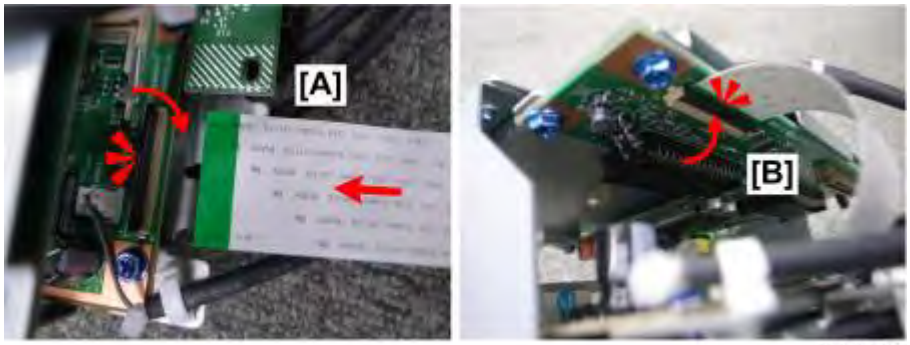
d416i556

7. Clamp both harnesses (x 3).



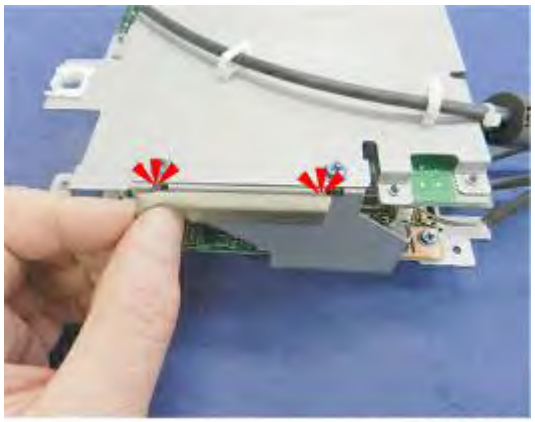
D418i560

8. Attach one small ferrite core to each harness running across the front plate.



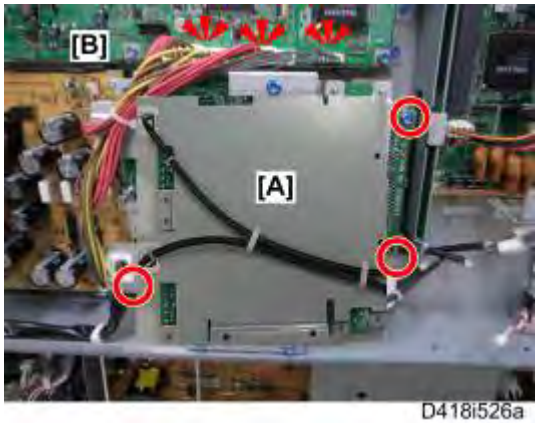
d418i521

9. With its green side facing up [A], connect one end of the FFC to the FCU below (x1).
10. Loop the other end up [B] and connect it to the G3 interface unit above (x1).
11. Confirm that both green edges are facing one another.



d619i020a

12. Attach the gasket to the G3 bracket.



D418i526a

13. Install the FCU and G3 unit assembly [A] in the interface board (x3).
14. Reconnect the bottom of the IPU (x3, x1).



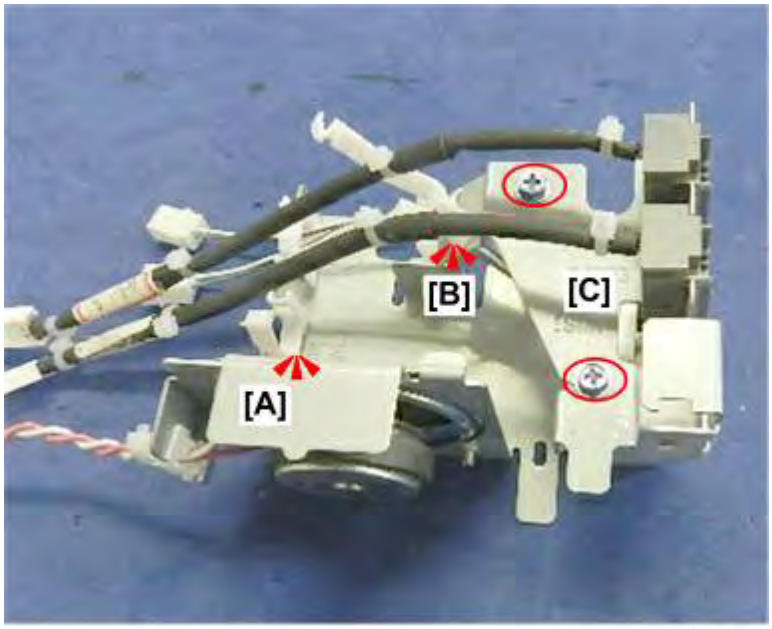
d619i509b

15. Remove the four cut-outs from the controller box with a flat-head screwdriver: LINE 1, TEL, LINE 2, LINE 3.



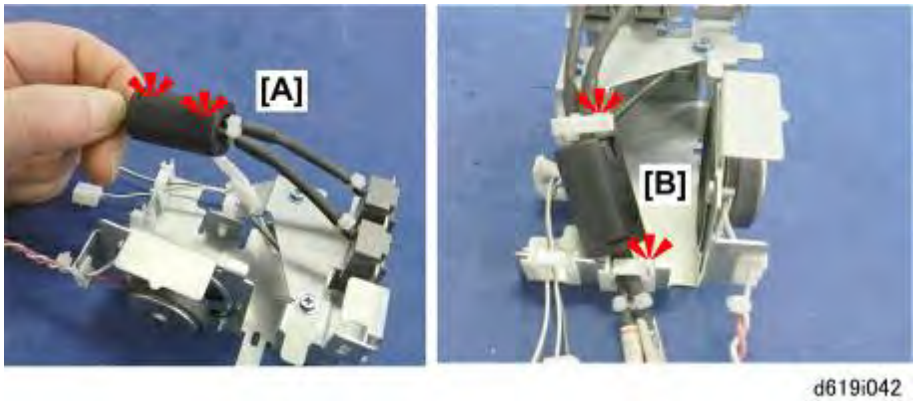
d418i557

16. Attach the two modular jacks to the G3 connector bracket.



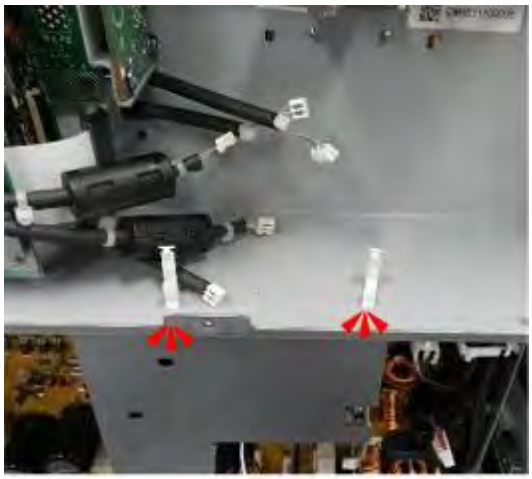
d619i041

17. Attach the saddle clamp [A] to the G3 bracket.
18. Attach the post of the other clamp [B] to the slanted arm of the bracket, and then clamp both harnesses (x2).
19. Attach the modular jack bracket [C] to the speaker unit (x2).



d619i042

20. Wrap the large ferrite core [A] around both harnesses and lock it.
21. Close the clamps on either end of the ferrite core [B] (x2).



d619i031

22. Set the two small clamps provided with the fax unit.



d619i032

23. Set the speaker unit in the lower right corner (below the controller board) and fasten it to the back of the machine (x2).



d619i043

24. Connect the harnesses between the FCU/G3 speaker unit and the fax unit (x5, x2).

Important

- On the left, the upper harness is LINE 2 and the lower harness is LINE 3.
- Make sure these harnesses are matched and connected with the LINE 2 and LINE 3 harnesses on the right. (The modules are clearly marked "LINE 2" and "LINE 3".

25. Reattach:
    - Controller box cover (x 13).
    - Rear lower cover (x 2).
    - Rear upper cover (x 2).

Decal Attachment



1. Attach the fax function decal [A] to **F5**.

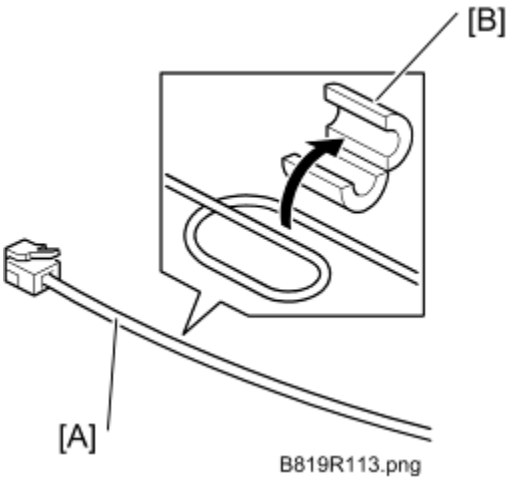
   Important

   - After fax installation, the fax function is assigned to F5. This is the default. You can change the function key assignment with User Tools.
2. Attach the multi-language decal [B] (EU only).
3. Attach the FCC decal to the rear cover of the machine (NA only).
4. Connect the power plug to an outlet.

   Important

   - Make sure that the power outlet is grounded.
5. Turn the machine on. In the bottom left corner of the screen, a message will tell you that the SRAM is being formatted.
6. When the reformat is finished, cycle the machine off and on again.
7. Enter User Tools and make sure that the date and time settings are set correctly.

Line Connection and Settings



1. Loop one end of the telephone cable [A] once, then enclose it with the ferrite core (K3 NF-75(N)BK0) [B] as shown.

   Note

   - Attach the ferrite core at least 9 cm (3.5 in.) from the connector.
   - Attach a ferrite core to the 2nd G3 line if two G3 boards are installed.

2. Connect the telephone cable to "LINE 2" jack.

   -or-

   If two G3 boards are installed, connect the cables to "LINE 2" and "LINE 3" jacks.

3. Connect the machine power cord to the power supply, then turn on the main power switch.
4. Enter the Service Mode.
5. Touch "Fax SP"
6. Do these communication switch settings:

SP1104-23 (Switch 16)	Set Bit 1 "1".
	Set Bit 3 "1" if two G3 boards are installed.

7. Exit the Service Mode and turn the machine off/on with the main power switch.
8. Do SP5990-001 to print the system parameter list, then confirm that "G3" is listed as an option.
9. Enter the Service Mode and set the items required for PSTN communication.
   - If one G3 line is installed, use SP3103 (PSTN-1 Port Settings) to do the PSTN settings.
   - If two G3 lines are installed, use SP3103 (PSTN-1 Port Settings) and SP3104 (PSTN-2 Port Settings) to do the PSTN settings for the first and second G3 line.

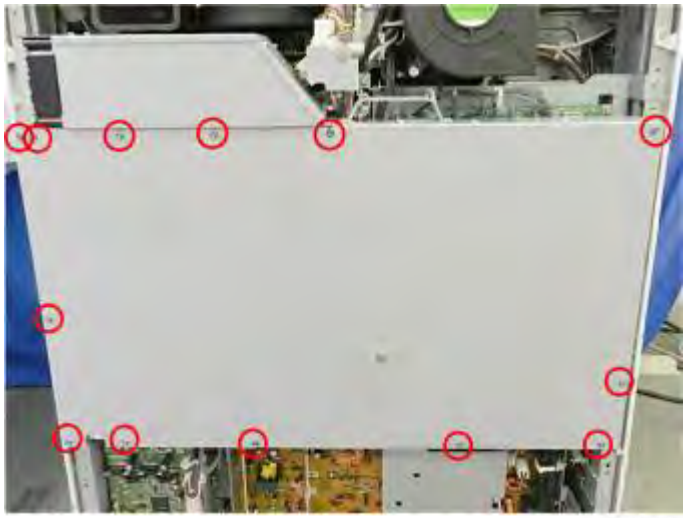
1.3 FAX UNIT OPTIONS

1.3.1 MEMORY UNIT (G578)



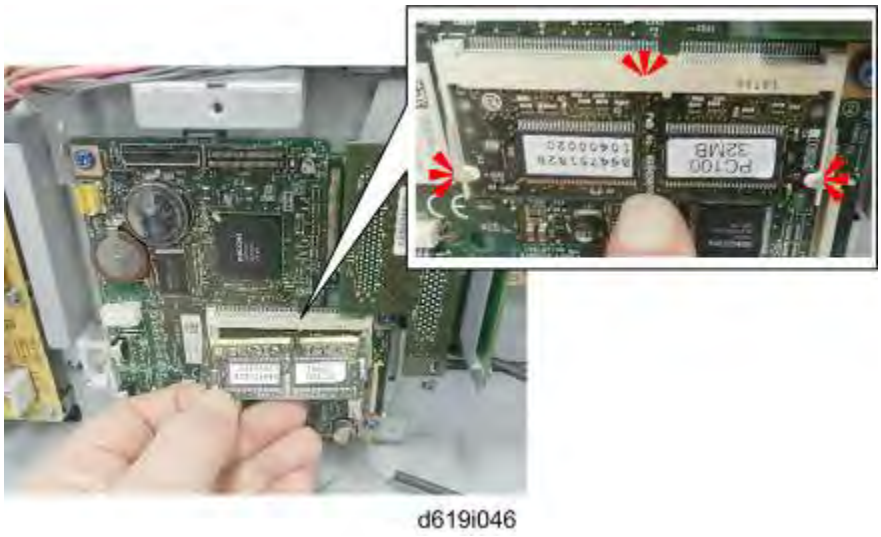
d619i001

1. Remove the rear upper cover [A] (x2).
2. Remove the rear lower cover [B] (x2).



d619i002

3. Remove the controller box cover (x13).



d619i046

4. Set the memory board in the slot on the FCU.

1.4 FAX CONNECTION UNIT TYPE E (D621)

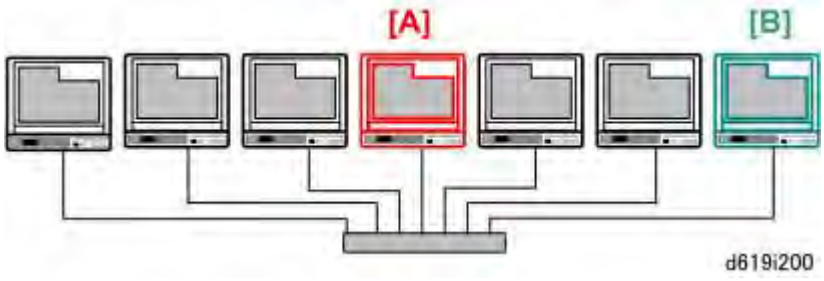
1.4.1 ACCESSORIES

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

No.	Description	Q'ty
1.	Remote Fax Card Type 31	1
2.	Remote Fax Card Type 32	1

1.4.2 OVERVIEW

This option is used to connect up to six machines without fax hardware (FCU and G3 boards) to only one machine with an FCU and G3 board installed. Every connected machine acts as a fax machine. As only one machine requires the fax hardware, this achieves a significant cost reduction. However, each of the six machines requires the Fax Connection Unit.



The machines must be on the same network. In the drawing above, [A] has the FCU (Fax Option Type 9002 (D619)) and at least one G3 interface board installed (G3 Interface Unit Type 9002 (D619)). Another machine [B] without the fax hardware (in the same network) can be connected to the master machine to make it capable of functioning as a fax.

- The machine with the fax hardware installed is the **Master** machine.
- The machine without the fax hardware connected to the master machine is the S**lave** machine.

There are some restrictions.

- The machines must be on the same network.
- Every Master and Slave machine requires installation of the Printer/Scanner Unit Type 9002 (D620).

- Up to six machines can be slaved to one master machine.
- The fax transmissions for slave machines can be done on a G3 line only. This means the master machine requires installation of not only the Fax Option Type 9002 (D619) but at least one G3 Interface Unit Type 9002 (D619).

1.4.3 GENERAL PRECAUTIONS

Before shipping, the settings of every machine are set to the factory defaults. There are no factory default settings done for remote fax connection.

Here are some other important points to keep in mind about remote fax connection.

- Before you set up a machine as a master machine for the first time, always check the machine and confirm that there are no fax transactions queued for sending or printing. If such transactions exist, send or print the files.
- Before you disable the remote fax connection of a master machine, make sure there are no fax transactions queued for sending, files received and queued for printing, or files queued for sending to a slave machine. If such files exist, send them or print them.

  Important

  - Files queued for sending or printing can cause problems during installation of this option. Before setting up one or more remote connections with this option, always make sure there are no files queued for either transmission or printing.
- If a machine that has never been used in a remote fax connection is to slaved to a master machine, or if the machine was previously used as a slave machine and is to be used as the master machine, initialize the machine with the Fax Default Program (described below) to restore the factory defaults.

1.4.4 INSTALLATION

Before You Begin: Checklists

Check the machine to be set up as the master. The following items must be installed in the master machine.

- Printer/Scanner Unit Type 9002 (D620). Installation is described in the Field Service Manual. The P/S SD card must be in SD card Slot 1.
- Fax Option Type 9001 (D619). This is the FCU. Installation is described in this manual.
- G3 Interface Unit Type 9002 (D619). At least one G3 unit is required. Installation is described in this manual.

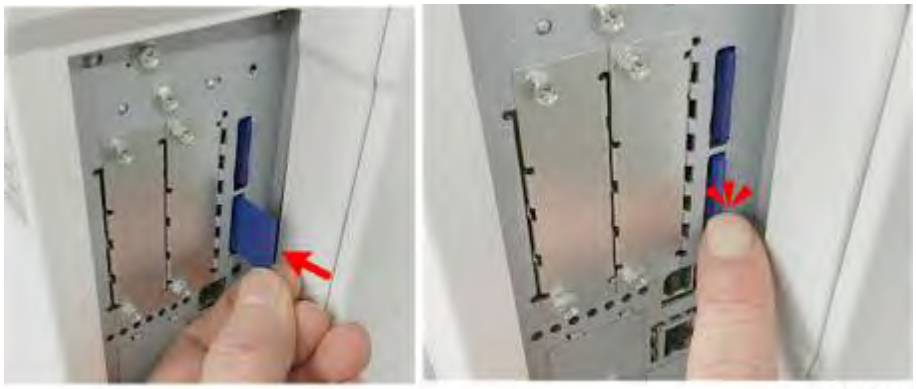
Check the machines to be slaved. The following item must be installed in a slave machine.

- Printer/Scanner Unit Type 9002 (D620). Installation is described in the Field Service Manual. The P/S SD card must be in SD card Slot 1. Installation is described in the Field Service Manual.

These items must be installed in the master and slave machines before doing the procedures below.

Slave Procedure I

1. Turn the machine off and disconnect it from its power source.
2. Remove the SD card slot cover (x1).
3. Confirm that the Printer/Scanner SD card is in Slot 1.



d619i048

4. With its label turned away toward the front of the machine, insert **Remote Fax Card Type 31** into SD card slot 2 (lower slot). Push it in until you hear it click and lock in place.
5. Connect the machine power cord to its power source, and then turn the machine on.
6. Enter the SP mode.
7. Do **SP5-873-1** to move the fax connection application from the SD card in Slot 2 (lower slot) to the Printer/Scanner SD card in Slot 1 (upper slot).
8. Switch the machine off.
9. Remove the remote fax SD card from Slot 2, and then store it in a safe place.

10. Re-attach the SD card slot cover, and then switch the machine on.
11. At the Ready screen, press [User Tools/Counter] on the operation panel.
12. Touch the Administrator Tools tab.



d619i201

13. Make sure the two items shown above are Off.

Slave Procedure 2

1. Under the System Administrator tab, touch [Program/Change/Delete Remote Machine].



d619i202

2. Enter the IP address (or host name) of the Master machine.
   - Only one Master machine can be registered on the Slave machine.
   - Do not try to do more than one setting.
3. Touch [Exit] to close the screen.

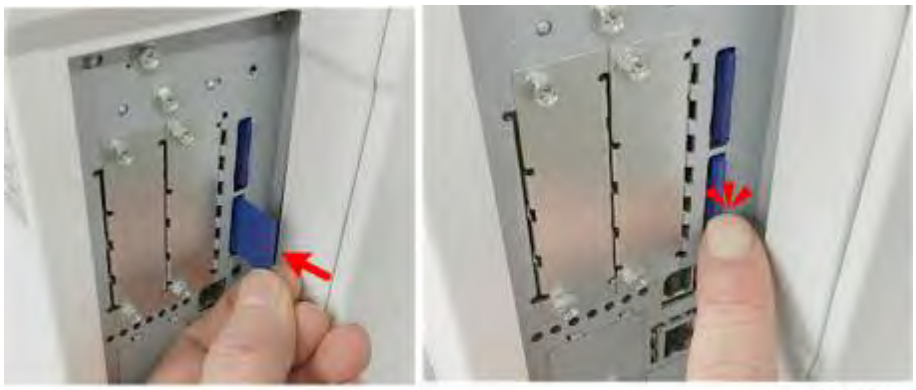
Master Machine Procedure 1

1. Turn the machine off and disconnect it from its power source.



d619i047

2. Remove the SD card slot cover (x1).
3. Confirm that the Printer/Scanner SD card is in Slot 1.



d619i048

4. With its label turned away toward the front of the machine, insert **Remote Fax Card Type 32** into SD card slot 2 (lower slot). Push it in until you hear it lock in place.
5. Connect the machine power cord to its power source, and then turn the machine on.
6. Enter the SP mode.
7. Do **SP5-873-1** to move the fax connection application from the SD card in Slot 2 (lower slot) to the Printer/Scanner SD card in Slot 1 (upper slot).
8. Switch the machine off.
9. Remove the remote fax SD card from Slot 2, and then store it in a safe place.
10. Re-attach the SD card slot cover, and then switch the machine on.
11. At the Ready screen, press [User Tools/Counter] on the operation panel.
12. Touch the Administrator Tools tab.



d619i201

13. Make sure the two items shown above are Off.

Master Machine Procedure 2

1. Under the System Administrator tab, touch [Program/Change/Delete Remote Machine]

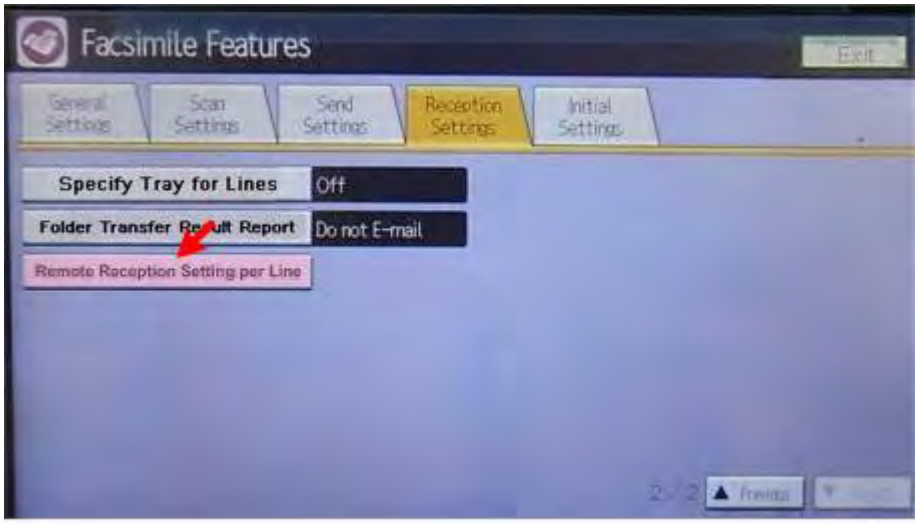


d619i202

2. Enter the IP address of the **Slave** machine, or the host name.
   - Only one Master machine can be registered on the Slave machine.
   - Do not try to set more than one machine.
   - Up to six machines can be registered as slave machines.
3. Touch [Exit] to close the screen.

Master Procedure 3

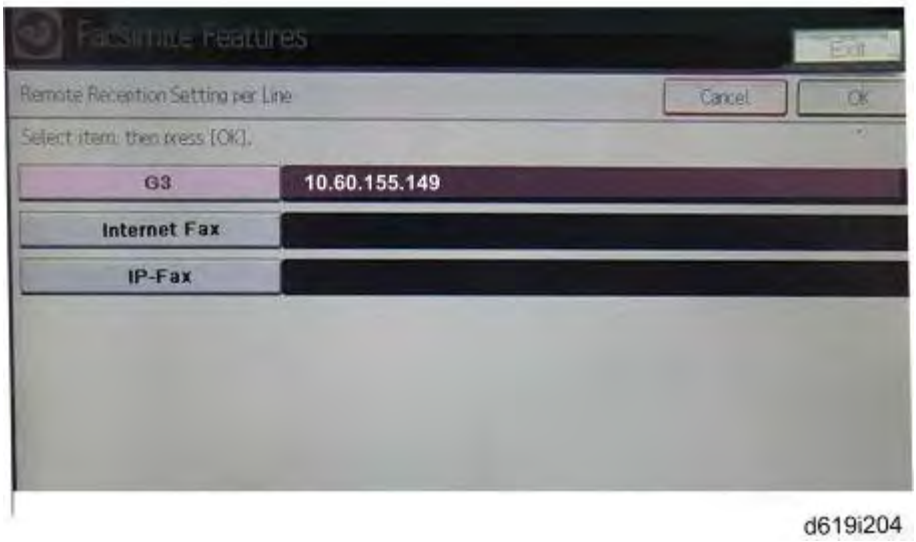
1. Touch [Facsimile Features].
2. Touch [Reception Settings].



d619i203

3. On the Reception Settings tab, touch [Remote Reception Settings per Line].

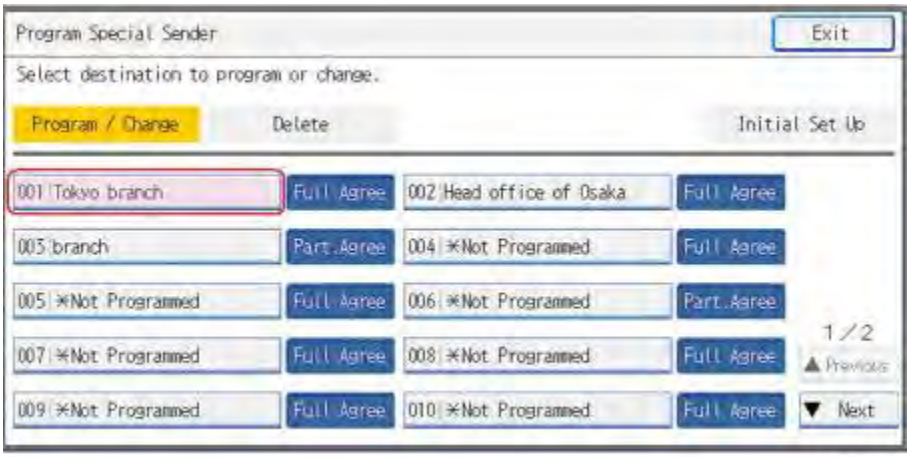
With Multiple Lines



d619i204

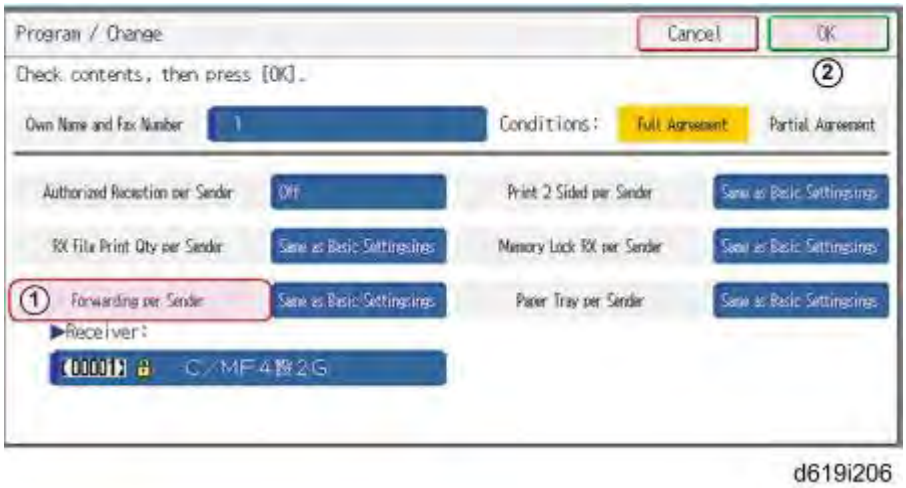
1. Enter the IP address or host name of the connection machine with the line designated for reception.
2. Do not touch [OK] on the Slave machine without a setting (this could cause an error).
3. Touch [OK] to finish the procedure.

Special Sender Setting



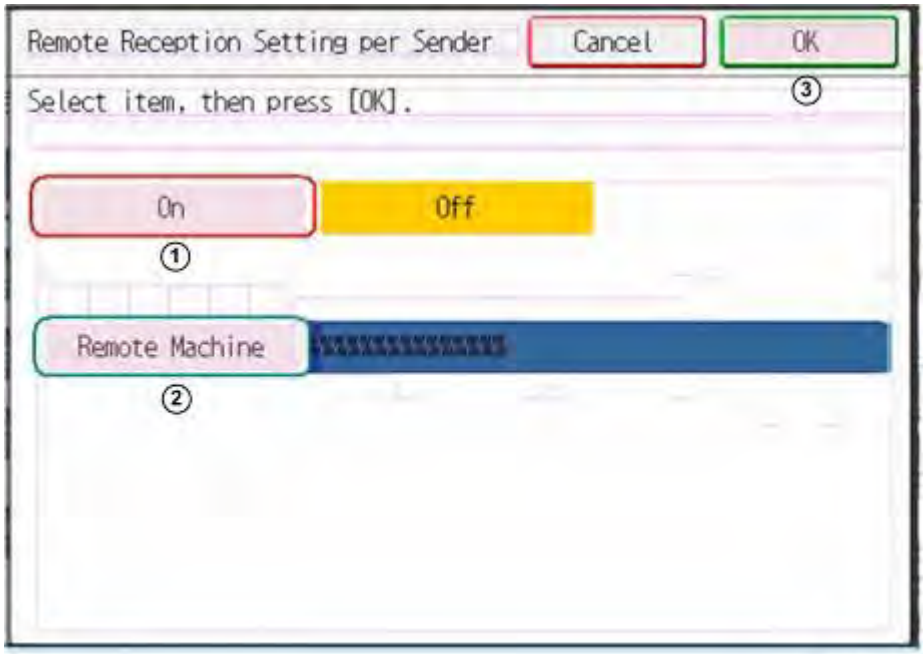
d619i205

1. Touch [Program Special Sender], and then touch the button of the special sender that you want to register.



d619i206

2. On the Program/Change screen, touch [Forwarding to Sender] and then touch [OK].



d619i207

3. On the Remote Reception Setting per Sender screen, touch [Connect] touch [ON], touch [Remote Machine] and then touch [OK].

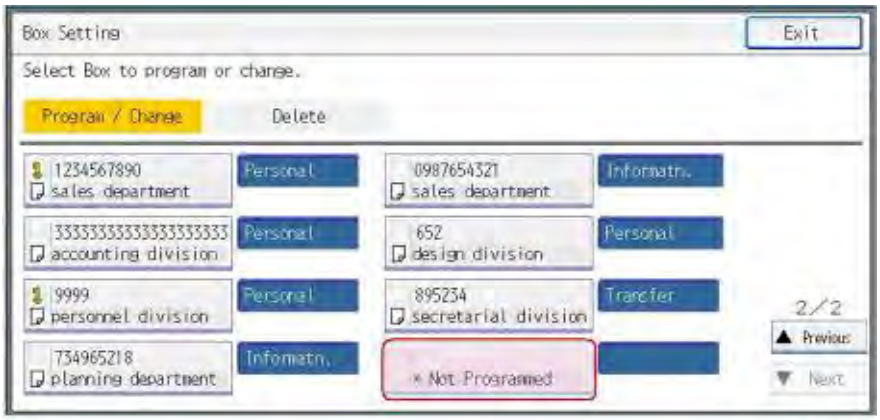
Dial-in Transfer Setting

1. On the Facsimile Features screen, touch the Initial Settings tab.



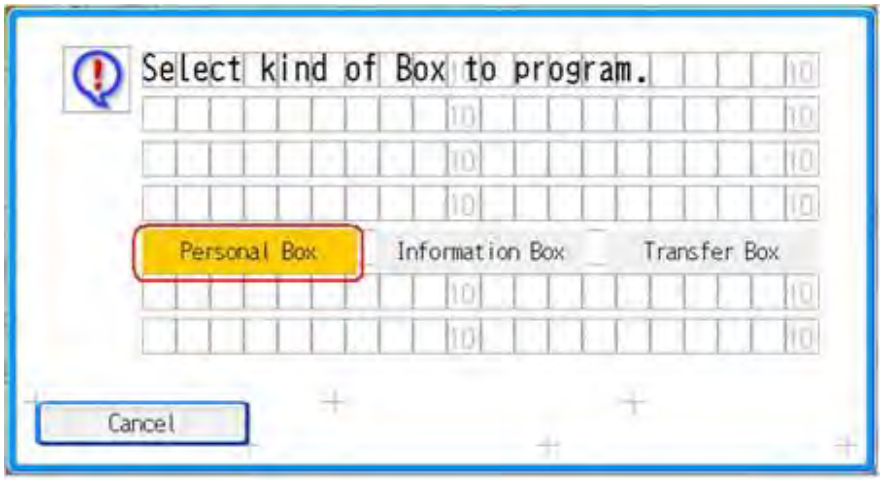
d619i208

2. Touch the [Box Setting] button.



d619i209

3. On the Box Setting screen press a button where you want to register a box.



d619i210

4. Touch [Personal Box].



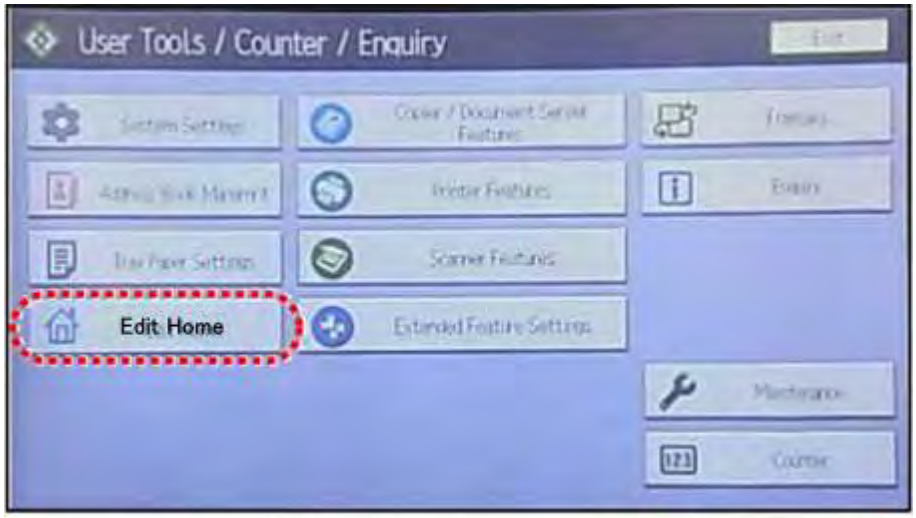
d619i211

5. On the Personal Box Setting screen, enter the dial-in number at ①.
6. Touch [Remote Machine], and then select the remote connection target ②.
7. Touch [ON] to save the settings.

Master Machine: Add Fax Icon for Remote Fax

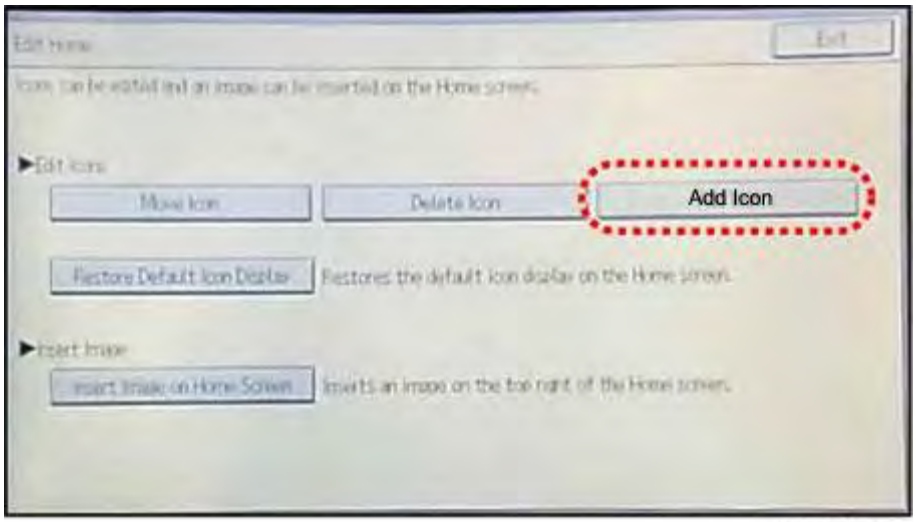
Follow this procedure to add the fax icon on the Home screen on the Master machine operation panel.

1. Press [User Tools/Counter] .



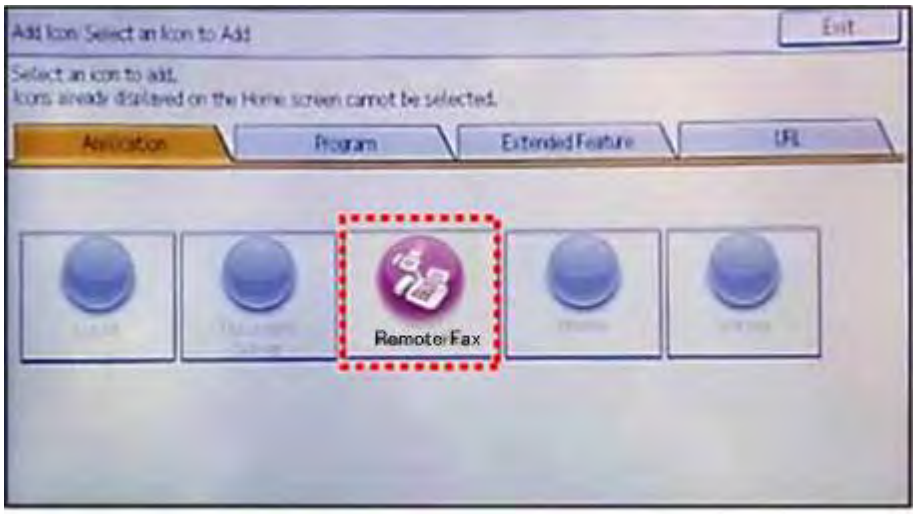
d1440144

2. Touch [Edit Home].



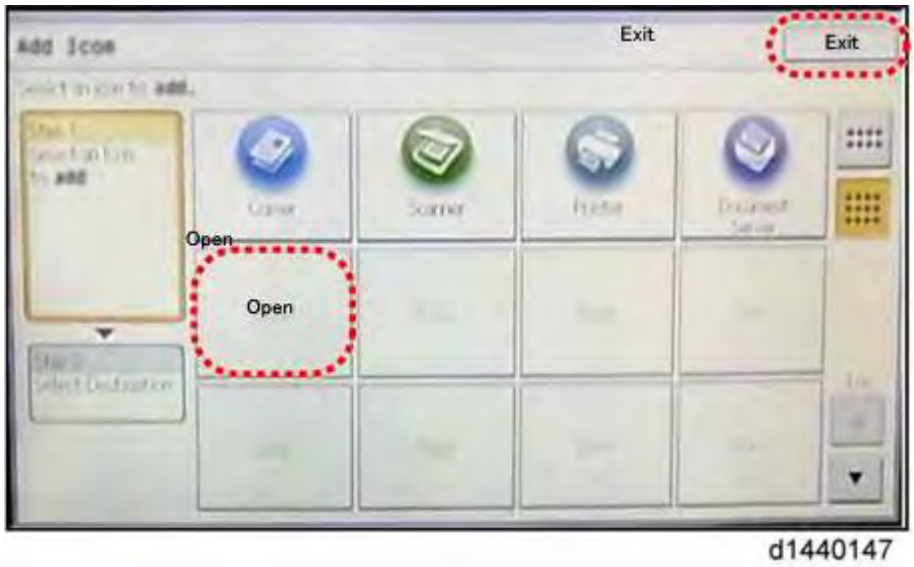
d1440145

3. Touch [Add Icon].



d1440146a

4. Touch [Remote Fax].



d1440147

5. Touch an [Open] key to select the location for the remote fax icon.
6. Touch [Exit] to end.

1.4.5 INITIALIZING THE FAX DEFAULT PROGRAM

After one of the following types of machines has been designated a Slave machine for remote fax connection, the Fax Default Program (fax operation screen after power on) must be executed to restore the factory default settings:

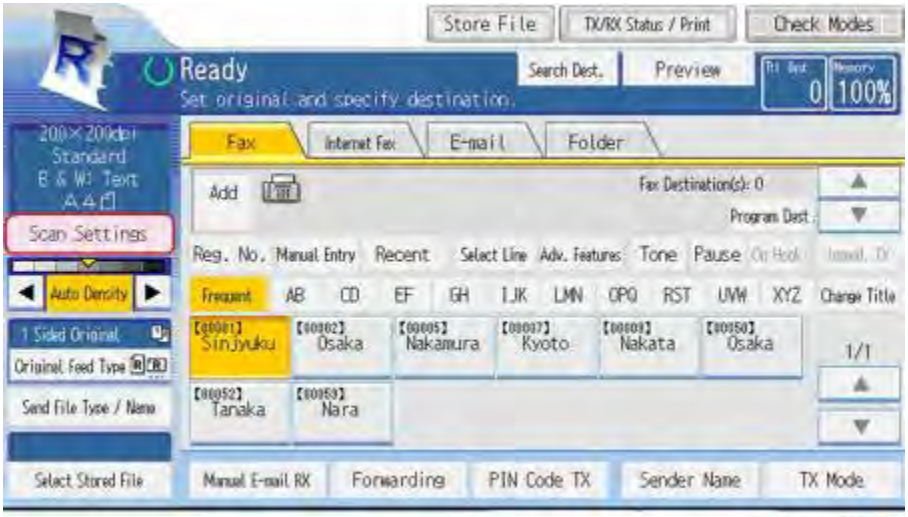
- An MFP machine previously operated as an independent fax but will now be designated a Slave machine.
- An MFP previously used as a Master machine and now to be designated a Slave machine.

Important

- Before executing the Fax Default Program, always review and note the user settings in case some of this information is lost during initialization.

The procedures below show you how to initialize the settings with the Fax Default Program, and how to check and reset settings that may have been lost by initialization.

Fax Scan Setting Information on the Normal Fax Screen



d619i212

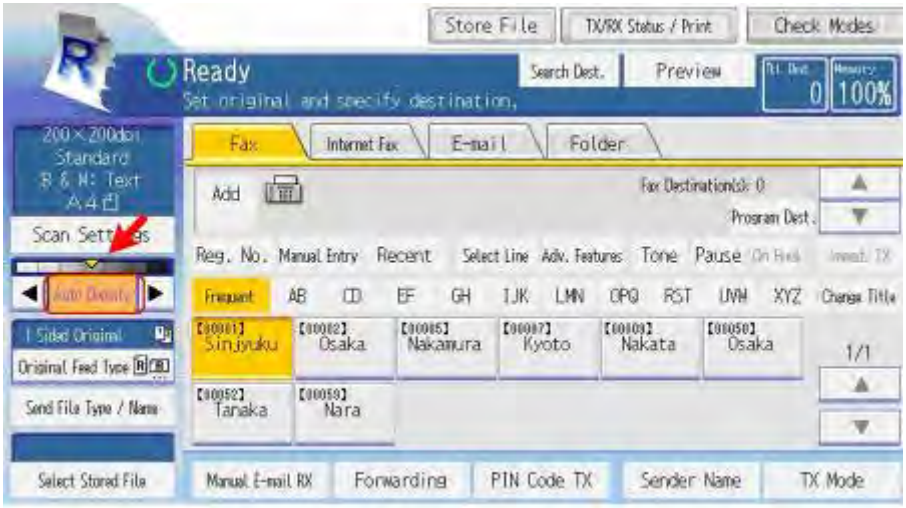
1. Touch the [Scan Settings] button.



d619i213

2. Touch each tab, and then note the settings.

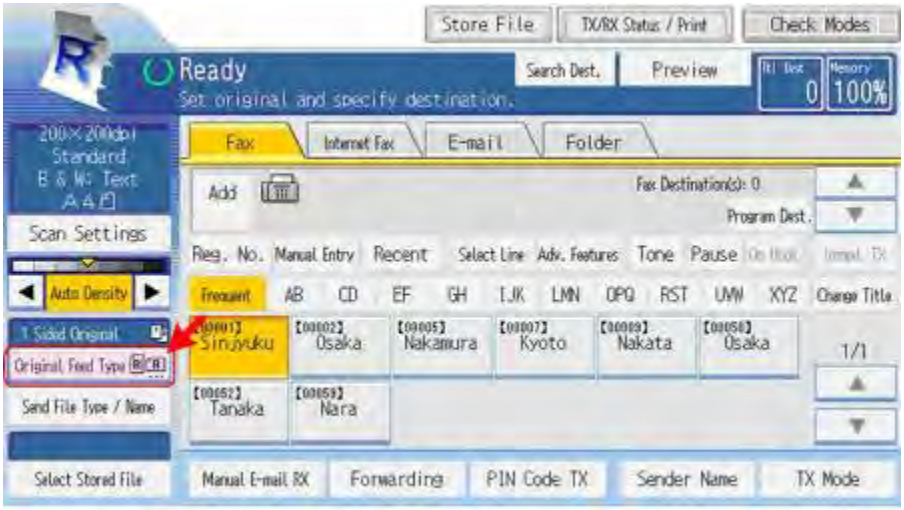
Density Settings



d619i214

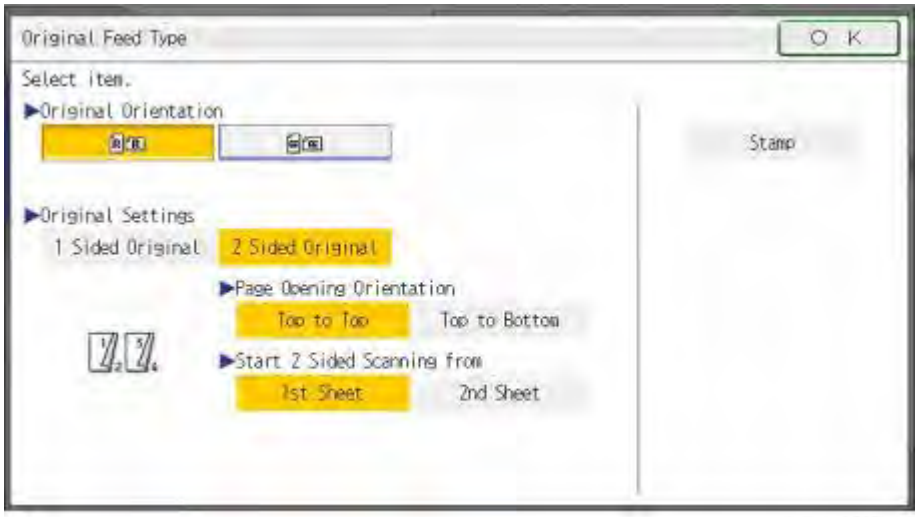
1. Note the Auto Density setting.

Original Setting



d619i215

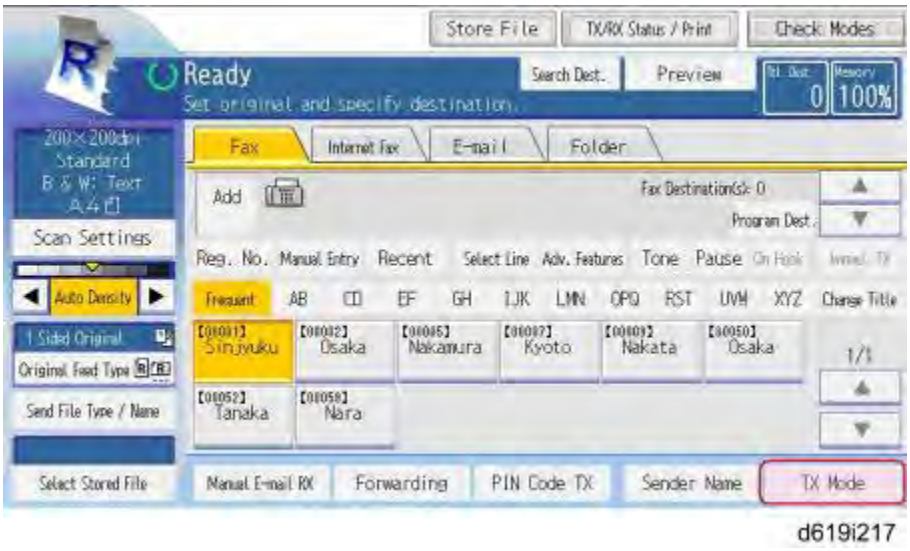
1. Touch the [Original Feed Type] button.



d619i216

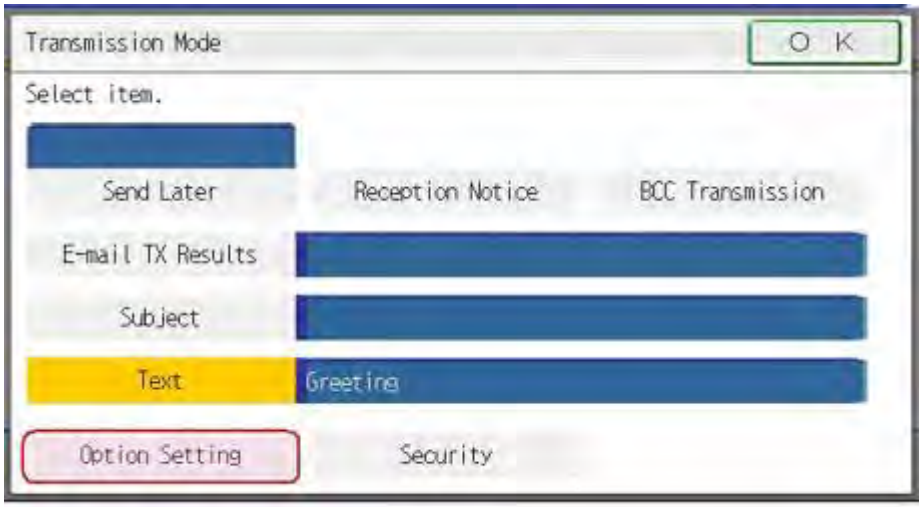
2. Note the settings on the Original Feed Type screen.

Fax Header Print (TTI)



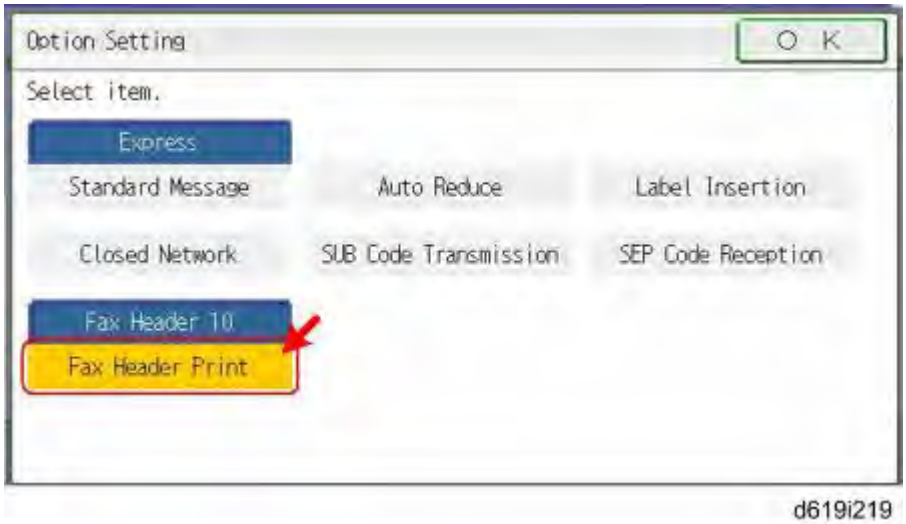
d619i217

1. On the Fax Ready screen, touch [TX Mode].



d619i218

2. Touch the [Option Setting] button on the Transmission Mode screen.



d619i219

3. Note the settings on the Option Setting screen

Line Select



d619i220

1. Touch [Select Line] on the Fax Ready screen.



d619i221

2. Note the setting on the Select Line screen.

Fax Scan Setting Information on the Normal Fax Screen



d619i222

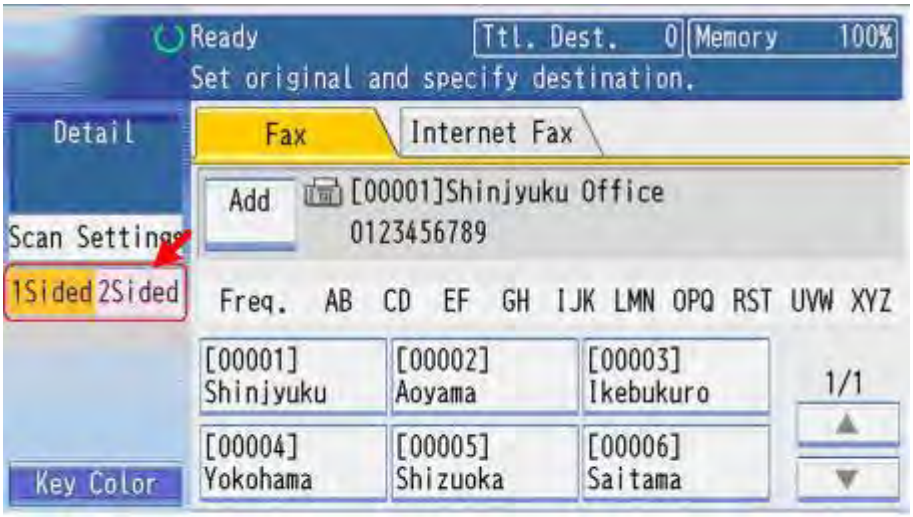
1. Touch [Scan Settings] on the simplified Fax Ready screen.



d619i223

2. Note the Scan Settings.

Simplex/Duplex

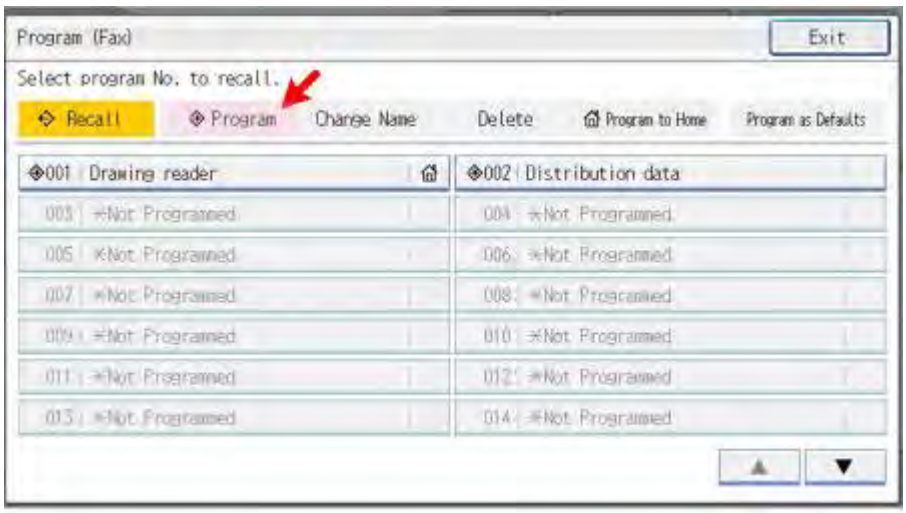


d619i224

1. Touch the [1 Sided 2 Sided] button.
2. Note the settings.

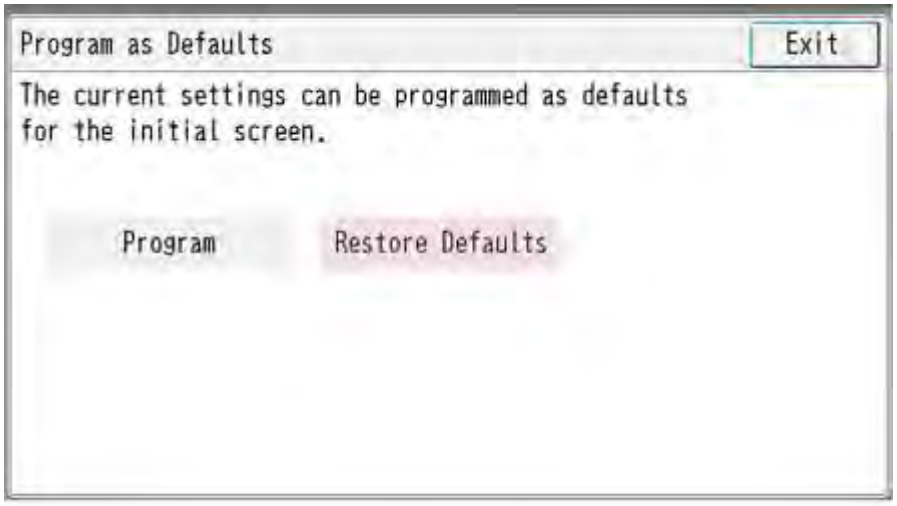
Default Program Initialization Flow

1. Touch [Program] on the fax initial screen.



d619i225

2. Touch [Program] on the Program (Fax) screen.



d619i226

3. Touch [Restore Defaults] restore the default settings.

1.4.6 IMPORTANT NOTES

General Notes

Here are some important points to keep in mind:

- The recognition user code cannot be used for fax connection from either the Master or the Slave machine.
- Mail sending with the fax connection (send result mail, scan-to-email same information sending) is not compatible with S/MIME.
- The Slave machine may receive faxes from the Master machine line for dial-in and special target transmissions.
- A Slave machine cannot be used in a fax connection with an externally installed counter device.
- When a fax is sent using an address from the Slave machine address book, the transmission destination is entered directly into the job log of the Master machine so it can manage the transmission.
- Fax connection transmissions are not compatible with sending to a destination folder.
- The address book of a Master machine cannot be accessed from a Slave machine.
- Settings for dialing "0" and area codes are stores in the settings on the Master machine.
- An Activity Report records only the destinations of the senders. The main text of the transmission is not shown.
- Only two Fax Headers (TTI) can be registered for the Slave machine.
- The counter on the Slave machine tallies fax TX/RX transactions
- In regard to TX/RX fax image capture, the Slave machine conducts TX transactions and the Master machine conducts RX transactions.
- The quality of received messages printed on a Master and Slave machine may differ slightly.

- The settings for fax send transactions are limited on the Slave machine to the following features:

  - Memory Sending
  - One-Touch Speed Dial
  - Direct Dial Screen
  - Re-dial Screen
  - Original Type
  - Resolution
  - Scanning Size
  - Mixed Sizes
  - Auto Density
  - Manual Density
  - Original Set Direction
  - Original Side
  - Stamp
  - Address Registration
  - Line Selection
  - Fax Header Print (TTI)
  - Activity Report
  - TX Document Check/Cancel
  - Activity Report (TX) Display
  - Activity Report (RX) Display

- On a Slave machine, the settings for RX transactions are limited to duplex printing and output tray selection
- When user authentication is implemented, be sure to implement the same methods for all connected machines.

Functions Available on the Initial Fax Screen of a Connected Machine

- The only line that can be selected for fax operation on the Master machine is a G3 line.
- The content of a fax header (TTI) print can be selected from only one of two settings.

Sending with Fax Connection

The information for the following functions is registered and stored on the Master machine:

- Address book
- LDAP server

Transaction results for fax connected transmissions

Reports may not print for some types of transactions of machines in a fax connection.

2. REPLACEMENT AND ADJUSTMENT

2.1 FCU REPLACEMENT

2.1.1 SRAM DATA TRANSFER PROCEDURE

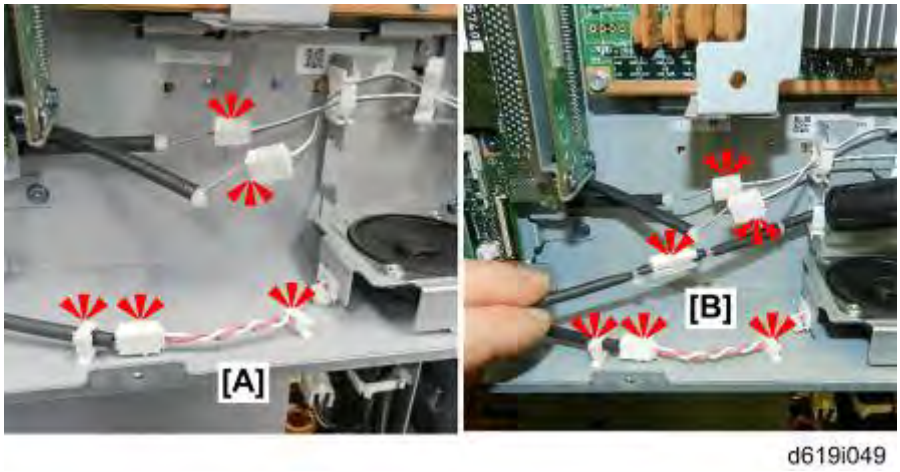
When you replace the FCU board, follow this procedure to transfer the SRAM data from the old FCU board to the new FCU board.

Note

- The following data is transfered: TTI, RTI, CSI, Fax bit switch settings, RAM address settings, and NCU parameter settings

Remove Fax Unit

1. Switch the machine off.
2. Disconnect the machine from the network.



d619i049

3. Disconnect the FCU and speaker unit.

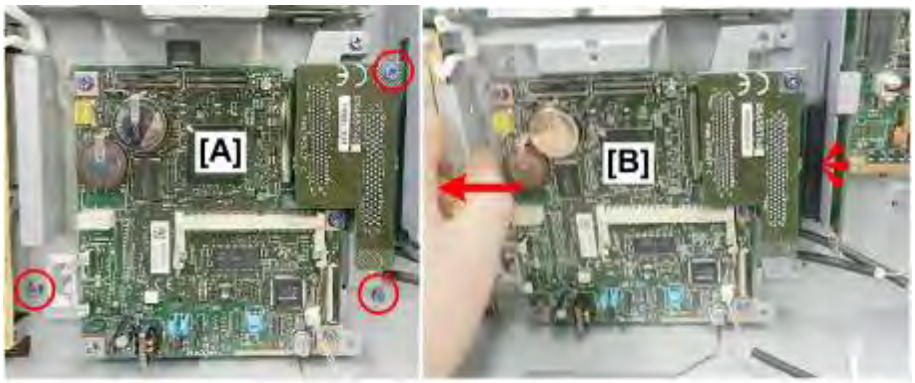
Important

- Be sure to disconnect all the harnesses between the FCU and speaker unit.
- If there is one or two G3 units installed, there will be more connectors ([A] shows no G3 unit installed, and [B] shows one G3 unit installed).
- Do not remove the speaker unit.



d619i038

4. Disconnect the bottom edge of the IPU (x1, x3).

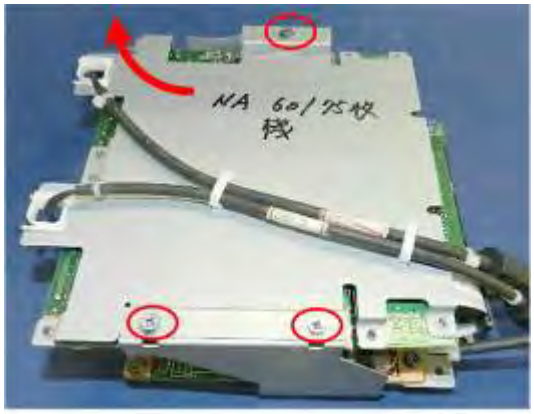


d619i039

5. Disconnect the FCU bracket (x3).
6. Pull the FCU bracket [B] to the left to disconnect it from the interface bracket on the right, and then remove it.
7. Lay the FCU bracket on a clean flat surface.

Remove the FCU

1. Skip Steps 1 to 3 if a G3 unit is not installed.



d619i050

2. Remove the G3 unit (x3).



d619i051

3. Remove the FFC connecting the G3 unit and FCU.



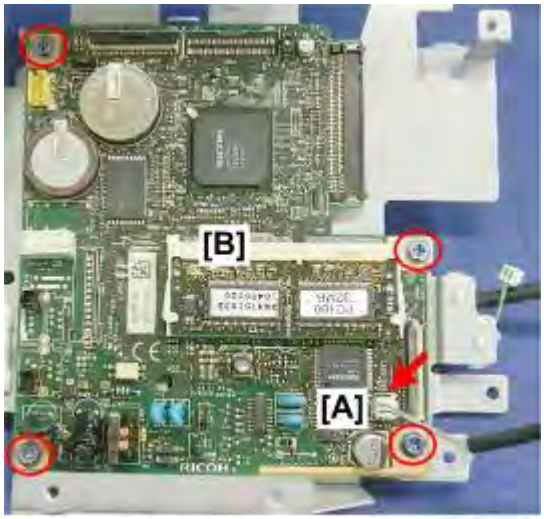
d619i052

4. Remove the FCU I/F board (x1).



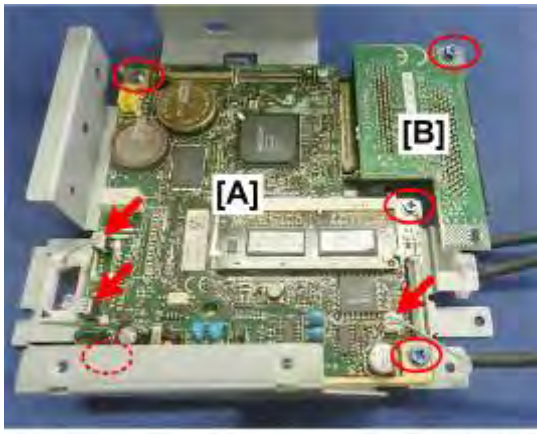
d619i053

5. At the lower left corner, disconnect the harnesses (x2).



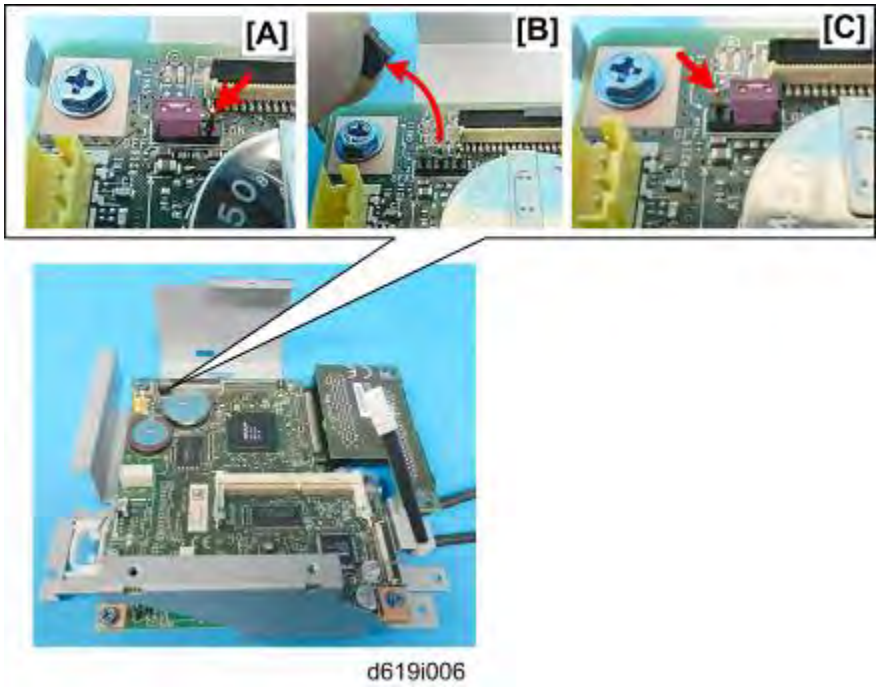
d619i054

6. At [A] disconnect the harness, and then attach this harness to the new board (x1).
7. Remove the FCU [B] (x4).



d619i055

8. Attach the new FCU [A] to the FCU bracket (x4).
9. Attach the FCU I/F board [B] (x1).
10. Connect the harnesses to the new FCU (x3).



d619i006

11. Locate the jumper [A] on the FCU. There are two bare pins visible next to the "ON" notation on the board. (This is the OFF position.)
12. Remove the jumper [B].
13. Move the jumper one set of pins to the right and re-set it on the pins so that a bare set of pins [C] is visible next to the "OFF" notation. (This is the ON position.)

Important

- If the jumper is not moved from the OFF to the ON position, the machine will return SC672 (Controller Startup Error) when the machine is powered on.



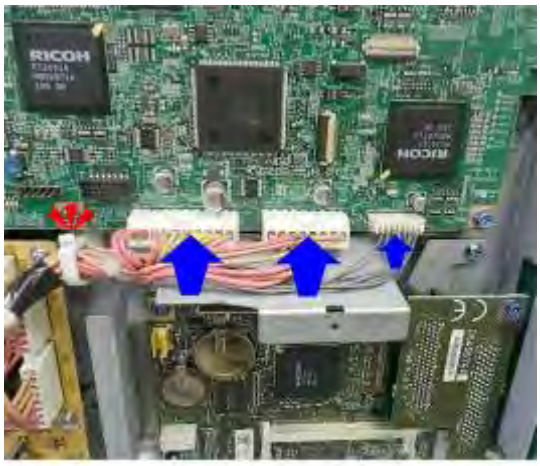
d619i009

14. Set the new FCU (x1).



d619i010

15. Fasten the new FCU to the frame (x3).



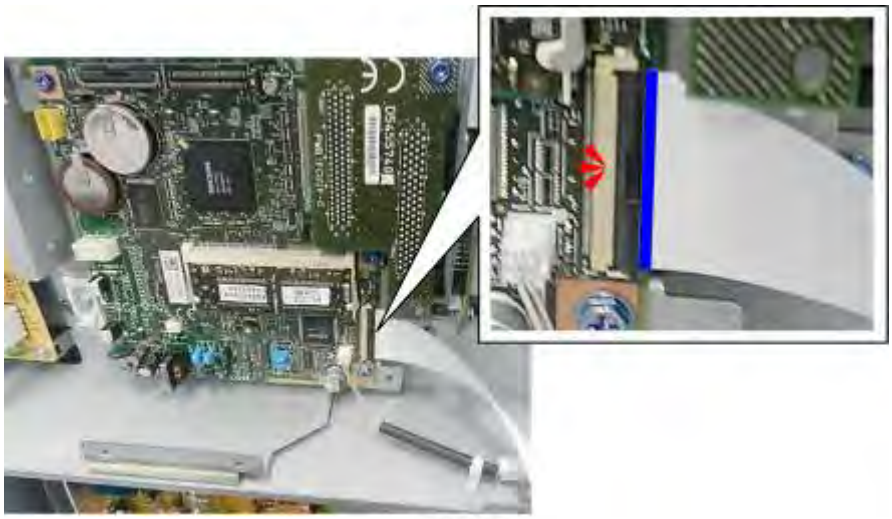
d619i011

16. Re-connect the bottom edge of the IPU (x1, x3).



d619i056

17. Set a stool or chair close to the back of the machine.
18. Reconnect all the harnesses between the FCU and speaker unit.

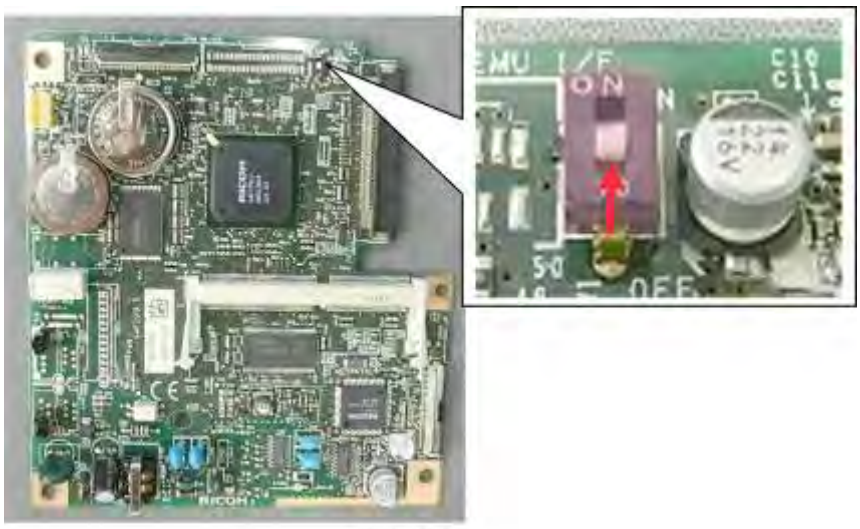


d619i057

19. Connect the long FFC shipped with the new FCU to the new FCU board in the machine (x 1).

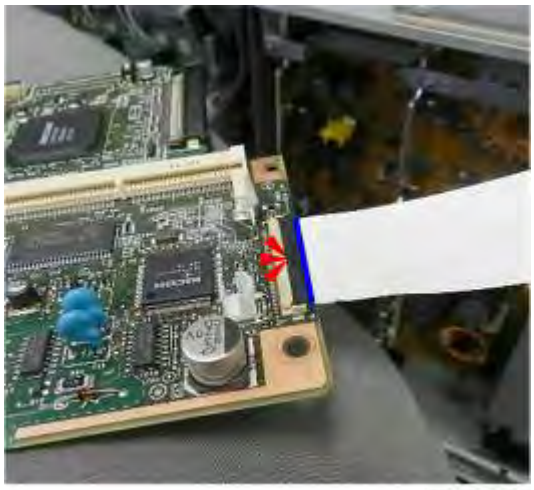
Important

- The blue side of the FFC must face up.



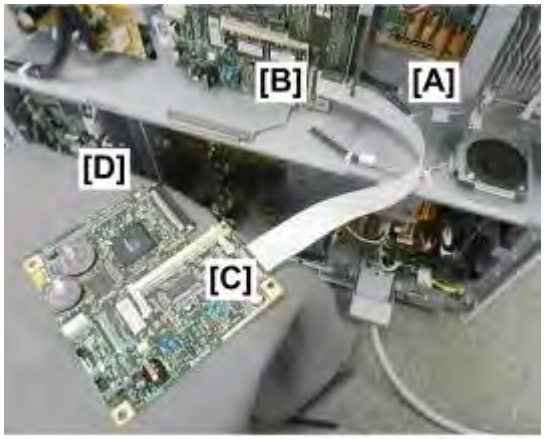
d619i058

20. Move Dip Switch [A] of the old FCU board from “OFF” to “ON”.



d619i059

21. With the blue side up as shown, connect the other end of the FFC to the old FCU board.



d619i060

22. Check:
    [A] All harnesses between FCU and speaker unit connected
    [B] FFC connected to FCU in the machine (blue side visible)
    [C] FFC connected to the old FCU (blude side visible)
    [D] DIP SW set to "ON"
23. Turn on the main power switch.
24. SRAM data transmission starts. When the transmission is completed, you will hear a beep from the speaker.
25. When “Ready” appears on the copy display, turn off the main power switch

Note

- If the speaker does not emit a beep, cycle the machine off/on and and wait again.
- If the second attempt fails, try again.
- If the beeper does not sound after the third attempt, then you must enter the SRAM settings manually.

26. Disconnect the long FFC from the new FCU.
27. Reattach the controller box cover and rear covers.

28. Turn on the main power switch.
29. Do **SP6-101** to print the system parameter list.
30. Check the system parameter list to make sure that the data was transferred correctly.
31. Set the correct date and time with the User Tools: User Tools > System Settings > Timer Setting > Set Date/Time.

Note

- If any of the SRAM data was not transferred, enter those settings manually.

3. TROUBLESHOOTING

3.1 ERROR CODES

If an error code occurs, retry the communication. If the same problem occurs, try to fix the problem as suggested below. Note that some error codes appear only in the error code display and on the service report.

Code	Meaning	Suggested Cause/Action
0-00	DIS/NSF not detected within 40 s of Start being pressed	▪ Check the line connection. ▪ The machine at the other end may be incompatible. ▪ Replace the FCU. ▪ Check for DIS/NSF with an oscilloscope. ▪ If the RX signal is weak, there may be a bad line.
0-01	DCN received unexpectedly	▪ The other party is out of paper or has a jammed printer. ▪ The other party pressed Stop during communication.
0-03	Incompatible modem at the other end	The other terminal is incompatible.

Code	Meaning	Suggested Cause/Action
0-04	CFR or FTT not received after modem training	▪ Check the line connection. ▪ Try changing the TX level and/or cable equalizer settings. ▪ Replace the FCU. ▪ The other terminal may be faulty; try sending to another machine. ▪ If the RX signal is weak or defective, there may be a bad line. **Cross reference** Tx level - NCU Parameter 01 (PSTN) Cable equalizer - G3 Switch 07 (PSTN) Dedicated Tx parameters in Service Program Mode
0-05	Modem training fails even G3 shifts down to 2400 bps.	▪ Check the line connection. ▪ Try adjusting the TX level and/or cable equalizer. ▪ Replace the FCU. ▪ Check for line problems. **Cross reference** See error code 0-04.
0-06	The other terminal did not reply to DCS	▪ Check the line connection. ▪ Try adjusting the TX level and/or cable equalizer settings. ▪ Replace the FCU. ▪ The other end may be defective or incompatible; try sending to another machine. ▪ Check for line problems. **Cross reference** See error code 0-04.

Code	Meaning	Suggested Cause/Action
0-07	No post-message response from the other end after a page was sent	▪ Check the line connection. ▪ Replace the FCU. ▪ The other end may have jammed or run out of paper. ▪ The other end user may have disconnected the call. ▪ Check for a bad line. ▪ The other end may be defective; try sending to another machine.
0-08	The other end sent RTN or PIN after receiving a page, because there were too many errors	▪ Check the line connection. ▪ Replace the FCU. ▪ The other end may have jammed, or run out of paper or memory space. ▪ Try adjusting the TX level and/or cable equalizer settings. ▪ The other end may have a defective modem/FCU; try sending to another machine. ▪ Check for line problems and noise. **Cross reference** ▪ Tx level - NCU Parameter 01 (PSTN) ▪ Cable equalizer - G3 Switch 07 (PSTN) ▪ Dedicated Tx parameters in Service Program Mode
0-14	Non-standard post message response code received	▪ Incompatible or defective remote terminal; try sending to another machine. ▪ Noisy line: resend. ▪ Try adjusting the TX level and/or cable equalizer settings. ▪ Replace the FCU. **Cross reference** See error code 0-08.

Code	Meaning	Suggested Cause/Action
0-15	The other terminal is not capable of specific functions.	The other terminal is not capable of accepting the following functions, or the other terminal's memory is full. ▪ Confidential RX ▪ Transfer function ▪ SEP/SUB/PWD/SID
0-16	CFR or FTT not detected after modem training in confidential or transfer mode	▪ Check the line connection. ▪ Replace the FCU. ▪ Try adjusting the TX level and/or cable equalizer settings. ▪ The other end may have disconnected, or it may be defective; try calling another machine. ▪ If the RX signal level is too low, there may be a line problem. **Cross reference** See error code 0-08.
0-17	Communication was interrupted by pressing the Stop key	If the Stop key was not pressed and this error keeps occurring, replace the operation panel or the operation panel drive board.
0-20	Facsimile data not received within 6 s of retraining	▪ Check the line connection. ▪ Replace the FCU. ▪ Check for line problems. ▪ Try calling another fax machine. ▪ Try adjusting the reconstruction time for the first line and/or RX cable equalizer setting. **Cross reference** Reconstruction time - G3 Switch 0A, bit 6 Rx cable equalizer - G3 Switch 07 (PSTN)

Code	Meaning	Suggested Cause/Action
0-21	EOL signal (end-of-line) from the other end not received within 5 s of the previous EOL signal	▪ Check the connections between the FCU and line. ▪ Check for line noise or other line problems. ▪ Replace the FCU. ▪ The remote machine may be defective or may have disconnected. **Cross reference** Maximum interval between EOLs and between ECM frames - G3 Bit Switch 0A, bit 4
0-22	The signal from the other end was interrupted for more than the acceptable modem carrier drop time (default: 200 ms)	▪ Check the line connection. ▪ Replace the FCU. ▪ Defective remote terminal. ▪ Check for line noise or other line problems. ▪ Try adjusting the acceptable modem carrier drop time. **Cross reference** Acceptable modem carrier drop time - G3 Switch 0A, bits 0 and 1
0-23	Too many errors during reception	▪ Check the line connection. ▪ Replace the FCU. ▪ Defective remote terminal ▪ Check for line noise or other line problems. ▪ Try asking the other end to adjust their TX level. ▪ Try adjusting the RX cable equalizer setting and/or RX error criteria. **Cross reference** Rx cable equalizer - G3 Switch 07 (PSTN) Rx error criteria - Communication Switch 02, bits 0 and 1
0-29	Data block format failure in ECM reception	▪ Check for line noise or other line problems. ▪ Check the FCU - NCU connectors. ▪ Replace the NCU or FCU.

Code	Meaning	Suggested Cause/Action
0-30	The other terminal did not reply to NSS(A) in AI short protocol mode	▪ Check the line connection. ▪ Try adjusting the TX level and/or cable equalizer settings. ▪ The other terminal may not be compatible. **Cross reference** Dedicated tx parameters - Section 4
0-32	The other terminal sent a DCS, which contained functions that the receiving machine cannot handle.	▪ Check the protocol dump list. ▪ Ask the other party to contact the manufacturer.
0-33	The data reception (not ECM) is not completed within 10 minutes.	▪ Check the line connection. ▪ The other terminal may have a defective modem/FCU.
0-52	Polarity changed during communication	▪ Check the line connection. Retry communication.
0-55	FCU does not detect the SG3.	▪ FCU firmware or board defective. ▪ SG3 firmware or board defective.
0-56	The stored message data exceeds the capacity of the mailbox in the SG3.	SG3 firmware or board defective.
0-70	The communication mode specified in CM/JM was not available (V.8 calling and called terminal)	▪ The other terminal did not have a compatible communication mode (e.g., the other terminal was a V.34 data modem and not a fax modem.) ▪ A polling tx file was not ready at the other terminal when polling RX was initiated from the calling terminal.
0-74	The calling terminal fell back to T.30 mode, because it could not detect ANSam after sending CI.	▪ The calling terminal could not detect ANSam due to noise, etc. ▪ ANSam was too short to detect. ▪ Check the line connection and condition. ▪ Try making a call to another V.8/V.34 fax.

Code	Meaning	Suggested Cause/Action
0-75	The called terminal fell back to T.30 mode, because it could not detect a CM in response to ANSam (ANSam timeout).	▪ The terminal could not detect ANSam. ▪ Check the line connection and condition. ▪ Try receiving a call from another V.8/V.34 fax.
0-76	The calling terminal fell back to T.30 mode, because it could not detect a JM in response to CM (CM timeout).	▪ The called terminal could not detect a CM due to noise, etc. ▪ Check the line connection and condition. ▪ Try making a call to another V.8/V.34 fax.
0-77	The called terminal fell back to T.30 mode, because it could not detect a CJ in response to JM (JM timeout).	▪ The calling terminal could not detect a JM due to noise, etc. ▪ A network that has narrow bandwidth cannot pass JM to the other end. ▪ Check the line connection and condition. ▪ Try receiving a call from another V.8/V.34 fax.
0-79	The called terminal detected CI while waiting for a V.21 signal.	▪ Check for line noise or other line problems. ▪ If this error occurs, the called terminal falls back to T.30 mode.
0-80	The line was disconnected due to a timeout in V.34 phase 2 – line probing.	▪ The guard timer expired while starting these phases. Serious noise, narrow bandwidth, or low signal level can cause these errors. If these errors happen at the transmitting terminal: ▪ Try making a call at a later time. ▪ Try using V.17 or a slower modem using dedicated tx parameters. ▪ Try increasing the TX level. ▪ Try adjusting the tx cable equalizer setting.
0-81	The line was disconnected due to a timeout in V.34 phase 3 – equalizer training.	
0-82	The line was disconnected due to a timeout in the V.34 phase 4 – control channel start-up.	

Code	Meaning	Suggested Cause/Action
0-83	The line was disconnected due to a timeout in the V.34 control channel restart sequence.	If these errors happen at the receiving terminal: ▪ Try adjusting the RX cable equalizer setting. ▪ Try increasing the TX level. ▪ Try using V.17 or a slower modem if the same error is frequent when receiving from multiple senders.
0-84	The line was disconnected due to abnormal signaling in V.34 phase 4 – control channel start-up.	▪ The signal did not stop within 10 s. ▪ Turn off the main power switch, then turn it back on. ▪ If the same error is frequent, replace the FCU.
0-85	The line was disconnected due to abnormal signaling in V.34 control channel restart.	▪ The signal did not stop within 10 s. ▪ Turn off the main power switch, then turn it back on. ▪ If the same error is frequent, replace the FCU.
0-86	The line was disconnected because the other terminal requested a data rate using MPh that was not available in the currently selected symbol rate.	▪ The other terminal was incompatible. ▪ Ask the other party to contact the manufacturer.
0-87	The control channel started after an unsuccessful primary channel.	▪ The receiving terminal restarted the control channel because data reception in the primary channel was not successful. ▪ This does not result in an error communication.
0-88	The line was disconnected because PPR was transmitted/received 9 (default) times within the same ECM frame.	▪ Try using a lower data rate at the start. ▪ Try adjusting the cable equalizer setting.

Code	Meaning	Suggested Cause/Action
2-11	Only one V.21 connection flag was received	▪ Replace the FCU.
2-12	Modem clock irregularity	▪ Replace the FCU.
2-13	Modem initialization error	▪ Turn off the machine, then turn it back on. ▪ Update the modem ROM. ▪ Replace the FCU.
2-22	Counter overflow error of JBIG chip	If error occurs frequently, change the settings for resolution, paper size, compression type.
2-23	JBIG compression or reconstruction error	Turn off the machine, then turn it back on.
2-24	JBIG ASIC error	▪ Turn off the machine, then turn it back on.
2-25	JBIG data reconstruction error (BIH error)	▪ JBIG data error ▪ Check the sender's JBIG function. ▪ Update the FCU ROM.
2-26	JBIG data reconstruction error (Float marker error)	
2-27	JBIG data reconstruction error (End marker error)	
2-28	JBIG data reconstruction error (Timeout)	
2-29	JBIG trailing edge maker error	▪ FCU defective ▪ Check the destination device.
2-50	The machine resets itself for a fatal FCU system error	▪ If this is frequent, update the ROM, or replace the FCU.
2-51	The machine resets itself because of a fatal communication error	▪ If this is frequent, update the ROM, or replace the FCU.

Code	Meaning	Suggested Cause/Action
2-53	Snd msg() in the manual task is an error because the mailbox for the operation task is full.	▪ The user did the same operation many times, and this gave too much load to the machine.
4-01	Line current was cut	▪ Check the line connector. ▪ Check for line problems. ▪ Replace the FCU.
4-10	Communication failed because of an ID Code mismatch (Closed Network) or Tel. No./CSI mismatch (Protection against Wrong Connections)	▪ Get the ID Codes the same and/or the CSIs programmed correctly, then resend. ▪ The machine at the other end may be defective.
5-00	Data reconstruction not possible	Replace the FCU.
5-10	DCR timer expired	▪ Replace the FCU.
5-20	Storage impossible because of a lack of memory	▪ Temporary memory shortage. ▪ Test the SAF memory.
5-21	Memory overflow	
5-23	Print data error when printing a substitute RX or confidential RX message	▪ Test the SAF memory. ▪ Ask the other end to resend the message.
5-25	SAF file access error	▪ Replace an SD card or HDD. ▪ Replace the FCU.
6-00	G3 ECM - T1 time out during reception of facsimile data	▪ Try adjusting the RX cable equalizer. ▪ Replace the FCU.
6-01	G3 ECM - no V.21 signal was received	
6-02	G3 ECM - EOR was received	

Code	Meaning	Suggested Cause/Action
6-04	G3 ECM - RTC not detected	▪ Check the line connection. ▪ Check for a bad line or defective remote terminal. ▪ Replace the FCU.
6-05	G3 ECM - facsimile data frame not received within 18 s of CFR, but there was no line fail	▪ Check the line connection. ▪ Check for a bad line or defective remote terminal. ▪ Replace the FCU. ▪ Try adjusting the RX cable equalizer **Cross reference** ▪ Rx cable equalizer - G3 Switch 07 (PSTN)
6-06	G3 ECM - coding/decoding error	▪ Defective FCU. ▪ The other terminal may be defective.
6-08	G3 ECM - PIP/PIN received in reply to PPS.NULL	▪ The other end pressed Stop during communication. ▪ The other terminal may be defective.
6-09	G3 ECM - ERR received	▪ Check for a noisy line. ▪ Adjust the TX levels of the communicating machines. ▪ See code 6-05.
6-10	G3 ECM - error frames still received at the other end after all communication attempts at 2400 bps	▪ Check for line noise. ▪ Adjust the TX level (use NCU parameter 01 or the dedicated TX parameter for that address). ▪ Check the line connection. ▪ Defective remote terminal.
6-21	V.21 flag detected during high speed modem communication	▪ The other terminal may be defective or incompatible.
6-22	The machine resets the sequence because of an abnormal handshake in the V.34 control channel	▪ Check for line noise. ▪ If the same error occurs frequently, replace the FCU. ▪ Defective remote terminal.

Code	Meaning	Suggested Cause/Action
6-99	V.21 signal not stopped within 6 s	Replace the FCU.
13-17	SIP user name registration error	▪ Double registration of the SIP user name. ▪ Capacity for user-name registration in the SIP server is not sufficient.
13-18	SIP server access error	▪ Incorrect initial setting for the SIP server. ▪ Defective SIP server.
13-24	SIP authentication error	▪ Registered password in the device does not match the password in the SIP server.
13-25	Network I/F setting error	▪ IPV4 is not active in the active protocol setting. ▪ IP address of the device is not registered.
13-26	Network I/F setting error at power on	▪ Active protocol setting does not match the I/F setting for SIP server. ▪ IP address of the device is not registered.
13-27	IP address setting error	▪ IP address of the device is not registered.
14-00	SMTP Send Error	▪ Error occurred during sending to the SMTP server. Occurs for any error other than 14-01 to 16. For example, the mail address of the system administrator is not registered.
14-01	SMTP Connection Failed	▪ Failed to connect to the SMTP server (timeout) because the server could not be found. ▪ The PC is not ready to transfer files. ▪ SMTP server not functioning correctly. ▪ The DNS IP address is not registered. ▪ Network not operating correctly. ▪ Destination folder selection not correct.

Code	Meaning	Suggested Cause/Action
14-02	No Service by SMTP Service (421)	▪ SMTP server operating incorrectly, or the destination for direct SMTP sending is not correct. ▪ Contact the system administrator and check that the SMTP server has the correct settings and operates correctly. ▪ Contact the system administrator for direct SMTP sending and check the sending destination.
14-03	Access to SMTP Server Denied (450)	▪ Failed to access the SMTP server because the access is denied. ▪ SMTP server operating incorrectly. Contact the system administrator to determine if there is a problem with the SMTP server and to check that the SMTP server settings are correct. ▪ Folder send destination is incorrect. Contact the system administrator to determine that the SMTP server settings and path to the server are correct. ▪ Device settings incorrect. Confirm that the user name and password settings are correct. ▪ Direct SMTP destination incorrect. Contact the system administrator to determine if there is a problem at the destination at that the settings at the destination are correct.
14-04	Access to SMTP Server Denied (550)	▪ SMTP server operating incorrectly ▪ Direct SMTP sending not operating correctly

Code	Meaning	Suggested Cause/Action
14-05	SMTP Server HDD Full (452)	▪ Failed to access the SMTP server because the HDD on the server is full. ▪ Insufficient free space on the HDD of the SMTP server. Contact the system administrator and check the amount of space remaining on the SMTP server HDD. ▪ Insufficient free space on the HDD where the destination folder is located. Contact the system administrator and check the amount of space remaining on the HDD where the target folder is located. ▪ Insufficient free space on the HDD at the target destination for SMTP direct sending. Contact the system administrator and check the amount of space remaining on the target HDD.
14-06	User Not Found on SMTP Server (551)	▪ The designated user does not exist. ▪ The designated user does not exist on the SMTP server. ▪ The designated address is not for use with direct SMTP sending.
14-07	Data Send to SMTP Server Failed (4XX)	▪ Failed to access the SMTP server because the transmission failed. ▪ PC not operating correctly. ▪ SMTP server operating incorrectly ▪ Network not operating correctly. ▪ Destination folder setting incorrect. ▪ Direct SMTP sending not operating correctly.

Code	Meaning	Suggested Cause/Action
14-08	Data Send to SMTP Server Failed (5XX)	▪ Failed to access the SMTP server because the transmission failed. ▪ SMTP server operating incorrectly ▪ Destination folder setting incorrect. ▪ Direct SMTP sending not operating correctly. ▪ Software application error.
14-09	Authorization Failed for Sending to SMTP Server	▪ POP-Before-SMTP or SMTP authorization failed. ▪ Incorrect setting for file transfer
14-10	Addresses Exceeded	▪ Number of broadcast addresses exceeded the limit for the SMTP server.
14-11	Buffer Full	▪ The send buffer is full so the transmission could not be completed. Buffer is full due to using Scan-to-Email while the buffer is being used send mail at the same time.
14-12	Data Size Too Large	▪ Transmission was cancelled because the detected size of the file was too large.
14-13	Send Cancelled	▪ Processing is interrupted because the user pressed Stop.
14-14	Security Locked File Error	▪ Update the software because of the defective software.
14-15	Mail Data Error	▪ The transmitting a mail is interrupted via DCS due to the incorrect data. ▪ Update the software because of the defective software.
14-16	Maximum Division Number Error	▪ When a mail is divided for the mail transmission and the division number of a mail are more than the specified number, the mail transmission is interrupted. ▪ Update the software because of the defective software.

Code	Meaning	Suggested Cause/Action
14-17	Incorrect Ticket	▪ Update the software because of the defective software.
14-18	Access to MCS File Error	▪ The access to MCS file is denied due to the no permission of access. ▪ Update the software because of the defective software.
14-20	SMTP Authentication error	Make sure the administrator's e-mail address is same as the SMTP authentication address or POP before SMTP address.
14-21	Transmission error of S/MIME	Register the correct user certificate and device certificate.
14-30	MCS File Creation Failed	Failed to create the MCS file because: ▪ The number of files created with other applications on the Document Server has exceeded the limit. ▪ HDD is full or not operating correctly. ▪ Software error.
14-31	UFS File Creation Failed	UFS file could not be created: ▪ Not enough space in UFS area to handle both Scan-to-Email and IFAX transmission. ▪ HDD full or not operating correctly. ▪ Software error.
14-32	Cancelled the Mail Due to Error Detected by NFAX	▪ Error detected with NFAX and send was cancelled due to a software error.
14-33	No Mail Address For the Machine	▪ Neither the mail address of the machine nor the mail address of the network administrator is registered.

Code	Meaning	Suggested Cause/Action
14-34	Address designated in the domain for SMTP sending does not exist	▪ Operational error in normal mail sending or direct SMTP sending. ▪ Check the address selected in the address book for SMTP sending. ▪ Check the domain selection.
14-50	Mail Job Task Error	Due to an FCU mail job task error, the send was cancelled: ▪ Address book was being edited during creation of the notification mail. ▪ Software error.
14-51	UCS Destination Download Error	Not even one return notification can be downloaded: ▪ The address book was being edited. ▪ The number for the specified destination does not exist (it was deleted or edited after the job was created).
14-60	Send Cancel Failed	▪ The cancel operation by the user failed to cancel the send operation.
14-61	Notification Mail Send Failed for All Destinations	▪ All addresses for return notification mail failed.
14-62	Transmission Error due to the existence of zero line page	▪ When the 0 line page exists in received pages with G3 communication, the transmission is interrupted.
15-01	POP3/IMAP4 Server Not Registered	▪ At startup, the system detected that the IP address of the POP3/IMAP4 server has not been registered in the machine.
15-02	POP3/IMAP4 Mail Account Information Not Registered	▪ The POP3/IMAP4 mail account has not been registered.
15-03	Mail Address Not Registered	▪ The mail address has not been registered.
15-10	DCS Mail Receive Error	▪ Error other than 15-11 to 15-18.

Code	Meaning	Suggested Cause/Action
15-11	Connection Error	The DNS or POP3/IMAP4 server could not be found: ▪ The IP address for DNS or POP3/IMAP4 server is not stored in the machine. ▪ The DNS IP address is not registered. ▪ Network not operating correctly.
15-12	Authorization Error	POP3/IMAP4 send authorization failed: ▪ Incorrect IFAX user name or password. ▪ Access was attempted by another device, such as the PC. ▪ POP3/IMAP4 settings incorrect.
15-13	Receive Buffer Full	▪ Occurs only during manual reception. Transmission cannot be received due to insufficient buffer space. The buffer is being used for mail send or Scan-to-Email.
15-14	Mail Header Format Error	▪ The mail header is not standard format. For example, the Date line description is incorrect.
15-15	Mail Divide Error	▪ The e-mail is not in standard format. There is no boundary between parts of the e-mail, including the header.
15-16	Mail Size Receive Error	▪ The mail cannot be received because it is too large.
15-17	Receive Timeout	▪ May occur during manual receiving only because the network is not operating correctly.
15-18	Incomplete Mail Received	▪ Only one portion of the mail was received.
15-31	Final Destination for Transfer Request Reception Format Error	▪ The format of the final destination for the transfer request was incorrect.

Code	Meaning	Suggested Cause/Action
15-39	Send/Delivery Destination Error	The transmission cannot be delivered to the final destination: ▪ Destination file format is incorrect. ▪ Could not create the destination for the file transmission.
15-41	SMTP Receive Error	▪ Reception rejected because the transaction exceeded the limit for the “Auth. E-mail RX” setting.
15-42	Off Ramp Gateway Error	▪ The delivery destination address was specified with Off Ramp Gateway OFF.
15-43	Address Format Error	▪ Format error in the address of the Off Ramp Gateway.
15-44	Addresses Over	▪ The number of addresses for the Off Ramp Gateway exceeded the limit of 30.
15-61	Attachment File Format Error	▪ The attached file is not TIFF format.
15-62	TIFF File Compatibility Error	Could not receive transmission due to: ▪ Resolution error ▪ Image of resolution greater than 200 dpi without extended memory. ▪ Resolution is not supported. ▪ Page size error ▪ The page size was larger than A3. ▪ Compression error ▪ File was compressed with other than MH, MR, or MMR.
15-63	TIFF Parameter Error	The TIFF file sent as the attachment could not be received because the TIFF header is incorrect: ▪ The TIFF file attachment is a type not supported. ▪ The TIFF file attachment is corrupted. ▪ Software error.

Code	Meaning	Suggested Cause/Action
15-64	TIFF Decompression Error	The file received as an attachment caused the TIFF decompression error: ▪ The TIFF format of the attachment is corrupted. ▪ Software error.
15-71	Not Binary Image Data	▪ The file could not be received because the attachment was not binary image data.
15-73	MDN Status Error	▪ Could not find the Disposition line in the header of the Return Receipt, or there is a problem with the firmware.
15-74	MDN Message ID Error	▪ Could not find the Original Message ID line in the header of the Return Receipt, or there is a problem with the firmware.
15-80	Mail Job Task Read Error	▪ Could not receive the transmission because the destination buffer is full and the destination could not be created (this error may occur when receiving a transfer request or a request for notification of reception).
15-81	Repeated Destination Registration Error	▪ Could not repeat receive the transmission because the destination buffer is full and the destination could not be created (this error may occur when receiving a transfer request or a request for notification of reception).
15-91	Send Registration Error	Could not receive the file for transfer to the final destination: ▪ The format of the final destination or the transfer destination is incorrect. ▪ Destinations are full so the final and transfer destinations could not be created.

Code	Meaning	Suggested Cause/Action
15-92	Memory Overflow	▪ Transmission could not be received because memory overflowed during the transaction.
15-93	Memory Access Error	▪ Transaction could not complete due to a malfunction of SAF memory.
15-94	Incorrect ID Code	▪ The machine rejected an incoming e-mail for transfer request, because the ID code in the incoming e-mail did not match the ID code registered in the machine.
15-95	Transfer Station Function	▪ The machine rejected an incoming e-mail for transfer because the transfer function was unavailable.
22-00	Original length exceeded the maximum scan length	▪ Divide the original into more than one page. ▪ Check the resolution used for scanning. Lower the scan resolution if possible. ▪ Add optional page memory.
22-01	Memory overflow while receiving	▪ Wait for the files in the queue to be sent. ▪ Delete unnecessary files from memory. ▪ Transfer the substitute reception files to an another fax machine, if the machine's printer is busy or out of order. ▪ Add an optional SAF memory card or hard disk.
22-02	Tx or RX job stalled due to line disconnection at the other end	▪ The job started normally but did not finish normally; data may or may not have been received fully. ▪ Restart the machine.
22-04	The machine cannot store received data in the SAF	▪ Update the ROM ▪ Replace the FCU.
22-05	No G3 parameter confirmation answer	▪ Defective FCU board or firmware.

Code	Meaning	Suggested Cause/Action
23-00	Data read timeout during construction	▪ Restart the machine. ▪ Replace the FCU.
25-00	The machine software resets itself after a fatal transmission error occurred	▪ Update the ROM ▪ Replace the FCU.
F0-xx	V.34 modem error	▪ Replace the FCU.
F6-xx	SG3 modem error	▪ Update the SG3 modem ROM. ▪ Replace the SG3 board. ▪ Check for line noise or other line problems. ▪ Try communicating another V.8/V.34 fax.

3.2 IFAX TROUBLESHOOTING

Use the following procedures to determine whether the machine or another part of the network is causing the problem.

Communication Route	Item	Action [Remarks]
General LAN	1. Connection with the LAN	▪ Check that the LAN cable is connected to the machine. ▪ Check that the LEDs on the hub are lit.
	2. LAN activity	Check that other devices connected to the LAN can communicate through the LAN.
Between IFAX and PC	1. Network settings on the PC	▪ Check the network settings on the PC. [Is the IP address registered in the TCP/IP properties in the network setup correct? Check the IP address with the administrator of the network.]
	2. Check that PC can connect with the machine	▪ Use the “ping” command on the PC to contact the machine. [At the MS-DOS prompt, type ping then the IP address of the machine, then press Enter.]
	3. LAN settings in the machine	▪ Check the LAN parameters ▪ Check if there is an IP address conflict with other PCs. [Use the “Network” function in the User Tools. If there is an IP address conflict, inform the administrator.]

Communication Route	Item	Action [Remarks]
Between machine and e-mail server	1. LAN settings in the machine	▪ Check the LAN parameters ▪ Check if there is an IP address conflict with other PCs. [Use the “Network” function in the User Tools. If there is an IP address conflict, inform the administrator.]
	2. E-mail account on the server	▪ Make sure that the machine can log into the e-mail server. ▪ Check that the account and password stored in the server are the same as in the machine. [Ask the administrator to check.]
	3. E-mail server	▪ Make sure that the client devices which have an account in the server can send/receive e-mail. [Ask the administrator to check. Send a test e-mail with the machine’s own number as the destination. The machine receives the returned e-mail if the communication is performed successfully.]
Between e-mail server and internet	1. E-mail account on the Server	▪ Make sure that the PC can log into the e-mail server. ▪ Check that the account and password stored in the server are the same as in the machine. [Ask the administrator to check.]

Communication Route	Item	Action [Remarks]
	2. E-mail server	▪ Make sure that the client devices which have an account in the server can send/receive e-mail. [Ask the administrator to check. Send a test e-mail with the machine's own number as the destination. The machine receives the returned e-mail if the communication is performed successfully.]
	3. Destination e-mail address	▪ Make sure that the e-mail address is actually used. ▪ Check that the e-mail address contains no incorrect characters such as spaces.
	4. Router settings	▪ Use the "ping" command to contact the router. ▪ Check that other devices connected to the router can sent data over the router. [Ask the administrator of the server to check.]
	5. Error message by e-mail from the network of the destination.	▪ Check whether e-mail can be sent to another address on the same network, using the application e-mail software. ▪ Check the error e-mail message. [Inform the administrator of the LAN.]

3.3 IP-FAX TROUBLESHOOTING

3.3.1 IP-FAX TRANSMISSION

Cannot send by IP Address/Host Name

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Specified IP address/host name correct?	Check the IP address/host name.
3	Firewall/NAT is installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
4	Transmission sent manually?	Manual sending not supported.
5	IP address of local machine registered?	Register the IP address.
6	Remote terminal port number setting other than 1720 (when using H.323) or 5060 (when using SIP)?	Send by specifying the port number.
7	Specified port number correct?	Confirm the port number of the remote fax.
8	DNS server registered when host name specified?	Contact the network administrator.
9	Remote fax a T.38 terminal?	Check whether the remote fax is a T38 terminal.
10	Remote fax switched off or busy?	Check that the remote fax is switched on.

11	Network bandwidth too narrow?	Request the network administrator to increase the bandwidth.
		Raise the delay level. IPFAX SW 01 Bit 0 to 3
		IP-Fax bandwidth is the same as the DCS speed. Set IP-Fax SW00 Bit 6 to 1.
12	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.

Cannot send via VoIP Gateway

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	VoIP Gateway T.38 standard?	Contact the network administrator.
3	VoIP Gateway installed correctly?	Contact the network administrator.
4	VoIP Gateway power switched on?	Contact the network administrator.
5	Is the IP address/host name of the specified Gateway correct?	Check the IP address/host name.
6	Number of the specified fax correct?	Check the remote fax number.
7	Firewall/NAT is installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
8	Transmission sent manually?	Manual sending not supported.
9	IP address of local fax registered?	Register the IP address.
10	DNS registered when host name specified?	Contact the network administrator.
11	Remote fax a G3 fax?	Check that the remote fax is a G3 fax.

12	G3 fax is connected to VoIP gateway?	Check that G3 fax is connected.
13	Remote G3 fax turned on?	Check that G3 fax is switched on.
14	Network bandwidth too narrow?	Request the network administrator to increase the bandwidth.
		Raise the network delay level. IPFAX SW 01 Bit 0 to 3
		IP-Fax bandwidth is the same as the DCS speed. Set IP-Fax SW00 Bit 6 to 1.

Cannot send by Alias Fax number.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Number of specified Alias fax correct?	Confirm the Alias of the remote fax. Error Code: 13-14
3	Firewall/NAT installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
4	Transmission sent manually?	Manual sending not supported.
5	Gatekeeper/SIP server installed correctly?	Contact the network administrator.
6	Gatekeeper/SIP server power switched on?	Contact the network administrator.
7	IP address/host name of Gatekeeper/SIP server correct?	Check the IP address/host name.
8	DNS server registered when Gatekeeper/SIP server host name specified?	Contact the network administrator.

9	Enable H.323/Enable SIP SW is set to on?	Check the settings. See User Parameter SW 34 Bit 0/SW 34 Bit 1
10	IP address of local fax registered?	Register the IP address of the local fax.
11	Alias number of local fax registered?	Register the Alias number of the local fax.
12	Remote fax registered in Gatekeeper?	Contact the network administrator.
13	Remote fax a T.38 terminal?	Check whether the remote fax is a T38 terminal.
14	Remote fax switched off or busy?	Contact the network administrator.
15	Network bandwidth too narrow?	Request the system administrator to increase the bandwidth.
		Raise the delay level. IPFAX SW 01 Bit 0 to 3
		Lower the modem transmission baud rate. IPFAX SW 05
16	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.

3.3.2 IP-FAX RECEPTION

Cannot receive via IP Address/Host Name.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Firewall/NAT is installed?	Cannot breach the firewall. Send by using another method (Fax, Internet Fax)
3	IP address of local fax registered?	Register the IP address.
4	Port number specified at remote sender fax (if required)?	Request the sender to specify the port number.
5	Specified port number correct (if required)?	Request the sender to check the port number.
6	DNS server registered when host name specified on sender side?	Contact the network administrator. Note ▪ The sender machine displays this error code if the sender fax is a Ricoh model.
7	Network bandwidth too narrow?	Request the system administrator to increase the bandwidth.
		Lower the start modem reception baud rate on the receiving side. IPFAX SW06
8	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.

Cannot receive by VoIP Gateway.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Firewall/NAT is installed?	Cannot breach the firewall. Request the remote fax to send by using another method (Fax, Internet Fax)
3	VoIP Gateway installed correctly?	Contact the network administrator.
4	VoIP Gateway power switched on?	Contact the network administrator.
5	IP address/host name of specified VoIP Gateway correct on sender's side?	Request the remote fax to check the IP address/host name.
6	DNS server registered when host name specified on sender side?	Contact the network administrator.
7	Network bandwidth too narrow?	Request the network administrator to increase the bandwidth.
8	G3 fax connected?	Check that G3 fax is connected.
9	G3 fax power switched on?	Check that G3 fax is switched on.

Cannot receive by Alias Fax number.

Check Point		Action
1	LAN cable connected?	Check the LAN cable connection.
2	Firewall/NAT is installed?	Cannot the breach firewall. Request the remote fax to send by using another method (Fax, Internet Fax)
3	Gatekeeper/SIP server installed correctly?	Contact the network administrator. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.
4	Power to Gatekeeper/SIP server switched on?	Contact the network administrator. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.
5	IP address/host name of Gatekeeper/SIP server correct on the sender's side?	Request the sender to check the IP address/host name. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.
6	DNS server registered when Gatekeeper/SIP server host name specified on sender's side?	Contact the network administrator. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.
7	Enable H.323/Enable SIP SW is set to on?	Request the sender to check the settings. User Parameter SW 34 Bit 0/SW 34 Bit 1 Note ▪ Only if the remote sender fax is a Ricoh fax.

8	Local fax IP address registered?	Register the IP address.
9	Local fax Alias number registered?	Register the Alias number.
10	Network bandwidth too narrow?	Request the system administrator to increase the bandwidth.
		Lower the start modem reception baud rate on the receiving side. IPFAX SW06
11	Remote fax cancelled transmission?	Check whether the remote fax cancelled the transmission.
12	Local fax registered in Gatekeeper/SIP server?	Contact the network administrator. Note ▪ The sender machine displays this error code when the sender fax is a Ricoh model.

4. SERVICE TABLES

4.1 CAUTIONS

Important

- 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.

Note

- The main power LED lights or flashes while the platen cover or ARDF is open, while the main machine is communicating with a facsimile or the network server, or while the machine is accessing the hard disk or memory for reading or writing data.

4.2 SERVICE PROGRAM TABLES

4.2.1 SP1-XXX (BIT SWITCHES)

1	Mode No.		Function
101	System Switch		
	001 – 032	00 – 1F	Change the bit switches for system settings for the fax option ☛ "Bit Switches - 1" : p.105 "System Switches"
102	Ifax Switch		
	001 – 016	00 – 0F	Change the bit switches for internet fax settings for the fax option ☛ "Bit Switches - 2" : p.121 "I-Fax Switches"
103	Printer Switch		
	001 – 016	00 – 0F	Change the bit switches for printer settings for the fax option ☛ "Bit Switches - 2" : p.129 "Printer Switches"
104	Communication Switch		
	001 – 032	00 – 1F	Change the bit switches for communication settings for the fax option ☛ "Bit Switches - 3" : p.137 "Communication Switches"
105	G3-1 Switch		
	001 – 016	00 – 0F	Change the bit switches for the protocol settings of the standard G3 board ☛ "Bit Switches - 4" : p.147 "G3 Switches"
106	G3-2 Switch		

	001 – 016	00 – 0F	Change the bit switches for the protocol settings of the optional G3 board ☛ "Bit Switches - 5" : "p.157 "G3-2 and G3-3 Switches""
107	G3-3 Switch		
	001 – 016	00 – 0F	Change the bit switches for the protocol settings of the optional G3 board ☛ " Bit Switches - 5" : p.157 "G3-2 and G3-3 Switches"
108	G4 Internal Switch		
	001 – 032	00 – 1F	**Not used** (Do not change the bit switches)
109	G4 Parameter Switch		
	001 – 016	00 – 0F	**Not used** (Do not change the bit switches)
111	IP fax Switch		
	001 – 016	00 – 0F	Change the bit switches for optional IP fax parameters ☛ " Bit Switches - 6 : p.166 "IP Fax Switches"

4.2.2 SP2-XXX (RAM)

2	Mode No.		Function
101	RAM Read/Write		
	001		Change RAM data for the fax board directly. ☛ p.199 "Service RAM Addresses"
102	Memory Dump		
	001	G3-1 Memory Dump	Print out RAM data for the fax board. ☛ p.199 "Service RAM Addresses"
	002	G3-2 Memory Dump	Print out RAM data for the optional SG3 board.
	003	G3-3 Memory Dump	Print out RAM data for the optional SG3 board.
	004	G4 Memory Dump	Not used
103	G3-1 NCU Parameters		
	001 – 023	CC, 01 – 22	NCU parameter settings for the standard G3 board. ☛ p.175 "NCU Parameters"
104	G3-2 NCU Parameters		
	001 – 023	CC, 01 – 22	NCU parameter settings for the optional G3 board. ☛ p.175 "NCU Parameters"
105	G3-3 NCU Parameters		
	001 – 023	CC, 01 – 22	NCU parameter settings for the optional G3 board. ☛ p.175 "NCU Parameters"

4.2.3 SP3-XXX (MACHINE SET)

3	Mode No.		Function
101	Service Station		
	001	Fax Number	Enter the fax number of the service station.
	002	Select Line	Select the line type.
102	Serial Number		
	000		Enter the fax unit's serial number.
103	PSTN-1 Port Settings		
	001	Select Line	Select the line type setting for the G3-1 line. If the machine is installed on a PABX line, select "PABX", "PABX(GND)" or "PABX(FLASH)".
	002	PSTN Access Number	Enter the PSTN access number for the G3-1 line.
	003	Memory Lock Disabled	Not used
104	PSTN-2 Port Settings		
	001	Select Line	Select the line setting for the G3-2 line. If the machine is installed on a PABX line, select "PABX", "PABX(GND)" or "PABX(FLASH)".
	002	PSTN Access Number	Enter the PSTN access number for the G3-2 line.
	003	Memory Lock Disabled	Not used
	004	Transmission Disabled	If you turn this SP on, the machine does not send any fax messages on the G3-2 line.

105	PSTN-3 Port Settings		
	001	Select Line	Select the line setting for the G3-3 line. If the machine is installed on a PABX line, select “PABX”, “PABX(GND)” or “PABX(FLASH)”.
	002	PSTN Access Number	Enter the PSTN access number for the G3-3 line.
	003	Memory Lock Disabled	Not used
	004	Transmission Disabled	If you turn this SP on, the machine does not send any fax messages on the G3-3 line.
106	ISDN Port Settings		
	001	Select Line	**Not used** (Do not change the settings.)
	002	PSTN Access Number	
	003	Memory Lock Disabled	
	004	Transmission Disabled	
107	IPFAX Port Settings		
	001	H323 Port	Sets the H323 port number.
	002	SIP Port	Sets the SIP port number.
	003	RAS Port	Sets the RAS port number.
	004	Gatekeeper port	Sets the Gatekeeper port number.
	005	T.38 Port	Sets the T.38 port number.
	006	SIP Server Port	Sets the SIP port number.
	007	IPFAX Protocol Priority	Select "H323" or "SIP".

201	FAX SW		
	001 – 032	00 – 1F	

4.2.4 SP4-XXX (ROM VERSIONS)

4	Mode No.		Function
101	001	FCU ROM Version	Displays the FCU ROM version.
102	001	Error Codes	Displays the latest 64 fax error codes.
103	001	G3-1 ROM Version	Displays the G3-1 modem version.
104	001	G3-2 ROM Version	Displays the G3-2 modem version.
105	001	G3-3 ROM Version	Displays the G3-3 modem version.
106	001	G4 ROM Version	**Not used** (Do not change the settings.)

4.2.5 SP5-XXX (RAM CLEAR)

5	Mode No.	Function
101	Initialize SRAM (except Secure)	
	000	Initializes the bit switches and user parameters, user data in the SRAM, files in the SAF memory, and clock.
102	Erase All Files	
	000	Erases all files stored in the SAF memory.
103	Reset Bit Switches (except Secure)	
	000	Resets the bit switches and user parameters.
104	Factory Setting	
	000	Resets the bit switches and user parameters, user data in the SRAM and files in the SAF memory.

105	Reset All Bit Switches	
	000	Resets all the current bit switch settings.
106	Reset Security Bit Switches	
	000	Resets only the security bit switches. If you select automatic output/display for the user parameter switches, the security settings are initialized.

4.2.6 SP6-XXX (REPORTS)

6	Mode No.		Function
101	System Parameter List		
	000	-	Touch the “ON” button to print the system parameter list.
102	Service Monitor Report		
	000	-	Touch the “ON” button to print the service monitor report.
103	G3 Protocol Dump List		
	001	G3 All Communications	Prints the protocol dump list of all communications for all G3 lines.
	002	G3-1 (All Communications)	Prints the protocol dump list of all communications for the G3-1 line.
	003	G3-1 (1 Communication)	Prints the protocol dump list of the last communication for the G3-1 line.
	004	G3-2 (All Communications)	Prints the protocol dump list of all communications for the G3-2 line.
	005	G3-2 (1 Communication)	Prints the protocol dump list of the last communication for the G3-2 line.
	006	G3-3 (All Communications)	Prints the protocol dump list of all communications for the G3-3 line.

	007	G3-3 (1 Communication)	Prints the protocol dump list of the last communication for the G3-3 line.
104	G4 Protocol Dump List		
	001	Dch + Bch 1	**Not used** (Do not change the settings.)
	002	Dch	
	003	Bch 1 Link Layer	
	004	Dch Link Layer	
	005	Dch +Bch 2	
	006	Bch 2 Link Layer	
105	All Files print out		
	000	-	Prints out all the user files in the SAF memory, including confidential messages. **Note**: Do not use this function, unless the customer is having trouble printing confidential messages or recovering files stored using the memory lock feature.
106	Journal Print out		
	001	All Journals	The machine prints all the communication records on the report.
	002	Specified Date	The machine prints all communication records after the specified date.
107	Log List Print out		
	001	All log files	These log print out functions are for designer use only.
	002	Printer	
	003	SC/TRAP Stored	
	004	Decompression	
	005	Scanner	
	006	JOB/SAF	

	007	Reconstruction	
	008	JBIG	
	009	Fax Driver	
	010	G3CCU	
	011	Fax Job	
	012	CCU	
	013	Scanner Condition	
108	IP Protocol Dump List		
	001	All Communications	Prints the protocol dump list of all communications for the IP fax line.
	002	1 Communication	Prints the protocol dump list of the last communication for the IP fax line.

4.2.7 SP7-XXX (TESTS)

These are the test modes for PTT approval.

7	Function
101	G3-1 Modem Tests
102	G3-1 DTMF Tests
103	Ringer Test
104	G3-1 V34 (S2400baud)
105	G3-1 V34 (S2800baud)
106	G3-1 V34 (S3000baud)
107	G3-1 V34 (S3200baud)
108	G3-1 V34 (S3429baud)
109	Recorded Message Test

110	G3-2 Modem Tests
111	G3-2 DTMF Tests
112	G3-2 V34 (S2400baud)
113	G3-2 V34 (S2800baud)
114	G3-2 V34 (S3000baud)
115	G3-2 V34 (S3200baud)
116	G3-2 V34 (S3429baud)
117	G3-3 Modem Tests
118	G3-3 DTMF Tests
119	G3-3 V34 (S2400baud)
120	G3-3 V34 (S2800baud)
121	G3-3 V34 (S3000baud)
122	G3-3 V34 (S3200baud)
123	G3-3 V34 (S3429baud)
124	IG3-1 Modem Tests - **Not used**
125	IG3-1 DTMF Tests - **Not used**
126	IG3-1 V34 (S2400baud) - **Not used**
127	IG3-1 V34 (S2800baud) - **Not used**
128	IG3-1 V34 (S3000baud) - **Not used**
129	IG3-1 V34 (S3200baud) - **Not used**
130	IG3-1 V34 (S3429baud) - **Not used**
131	IG3-2 Modem Tests - **Not used**
132	IG3-2 DTMF Tests - **Not used**
133	IG3-2 V34 (S2400baud) - **Not used**
134	IG3-2 V34 (S2800baud) - **Not used**

135	IG3-2 V34 (S3000baud) - **Not used**
136	IG3-2 V34 (S3200baud) - **Not used**
137	IG3-2 V34 (S3429baud) - **Not used**

4.3 BIT SWITCHES - 1

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

4.3.1 SYSTEM SWITCHES

System Switch 00 (SP No. 1-101-001)		
No	**Function**	**Comments**
0	Dedicated transmission parameter programming 0: Disabled 1: Enabled	Set this bit to 1 before changing any dedicated transmission parameters. This setting is automatically reset to "0" after turning off and on.
1	Not used	Do not change
2	Technical data printout on the Journal 0: Disabled 1: Enabled	1: Instead of the personal name, the following data are listed on the Journal for each G3 communication.

	Example: **0000 32V34 288/264 L0100 03 04** (1) (2)(3) (4) (5) (6) (7) (8) (1): EQM value (Line quality data). A larger number means more errors. (2): Symbol rate (V.34 only) (3): Final modem type used (4): Starting data rate (for example, 288 means 28.8 kbps) (5): Final data rate (6): Rx revel (see below for how to read the RX level) (7): Total number of error lines that occurred during non-ECM reception. (8): Total number of burst error lines that occurred during non-ECM reception. Note ▪ EQM and RX level are fixed at "FFFF" in TX mode. ▪ The seventh and eighth numbers are fixed at "00" for transmission records and ECM reception records.	
	Rx level calculation Example: **0000 32V34 288/264 L0100 03 04** (1) (2)(3) (4) (5) (6) (7) (8) The four-digit hexadecimal value (N) after "L" indicates the RX level. The **high** byte is given first, followed by the **low** byte. Divide the decimal value of N by -16 to get the RX level. In the above example, the decimal value of N (= 0100 [H]) is 256. So, the actual RX level is 256/-16 = -16 dB	
3	Not used	Do not change this setting.
4	Line error mark print 0: OFF, 1: ON (print)	When "1" is selected, a line error mark is printed on the printout if a line error occurs during reception. This shows error locations when ECM is turned off.
5	G3/G4 communication parameter display 0: Disabled 1: Enabled	This is a fault-finding aid. The LCD shows the key parameters (see "G3 Communication Parameters" below this table). This is normally disabled because it cancels the CSI display for the user. Be sure to reset this bit to "0" after testing.

6	Protocol dump list output after each communication 0: Off 1: On	This is only used for communication troubleshooting. It shows the content of the transmitted facsimile protocol signals. Always reset this bit to 0 after finishing testing. If system switch 09 bit 6 is at "1", the list is only printed if there was an error during the communication.
7	Not used	Do not change the setting.

G3 Communication Parameters

Modem rate	336: 33600 bps 312: 31200 bps 288: 28800 bps 264: 26400 bps 240: 24000 bps 216: 21600 bps 192: 19200 bps 168: 16800 bps 144: 14400 bps 120: 12000 bps 96: 9600 bps 72: 7200 bps 48: 4800 bps 24: 2400 bps
Resolution	S: Standard (8 x 3.85 dots/mm) D: Detail (8 x 7.7 dots/mm) F: Fine (8 x 15.4 dots/mm) SF: Superfine (16 x 15.4 dots/mm) 21: Standard (200 x 100 dpi) 22: Detail (200 x 200 dpi) 44: Superfine (400 x 400 dpi)
Compression mode	MMR: MMR compression MR: MR compression MH: MH compression JBO: JBIG compression (Optional mode) JBB: JBIG compression (Basic mode)
Communication mode	ECM: With ECM NML: With no ECM

Width and reduction	A4: A4 (8.3"), no reduction B4: B4 (10.1"), no reduction A3: A3 (11.7"), no reduction
I/O rate	0: 0 ms/line 5: 5 ms/line 10: 10 ms/line 20: 20 ms/line 25: 2.5 ms/line 40: 40 ms/line Note ▪ "40" is displayed while receiving a fax message using AI short protocol.

System Switch 01 - Not used (Do not change the factory settings.)

System Switch 02 (SP No. 1-101-003)				
No	**Function**			**Comments**
0	Not used			Do not change these settings.
2	Forced reset after transmission stalls 0: Off 1: On			With this setting on, the machine resets itself automatically if a transmission stalls and fails to complete the job.
3	Not used			Do not change these settings.
4	File retention time 0: Depends on User Parameter 24 [18(H)] 1: No limit			1: A file that had a communication error will not be erased unless the communication is successful.
5	Not used			Do not change this setting.
6-7	Memory read/write by RDS			(0,0): All RDS systems are always locked out. (0,1), (1,0): Normally, RDS systems are locked out, but the user can temporarily switch RDS on to allow RDS operations to take place. RDS
	Bit 7	Bit 6	Setting	
	0	0	Always disabled	

	0	1	User selectable	will automatically be locked out again after a certain time, which is stored in System Switch 03. Note that if an RDS operation takes place, RDS will not switch off until this time limit has expired. (1,1): At any time, an RDS system can access the machine.
	1	0	User selectable	
	1	1	Always enabled	

System Switch 03 (SP No. 1-101-004)		
No	**Function**	**Comments**
0 to 7	Length of time that RDS is temporarily switched on when bits 6 and 7 of System Switch 02 are set to "User selectable"	00 - 99 hours (BCD). This setting is only valid if bits 6 and 7 of System Switch 02 are set to "User selectable". The default setting is 24 hours.

System Switch 04 (SP No. 1-101-005)		
No	**Function**	**Comments**
0-2	Not used	Do not change these settings.
3	Printing dedicated TX parameters on Quick/Speed Dial Lists 0: Disabled 1: Enabled	1: Each Quick/Speed dial number on the list is printed with the dedicated TX parameters (10 bytes each). The first 10 bytes of data are the programmed dedicated TX parameters; 34 bytes of data are printed (the other 24 bytes have no use for service technicians).
4-7	Not used	Do not change these settings.

System Switch 05 - Not used (Do not change the factory settings.)
System Switch 06 - Not used (Do not change the factory settings.)
System Switch 07 - Not used (Do not change the factory settings.)
System Switch 08 - Not used (Do not change the factory settings.)

System Switch 09 (SP No. 1-101-010)		
No	**Function**	**Comments**
0	Addition of image data from confidential transmissions on the transmission result report 0: Disabled 1: Enabled	If this feature is enabled, the top half of the first page of confidential messages will be printed on transmission result reports.
1	Print timing of communication reports on the Journal when no image data was exchanged. 0: After DCS/NSS communication (default), 1: After polling	0: The Journal is printed only when image data is sent. 1: The Journal is printed when any data is sent.
2	Automatic error report printout 0: Disabled 1: Enabled	0: Error reports will not be printed. 1: Error reports will be printed automatically after failed communications.
3	Printing of the error code on the error report 0: No 1: Yes	1: Error codes are printed on the error reports. This can be used for detecting an error which occurs rarely.
4	Not used	Do not change this setting.
5	Power failure report 0: Disabled 1: Enabled (default)	1: A power failure report will be automatically printed after the power is switched on if a fax message disappeared from the memory when the power was turned off last. **NOTE:** If "0" is selected, no reports are printed and no one may recognize that fax data is gone due to a power failure.

6	Conditions for printing the protocol dump list 0: Print for all communications 1: Print only when there is a communication error	This switch becomes effective only when system switch 00 bit 6 is set to 1. 1: Set this bit to 1 when you wish to print a protocol dump list only for communications with errors. **Note:** The memory size is limited. Use this bit switch only when some log reports are necessary.
7	Priority given to various types of remote terminal ID when printing reports 0: RTI > CSI > Dial label > Tel. number 1: Dial label > Tel. number > RTI > CSI	This bit determines which set of priorities the machine uses when listing remote terminal names on reports. Dial Label: The name stored, by the user, for the Quick/Speed Dial number.

System Switch 0A (SP No. 1-101-011)		
No	**Function**	**Comments**
0	Automatic port selection 0: Disabled, 1: Enabled	When "1" is selected, a suitable port is automatically selected if the selected port is not used. **NOTE:** This bit is useful if all communication lines at a customer site are not the same quality
1-3	Not used	Do not change these settings.
4	Dialing on the ten-key pad when the external telephone is off-hook 0: Disabled 1: Enabled	0: Prevents dialing from the ten-key pad while the external telephone is off-hook. Use this setting when the external telephone is not by the machine, or if a wireless telephone is connected as an external telephone. 1: The user can dial on the machine's ten-key pad when the handset is off-hook.
5	On hook dial 0: Disabled 1: Enabled	0: On hook dial is disabled.

6-7	Not used	Do not change the factory settings

System Switch 0B - Not used (Do not change the factory settings.)
System Switch 0C - Not used (Do not change the factory settings.)
System Switch 0D - Not used (Do not change the factory settings.)

System Switch 0E (SP No. 1-101-015)		
No	**Function**	**Comments**
0-1	Not used	Do not change the settings.
2	Enable/disable for direct sending selection 0: Direct sending off 1: Direct sending on	Direct sending cannot operate when the capture function is on during sending. Setting this switch to "1" en bles direct sending without capture. Setting this switch to "0" masks the direct sending function on the operation panel so direct sending with Scan Router cannot be selected.
3	Action when the external handset goes off-hook 0: Manual TX and RX operation 1: Memory TX and RX operation (the display remains the same)	0: Manual TX is possible while the external handset is off-hook. However, manual TX during handset off-hook may not be sent to a correct direction. Manual TX is not possible. 1: The display stays in standby mode even when the external handset is used, so that other people can use the machine for memory TX operation. Note that manual TX and RX are not possible with this setting.
4-7	Not used	Do not change these settings.

<table>
<tr><th colspan="4">System Switch 0F (SP No. 1-101-016)</th></tr>
<tr><th>No</th><th colspan="2">Function</th><th>Comments</th></tr>
<tr><td rowspan="17">0
to
7</td><td colspan="2">Country/area code for functional settings (Hex)</td><td rowspan="16">This country/area code determines the factory settings of bit switches and RAM addresses. However, it has no effect on the NCU parameter settings and communication parameter RAM addresses.
Cross reference
NCU country code:
SP No. 2-103-001 for G3-1
SP No. 2-104-001 for G3-2
SP No. 2-105-001 for G3-3</td></tr>
<tr><td>00: France</td><td>12: Asia</td></tr>
<tr><td>01: Germany</td><td>13: Japan</td></tr>
<tr><td>02: UK</td><td>14: Hong Kong</td></tr>
<tr><td>03: Italy</td><td>15: South Africa</td></tr>
<tr><td>04: Austria</td><td>16: Australia</td></tr>
<tr><td>05: Belgium</td><td>17: New Zealand</td></tr>
<tr><td>06: Denmark</td><td>18: Singapore</td></tr>
<tr><td>07: Finland</td><td>19: Malaysia</td></tr>
<tr><td>08: Ireland</td><td>1A: China</td></tr>
<tr><td>09: Norway</td><td>1B: Taiwan</td></tr>
<tr><td>0A: Sweden</td><td>1C: Korea</td></tr>
<tr><td>0B: Switz.</td><td>1D: Brazil</td></tr>
<tr><td>0C: Portugal</td><td>20: Turkey</td></tr>
<tr><td>0D: Holland</td><td>21: Greece</td></tr>
<tr><td>0E: Spain</td><td>22: Hungary</td></tr>
<tr><td>0F: Israel</td><td>23: Czech</td></tr>
<tr><td>10: ---</td><td>24: Poland</td><td></td></tr>
<tr><td>11: USA</td><td></td><td></td></tr>
</table>

System Switch 10 (SP No. 1-101-017)		
No	**Function**	**Comments**
0-7	Threshold memory level for parallel memory transmission	Threshold = N x 128 KB + 256 KB N can be between 00 - FF(H) Default setting: 02(H) = 512 KB

System Switch 11 (SP No. 1-101-018)		
No	**Function**	**Comments**
0	TTI printing position 0: Superimposed on the page data 1: Printed before the data leading edge	Change this bit to 1 if the TTI overprints information that the customer considers to be important (G3 transmissions). **Note:** If "1" is selected, it is possible that sent data is printed on two sheets of paper.
1-2	Not used	Do not change the factory settings.
3	TTI used for broadcasting 0: The TTIs selected for each Quick/Speed dial are used 1: The same TTI is used for all destinations	1: The TTI (TTI_1 or TTI_2) which is selected for all destinations during broadcasting.
4-7	Not used	Do not change the factory settings.

System Switch 12 (SP No. 1-101-019)		
No	**Function**	**Comments**
0-7	TTI printing position in the main scan direction	TTI: 08 to 92 (BCD) mm Input even numbers only. This setting determines the print start position for the TTI from the left edge of the paper. If the TTI is moved too far to the right, it may overwrite the file number which is on the top right of the page. On an A4 page, if the TTI is moved over by more than 50 mm, it may overwrite the page number.

System Switch 13 - Not used (do not change these settings)
System Switch 14 - Not used (do not change these settings)

System Switch 15 (SP No. 1-101-022)		
No	**Function**	**Comments**
0	Not used	Do not change the settings.
1	Going into the Energy Saver mode automatically 0: Enabled 1: Disabled	1: The machine will restart from the Energy Saver mode quickly, because the +5V power supply is active even in the Energy Saver mode. The LED of the operation switch is flashing instead of entering Energy Saver mode. Use this setting if an external telephone has to be used when the machine is in the Energy Saver mode.
2-3	Not used	Do not change these settings.

<table>
<tr><td rowspan="6">4-5</td><td colspan="3">Interval for preventing the machine from entering Energy Saver mode if there is a pending transmission file.</td><td rowspan="6">If there is a file waiting for transmission, the machine does not go to Energy Saver mode during the selected period.
After transmitting the file, if there is no file waiting for transmission, the machine goes to the Energy Saver mode.</td></tr>
<tr><td>Bit 5</td><td>Bit 4</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>1 min</td></tr>
<tr><td>0</td><td>1</td><td>30 min</td></tr>
<tr><td>1</td><td>0</td><td>1 hour</td></tr>
<tr><td>1</td><td>1</td><td>24 hours</td></tr>
<tr><td>6-7</td><td colspan="3">Not used</td><td>Do not change</td></tr>
</table>

System Switch 16 (SP No. 1-101-023)		
No	**Function**	**Comments**
0	Parallel Broadcasting 0: Disabled 1: Enabled	1: The machine sends messages simultaneously using all available ports during broadcasting. **NOTE:** If a customer wants to keep a line available for fax reception or other reasons, select "0" (Disable).
1	Priority setting for the G3 line. 0: PSTN-1 > PSTN-2 or 3 1: PSTN-2 or 3 > PSTN-1	This function allows the user to select the default G3 line type. The optional SG3 units are required to use the PSTN-2 or 3 setting.
2-7	Not used	Do not change these settings.

System Switch 17 - Not used (do not change these settings)
System Switch 18 - Not used (do not change these settings)

System Switch 19 (SP No. 1-101-026)		
No	**Function**	**Comments**
0-5	Not used	Do not change the settings.
6	Extended scanner page memory after memory option is installed 0: Disabled 1: Enabled	0: After installing the memory expansion option, the scanner page memory is extended to 4 MB from 2 MB. 1: If this bit is set to 1 after installing the memory expansion option, the scanner page memory is extended to 12 MB. But the SAF memory decreases to 18 MB.
7	Special Original mode 0: Disabled 1: Enabled	1: If the customer frequently wishes to transmit a form or letterhead which has a colored or printed background, change this bit to "1". "Original 1" and "Original 2" can be selected in addition to the "Text", "Text/Photo" and "Photo" modes.

System Switch 1A (SP No. 1-101-027)		
No	**Function**	**Comments**
0 to 7	LS RX memory capacity threshold setting 00-FF (0-1020 Kbyte: Hex)	Sets the value to x4KB. When the amount of available memory drops below this setting, RX documents are printed to conserve memory. Initial setting 0x80 (512 KB) **Note:** If a customer wants available memory size to be larger, decrease this threshold

System Switch 1B - Not used (do not change these settings)
System Switch 1C - Not used (do not change these settings)

System Switch 1D (SP No. 1-101-030)		
No	**Function**	**Comments**
0	RTI/CSI/CPS code display 0: Enable 1: Disable	0: RTI, CSI, CPS codes are displayed on the top line of the LCD panel during communication. 1: Codes are switched off (no display)
1-7	Not used	Do not change these settings.

System Switch 1E (SP No. 1-101-031)		
No	**Function**	**Comments**
0	Communication after the Journal data storage area has become full 0: Impossible 1: Possible	0: When this switch is on and the journal history becomes full, the next report prints. If the journal history is not deleted, the next transmission cannot be received. This prevents overwriting communication records before the machine can print them. 1: If the buffer memory of the communication records for the Journal is full, fax communications are still possible. But the machine will overwrite the oldest communication records. **Note**: This setting is effective only when Automatic Journal printout is enabled but the machine cannot print the report (e.g., no paper).

1	Action when the SAF memory has become full during scanning 0: The current page is erased. 1: The entire file is erased.	0: If the SAF memory becomes full during scanning for a memory transmission, the successfully scanned pages are transmitted. 1: If the SAF memory becomes full during scanning for a memory transmission, the file is erased and no pages are transmitted. **Note**: This setting is effective only when Automatic Journal printout is enabled but the machine cannot print the report (e.g., no paper).
2	RTI/CSI display priority 0: RTI 1: CSI	This bit determines which identifier, RTI or CSI, is displayed on the LCD while the machine is communicating in G3 non-standard mode.
3	File No. printing 0: Enabled 1: Disabled	1: File numbers are not printed on any reports. **Note:** The file numbers may not be printed in the sequential order. If a customer does not like this numbering, select "0".
4	Action when authorized reception is enabled but authorized RTIs/CSIs are not yet programmed 0: Faxes can be received if the sender has an RTI or CSI 1: All fax reception is disabled	0: If the user has stored no acceptable sender RTIs or CSIs, the user can select “ON” in the authorized reception setting but the setting becomes invalid (“OFF”). The machine will not be able to receive any fax messages. If the customer wishes to receive messages from any sender that includes an RTI or CSI, and to block messages from senders that do not include an RTI or CSI, change this bit to "0", then enable Authorized Reception. Otherwise, keep this bit at "1 (default setting)".
5-7	Not used	Do not change the settings

System Switch 1F (SP No. 1-101-032)		
No	**Function**	**Comments**
0	Not used	Do not change the settings.
1	Report printout after an original jam during SAF storage or if the SAF memory fills up 0: Enabled 1: Disabled	0: When an original jams, or the SAF memory overflows during scanning, a report will be printed. Change this bit to "1" if the customer does not want to have a report in these cases. Memory TX – Memory storage report Parallel memory TX – Transmission result report
2	Not used	Do not change the settings.
3	Received fax print start timing (G3 reception) 0: After receiving each page 1: After receiving all pages	0: The machine prints each page immediately after the machine receives it. 1: The machine prints the complete message after the machine receives all the pages in the memory.
4-6	Not used	Do not change the factory settings.
7	Action when a fax SC has occurred 0: Automatic reset 1: Fax unit stops	0: When the fax unit detects a fax SC code other than SC1201 and SC1207, the fax unit automatically resets itself. 1: When the fax unit detects any fax SC code, the fax unit stops. **Cross Reference** Fax SC codes - See "Troubleshooting"

4.4 BIT SWITCHES - 2

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

4.4.1 I-FAX SWITCHES

I-fax Switch 00 (SP No. 1-102-001)		
No	**Function**	**Comments**
Original Width of TX Attachment File		This setting sets the maximum size of the original that the destination can receive. (Bits 3~7 are reserved for future use or not used.)
0	A4	-
1	B4	
2	A3	
3-6	Reserved	
7	Not used	
	0: Off (not selected), 1: On (selected) If more than one of these three bits is set to "1", the larger size has priority. For example, if both Bit 2 and Bit 1 are set to "1" then the maximum size is "A3" (Bit 2). When mail is sent, there is no negotiation with the receiving machine at the destination, so the sending machine cannot make a selection for the receiving capabilities (original width setting) of the receiving machine. The original width selected with this switch is used as the RX machine's original width setting, and the original is reduced to this size before sending. The default is A4. If the width selected with this switch is higher than the receiving machine can accept, the machine detects this and this causes an error.	

<table>
<tr><th colspan="3">I-fax Switch 01 (SP No. 1-102-002)</th></tr>
<tr><th>No</th><th>Function</th><th>Comments</th></tr>
<tr><td colspan="2">Original Line Resolution of TX Attachment File</td><td>These settings set the maximum resolution of the original that the destination can receive.</td></tr>
<tr><td>0</td><td>200x100 Standard</td><td rowspan="7">0: Not selected
1: Selected
If more than one of these three bits is set to "1", the higher resolution has priority. For example, if both Bit 0 and Bit 2 are set to "1" Then The Resolution is set for "Bit 2 200 x 400.</td></tr>
<tr><td>1</td><td>200x200 Detail</td></tr>
<tr><td>2</td><td>200x400 Fine</td></tr>
<tr><td>3</td><td>300 x 300 Reserve</td></tr>
<tr><td>4</td><td>400 x 400 Super Fine</td></tr>
<tr><td>5</td><td>600 x 600 Reserve</td></tr>
<tr><td>6</td><td>Reserve</td></tr>
<tr><td>7</td><td colspan="2">mm/inch</td></tr>
<tr><td></td><td colspan="2">This setting selects mm/inch conversion for mail transmission.
0: Off (No conversion), 1: On (Conversion)
When on (set to "1"), the machine converts millimeters to inches for sending mail. There is no switch for converting inches to millimeters.
Unlike G3 fax transmissions which can negotiate between sender and receiver to determine the setting, mail cannot negotiate between terminals; the mm/inch selection is determined by the sender fax.
When this switch is Off (0):
▪ Images scanned in inches are sent in inches.
▪ Images scanned in mm are sent in mm.
▪ Images received in inches are transmitted in inches.
▪ Images received in mm are transmitted in mm.
When this switch is On (1):
▪ Images scanned in inches are sent in inches.
▪ Images scanned in mm are converted to inches.
▪ Images received in inches are transmitted in inches.
▪ Images received in mm are converted to inches.</td></tr>
</table>

I-fax Switch 02 (SP No. 1-102-003)		
No	**Function**	**Comments**
0	RX Text Mail Header Processing	
	This setting determines whether the header information is printed with text e-mails when they are received. 0: Prints only text mail. 1: Prints mail header information attached to text mail. When a text mail is received with this switch On (1), the "From" address and "Subject" address are printed as header information. When a mail with only binary data is received (a TIFF-F file, for example), this setting is ignored and no header is printed.	
1	Output from Attached Document at E-mail TX Error	
	This setting determines whether only the first page or all pages of an e-mail attachment are printed at the sending station when a transmission error occurs. This allows the customer to see which documents have not reached their intended destinations if sent to the wrong e-mail addresses, for example. 0: Prints 1st page only. 1: Prints all pages.	
2-3	Text String for Return Receipt	
	This setting determines the text string output for the Return Receipt that confirms the transmission was received normally at the destination.	

	00: "Dispatched" Sends from PC mail a request for a Return Receipt. Receives the Return Receipt with "dispatched" in the 2nd part: Disposition: Automatic-action/MDN-send automatically; dispatched The "dispatched" string is included in the Subject string. 01: "Displayed" Sends from PC mail a request for a Return Receipt. Receives the Return Receipt with "displayed" in the 2nd part: Disposition: Automatic-action/MDN-send automatically; displayed The "displayed" string is included in the Subject string. 10: Reserved 11: Reserved A mail requesting a Return Receipt sent from an IFAX with this switch set to "00" (for "dispatched") received by Microsoft Outlook 2000 may cause an error. If any setting other than "displayed" (01) causes a problem, change the setting to "01" to enable normal sending of the Return Receipt.
4	Media accept feature
	This setting adds or does not add the media accept feature to the answer mail to confirm a reception. 0: Does not add the media accept feature to the answer mail 1: Adds the media accept feature to the answer mail. Use this bit switch if a problem occurs when the machine receives an answer mail, which contains the media accept feature field.
5-6	Not Used
7	Image Resolution of RX Text Mail
	This setting determines the image resolution of the received mail. 0: 200 x 200 1: 400 x 400 The "1" setting requires installation of the Memory Unit in order to have enough SAF (Store and Forward) memory to receive images at 400 x 400 resolution.

I-fax Switch 03 - Not used (do not change these settings)

I-fax Switch 04 (SP No. 1-102-005)		
No	**Function**	**Comments**
0	Subject for Delivery TX/Memory Transfer	
	This setting determines whether the RTI/CSI registered on this machine or the RTI/CSI of the originator is used in the subject lines of transferred documents. 0: Puts the RTI/CSI of the originator in the Subject line. If this is used, either the RTI or CSI is used. Only one of these can be received for use in the subject line. 1: Puts the RTI/CSI registered on this machine in the Subject line. When this switch is used to transfer and deliver mail to a PC, the information in the Subject line that indicates where the transmission originated can be used to determine automatically the destination folder for each e-mail.	
1	Subject corresponding to mail post database 0: Standard subject 1: Mail post database subject The standard subject is replaced by the mail post database subject in the following three cases: 1) When the service technician sets the service (software) switch. 2) When memory sending or delivery specified by F code is applied by the SMTP server 3) With relay broadcasting (1st stage without the Schmidt 4 function). Note ▪ This switch does not apply for condition 3) when the RX system is set up for memory sending, delivery by F-code, sending with SMTP RX and when operators are using FOL (to prevent problems when receiving transmissions).	
2-7	Not Used	

I-fax Switch 05 (SP No. 1-102-006)		
No	**Function**	**Comments**
0	Mail Addresses of SMTP Broadcast Recipients	
	Determines whether the e-mail addresses of the destinations that receive transmissions broadcasted using SMTP protocol are recorded in the Journal. For example: "1st destination + Total number of destinations: 9" in the Journal indicates a broadcast to 9 destinations. 0: Not recorded 1: Recorded	
1-7	Not Used	

I-fax Switch 06 - Not used (do not change the settings)
I-fax Switch 07 - Not used (do not change the settings)

I-fax Switch 08 (SP No. 1-102-009)		
No	**Function**	**Comments**
0-7	Memory Threshold for POP Mail Reception	
	This setting determines the amount of SAF (Store and Forward) memory. (SAF stores fax messages to send later for transmission to more than one location, and also holds incoming messages if they cannot be printed.) When the amount of SAF memory available falls below this setting, mail can no longer be received; received mail is then stored on the mail server. 00-FF (0 to 1024 KB: HEX) The hexadecimal number you enter is multiplied by 4 KB to determine the amount of memory.	

I-fax Switch 09 (SP No. 1-102-010)		
No	**Function**	**Comments**
0-3	Not used	Do not change the settings
4-7	Restrict TX Retries	This setting determines the number of retries when connection and transmission fails due to errors. 01-F (1-15 Hex)

I-fax Switch 0A - Not used (do not change the settings)
I-fax Switch 0B - Not used (do not change the settings)
I-fax Switch 0C - Not used (do not change the settings)

<table>
<tr><th colspan="5">I-fax Switch 0D (SP No. 1-102-014)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td>0-1</td><td colspan="3">Not used</td><td>Do not change the settings</td></tr>
<tr><td rowspan="6">2-3</td><td colspan="3">Set to select the signature when sending mail notification of the send results</td><td rowspan="6">In response to IEEE2600.1.</td></tr>
<tr><td>Bit 2</td><td>Bit 3</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>No sign</td></tr>
<tr><td>0</td><td>1</td><td>No setting</td></tr>
<tr><td>1</td><td>0</td><td>Individual setting</td></tr>
<tr><td>1</td><td>1</td><td>Always sign</td></tr>
<tr><td rowspan="3">4-5</td><td colspan="3">Set to select the signature when sending mail.</td><td rowspan="3">In response to IEEE2600.1.</td></tr>
<tr><td>Bit 5</td><td>Bit 4</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>No sign</td></tr>
</table>

	0	1	No setting	
	1	**0**	Individual setting	
	1	1	Always sign	
6-7	Not used			Do not change the settings.

I-fax Switch 0E - Not used (do not change the settings)

I-fax Switch 0F (SP No. 1-102-016)		
No	**Function**	**Comments**
0	Delivery Method for SMTP RX Files	
	This setting determines whether files received with SMTP protocol are delivered or output immediately. 0: Off. Files received via SMTP are output immediately without delivery. 1: On. Files received via SMTP are delivered immediately to their destinations.	
1-7	Not used	

4.4.2 PRINTER SWITCHES

Printer Switch 00 (SP No. 1-103-001)		
No	**Function**	**Comments**
0	Select page separation marks 0: Off 1: On	0: If a 2 page RX transmission is split, [*] is printed in the bottom right corner of the 1st page and only a [2] is printed in the upper right corner of the 2nd page. 1: If a 2 page RX transmission is split into two pages, for example, [*] [2] is printed in the bottom right corner of the 1st page and only a [2] is printed in the upper right corner of the 2nd page. **Note**: This helps the user to identify pages that have been split because the size of the paper is smaller than the size of the document received. (When A5 is used to print an A4 size document, for example.)
1	Repetition of data when the received page is longer than the printer paper 0: Off 1: On	1: Default. 10 mm of the trailing edge of the previous page are repeated at the top of the next page. 0: The next page continues from where the previous page stopped without any repeated text.
2	Prints the date and time on received fax messages 0: Disabled 1: Enabled	This switch is only effective when user parameter 02 - bit 2 (printing the received date and time on received fax messages) is enabled. 1: The machine prints the received and printed date and time at the bottom of each received page.
3-7	Not used	Do not change the settings.

<table>
<tr><th colspan="5">Printer Switch 01 (SP No. 1-103-002)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td>0-2</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
<tr><td rowspan="6">3-4</td><td colspan="3">Maximum print width used in the setup protocol</td><td rowspan="6">These bits are only effective when bit 7 of printer switch 01 is "1".</td></tr>
<tr><td>Bit 4</td><td>Bit 3</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>Not used</td></tr>
<tr><td>0</td><td>1</td><td>A3</td></tr>
<tr><td>1</td><td>0</td><td>B4</td></tr>
<tr><td>1</td><td>1</td><td>A4</td></tr>
<tr><td>5-6</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
<tr><td>7</td><td colspan="3">Received message width restriction in the protocol signal to the sender
0: Disabled
1: Enabled</td><td>0: The machine informs the transmitting machine of the print width depending on the paper size available from the paper feed stations.
Refer to the table on the next page for how the machine chooses the paper width used in the setup protocol (NSF/DIS).
1: The machine informs the transmitting machine of the fixed paper width which is specified by bits 3 and 4 above.</td></tr>
</table>

Relationship between available paper sizes and printer width used in the setup protocol

Available Paper Size	Printer width used in the Protocol (NSF/DIS)
A4 or 8.5" x 11"	297 mm width
B5	256 mm width
A5 or 8.5" x 5.5"	216 mm width
No paper available (Paper end)	216 mm width

Printer Switch 02 (SP No. 1-103-003)		
No	**Function**	**Comments**
0	1st paper feed station usage for fax printing 0: Enabled 1: Disabled	0: The paper feed station can be used to print fax messages and reports. 1: The specified paper feed station will not be used for printing fax messages and reports. **Note**: Do not disable usage for a paper feed station which has been specified by User Parameter Switch 0F (15), or which is used for the Specified Cassette Selection feature.
1	2nd paper feed station usage for fax printing 0: Enabled 1: Disabled	
2	3rd paper feed station usage for fax printing 0: Enabled 1: Disabled	
3	4th paper feed station usage for fax printing 0: Enabled 1: Disabled	
4	LCT usage for fax printing 0: Enabled 1: Disabled	
5-7	Not used	Do not change the settings.

Printer Switch 03 (SP No. 1-103-004)		
No	**Function**	**Comments**
0	Length reduction of received data 0: Disabled 1: Enabled	0: Incoming pages are printed without length reduction. (Page separation threshold: Printer Switch 03, bits 4 to 7) 1: Incoming page length is reduced when printing. (Maximum reducible length: Printer Switches 04, bits 0 to 4)
1-3	Not used	Do not change the settings
4 to 7	Page separation setting when sub scan compression is forbidden 00-0F (0-15 mm: Hex) Default: 6 mm	Page separation threshold (with reduction disabled with switch 03-0 above). For example, if this setting is set to "10", and A4 is the selected paper size: If the received document is 10 mm or less longer than A4, then the 10 mm are cut and only 1 page prints. If the received document is 10 mm longer than A4, then the document is split into 2 pages.

Printer Switch 04 (SP No. 1-103-005)						
No	**Function**		**Comments**			
0 to 4	Maximum reducible length when length reduction is enabled with switch 03-0 above. [Maximum reducible length] = [Paper length] + (N x 5mm) "N" is the decimal value of the binary setting of bits 0 to 4.					
	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0	Setting
	0	0	0	0	0	0 mm
	0	0	0	0	1	5 mm
	0	0	1	0	0	20 mm

	1	1	1	1	1	155 mm
	For A5 sideways and B5 sideways paper [Maximum reducible length] = [Paper length] + 0.75 x (N x 5mm)					
5 6	Length of the duplicated image on the next page, when page separation has taken place.					
	Bit 6		Bit 5		Setting	
	0		0		4 mm	
	0		1		10 mm	
	1		0		15 mm	
	1		1		Not used	
7	Not used.		Do not change the setting.			

Printer Switch 05 - Not used (do not change the settings)

Printer Switch 06 (SP No. 1-103-007)		
No	**Function**	**Comments**
0	Printing while a paper cassette is pulled out, when the Just Size Printing feature is enabled. 0: Printing will not start 1: Printing will start if another cassette has a suitable size of paper, based on the paper size selection priority tables.	Cross reference Just size printing on/off – User switch 05, bit 5
1-7	Not used.	Do not change the settings.

Printer Switch 07 (SP No. 1-103-008)		
No	**Function**	**Comments**
0-3	Not used.	Do not change the settings.
4	List of destinations in the Communication Failure Report for broadcasting 0: All destinations 1: Only destinations where communication failure occurred	1: Only destinations where communication failure occurred are printed on the Communication Failure Report.
5-7	Not used.	Do not change the settings.

Printer Switch 08 - Not used (do not change the settings)
Printer Switch 09 - Not used (do not change the settings)
Printer Switch 0A - Not used (do not change the settings)
Printer Switch 0B - Not used (do not change the settings)
Printer Switch 0C - Not used (do not change the settings)

Printer Switch 0E (SP No. 1-103-015)		
No	**Function**	**Comments**
0	Paper size selection priority 0: Width 1: Length	0: A paper size that has the same width as the received data is selected first. 1: A paper size which has enough length to print all the received lines without reduction is selected first.
1	Paper size selected for printing A4 width fax data 0: 8.5" x 11" size 1: A4 size	This switch determines which paper size is selected for printing A4 width fax data, when the machine has both A4 and 8.5" x 11" size paper.

<table>
<tr><td>2</td><td>Page separation
0: Enabled
1: Disabled</td><td>1: If all paper sizes in the machine require page separation to print a received fax message, the machine does not print the message (Substitute Reception is used). After a larger size of paper is set in a cassette, the machine automatically prints the fax message.</td></tr>
<tr><td>3-4</td><td>Printing the sample image on reports
<table><tr><td>Bit 4</td><td>Bit 3</td><td>Setting</td></tr><tr><td>0</td><td>0</td><td>The upper half only</td></tr><tr><td>0</td><td>1</td><td>50% reduction
(sub-scan only)</td></tr><tr><td>1</td><td>0</td><td>Same size</td></tr><tr><td>1</td><td>1</td><td>Not used</td></tr></table></td><td>"Same size" means the sample image is printed at 100%, even if page separation occurs.
User Parameter Switch 19 (13H) bit 4 must be set to "0" to enable this switch.
Refer to Detailed Section Descriptions for more on this feature.</td></tr>
<tr><td>5-6</td><td>Not used</td><td>Do not change the settings.</td></tr>
<tr><td>7</td><td>Equalizing the reduction ratio among separated pages
(Page Separation)
0: Enabled
1: Disabled</td><td>0: When page separation has taken place, all the pages are reduced with the same reduction ratio.
1: Only the last page is reduced to fit the selected paper size when page separation has taken place. Other pages are printed without reduction.</td></tr>
</table>

<table>
<tr><th colspan="5">Printer Switch 0F (SP No. 1-103-016)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="6">0-1</td><td colspan="3">Smoothing feature</td><td rowspan="5">(0, 0) (0, 1): Disable smoothing if the machine receives halftone images from other manufacturers fax machines frequently.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>Disabled</td></tr>
<tr><td>0</td><td>1</td><td>Disabled</td></tr>
<tr><td>1</td><td>0</td><td>Enabled</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
<tr><td>2</td><td colspan="3">Duplex printing
0: Disabled
1: Enabled</td><td>1: The machine always prints received fax messages in duplex printing mode:</td></tr>
<tr><td>3</td><td colspan="3">Binding direction for Duplex printing
0: Left binding
1: Top binding</td><td>0: Sets the binding for the left edge of the stack.
1: Sets the binding for the top of the stack.</td></tr>
<tr><td>4-7</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
</table>

4.5 BIT SWITCHES - 3

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

4.5.1 COMMUNICATION SWITCHES

<table>
<tr><th colspan="5">Communication Switch 00 (SP No. 1-104-001)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="6">0-1</td><td colspan="3">Compression modes available in receive mode</td><td rowspan="6">These bits determine the compression capabilities to be declared in phase B (handshaking) of the T.30 protocol.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Modes</td></tr>
<tr><td>0</td><td>0</td><td>MH only</td></tr>
<tr><td>0</td><td>1</td><td>MH/MR</td></tr>
<tr><td>1</td><td>0</td><td>MH/MR/MMR</td></tr>
<tr><td>1</td><td>1</td><td>MH/MR/MMR/JBIG</td></tr>
<tr><td rowspan="6">2-3</td><td colspan="3">Compression modes available in transmit mode</td><td rowspan="6">These bits determine the compression capabilities to be used in the transmission and to be declared in phase B (handshaking) of the T.30 protocol.</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Modes</td></tr>
<tr><td>0</td><td>0</td><td>MH only</td></tr>
<tr><td>0</td><td>1</td><td>MH/MR</td></tr>
<tr><td>1</td><td>0</td><td>MH/MR/MMR</td></tr>
<tr><td>1</td><td>1</td><td>MH/MR/MMR/JBIG</td></tr>
<tr><td>4</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
</table>

5	JBIG compression method: Reception 0: Only basic supported 1: Basic and optional both supported	Change the setting when communication problems occur using JBIG compression.
6	JBIG compression method: Transmission 0: Basic mode priority 1: Optional mode priority	Change the setting when communication problems occur using JBIG compression.
7	Closed network (reception) 0: Disabled 1: Enabled	1: Reception will not go ahead if the polling ID code of the remote terminal does not match the polling ID code of the local terminal. This function is only available in NSF/NSS mode.

<table>
<tr><th colspan="5">Communication Switch 01 (SP No. 1-104-002)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td>0</td><td colspan="3">ECM
0: Off 1: On</td><td>If this bit is set to 0, ECM is switched off for all communications.
In addition, V.8 protocol and JBIG compression are switched off automatically.</td></tr>
<tr><td>1</td><td colspan="3">Not used</td><td>Do not change the setting.</td></tr>
<tr><td rowspan="7">2-3</td><td colspan="3">Wrong connection prevention method</td><td rowspan="7">(0,1): The machine will disconnect the line without sending a fax message, if the last 8 digits of the received CSI do not match the last 8 digits of the dialed telephone number. This does not work when manually dialed.
(1,0): The same as above, except that only the last 4 digits are compared.
(1,1): The machine will disconnect the line without sending a fax message, if the other end does not identify itself with an RTI or CSI.
(0,0): Nothing is checked; transmission will always go ahead.
Note: This function does not work when dialing is done from the external telephone.</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>None</td></tr>
<tr><td>0</td><td>1</td><td>8 digit CSI</td></tr>
<tr><td>1</td><td>0</td><td>4 digit CSI</td></tr>
<tr><td>1</td><td>1</td><td>CSI/RTI</td></tr>
<tr><td colspan="3"></td></tr>
</table>

<table>
<tr><td>4-5</td><td colspan="3">Not used</td><td>Do not change the setting.</td></tr>
<tr><td rowspan="6">6-7</td><td colspan="3">Maximum printable page length available</td><td rowspan="6">The setting determined by these bits is informed to the transmitting terminal in the pre-message protocol exchange (in the DIS/NSF frames).</td></tr>
<tr><td>Bit 7</td><td>Bit 6</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>No limit</td></tr>
<tr><td>0</td><td>1</td><td>B4 (364 mm)</td></tr>
<tr><td>1</td><td>0</td><td>A4 (297 mm)</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
</table>

<table>
<tr><th colspan="3">Communication Switch 02 (SP No. 1-104-003)</th></tr>
<tr><th>No</th><th>Function</th><th>Comments</th></tr>
<tr><td rowspan="5">0</td><td rowspan="5">G3 Burst error threshold
0: Low 1: High</td><td colspan="2">If there are more consecutive error lines in the received page than the threshold, the machine will send a negative response. The Low and High threshold values depend on the sub-scan resolution, and are as follows.</td></tr>
<tr><td>100 dpi</td><td>6(L) →12(H)</td></tr>
<tr><td>200 dpi</td><td>12(L) →24(H)</td></tr>
<tr><td>300 dpi</td><td>18(L) →36(H)</td></tr>
<tr><td>400 dpi</td><td>24(L) →48(H)</td></tr>
<tr><td>1</td><td>Acceptable total error line ratio
0: 5% 1: 10%</td><td colspan="2">If the error line ratio for a page exceeds the acceptable ratio, RTN will be sent to the other end.</td></tr>
<tr><td>2</td><td>Treatment of pages received with errors during G3 reception
0: Deleted from memory without printing
1: Printed</td><td colspan="2">0: Pages received with errors are not printed.</td></tr>
</table>

3	Hang-up decision when a negative code (RTN or PIN) is received during G3 immediate transmission 0: No hang-up, 1: Hang-up	0: The next page will be sent even if RTN or PIN is received. 1: The machine will send DCN and hang up if it receives RTN or PIN. This bit is ignored for memory transmissions or if ECM is being used.
4-7	Not used	Do not change the settings.

Communication Switch 03 (SP No. 1-104-004)		
No	**Function**	**Comments**
0-7	Maximum number of page retransmissions in a G3 memory transmission	00 - FF (Hex) times. This setting is not used if ECM is switched on. Default setting - 03(H)

Communication Switch 04 - Not used (do not change the settings)
Communication Switch 05 - Not used (do not change the settings)
Communication Switch 06 - Not used (do not change the settings)
Communication Switch 07 - Not used (do not change the settings)
Communication Switch 08 - Not used (do not change the settings)
Communication Switch 09 - Not used (do not change the settings)

Communication Switch 0A (SP No. 1-104-011)		
No	**Function**	**Comments**
0	Point of resumption of memory transmission upon redialing 0: From the error page 1: From page 1	0: The transmission begins from the page where transmission failed the previous time. 1: Transmission begins from the first page, using normal memory transmission.
1-7	Not used	Do not change the settings.

Communication Switch 0B (SP No. 1-104-012)		
No	**Function**	**Comments**
0-3	Not used	Do not change the settings.
4	Printout of the message when acting as a Transfer Station 0: Disabled, 1: Enabled	When the machine is acting as a Transfer Station, this bit determines whether the machine prints the fax message coming in from the Requesting Terminal.
5-7	Not used	Do not change the settings.

Communication Switch 0C - Not used (do not change the settings)

Communication Switch 0D (SP No. 1-104-014)		
No	**Function**	**Comments**
0-7	The available memory threshold, below which ringing detection (and therefore reception into memory) is disabled	00 to FF (Hex), unit = 4 kbytes (e.g., 06(H) = 24 kbytes) One page is about 24 kbytes. The machine refers to this setting before each fax reception. If the amount of remaining memory is below this threshold, the machine cannot receive any fax messages. If this setting is kept at 0, the machine will detect ringing signals and go into receive mode even if there is no memory available. This will result in communication failure.

Communication Switch 0E (SP No. 1-104-015)		
No	**Function**	**Comments**
0-7	Minimum interval between automatic dialing attempts	06 to FF (Hex), unit = 2 s (e.g., 06(H) = 12 s) This value is the minimum time that the machine waits before it dials the next destination.

Communication Switch 0F – Not used (do not change the settings.)

Communication Switch 10 (SP No. 1-104-017)		
No	**Function**	**Comments**
0-7	Memory transmission: Maximum number of dialing attempts to the same destination	01 – FE (Hex) times

Communication Switch 11 – Not used (do not change the settings.)

Communication Switch 12 (SP No. 1-104-019)		
No	**Function**	**Comments**
0-7	Memory transmission: Interval between dialing attempts to the same destination	01 – FF (Hex) minutes

Communication Switch 13 – Not used (do not change the settings.)

<table>
<tr><th colspan="5">Communication Switch 14 (SP No. 1-104-021)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td>0</td><td colspan="3">Inch-to-mm conversion during transmission
0: Disabled, 1: Enabled</td><td>0: In immediate transmission, data scanned in inch format are transmitted without conversion.
In memory transmission, data stored in the SAF memory in mm format are transmitted without conversion.
Note: When storing the scanned data into SAF memory, the fax unit always converts the data into mm format.
1: The machine converts the scanned data or stored data in the SAF memory to the format which was specified in the set-up protocol (DIS/NSF) before transmission.</td></tr>
<tr><td>1-5</td><td colspan="3">Not used</td><td>Do not change the factory settings.</td></tr>
<tr><td rowspan="6">6-7</td><td colspan="3">Available unit of resolution in which fax messages are received</td><td rowspan="6">For the best performance, do not change the factory settings.
The setting determined by these bits is informed to the transmitting terminal in the pre-message protocol exchange (in the DIS/NSF frames).</td></tr>
<tr><td>Bit 7</td><td>Bit 6</td><td>Unit</td></tr>
<tr><td>0</td><td>0</td><td>mm</td></tr>
<tr><td>0</td><td>1</td><td>inch</td></tr>
<tr><td>1</td><td>0</td><td>mm and inch</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
</table>

Communication Switch 15 – Not used (do not change the settings)

Communication Switch 16 (SP No. 1-104-023)		
No	**Function**	**Comments**
0	Not used	Do not change the settings.
1	Optional G3 unit (G3-2) 0: Not installed 1: Installed	Change this bit to 1 when installing the first optional G3 unit.
2	Not used	
3	Select PSTN connection 0: Off 1: On	This switch enables the G3-2. 0: Off, no connection 1: Recognizes and enables G3-2. This switch can be used only after G3-2 has been installed.
4-7	Not used	Do not change the settings.

Communication Switch 17 (SP No. 1-104-024)		
No	**Function**	**Comments**
0	SEP reception 0: Disabled 1: Enabled	0: Polling transmission to another maker's machine using the SEP (Selective Polling) signal is disabled.
1	SUB reception 0: Disabled 1: Enabled	0: Confidential reception to another maker's machine using the SUB (Sub-address) signal is disabled.
2	PWD reception 0: Disabled 1: Enabled	0: Disables features that require PWD (Password) signal reception.
3-4	Not used	Do not change the settings.

5	PSTN dial-in routing setting 0: OFF 1: ON	1: The machine sets multiple PSTN dial-in numbers in the PSTN dial-in line and transfers received data from each PSTN dial-in number to each address.
6	Not used	Do not change the settings.
7	Action when there is no box with an F-code that matches the received SUB code 0: Disconnect the line 1: Receive the message (using normal reception mode)	Change this setting when the customer requires.

Communication Switch 18 (SP No. 1-104-025)		
No	**Function**	**Comments**
0-4	Not used	Do not change the settings.
5	IP-Fax dial-in routing selection 0: Off 1: On	1: Transfers received data to each IP-Fax dial-in number. IP-Fax dial-in number is a 4-digit number.
6	PSTN 2 dial-in routing 0: Off 1: On	Enables or disables dial-in routing for the PSTN 2 connection.
7	PSTN 3 dial-in routing 0: Off 1: On	Enables or disables dial-in routing for the PSTN 3 connection.

Communication Switch 19 - Not used (do not change the settings)
Communication Switch 1A - Not used (do not change the settings)

Communication Switch 1B (SP No. 1-104-028)		
No	**Function**	**Comments**
0-7	Extension access code (0 to 7) to turn V.8 protocol On/Off 0: On 1: Off	If the PABX does not support V.8/V.34 protocol procedure, set this bit to "1" to disable V.8. Example: If "0" is the PSTN access code, set bit 0 to 1. When the machine detects "0" as the first dialed number, it automatically disables V.8 protocol. (Alternatively, if "3" is the PSTN access code, set bit 3 to 1.)

Communication Switch 1C (SP No. 1-104-029)		
No	**Function**	**Comments**
0-1	Extension access code (8 and 9) to turn V.8 protocol On/Off 0: On 1: Off	Refer to communication switch 1B. Example: If "8" is the PSTN access code, set bit 0 to 1. When the machine detects "8" as the first dialed number, it automatically disables V.8 protocol. (If "9" is the PSTN access code, use bit 1.)
2-7	Not used	Do not change the settings.

Communication Switch 1D - Not used (do not change the settings)
Communication Switch 1E - Not used (do not change the settings)
Communication Switch 1F - Not used (do not change the settings)

4.6 BIT SWITCHES - 4

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

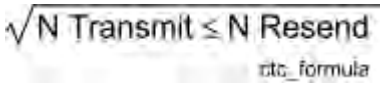
Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

4.6.1 G3 SWITCHES

<table>
<tr><th colspan="5">G3 Switch 00 (SP No. 1-105-001)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="8">0
1</td><td colspan="3">Monitor speaker during communication (tx and rx)</td><td rowspan="8">(0, 0): The monitor speaker is disabled all through the communication.
(0, 1): The monitor speaker is on up to phase B in the T.30 protocol.
(1, 0): Used for testing. The monitor speaker is on all through the communication. Make sure that you reset these bits after testing.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>Disabled</td></tr>
<tr><td>0</td><td>1</td><td>Up to Phase B</td></tr>
<tr><td>1</td><td>0</td><td>All the time</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>2</td><td colspan="3">Monitor speaker during memory transmission
0: Disabled 1: Enabled</td><td>1: The monitor speaker is enabled during memory transmission.</td></tr>
<tr><td>3-7</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
</table>

G3 Switch 01 (SP No. 1-105-002)		
No	**Function**	**Comments**
0-3	Not used	Do not change the settings.
4	DIS frame length 0: 10 bytes 1: 4 bytes	1: The bytes in the DIS frame after the 4th byte will not be transmitted (set to 1 if there are communication problems with PC-based faxes which cannot receive the extended DIS frames).
5	Not used	Do not change the setting.
6	Forbid CED/AMsam output 0: Off 1: On (Forbid output)	Do not change this setting (Default: 0: Off), unless communication problem is caused by a CED or ANSam transmission.
7	Not used	Do not change the setting.

G3 Switch 02 (SP No. 1-105-003)		
No	**Function**	**Comments**
0	G3 protocol mode used 0: Standard and non-standard 1: Standard only	Change this bit to 1 only when the other end can only communicate with machines that send T.30-standard frames only. 1: Disables NSF/NSS signals (these are used in non-standard mode communication)
1-6	Not used	Do not change the settings.
7	Short preamble 0: Disabled 1: Enabled	Refer to Appendix B in the Group 3 Facsimile Manual for details about Short Preamble.

G3 Switch 03 (SP No. 1-105-004)		
No	**Function**	**Comments**
0	DIS detection number (Echo countermeasure) 0: 1 1: 2	0: The machine will hang up if it receives the same DIS frame twice. 1: Before sending DCS, the machine will wait for the second DIS which is caused by echo on the line.
1	Not Used	Do not change the settings.
2	V.8 protocol 0: Disabled 1: Enabled	0: V.8/V.34 communications will not be possible. **Note**: Do not set to 0 unless the line condition is always bad enough to slow down the data rate to 14.4 kbps or lower.
3	ECM frame size 0: 256 bytes 1: 64 bytes	Keep this bit at "0" in most cases.
4	CTC transmission conditions 0: After one PPR signal received 1: After four PPR signals received (ITU-T standard)	0: When using ECM in non-standard (NSF/NSS) mode, the machine sends a CTC to drop back the modem rate after receiving a PPR, if the following condition is met in communications at 14.4, 12.0, 9.6, and 7.2 kbps.  NTransmit- Number of transmitted frames NResend- Number of frames to be retransmitted 1: When using ECM, the machine sends a CTC to drop back the modem rate after receiving four PPRs. PPR, CTC: These are ECM protocol signals. This bit is not effective in V.34 communications.
5	Modem rate used for the next page after receiving a negative code (RTN or PIN) 0: No change 1: Fallback	1: The machine's tx modem rate will fall back before sending the next page if a negative code is received. This bit is ignored if ECM is being used.

6	Not used	Do not change the settings
7	Select detection of reverse polarity in ringing 0: Off 1: On	This switch is used to prevent reverse polarity in ringing on the phone line (applied to PSTN-G3 ringing). Do not change this setting 0: No detection 1: Detection (Japan and Korea only)

G3 Switch 04 (SP No. 1-105-005)

No	Function	Comments
0-3	Training error detection threshold	0 - F (Hex); 0 - 15 bits If the number of error bits in the received TCF is below this threshold, the machine informs the sender that training has succeeded.
4-7	Not used	Do not change the settings.

G3 Switch 05 (SP No. 1-105-006)

No	Function					Comments
0-3	Initial Tx modem rate (kbps)					These bits set the initial starting modem rate for transmission. Use the dedicated transmission parameters if you need to change this for specific receivers. If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually. Cross reference V.8 protocol on/off - G3 switch 03, bit 2
	Bit 3	Bit 2	Bit 1	Bit 0	kbps	
	0	0	0	1	2.4	
	0	0	1	0	4.8	
	0	0	1	1	7.2	
	0	1	0	0	9.6	
	0	1	0	1	12.0	
	0	1	1	0	14.4	
	0	1	1	1	16.8	
	1	0	0	0	19.2	

<table>
<tr><td rowspan="8"></td><td>1</td><td>0</td><td>0</td><td>1</td><td>21.6</td><td rowspan="8"></td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>0</td><td>24.0</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>1</td><td>26.4</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>0</td><td>28.8</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>1</td><td>31.2</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>33.6</td></tr>
<tr><td colspan="5">Other settings - Not used</td></tr>
<tr><td rowspan="6">4-5</td><td colspan="5">Initial modem type for 9.6 k or 7.2 kbps.</td><td rowspan="6">These bits set the initial modem type for 9.6 and 7.2 kbps, if the initial modem rate is set at these speeds.</td></tr>
<tr><td>Bit 5</td><td colspan="2">Bit 4</td><td colspan="2">Setting</td></tr>
<tr><td>0</td><td colspan="2">0</td><td colspan="2">V.29</td></tr>
<tr><td>0</td><td colspan="2">1</td><td colspan="2">V.17</td></tr>
<tr><td>1</td><td colspan="2">0</td><td colspan="2">V.34</td></tr>
<tr><td>1</td><td colspan="2">1</td><td colspan="2">Not used</td></tr>
<tr><td>6-7</td><td colspan="5">Not used</td><td>Do not change the settings.</td></tr>
</table>

<table>
<tr><th colspan="7">G3 Switch 06 (SP No. 1-105-007)</th></tr>
<tr><th>No</th><th colspan="5">Function</th><th>Comments</th></tr>
<tr><td rowspan="8">0-3</td><td colspan="5">Initial Rx modem rate(kbps)</td><td rowspan="8">These bits set the initial starting modem rate for reception.
Use a lower setting if high speeds pose problems during reception.
If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually.
Cross reference
V.8 protocol on/off - G3 switch 03, bit2</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Bit 1</td><td>Bit 0</td><td>kbps</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>2.4</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>4.8</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>7.2</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>0</td><td>9.6</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>1</td><td>12.0</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>0</td><td>14.4</td></tr>
</table>

	0	1	1	1	16.8	
	1	0	0	0	19.2	
	1	0	0	1	21.6	
	1	0	0	1	24.0	
	1	0	1	1	26.4	
	1	1	0	0	28.8	
	1	1	0	1	31.2	
	Other settings - Not used					

4-7

Modem types available for reception

The setting of these bits is used to inform the transmitting terminal of the available modem type for the machine in receive mode.

If V.34 is not selected, V.8 protocol must be disabled manually.

Cross reference

V.8 protocol on/off - G3 switch 03, bit 2

Bit 7	Bit 6	Bit 5	Bit 4	Types
0	0	0	1	V.27ter
0	0	1	0	V.27ter, V.29
0	0	1	1	V.27ter, V.29, V.33
0	1	0	0	V.27ter, V.29, V.17/V.33
0	1	0	1	V.27ter, V.29, V.17/V33, V.34
Other settings - Not used				

<table>
<tr><th colspan="3">G3 Switch 07 (SP No. 1-105-008)</th></tr>
<tr><th>No</th><th>Function</th><th>Comments</th></tr>
<tr><td>0-1</td><td>PSTN cable equalizer
(tx mode: Internal)
<table><tr><td>Bit 1</td><td>Bit 0</td><td>Setting</td></tr><tr><td>0</td><td>0</td><td>None</td></tr><tr><td>0</td><td>1</td><td>Low</td></tr><tr><td>1</td><td>0</td><td>Medium</td></tr><tr><td>1</td><td>1</td><td>High</td></tr></table></td><td>Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange.
Use the dedicated transmission parameters for specific receivers.
Also, try using the cable equalizer if one or more of the following symptoms occurs.
Communication error
Modem rate fallback occurs frequently.
Note: This setting is not effective in V.34 communications.</td></tr>
<tr><td>2-3</td><td>PSTN cable equalizer
(rx mode: Internal)
<table><tr><td>Bit 3</td><td>Bit 2</td><td>Setting</td></tr><tr><td>0</td><td>0</td><td>None</td></tr><tr><td>0</td><td>1</td><td>Low</td></tr><tr><td>1</td><td>0</td><td>Medium</td></tr><tr><td>1</td><td>1</td><td>High</td></tr></table></td><td>Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange.
Also, try using the cable equalizer if one or more of the following symptoms occurs.
Communication error with error codes such as 0-20, 0-23, etc.
Modem rate fallback occurs frequently.
Note: This setting is not effective in V.34 communications.</td></tr>
<tr><td>4</td><td>PSTN cable equalizer
(V.8/V.17 rx mode: External)
0: Disabled
1: Enabled</td><td>Keep this bit at "1".</td></tr>
<tr><td>5</td><td>Not used</td><td>Do not change the settings.</td></tr>
</table>

6	Parameter selection for dial tone detection 0: Normal parameter 1: Specific parameter	0: This uses the fixed table in the ROM for dial tone detection. 1: This uses the specific parameter adjusted with SRAM (69ECBEH - 69ECDEH). Select this if the dial tone cannot be detected when the "Normal parameter: 0" is selected.
7	Not used	Do not change the settings.

G3 Switch 08 - Not used (do not change the settings)
G3 Switch 09 - Not used (do not change the settings)

<table>
<tr><th colspan="5">G3 Switch 0A (SP No. 1-105-011)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="6">0-1</td><td colspan="3">Maximum allowable carrier drop during image data reception</td><td rowspan="6">These bits set the acceptable modem carrier drop time.
Try a longer setting if error code 0-22 is frequent.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Value (ms)</td></tr>
<tr><td>0</td><td>0</td><td>200</td></tr>
<tr><td>0</td><td>1</td><td>400</td></tr>
<tr><td>1</td><td>0</td><td>800</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
<tr><td>2</td><td colspan="3">Select cancellation of high-speed RX if carrier signal lost while receiving
0: Off
1: On</td><td>This switch setting determines if high-speed receiving ends if the carrier signal is lost when receiving during non-ECM mode</td></tr>
<tr><td>3</td><td colspan="3">Not used</td><td>Do not change the settings</td></tr>
</table>

4	Maximum allowable frame interval during image data reception. 0: 5 s 1: 13 s	This bit set the maximum interval between EOL (end-of-line) signals and the maximum interval between ECM frames from the other end. Try using a longer setting if error code 0-21 is frequent.
5	Not used	Do not change the settings.
6	Reconstruction time for the first line in receive mode 0: 6 s 1: 12 s	When the sending terminal is controlled by a computer, there may be a delay in receiving page data after the local machine accepts set-up data and sends CFR. This is outside the T.30 recommendation. But, if this delay occurs, set this bit to 1 to give the sending machine more time to send data. Refer to error code 0-20. ITU-T T.30 recommendation: The first line should come within 5 s of CFR.
7	Not used	Do not change the settings.

G3 Switch 0B Not used (do not change the settings).
G3 Switch 0C Not used (do not change the settings).
G3 Switch 0D Not used (do not change the settings).

G3 Switch 0E (SP No. 1-105-015)		
No	**Function**	**Comments**
0-7	Set CNG send time interval Some machines on the receiving side may not be able to automatically switch the 3-second CNG interval.	
	High order bit	3000-2250ms: 3000-50xNms 3000 – 50 x Nms 0F (3000 ms) <= N <= FF (2250 ms)
	Low order bit	00-0E(3000-3700ms: 3000+50xNms 3000 – 50 x Nms 0F (3000 ms) <= N <= 0F (3700 ms)

G3 Switch 0F (SP No. 1-105-016)		
No	**Function**	**Comments**
0	Alarm when an error occurred in Phase C or later 0: Disabled 1: Enabled	If the customer wants to hear an alarm after each error communication, change this bit to "1".
1	Alarm when the handset is off-hook at the end of communication 0: Disabled 1: Enabled	If the customer wants to hear an alarm if the handset is off-hook at the end of fax communication, change this bit to "1".
2-3	Not used	Do not change the settings.
4	Sidaa manual calibration setting 0: Off 1: On	1: manually calibrates for communication with a line whose current change occurs such as an optical fiber line.
5-7	Not used	Do not change the settings.

4.7 BIT SWITCHES - 5

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

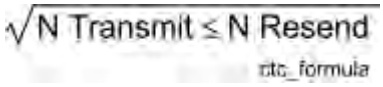
4.7.1 G3-2 AND G3-3 SWITCHES

These switches require an optional G3 interface unit.
G3-3 switches are the same as for G3-2 switches.

<table>
<tr><th colspan="5">G3-2 Switch 00 (SP No. 1-106-001)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="8">0
1</td><td colspan="3">Monitor speaker during communication (tx and rx)</td><td rowspan="8">(0, 0): The monitor speaker is disabled all through the communication.
(0, 1): The monitor speaker is on up to phase B in the T.30 protocol.
(1, 0): Used for testing. The monitor speaker is on all through the communication. Make sure that you reset these bits after testing.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>Disable</td></tr>
<tr><td>0</td><td>1</td><td>Up to Phase B</td></tr>
<tr><td>1</td><td>0</td><td>All the time</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>2</td><td colspan="3">Monitor speaker during memory transmission
0: Disabled 1: Enabled</td><td>1: The monitor speaker is enabled during memory transmission.</td></tr>
<tr><td>3-7</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
</table>

G3-2 Switch 01 (SP No. 1-106-002)		
No	**Function**	**Comments**
0-3	Not used	Do not change the settings.
4	DIS frame length 0: 10 bytes 1: 4 bytes	1: The bytes in the DIS frame after the 4th byte will not be transmitted (set to 1 if there are communication problems with PC-based faxes which cannot receive the extended DIS frames).
5	Not used	Do not change the setting.
6	Forbid CED/AMsam output 0: Off 1: On (Forbid output)	Do not change this setting (Default: 0: Off), unless communication problem is caused by a CED or ANSam transmission.
7	Not used	Do not change the setting.

G3-2 Switch 02 (SP No. 1-106-003)		
No	**Function**	**Comments**
0	G3 protocol mode used 0: Standard and non-standard 1: Standard only	Change this bit to 1 only when the other end can only communicate with machines that send T.30-standard frames only. 1: Disables NSF/NSS signals (these are used in non-standard mode communication)
1-6	Not used	Do not change the settings.
7	Short preamble 0: Disabled 1: Enabled	Refer to Appendix B in the Group 3 Facsimile Manual for details about Short Preamble.

G3-2 Switch 03 (SP No. 1-106-004)		
No	**Function**	**Comments**
0	DIS detection number (Echo countermeasure) 0: 1 1: 2	0: The machine will hang up if it receives the same DIS frame twice. 1: Before sending DCS, the machine will wait for the second DIS which is caused by echo on the line.
1	Not Used	Do not change the settings.
2	V.8 protocol 0: Disabled 1: Enabled	0: V.8/V.34 communications will not be possible. **Note**: Do not set to 0 unless the line condition is always bad enough to slow down the data rate to 14.4 kbps or lower.
3	ECM frame size 0: 256 bytes 1: 64 bytes	Keep this bit at "0" in most cases.
4	CTC transmission conditions 0: After one PPR signal received 1: After four PPR signals received (ITU-T standard)	0: When using ECM in non-standard (NSF/NSS) mode, the machine sends a CTC to drop back the modem rate after receiving a PPR, if the following condition is met in communications at 14.4, 12.0, 9.6, and 7.2 kbps.  Ntransmit = Number of transmitted frames Nresend = Number of frames to be retransmitted 1: When using ECM, the machine sends a CTC to drop back the modem rate after receiving four PPRs. PPR, CTC: These are ECM protocol signals. This bit is not effective in V.34 communications.
5	Modem rate used for the next page after receiving a negative code (RTN or PIN) 0: No change 1: Fallback	1: The machine's tx modem rate will fall back before sending the next page if a negative code is received. This bit is ignored if ECM is being used.

6	Not used	Do not change the settings
7	Select detection of reverse polarity in ringing 0: Off 1: On	This switch is used to prevent reverse polarity in ringing on the phone line (applied to PSTN-G3 ringing). Do not change this setting 0: No detection 1: Detection (Japan and Korea only)

G3-2 Switch 04 (SP No. 1-106-005)

No	Function	Comments
0-3	Training error detection threshold	0 - F (Hex); 0 - 15 bits If the number of error bits in the received TCF is below this threshold, the machine informs the sender that training has succeeded.
4-7	Not used	Do not change the settings.

G3-2 Switch 05 (SP No. 1-106-006)

No	Function					Comments
0-3	Initial Tx modem rate (kbps)					These bits set the initial starting modem rate for transmission. Use the dedicated transmission parameters if you need to change this for specific receivers. If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually. Cross reference V.8 protocol on/off - G3 switch 03, bit 2
	Bit 3	Bit 2	Bit 1	Bit 0	kbps	
	0	0	0	1	2.4	
	0	0	1	0	4.8	
	0	0	1	1	7.2	
	0	1	0	0	9.6	
	0	1	0	1	12.0	
	0	1	1	0	14.4	
	0	1	1	1	16.8	
	1	0	0	0	19.2	

<table>
<tr><td rowspan="6"></td><td>1</td><td>0</td><td>0</td><td>1</td><td>21.6</td><td rowspan="6"></td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>0</td><td>24.0</td></tr>
<tr><td>1</td><td>0</td><td>1</td><td>1</td><td>26.4</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>0</td><td>28.8</td></tr>
<tr><td>1</td><td>1</td><td>0</td><td>1</td><td>31.2</td></tr>
<tr><td colspan="5">Other settings - Not used</td></tr>
<tr><td rowspan="6">4-5</td><td colspan="5">Initial modem type for 9.6 k or 7.2 kbps.</td><td rowspan="6">These bits set the initial modem type for 9.6 and 7.2 kbps, if the initial modem rate is set at these speeds.</td></tr>
<tr><td>Bit 5</td><td>Bit 4</td><td colspan="3">Setting</td></tr>
<tr><td>0</td><td>0</td><td colspan="3">V.29</td></tr>
<tr><td>0</td><td>1</td><td colspan="3">V.17</td></tr>
<tr><td>1</td><td>0</td><td colspan="3">V.34</td></tr>
<tr><td>1</td><td>1</td><td colspan="3">Not used</td></tr>
<tr><td>6-7</td><td colspan="5">Not used</td><td>Do not change the settings.</td></tr>
</table>

<table>
<tr><th colspan="7">G3-2 Switch 06 (SP No. 1-106-007)</th></tr>
<tr><th>No</th><th colspan="5">Function</th><th>Comments</th></tr>
<tr><td rowspan="10">0-3</td><td colspan="5">Initial Rx modem rate(kbps)</td><td rowspan="10">These bits set the initial starting modem rate for reception.
Use a lower setting if high speeds pose problems during reception.
If a modem rate 14.4 kbps or slower is selected, V.8 protocol should be disabled manually.
Cross reference
V.8 protocol on/off - G3 switch 03, bit2</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Bit 1</td><td>Bit 0</td><td>kbps</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>2.4</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>4.8</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>7.2</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>0</td><td>9.6</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>1</td><td>12.0</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>0</td><td>14.4</td></tr>
<tr><td>0</td><td>1</td><td>1</td><td>1</td><td>16.8</td></tr>
</table>

	1	0	0	0	19.2	
	1	0	0	1	21.6	
	1	0	1	0	24.0	
	1	0	1	1	26.4	
	1	1	0	0	28.8	
	1	1	0	1	31.2	
	Other settings - Not used					

4-7

Modem types available for reception

The setting of these bits is used to inform the transmitting terminal of the available modem type for the machine in receive mode.

If V.34 is not selected, V.8 protocol must be disabled manually.

Cross reference

V.8 protocol on/off - G3 switch 03, bit 2

Bit 7	Bit 6	Bit 5	Bit 4	Types
0	0	0	1	V.27ter
0	0	1	0	V.27ter
0	0	1	1	V.27ter
0	1	0	0	V.27ter
0	1	0	1	V.27ter
Other settings - Not used				

<table>
<tr><th colspan="5">G3-2 Switch 07 (SP No. 1-106-008)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="8">0-1</td><td colspan="3">PSTN cable equalizer
(tx mode: Internal)</td><td rowspan="8">Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange.
Use the dedicated transmission parameters for specific receivers.

Also, try using the cable equalizer if one or more of the following symptoms occurs.
Communication error
Modem rate fallback occurs frequently.
Note: This setting is not effective in V.34 communications.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>None</td></tr>
<tr><td>0</td><td>1</td><td>Low</td></tr>
<tr><td>1</td><td>0</td><td>Medium</td></tr>
<tr><td>1</td><td>1</td><td>High</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td rowspan="8">2-3</td><td colspan="3">PSTN cable equalizer
(rx mode: Internal)</td><td rowspan="8">Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange.
Also, try using the cable equalizer if one or more of the following symptoms occurs.
Communication error with error codes such as 0-20, 0-23, etc.
Modem rate fallback occurs frequently.
Note: This setting is not effective in V.34 communications</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Setting</td></tr>
<tr><td>0</td><td>0</td><td>None</td></tr>
<tr><td>0</td><td>1</td><td>Low</td></tr>
<tr><td>1</td><td>0</td><td>Medium</td></tr>
<tr><td>1</td><td>1</td><td>High</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>4</td><td colspan="3">PSTN cable equalizer
(V.8/V.17 rx mode: External)
0: Disabled
1: Enabled</td><td>Keep this bit at "1".</td></tr>
<tr><td>5-7</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
</table>

G3-2 Switch 08 - Not used (do not change the settings)
G3-2 Switch 09 - Not used (do not change the settings)

<table>
<tr><th colspan="5">G3-2 Switch 0A (SP No. 1-106-011)</th></tr>
<tr><th>No</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td rowspan="6">0-1</td><td colspan="3">Maximum allowable carrier drop during image data reception</td><td rowspan="6">These bits set the acceptable modem carrier drop time.
Try a longer setting if error code 0-22 is frequent.</td></tr>
<tr><td>Bit 1</td><td>Bit 0</td><td>Value (ms)</td></tr>
<tr><td>0</td><td>0</td><td>200</td></tr>
<tr><td>0</td><td>1</td><td>400</td></tr>
<tr><td>1</td><td>0</td><td>800</td></tr>
<tr><td>1</td><td>1</td><td>Not used</td></tr>
<tr><td>2</td><td colspan="3">Select cancellation of high-speed RX if carrier signal lost while receiving
0: Off
1: On</td><td>This switch setting determines if high-speed receiving ends if the carrier signal is lost when receiving during non-ECM mode</td></tr>
<tr><td>3</td><td colspan="3">Not used</td><td>Do not change the settings</td></tr>
<tr><td>4</td><td colspan="3">Maximum allowable frame interval during image data reception.
0: 5 s 1: 13 s</td><td>This bit set the maximum interval between EOL (end-of-line) signals and the maximum interval between ECM frames from the other end.
Try using a longer setting if error code 0-21 is frequent.</td></tr>
<tr><td>5</td><td colspan="3">Not used</td><td>Do not change the settings.</td></tr>
</table>

6	Reconstruction time for the first line in receive mode 0: 6 s 1: 12 s	When the sending terminal is controlled by a computer, there may be a delay in receiving page data after the local machine accepts set-up data and sends CFR. This is outside the T.30 recommendation. But, if this delay occurs, set this bit to 1 to give the sending machine more time to send data. Refer to error code 0-20. ITU-T T.30 recommendation: The first line should come within 5 s of CFR.
7	Not used	Do not change the settings.

G3-2 Switch 0B- Not used (do not change the settings)
G3-2 Switch 0C- Not used (do not change the settings)
G3-2 Switch 0E- Not used (do not change the settings)
G3-2 Switch 0F- Not used (do not change the settings)

4.7.2 G4 INTERNAL SWITCHES

The G4 internal switches (SW00 to 1F) are displayed but do not change these settings.

4.7.3 G4 PARAMETER SWITCHES

The G4 parameter switches (SW00 to 0F) are displayed but do not change these settings.

4.8 BIT SWITCHES - 6

Note

- Do not adjust a bit switch or use a setting that is described as "Not used", as this may cause the machine to malfunction or to operate in a manner that is not accepted by local regulations. Such bits are for use only in other areas, such as Japan.

Default settings for bit switches are not listed in this manual. Refer to the System Parameter List printed by the machine.

4.8.1 IP FAX SWITCHES

IP Fax Switch 00 (SP No. 1-111-001)		
No.	**Function**	**Comments**
0	Not used	Do not change this setting.
1	IP Fax Transport 0: TCP, 1: UDP	Selects TCP or UDP protocol for IP-Fax
2	IP Fax single port selection 0: OFF, 1: ON (enable)	Selects single data port.
3	IP Fax double ports (single data port) selection 0: OFF, 1: ON (enable)	Selects whether IP-Fax uses a double port.
4	IP Fax Gatekeeper 0: OFF, 1: ON (enable)	Enables/disables the gatekeeper for IP-Fax.
5	IP Fax T30 bit signal reverse 0: LSB first, 1: MSB first	Reverses the T30 bit signal.
6	IP Fax max bit rate setting 0: Not affected, 1: Affected	When "0" is selected, the max bit rate does not affect the value of the DIS/DCS. When "1" is selected, the max bit rate affects the value of the DIS/DCS.

7	IP Fax received telephone number confirmation 0: No confirmation, 1: Confirmation	When "0" is selected, fax data is received without checking the telephone number. When "1" is selected, fax data is received only when confirming that the telephone number from the sender matches the registered telephone number in this machine. If this confirmation fails, the line is disconnected.

IP Fax Switch 01 (SP No. 1-111-002)

No.	Function			Comments	
0-3	IP Fax delay level setting Selects the acceptable delay level. Level 0 is the highest quality Default is "0000" (level 0).				
	Bit 3	Bit 2	Bit 1	Bit 0	
	0	0	0	0	Level 0
	0	0	0	1	Level 1
	0	0	1	0	Level 2
	0	0	1	1	Level 3
4-7	IP Fax preamble wait time setting			Selects the preamble wait time. [00 to 0f] There are 16 values in this 4-bit binary switch combination. Waiting time: set value level x 100 ms Max: 0f (1500 ms) Min: 00 (No wait time) The default is "0000" (00H).	

IP Fax Switch 02 (SP No. 1-111-003)		
No.	**Function**	**Comments**
0	IP Fax bit signal reverse setting 0: Maker code setting 1: Internal bit switch setting	When "0" is selected, the bit signal reverse method is decided by the maker code. When "1" is selected, the bit signal reverse method is decided by the internal bit switch. When communicating between IP Fax devices, LSB first is selected.)
1	IP Fax transmission speed setting 0: Modem speed 1: No limitation	Selects the transmit speed for IP Fax communication.
2	SIP transport setting 0: TCP 1: UDP	This bit switch sets the transport that has priority for receiving IP Fax data. This function is activated only when the sender has both TCP and UDP.
3	CCM connection 0: No CCM connection 1: CCM connection	When "1" is selected, only the connection call message with H.323 or no tunneled H.245 is transmitted via CCM.
4	Message reception selection from non-registered SIP server 0: Answer 1: Not answer	0: This answers the INVITE message from the SIP server not registered for the machine. 1: This does not receive the INVITE message from the SIP server not registered for the machine and send a refusal message.
5	ECM communication setting 0: No limit for image compression 1: Limit for image compression	0: This does not limit the type of the image compression with ECM communication. 1: When the other end machine is Ciscco, this permits the image compression other than JBIG or MMR with ECM communication.
6-7	Not used	Do not change these settings.

IP Fax Switch 03 (SP No. 1-111-004)		
No.	**Function**	**Comments**
0	Effective field limitation for G3 standard function information 0: OFF, 1: 4byte (DIS)	Limits the effective field for standard G3 function information.
1	Switching between G3 standard and G3 non standard 0: Enable switching 1: G3 standard only	Enables/disables switching between G3 standard and G3 non-standard.
2	Not used	Do not change this setting.
3	ECM frame size selection at transmitting 0: 256byte, 1: 64byte	Selects the ECM frame size for sending.
4	DIS detection times for echo prevention 0: 1 time, 1: 2 times	Sets the number of times for DIS to detect echoes.
5	CTC transmission selection 0: PPRx1 1: PPRx4	When "0" is selected, the transmission condition is decided by error frame numbers. When "1" is selected, the transmission condition is based on the ITU-T method.
6	Shift down setting at receiving negative code 0: OFF, 1: ON	Selects whether to shift down when negative codes are received.
7	Not used	Do not change this setting.

IP Fax Switch 04 (SP No. 1-111-005)		
No.	**Function**	**Comments**
0-3	TCF error threshold	Sets the TCF error threshold level. [00 to 0f] The default is "1111" (0fH).
4-7	Not used	Do not change these settings.

IP Fax Switch 05 (SP No. 1-111-006)

No.	Function					Comments
0-3	Modem bit rate setting for transmission (kbps)					Sets the modem bit rate for transmission. The default is "0110" (14.4K bps).
	Bit 3	Bit 2	Bit 1	Bit 0	kbps	
	0	0	0	1	2.4	
	0	0	1	1	4.8	
	0	0	1	1	7.2	
	0	1	0	0	9.6	
	0	1	0	1	12.0	
	0	1	1	0	14.4	
4-5	Modem setting for transmission					Sets the modem type for transmission. The default is "00" (V29).
	Bit 5	Bit 4	Types			
	0	0	V29			
	0	1	V17			
	1	0	Not used			
	1	1	Not used			
6-7	Not used					Do not change these settings.

<table>
<tr><th colspan="7">IP Fax Switch 06 (SP No. 1-111-007)</th></tr>
<tr><th>No.</th><th colspan="4">Function</th><th>Comments</th></tr>
<tr><td>0-3</td><td colspan="5">Modem bit rate setting for reception
Sets the modem bit rate for reception. The default is "0110" (14.4K bps).</td></tr>
<tr><td rowspan="7">4-7</td><td colspan="5">Modem setting for reception
Sets the modem type for reception. The default is "0100" (V27ter, V29, V17).</td></tr>
<tr><td>Bit 7</td><td>Bit 6</td><td>Bit 5</td><td>Bit 4</td><td>Types</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>V.27ter</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>V.27ter, V.29</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>V.27ter, V.29, V.33</td></tr>
<tr><td>0</td><td>1</td><td>0</td><td>0</td><td>V.27ter, V.29, V.17/V.33</td></tr>
<tr><td colspan="5">Other settings - Not used</td></tr>
</table>

IP Fax Switch 07 (SP No. 1-111-008)		
No.	**Function**	**Comments**
0	TSI information 0: Not added, 1: Added	Adds or does not add TSI information to NSS(S).
1	DCN transmission setting at T1 timeout 0: Not transmitted 1: Transmitted	Transmits or does not transmit DCN at T1 timeout.
2	Not used	Do not change this setting.
3	Hang up setting at DIS reception disabled 0: No hang up 1: Hang up after transmitting DCN	Sets whether the machine disconnects after DIS reception.
4	Number of times for training 0: 1 time, 1: 2 times	Selects the number of times training is done at the same bit rate.

5	Space CSI transmission setting at no CSI registration 0: Not transmitted 1: Transmitted	When "0" is selected, frame data is enabled. When "1" is selected, the transmitted data is all spaces.
6-7	Not used	Do not change these settings.

IP Fax Switch 08 (SP No. 1-111-009)				
No.	**Function**			**Comments**
0-1	T1 timer adjustment			Adjusts the T1 timer. The default is "00" (35 seconds).
	Bit 1	Bit 0		
	0	0	35 s	
	0	1	40 s	
	1	0	50 s	
	1	1	60 s	
2-3	T4 timer adjustment			Adjust the T4 timer. The default is "00" (3 seconds).
	Bit 3	Bit 2		
	0	0	3 s	
	0	1	3.5 s	
	1	0	4 s	
	1	1	5 s	
4-5	T0 timer adjustment			Adjusts the fail safe timer. This timer sets the interval between "setup" data transmission and T.38 phase decision. If your destination return is late on the network or G3 fax return is late, adjust the longer interval timer. The default is "00" (75 seconds).
	Bit 5	Bit 4		
	0	0	75 s	
	0	1	120 s	
	1	0	180 s	
	1	1	240 s	

6-7	Not used	Do not change these settings.

<table>
<tr><th colspan="5">IP Fax Switch 09 (SP No. 1-111-010)</th></tr>
<tr><th>No.</th><th colspan="3">Function</th><th>Comments</th></tr>
<tr><td>0</td><td colspan="3">Network I/F setting for SIP connection
0: IPv4
1: IPv6.</td><td>Selects the connection type (IPV4 or IPV6) to connect to the SIP server.</td></tr>
<tr><td>1</td><td colspan="3">Network I/F setting for Fax communication
0: Same setting as SIP server connection
1: Automatic setting</td><td>0: The I/F setting for fax communication follows the setting for SIP server connection.
1: The negotiation between the SIP server and the device decides whether IPv4 or IPv6 is used for the I/F setting for fax communication.</td></tr>
<tr><td>2</td><td colspan="3">Record-route setting
0: Disable
1: Enable</td><td>0: Disables the record-route function of the SIP server.
1: Enables the record-route function of the SIP server.</td></tr>
<tr><td rowspan="6">3-4</td><td colspan="3">re-INVITE transmission delay timer setting</td><td rowspan="6">This changes the interval for transmit re-INVITE after receiving the ACK message transmitted by T.38 device.</td></tr>
<tr><td>Bit 4</td><td>Bit 3</td><td></td></tr>
<tr><td>0</td><td>0</td><td>No delay</td></tr>
<tr><td>0</td><td>1</td><td>1 sec</td></tr>
<tr><td>1</td><td>0</td><td>2 sec</td></tr>
<tr><td>1</td><td>1</td><td>3 sec</td></tr>
<tr><td>5-7</td><td colspan="3">Not used.</td><td>Do not change these settings.</td></tr>
</table>

IP Fax Switch 0A - Not used (do not change the settings)
IP Fax Switch 0B - Not used (do not change the settings)
IP Fax Switch 0C - Not used (do not change the settings)
IP Fax Switch 0D - Not used (do not change the settings)
IP Fax Switch 0E - Not used (do not change the settings)

4.9 NCU PARAMETERS

The following tables give the RAM addresses and the parameter calculation units that the machine uses for ringing signal detection and automatic dialing. The factory settings for each country are also given. Most of these must be changed by RAM read/write (SP2-102), but some can be changed using NCU Parameter programming (SP2-103, 104 and 105); if SP2-103, 104 and 105 can be used, this will be indicated in the Remarks column. The RAM is programmed in hex code unless (BCD) is included in the Unit column.

Note

- The following addresses describe settings for the standard NCU.
- Change the fourth digit from "5" to "6" (e.g. 680500 to 680600) for the settings for the first optional G3 interface unit and from "5" to "7" (e.g. 680700) for the settings for the second optional G3 interface unit.

<table>
<tr><th>Address</th><th colspan="6">Function</th></tr>
<tr><td rowspan="13">680500</td><td colspan="6">Country/Area code for NCU parameters</td></tr>
<tr><td colspan="6">Use the Hex value to program the country/area code directly into this address, or use the decimal value to program it using SP2-103-001</td></tr>
<tr><td>Country /Area</td><td>Decimal</td><td>Hex</td><td>Country /Area</td><td>Decimal</td><td>Hex</td></tr>
<tr><td>France</td><td>00</td><td>00</td><td>Asia</td><td>18</td><td>12</td></tr>
<tr><td>Germany</td><td>01</td><td>01</td><td>Japan</td><td>19</td><td>13</td></tr>
<tr><td>UK</td><td>02</td><td>02</td><td>Hong Kong</td><td>20</td><td>14</td></tr>
<tr><td>Italy</td><td>03</td><td>03</td><td>South Africa</td><td>21</td><td>15</td></tr>
<tr><td>Austria</td><td>04</td><td>04</td><td>Australia</td><td>22</td><td>16</td></tr>
<tr><td>Belgium</td><td>05</td><td>05</td><td>New Zealand</td><td>26</td><td>17</td></tr>
<tr><td>Denmark</td><td>06</td><td>06</td><td>Singapore</td><td>24</td><td>18</td></tr>
<tr><td>Finland</td><td>07</td><td>07</td><td>Malaysia</td><td>25</td><td>19</td></tr>
<tr><td>Ireland</td><td>08</td><td>08</td><td>China</td><td>26</td><td>1A</td></tr>
<tr><td>Norway</td><td>09</td><td>09</td><td>Taiwan</td><td>27</td><td>1B</td></tr>
</table>

Address	Function					
	Sweden	10	0A	Korea	28	1C
	Switzerland	11	0B	Brazil	29	1D
	Portugal	12	0C	Turkey	32	20
	Holland	13	0D	Greece	33	21
	Spain	14	0E	Hungary	34	22
	Israel	15	0F	Czech	35	23
	USA	17	11	Poland	36	24

Address	Function	Unit	Remarks
680501	Line current detection time	20 ms	Line current detection is disabled. Line current is not detected if 680501 contains FF.
680502	Line current wait time		
680503	Line current drop detect time		
680504	PSTN dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680505	PSTN dial tone frequency upper limit (low byte)		
680506	PSTN dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680507	PSTN dial tone frequency lower limit (low byte)		
680508	PSTN dial tone detection time	20 ms	If 680508 contains FF(H), the machine pauses for the pause time (address 68050D / 68050E). Italy: See Note 2.
680509	PSTN dial tone reset time (LOW)		
68050A	PSTN dial tone reset time (HIGH)		
68050B	PSTN dial tone continuous tone time		

Address	Function	Unit	Remarks
68050C	PSTN dial tone permissible drop time		
68050D	PSTN wait interval (LOW)		-
68050E	PSTN wait interval (HIGH)		
68050F	PSTN ring-back tone detection time	20 ms	Detection is disabled if this contains FF.
680510	PSTN ring-back tone off detection time	20 ms	-
680511	PSTN detection time for silent period after ring-back tone detected (LOW)	20 ms	-
680512	PSTN detection time for silent period after ring-back tone detected (HIGH)	20 ms	-
680513	PSTN busy tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680514	PSTN busy tone frequency upper limit (low byte)		
680515	PSTN busy tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680516	PSTN busy tone frequency lower limit (low byte)		
680517	PABX dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680518	PABX dial tone frequency upper limit (low byte)		
680519	PABX dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone

Address	Function	Unit	Remarks
68051A	PABX dial tone frequency lower limit (low byte)		detection is disabled.
68051B	PABX dial tone detection time	20 ms	If 68051B contains FF, the machine pauses for the pause time (680520 / 680521).
68051C	PABX dial tone reset time (LOW)		
68051D	PABX dial tone reset time (HIGH)		
68051E	PABX dial tone continuous tone time		
68051F	PABX dial tone permissible drop time		
680520	PABX wait interval (LOW)		-
680521	PABX wait interval (HIGH)		
680522	PABX ringback tone detection time	20 ms	If both addresses contain FF(H), tone detection is disabled.
680523	PABX ringback tone off detection time	20 ms	
680524	PABX detection time for silent period after ringback tone detected (LOW)	20 ms	If both addresses contain FF(H), tone detection is disabled.
680525	PABX detection time for silent period after ringback tone detected (HIGH)	20 ms	
680526	PABX busy tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680527	PABX busy tone frequency upper limit (low byte)		
680528	PABX busy tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680529	PABX busy tone frequency lower limit (low byte)		

Address	Function	Unit	Remarks
68052A	Busy tone ON time: range 1	20 ms	-
68052B	Busy tone OFF time: range 1		
68052C	Busy tone ON time: range 2		
68052D	Busy tone OFF time: range 2		
68052E	Busy tone ON time: range 3		
68052F	Busy tone OFF time: range 3	20 ms	
680530	Busy tone ON time: range 4		
680531	Busy tone OFF time: range 4		
680532	Busy tone continuous tone detection time		
680533	Busy tone signal state time tolerance for all ranges, and number of cycles required for detection (a setting of 4 cycles means that ON-OFF-ON or OFF-ON-OFF must be detected twice). Tolerance (±) Bit 1: 0, Bit 0: 0 = 75% Bits 2 and 3 must always be kept at 0. Bit 1: 0, Bit 0: 0 = 50% Bits 2 and 3 must always be kept at 0. Bit 1: 0, Bit 0: 0 = 25% Bit 1: 0, Bit 0: 0 = 12.5% Bits 7, 6, 5, 4 - number of cycles required for cadence detection		
680534	International dial tone frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680535	International dial tone frequency upper limit (low byte)		
680536	International dial tone frequency lower limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680537	International dial tone frequency lower limit (low byte)		
680538	International dial tone detection time	20 ms	If 680538 contains FF, the machine pauses for

Address	Function	Unit	Remarks
680539	International dial tone reset time (LOW)		the pause time (68053D / 68053E). Belgium: See Note 2.
68053A	International dial tone reset time (HIGH)		
68053B	International dial tone continuous tone time		
68053C	International dial tone permissible drop time		
68053D	International dial wait interval (LOW)		-
68053E	International dial wait interval (HIGH)		
68053F	Country dial tone upper frequency limit (HIGH)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
680540	Country dial tone upper frequency limit (LOW)		
680541	Country dial tone lower frequency limit (HIGH)		If both addresses contain FF(H), tone detection is disabled.
680542	Country dial tone lower frequency limit (LOW)		
680543	Country dial tone detection time	20 ms	If 680543 contains FF, the machine pauses for the pause time (680548 / 680549).
680544	Country dial tone reset time (LOW)		
680545	Country dial tone reset time (HIGH)		
680546	Country dial tone continuous tone time	-	-
680547	Country dial tone permissible drop time	20 ms	-

Address	Function	Unit	Remarks
680548	Country dial wait interval (LOW)		
680549	Country dial wait interval (HIGH)		
68054A	Time between opening or closing the DO relay and opening the OHDI relay	1 ms	See Notes 3, 6 and 8. SP2-103-012 (parameter 11).
68054B	Break time for pulse dialing	1 ms	See Note 3. SP2-103-013 (parameter 12).
68054C	Make time for pulse dialing	1 ms	See Note 3. SP2-103-014 (parameter 13).
68054D	Time between final OHDI relay closure and DO relay opening or closing	1 ms	See Notes 3, 6 and 8. SP2-103-015 (parameter 14). This parameter is only valid in Europe.
68054E	Minimum pause between dialed digits (pulse dial mode)	20 ms	See Note 3 and 8. SP2-103-016 (parameter 15).
68054F	Time waited when a pause is entered at the operation panel		SP2-103-017 (parameter 16). See Note 3.
680550	DTMF tone on time	1 ms	SP2-103-018 (parameter 17).
680551	DTMF tone off time		SP2-103-019 (parameter 18).
680552	Tone attenuation level of DTMF signals while dialing	-N x 0.5 –3.5 dBm	SP2-103-020 (parameter 19). See Note 5.

Address	Function	Unit	Remarks
680553	Tone attenuation value difference between high frequency tone and low frequency tone in DTMF signals	-dBm x 0.5	SP2-103-021 (parameter 20). The setting must be less than –5dBm, and should not exceed the setting at 680552h above. See Note 5.
680554	PSTN: DTMF tone attenuation level after dialling	-N x 0.5 –3.5 dBm	SP2-103-022 (parameter 21). See Note 5.
680555	ISDN: DTMF tone attenuation level after dialling	-dBm x 0.5	See Note 5
680556	Not used	-	Do not change the settings.
680557	Time between 68054Dh (NCU parameter 14) and 68054Eh (NCU parameter 15)	1 ms	This parameter takes effect when the country code is set to France.
680558	Not used	-	Do not change the setting.
680559	Grounding time (ground start mode)	20 ms	The Gs relay is closed for this interval.
68055A	Break time (flash start mode)	1 ms	The OHDI relay is open for this interval.
68055B	International dial access code (High)	BCD	For a code of 100: 68055B - F1 68055C - 00
68055C	International dial access code (Low)		

Address	Function	Unit	Remarks
68055D	PSTN access pause time	20 ms	This time is waited for each pause input after the PSTN access code. If this address contains FF[H], the pause time stored in address 68054F is used. Do not set a number more than 7 in the UK.
68055E	Progress tone detection level, and cadence detection enable flags	Bit 7: 0, Bit 6: 0, Bit 5: 0 = -25.0 dBm Bit 7: 0, Bit 6: 0, Bit 5: 1 = -35.0 dBm Bit 7: 0, Bit 6: 1, Bit 5: 0 = -30.0 dBm Bit 7: 1, Bit 6: 0, Bit 5: 0 = -40.0 dBm Bit 7: 1, Bit 6: 1, Bit 5: 0 = -49.0 dBm Bits 2, 0 - See Note 2.	
68055F To 680564	**Not used**	-	Do not change the settings.
680565	Long distance call prefix (HIGH)	BCD	For a code of 0: 680565 – FF 680566 - FF
680566	Long distance call prefix (LOW)	BCD	
680567 to 680571	**Not used**	-	Do not change the settings.
680572	Acceptable ringing signal frequency: range 1, upper limit	1000/ N (Hz).	SP2-103-003 (parameter 02).
680573	Acceptable ringing signal frequency: range 1, lower limit		SP2-103-004 (parameter 03).
680574	Acceptable ringing signal frequency: range 2, upper limit		SP2-103-005 (parameter 04).
680575	Acceptable ringing signal frequency: range 2, lower limit		SP2-103-006 (parameter 05).

Address	Function	Unit	Remarks
680576	Number of rings until a call is detected	1	SP2-103-007 (parameter 06). The setting must not be zero.
680577	Minimum required length of the first ring	20 ms	See Note 4. SP2-103-008 (parameter 07).
680578	Minimum required length of the second and subsequent rings	20 ms	SP2-103-009 (parameter 08).
680579	Ringing signal detection reset time (LOW)	20 ms	SP2-103-010 (parameter 09).
68057A	Ringing signal detection reset time (HIGH)		SP2-103-011 (parameter 10).
68057B to 680580	**Not used**	-	Do not change the settings.
680581	Interval between dialing the last digit and switching the Oh relay over to the external telephone when dialing from the operation panel in handset mode.	20 ms	Factory setting: 500 ms
680582	Bits 0 and 1 - Handset off-hook detection time Bit 1:0, Bit 0: 0 = 200 ms Bit 1:0, Bit 0: 1 = 800 ms Other Not used Bits 2 and 3 - Handset on-hook detection time Bit 3: 0, Bit 2: 0 = 200 ms Bit 3: 0, Bit 2: 1 = 800 ms Other Not used Bits 4 to 7 - **Not used**		-

Address	Function	Unit	Remarks
680583 To 6805A0	**Not used**	-	Do not change the settings.
6805A1	Acceptable CED detection frequency upper limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A2	Acceptable CED detection frequency upper limit (low byte)		
6805A3	Acceptable CED detection frequency lower limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A4	Acceptable CED detection frequency lower limit (low byte)		
6805A5	CED detection time	20 ms ± 20 ms	Factory setting: 200 ms
6805A6	Acceptable CNG detection frequency upper limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A7	Acceptable CNG detection frequency upper limit (low byte)		
6805A8	Acceptable CNG detection frequency lower limit (high byte)	BCD (Hz)	If both addresses contain FF(H), tone detection is disabled.
6805A9	Acceptable CNG detection frequency lower limit (low byte)		
6805AA	**Not used**	-	Do not change the setting.
6805AB	CNG on time	20 ms	Factory setting: 500 ms
6805AC	CNG off time	20 ms	Factory setting: 3000 ms
6805AD	Number of CNG cycles required for detection	-	The data is coded in the same way as address 680533.

Address	Function	Unit	Remarks
6805AE	**Not used**	-	Do not change the settings.
6805AF	Acceptable AI short protocol tone (800Hz) detection frequency upper limit (high byte)	Hz (BCD)	If both addresses contain FF(H), tone detection is disabled.
6805B0	Acceptable AI short protocol tone (800Hz) detection frequency upper limit (low byte)		
6805B1	Acceptable AI short protocol tone (800Hz) detection frequency lower limit (high byte)	Hz(BCD)	If both addresses contain FF(H), tone detection is disabled.
6805B2	Acceptable AI short protocol tone (800Hz) detection frequency lower limit (low byte)		
6805B3	Detection time for 800 Hz AI short protocol tone	20 ms	Factory setting: 360 ms
6805B4	PSTN: Tx level from the modem	-N – 3 dBm	SP2-103-002 (parameter 01).
6805B5	PSTN: 1100 Hz tone transmission level	- N 6805B4 - 0.5N 6805B5 –3.5 (dB) See Note 7.	
6805B6	PSTN: 2100 Hz tone transmission level	- N6805B4 - 0.5N 6805B6 –3 (dB) See Note 7.	
6805B7	PABX: Tx level from the modem	- dBm	
6805B8	PABX: 1100 Hz tone transmission level	- N 6805B7 - 0.5N 6805B8 (dB)	
6805B9	PABX: 2100 Hz tone transmission level	- N 6805B7 - 0.5N 6805B9 (dB)	
6805BD	Modem turn-on level (incoming signal detection level)	-37-0.5N (dBm)	

Address	Function	Unit	Remarks
6805BE to 6805C6	**Not used**	-	Do not change the settings.
6805C7	Bits 0 to 3 – **Not used** Bit 4 = V.34 protocol dump 0: Simple, 1: Detailed (default) Bits 5 to 7 – **Not used.**		
6805C8 to 6805D9	**Not used**	-	Do not change the settings.
6805DA	T.30 T1 timer	1 s	
6805E0 bit 3	Maximum wait time for post message	0: 12 s 1: 30 s	1: Maximum wait time for post message (EOP/EOM/MPS) can be changed to 30 s. Change this bit to “1” if communication errors occur frequently during V.17 reception.
6805E3	Bits 0 and 1 – DCV (TIP/RING) Voltage Bit 1:0, Bit 0: 0 = 3.1 V Bit 1:0, Bit 0: 1 = 3.2 V Bit 1:1, Bit 0: 0 = 3.35 V Bit 1:1, Bit 0: 1 = 3.5 V Bits 2 and 3 – MINI (minimum loop electric current) Bit 2:0, Bit 3: 0 = 10 mA Bit 2:0, Bit 2: 1 = 12 mA Bit 2:1, Bit 3: 0 = 14 mA Bit 2:1, Bit 3: 1 = 16 mA Bits 6 and 7 – ACIM (AC impedance) Bit 7:0, Bit 6: 0 Bit 5:0, Bit 4: 0= 600 Bit 7:0, Bit 6: 0 Bit 5:1, Bit 4: 0= TBR21		

Address	Function	Unit	Remarks
6805E4	Bit 0 – OHS (on hook speed) 0: OHS=0 1: OHS=1 Bit 1 – SQ (spark quench) 0: SQ=00 1: SQ=11 Bit 2 – RZ (call signal Impedance) 0: RZ=0 (high) 1: RZ=1 (low) Bit 3 – RT (call signal detection level) 0: RT=0 (low) 1: RT=1 (high) Bit 4 – ILIM (DC limitation) 0: ILIM=0 (CTR 21) 1: ILIM=1 (other than CTR 21) Bit 5 –FILTER 0: FILTER=0 (around 5Hz) 1: FILTER=1 (around 200Hz) Bits 6 to 7 – Calibration in off hook state Bit 6:0, Bit 7: 0 = off hook to ACAL:128 ms, off hook to MCAL: 1000 ms Bit 6:1, Bit 7: 0 = off hook to ACAL:128 ms, off hook to MCAL: 500 ms Bit 6:0, Bit 7: 1 = off hook to ACAL:128 ms (no MCAL) Bit 6:1, Bit 7: 1 = off hook to ACAL:8 ms (no MCAL)		
6805E5	Bits 0 to 6 – **Not used** Bits 7 – Energy saving for DSP, COMBLK, SiDAA 0: Does not save energy 1: Saves energy		

NOTES

1. If a setting is not required, store FF in the address.
2. Italy and Belgium only

   RAM address 68055E: the lower four bits have the following meaning.

   Bit 2 - 1: International dial tone cadence detection enabled (Belgium)

   Bit 1 - Not used

   Bit 0 - 1: PSTN dial tone cadence detection enabled (Italy)

If bit 0 or bit 2 is set to 1, the functions of the following RAM addresses are changed.
680508 (if bit 0 = 1) or 680538 (if bit 2 = 1): tolerance for on or off state
duration (%), and number of cycles required for detection, coded as in address 680533.
68050B (if bit 0 = 1) or 68053B (if bit 2 = 1): on time, hex code (unit = 20 ms)
68050C (if bit 0 = 1) or 68053C (if bit 2 = 1): off time, hex code (unit = 20 ms)

3. Pulse dial parameters (addresses 68054A to 68054F) are the values for 10 pps. If 20 pps is used, the machine automatically compensates.
4. The first ring may not be detected until 1 to 2.5 wavelengths after the time specified by this parameter.
5. The calculated level must be between 0 and 10.
   The attenuation levels calculated from RAM data are:
   High frequency tone:
   - $-0.5 \times N_{680552}/_{680554} - 3.5$ dBm
   - $-0.5 \times N_{680555}$ dBm

   Low frequency tone:
   - $-0.5 \times (N_{680552}/_{680554} + N_{680553}) - 3.5$ dBm
   - $-0.5 \times (N_{680555} + N_{680553})$ dBm

   Note
   - N_{680552}, for example, means the value stored in address 680552(H)
6. 68054A: Europe - Between Ds opening and Di opening, France - Between Ds closing and Di opening
   68054D: Europe - Between Ds closing and Di closing, France - Between Ds opening and Di closing
7. Tone signals which frequency is lower than 1500Hz (e.g., 800Hz tone for AI short protocol) refer to the setting at 6805B5h. Tones which frequency is higher than 1500Hz refer to the setting at 6805B6h.
8. 68054A, 68054D, 68054E: The actual inter-digit pause (pulse dial mode) is the sum of the period specified by the RAM addresses 68054A, 68054D, and 68054E.

4.10 DEDICATED TRANSMISSION PARAMETERS

There are two sets of transmission parameters: Fax and E-mail
Each Quick Dial Key and Speed Dial Code has eight bytes of programmable parameters allocated to it. If transmissions to a particular machine often experience problems, store that terminal's fax number as a Quick Dial or Speed Dial, and adjust the parameters allocated to that number.
The programming procedure will be explained first. Then, the eight bytes will be described.

4.10.1 PROGRAMMING PROCEDURE

1. Set the bit 0 of System Bit Switch 00 to 1.
2. Enter Address Book Management mode ([User Tools]> System Settings> Key Operator> Address Book Management).
3. Select the address book that you want to program.
4. For the fax parameter, select "Fax Dest.", for the E-mail parameter, select "E-mail", then press "Start". Make sure that the LED of the Start button lights green.
5. The settings for the switch 00 are now displayed. Press the bit number that you wish to change.
6. To scroll through the parameter switches, either:
7. Select the next switch: press "Next" or Select the previous switch: "Prev." until the correct switch is displayed. Then go back to step 6.
8. After the setting is changed, press "OK".
9. After finishing, reset bit 0 of System Bit Switch 00 to 0.

4.10.2 PARAMETERS

Fax Parameters

The initial settings of the following fax parameters are all FF(H) - all the parameters are disabled.

Switch 00
FUNCTION AND COMMENTS
ITU-T T1 time (for PSTN G3 mode) If the connection time to a particular terminal is longer than the NCU parameter setting, adjust this byte. The T1 time is the value stored in this byte (in hex code), multiplied by 1 second. **Range:** 0 to 120 s (00h to 78h) FFh - The local NCU parameter factory setting is used. Do not program a value between 79h and FEh.

Switch 01

No	FUNCTION						COMMENTS
0-4	Tx level						If communication with a particular remote terminal often contains errors, the signal level may be inappropriate. Adjust the Tx level for communications with that terminal until the results are better. If the setting is "Disabled", the NCU parameter 01 setting is used. **Note**: Do not use settings other than listed on the left.
	Bit4	Bit3	Bit2	Bit1	Bit0		
	0	0	0	0	0	0	
	0	0	0	0	1	–1	
	0	0	0	1	0	–2	
	0	0	0	1	1	–3	
	0	0	1	0	0	–4	
	↓	↓	↓	↓	↓	↓	
	0	1	1	1	1	–15	
	1	1	1	1	1	Disabled	

5-7	Cable equalizer Bit 7: 0, Bit 6: 0, Bit 5: 0 = None Bit 7: 0, Bit 6: 0, Bit 5: 1 = Low Bit 7: 0, Bit 6: 1, Bit 5: 0 = Medium Bit 7: 0, Bit 6: 1, Bit 5: 1 = High Bit 7: 1, Bit 6: 1, Bit 5: 1 = Disabled	Use a higher setting if there is signal loss at higher frequencies because of the length of wire between the modem and the telephone exchange when calling the number stored in this Quick/Speed Dial. Also, try using the cable equalizer if one or more of the following symptoms occurs. Communication error with error codes such as 0-20, 0-23, etc. Modem rate fallback occurs frequently. **Note**: Do not use settings other than listed on the left. If the setting is "Disabled", the bit switch setting is used.

Switch 02

No	FUNCTION					COMMENTS
0-3	Initial Tx modem rate					If training with a particular remote terminal always takes too long, the initial modem rate may be too high. Reduce the initial Tx modem rate using these bits. For the settings 14.4 or kbps slower, Switch 04 bit 4 must be changed to 0. **Note**: Do not use settings other than listed on the left. If the setting is "Disabled", the bit switch setting is used.
	Bit3	Bit2	Bit1	Bit0	bps	
	0	0	0	0	Not used	
	0	0	0	1	2400	
	0	0	1	0	4800	
	0	0	1	1	7200	
	0	1	0	0	9600	
	0	1	0	1	12000	
	0	1	1	0	14400	
	0	1	1	1	16800	
	1	0	0	0	19200	

	1	0	0	1	21600	
	1	0	1	0	24000	
	1	0	1	1	26400	
	1	1	0	0	28800	
	1	1	0	1	31200	
	1	1	1	0	33600	
	1	1	1	1	Disabled	
	Other settings: **Not used**					
4-7	**Not used**					Do not change the settings.

Switch 03		
No	**FUNCTION**	**COMMENTS**
0-1	Inch-mm conversion before tx Bit 1: 0, Bit 0: 0 = Inch-mm conversion available Bit 1: 0, Bit 0: 1 = Inch only Bit 1: 1, Bit 0: 0 = Not used Bit 1: 1, Bit 0: 1 = Disabled	If "inch only" is selected on the machine uses inch-based resolutions for scanning, the printed copy may be slightly distorted at the other end if that machine uses mm-based resolutions. If the setting is "Inch-mm conversion available ", Inch-mm conversion become effective to the special senders. If the setting is "Disabled", the bit switch setting is used.
2-3	DIS/NSF detection method Bit 3: 0, Bit 2: 0 = First DIS or NSF Bit 3: 0, Bit 2: 1 = Second DIS or NSF Bit 3: 1, Bit 2: 0 = Not used Bit 3: 1, Bit 2: 1 = Disabled	(0, 1): Use this setting if echoes on the line are interfering with the set-up protocol at the start of transmission. The machine will then wait for the second DIS or NSF before sending DCS or NSS. If the setting is "Disabled", the bit switch setting is used.

4	V.8 protocol 0: Off 1: Disabled	If transmissions to a specific destination always end at a lower modem rate (14,400 bps or lower), disable V.8 protocol so as not to use V.34 protocol. 0: V.34 communication will not be possible. If the setting is "Disabled", the bit switch setting is used.
5	Compression modes available in transmit mode 0: MH only 1: Disabled	This bit determines the capabilities that are informed to the other terminal during transmission. If the setting is "Disabled", the bit switch setting is used.
6-7	ECM during transmission Bit 7: 0, Bit 6: 0 = Off Bit 7: 0, Bit 6: 1 = On Bit 7: 1, Bit 6: 0 = Not used Bit 7: 1, Bit 6: 1 = Disabled	For example, if ECM is switched on but is not wanted when sending to a particular terminal, use the (0, 0) setting. **Note**: V.8/V.34 protocol and JBIG compression are automatically disabled if ECM is disabled. If the setting is "Disabled", the bit switch setting is used.

Switch 04 - Not used (do not change the settings)
Switch 05 - Not used (do not change the settings)
Switch 06 - Not used (do not change the settings)
Switch 07 - Not used (do not change the settings)
Switch 08 - Not used (do not change the settings)
Switch 09 - Not used (do not change the settings)

E-mail Parameters

The initial settings of the following e-mail parameters are all "0" (all parameters disabled).

Switch 00		
No	**FUNCTION**	**COMMENTS**
0	MH Compression mode for e-mail attachments **0**: Off 1: On	Switches MH compression on and off for files attached to e-mails for sending.
1	MR Compression mode for e-mail attachments **0**: Off 1: On	Switches MR compression on and off for files attached to e-mails for sending.
2	MMR Compression mode for e-mail attachments **0**: Off 1: On	Switches MMR compression on and off for files attached to e-mails for sending.
3-6	**Not used**	Do not change these settings.
7	Designates the bits to reference for compression method of e-mail attachments **0**: Registered (Bit 0 to 6) 1: No registration.	The "0" selection (default) references the settings for Bits 00, 01, 02 above. The "1" selection ignores the selections of Bits 00, 01, 02.

Switch 01		
No	**FUNCTION**	**COMMENTS**
0	Original width of e-mail attachment: A4 **0**: Off 1: On	Sets the original width of the e-mail attachment as A4.
1	Original width of e-mail attachment: B4 **0**: Off 1: On	Sets the original width of the e-mail attachment as B4.
2	Original width of e-mail attachment: A3 **0**: Off 1: On	Sets the original width of the e-mail attachment as A3.
3-6	**Not used**	Do not change these settings.
7	Designates the bits to reference for original size of e-mail attachments **0**: Registered (Bit 0 to 6) 1: No registration.	The "0" selection (default) references the settings for Bits 00, 01, 02 above. The "1" selection ignores the selections of Bits 00, 01, 02.

Switch 02		
No	**FUNCTION**	**COMMENTS**
0	Line resolution of e-mail attachment: 200 x 100 **0**: Off 1: On	Sets the line resolution of the e-mail attachment as 200 x100.
1	Line resolution of e-mail attachment: 200 x 200 **0**: Off 1: On	Sets the line resolution of the e-mail attachment as 200 x 200.
2	Line resolution of e-mail attachment: 200 x 400 **0**: Off 1: On	Sets the line resolution of the e-mail attachment as 200 x 400.
3	Not used	Do not change these settings.
4	Line resolution of e-mail attachment: 400 x 400 **0**: Off 1: On	Sets the line resolution of the e-mail attachment as 400 x 400.
5-6	**Not used**	Do not change these settings.
7	Designates the bits to reference for original size of e-mail attachments **0**: Registered (Bit 0 to 6) 1: No registration.	The "0" selection (default) references the settings for Bits 00, 01, 02, 04 above. The "1" selection ignores the selections of Bits 00, 01, 02, 04.

Switch 03 - Not used (do not change the settings)

Switch 04		
No	**FUNCTION**	**COMMENTS**
0	Full mode address selection 0: Full mode address 1: No full mode (simple mode)	If the other ends have the addresses, which have the full mode function flag ("0"), this machine determines them as full mode standard machines. ▪ This machine attaches the "demand of reception confirmation" to a message when transmitting. ▪ This machine updates the reception capability to the address book when receiving.
1-7	**Not used**	Do not change these settings.

Switch 05		
No	**FUNCTION**	**COMMENTS**
0	Directr transmission selection to SMTP server 0: ON 1: OFF	Allows or does not allow the direct transmission to SMTP server.
1-7	Not used	Do not change these settings.

Switch 06 - Not used (do not change the settings)
Switch 07 - Not used (do not change the settings)
Switch 08 - Not used (do not change the settings)
Switch 09 - Not used (do not change the settings)

4.11 SERVICE RAM ADDRESSES

⚠CAUTION

- Do not change the settings which are marked as “Not used” or “Read only.”

680001 to 680004(H) - ROM version (Read only)

680001(H) - Revision number (BCD)

680002(H) - Year (BCD)

680003(H) - Month (BCD)

680004(H) - Day (BCD)

680006 to 680015(H) - Machine’s serial number (16 digits - ASCII)

680018(H) - Total program checksum (low)

680019(H) - Total program checksum (high)

680020 to 68003F(H) - System bit switches

680050 to 68005F(H) - Printer bit switches

680060 to 68007F(H) - Communication bit switches

680080 to 68008F(H) - G3 bit switches

680090 to 68009F(H) - G3-2 bit switches: Not used

6800A0 to 6800AF(H) - G3-3 bit switches: Not used

6800D0(H) - User parameter switch 00 (SWUER_00) : Not used

6800D1(H) - User parameter switch 01 (SWUSR_01) : Not used

6800D2(H) - User parameter switch 02 (SWUSR_02)

Bit 0: Forwarding mark printing on forwarded messages 0: Disabled, 1: Enabled

Bit 1: Center mark printing on received copies

(This switch is not printed on the user parameter list.)

0: Disabled, 1: Enabled

Bit 2: Reception time printing

(This switch is not printed on the user parameter list.)

0: Disabled, 1: Enabled

Bit 3: TSI print on received messages 0: Disabled, 1: Enabled

Bit 4: Checkered mark printing

(This switch is not printed on the user parameter list.)

0: Disabled, 1: Enabled

Bit 5: Not used

Bit 6: Not used

Bit 7: Not used

6800D3(H) - User parameter switch 03 (SWUSR_03: Automatic report printout)

Bit 0: Transmission result report (memory transmissions) 0: Off, 1: On

Bit 1: Not used

Bit 2: Memory storage report 0: Off, 1: On

Bit 3: Polling reserve report (polling reception) 0: Off, 1: On

Bit 4: Polling result report (polling reception) 0: Off, 1: On

Bit 5: Transmission result report (immediate transmissions) 0: Off, 1: On

Bit 6: Not used

Bit 7: Journal 0: Off, 1: On

6800D4(H) - User parameter switch 04 (SWUSR_04: Automatic report printout)

Bit 0: Not used

Bit 1: Automatic communication failure report and transfer result report output 0: Off, 1: On

Bits 2 to 3: Not used

Bit 4: Indicates the parties 0: Not indicated, 1: Indicated

Bit 5: Include sender's name on reports 0: Off, 1: On

Bit 6: Not used

Bit 7: Inclusion of a sample image on reports 0: Off, 1: On

6800D5(H) - User parameter switch 05 (SWUSR_05)

Bit 0: Substitute reception when the base copier is in an SC condition

0: Enabled, 1: Disabled

Bits 1 and 2: Condition for substitute rx when the machine cannot print messages (Paper end, toner end, jam, and during night mode)

Bit 2: 0, Bit 1: 0 = The machine receives all the fax messages.

Bit 2: 0, Bit 1: 1 = The machine receives the fax messages with RTI or CSI.

Bit 2: 1, Bit 1: 0 = The machine receives the fax messages with the same ID code.

Bit 2: 1, Bit 1: 1 = The machine does not receive anything.

Bit 3: Not used

Bit 4: Not used

Bit 5: Just size printing 0: Off, 1: On

Bit 6: Not used

Bit 7: Add paper display when a cassette is empty 0: Off, 1: On

6800D6(H) - User parameter switch 06 (SWUSR_06): Not used

6800D7(H) - User parameter switch 07 (SWUSR_07)

Bit 0 Ringing 0: Off, 1: On

Bit1: Automatic answering message 0: Off, 1: On

Bit 2: Parallel memory transmission 0: Off, 1: On

Bits 3 and 4: Not used

Bit 5: Remote control 0: Off, 1: On

Bits 6 and 7: Not used

6800D8(H) - User parameter switch 08 (SWUSR_08)

Bits 0 and 1: Not used.

Bit 2: Authorized reception

0: Only faxes from senders whose RTIs/CSIs are specified for this feature are accepted.

1: Only faxes from senders whose RTIs/CSIs are not specified for this feature are accepted.

Bits 3 to 7: Not used.

6800D9(H) - User parameter switch 09 (SWUSR_09): Not used

6800DA(H) - User parameter switch 10 (SWUSR_0A)

Bits 0 to 2: Not used

Bit 3: Page reduction 0: Off, 1: On

Bits 4 and 5: Not used

Bit 6: Use both e-mail notification and printed reports to confirm the transmission results 0: Off, 1: On

Bit 7: Not used

6800DB(H) - User parameter switch 11 (SWUSR_0B)

Bits 0 and 1: Not used

Bit 2: White original detection 0: Off, 1: On (alarm and alert message on the LCD)

Bit 3: Receive rejection for 1300 Hz transmission 0: Off (receive), 1: On (not receive)

Bit 5: Not used

Bit 6: Printout of messages received while acting as a forwarding station 0: Off, 1: On

Bit 7: Not used

6800DC(H) - User parameter switch 12 (SWUSR_0C): Not used

6800DD(H) - User parameter switch 13 (SWUSR_0D): Not used

6800DE(H) - User parameter switch 14 (SWUSR_0E)

Bit 0: Message printout while the machine is in Night Printing mode 0: On, 1: Off

Bit 1: Maximum document length detection 0: Double letter, 1: Longer than double-letter (well log) – up to 1,200 mm

Bit 2: Not used

Bit 3: Fax mode settings, such as resolution, before a mode key (Copy/Fax/Printer/Scanner) is pressed 0: Not cleared, 1: Cleared

Bits 4 to 6: Not used

Bit 7: Not used

6800DF(H) - User parameter switch 15 (SWUSR_0F)

(This switch is not printed on the user parameter list.)

Bits 0, 1 and 2: Cassette for fax printout

Bit 2: 0, Bit 1: 0, Bit 0: 1 = 1st paper feed station

Bit 2: 0, Bit 1: 1, Bit 0: 0 = 2nd paper feed station

Bit 2: 0, Bit 1: 1, Bit 0: 1 = 3rd paper feed station

Bit 2: 1, Bit 1: 0, Bit 0: 0 = 4th paper feed station

Bit 2: 1, Bit 1: 0, Bit 0: 1 = LCT

Other settings Not used

Bits 3 and 4: Not used

Bit 5: Using the cassette specified by bits 0, 1 and 2 above only 0: On, 1: Off

Bits 6 and 7: Not used

6800E0(H) – User parameter switch 16 (SWUSR_10)

(This switch is not printed on the user parameter list.)

Bits 0 and 1: Not used

Bit 2: Paper size selection priority for an A4 size fax message when A4/LT size paper is not available. 0: A3 has priority, 1: B4 has priority

Bits 3 to 7: Not used

6800E1(H) – User parameter switch 17 (SWUSR_11)

Bit 0: Not used

Bit 1: Not used

Bit 2: Inclusion of the “Add” button when a sequence of Quick/Speed dials is selected for broadcasting 0:Not needed, 1: Needed

Bits 3 to 6: Not used

Bit 7: Press “Start” key without an original when using the on hook dial or the external telephone, 0: displays “Cannot detect original size”. 1: Receives fax messages.

6800E2(H) - User parameter switch 18 (SWUSR_12)

Bit 0: TTI date 0: Off, 1: On

Bit 1: TTI sender 0: Off, 1: On

Bit 2: TTI file number 0: Off, 1: On

Bit 3: TTI page number 0: Off, 1: On

Bits 4 to 6: Not used

Bit 7: Japan only

6800E3(H) - User parameter switch 19 (SWUSR_13)

Bit 0: Not used

Bit 1: Journal format

0: The Journal is separated into transmissions and receptions

1: The Journal is separated into G3-1, G3-2, and G3-3 communications

Bit 2: Not used

Bit 3: 90° image rotation during B5 portrait Tx (This switch is not printed on the user parameter list.) 0: Off, 1: On

Bit 4: Reduction of sample images on reports to 50% in the main scan and sub-scan directions. (This switch is not printed on the user parameter list.) 0: Technician adjustment (printer switch 0E

bits 3 and 4), 1: 50% reduction

Bit 5: Use of A5 size paper for reports (This switch is not printed on the user parameter list.) 0: Off, 1: On

Bits 6 and 7: Not used

6800E4(H) - User parameter switch 20 (SWUSR_14)

Bit 0: Automatic printing of the LAN fax result report 0: Off, 1: On

Bit 1: Not used.

Bits 2 to 5: Store documents in memory which could not be printed from PC fax (LAN fax) driver

Bit 5	Bit 4	Bit 3	Bit 2	Setting
0	0	0	0	0 min.
0	0	0	1	1 min.
↓	↓	↓	↓	↓
1	1	1	0	14 min.
1	1	1	1	15 min.

Bits 6 and 7: Not used.

6800E5(H) - User parameter switch 21 (SWUSR_15)

Bit 0: Print results of sending reception notice request message 0: Disabled (print only when error occurs), 1: Enabled

Bit 1: Respond to e-mail reception acknowledgment request 0: Disabled, 1: Enabled

Bit 2: Not used

Bit 3: File format for forwarded folders 0: TIFF, 1:PDF

Bit 4: Transmit Journal by E-mail 0: Disabled, 1: Enabled

Bit 5: Not used

Bit 6: Network error display 0: Displayed, 1: Not displayed

Bit 7: Transmit error mail notification 0: Enabled, 1: Disabled

6800E6(H) - User parameter switch 22 (SWUSR_16)

(This switch is not printed on the user parameter list.)

Bit 0: Dial tone detection (PSTN 1) 0: Disabled, 1: Enabled

Bits 1 to 7: Not used

6800E7(H) – User parameter switch 23 (SWUSR_17): Not used

6800E8(H) - User parameter switch 24 (SWUSR_18): Not used

6800E9(H) - User parameter switch 25 (SWUSR_19)

Bit 0: Not used

Bit 1: Reception mode switch timer 0: Off, 1: On (switching Fax or Fax/Tel)

Bit 2: Mode priority switch 0: Fax first, 1: Tel first

Bit 3: Dial in function (Japan Only)

Bit 4: RDS operation 0: Not acceptable, 1: Acceptable for the limit specified by system switch 03

Note

- This bit is only effective when RDS operation can be selected by the user (see system switch 02).

Bits 5 to 7: Not used

6800EA(H) and 6800EB(H) - User parameter switches 26 and 27 (SWUSR_1A and 1B): Not used

6800EC(H) - User parameter switch 28(SWUSR_1C): Not used

6800ED(H) - User parameter switch 29(SWUSR_1D): Not used

6800EE(H) and 6800EF(H) - User parameter switches 30 and 31 (SWUSR_1E and 1F): Not used

6800F0(H) - User parameter switch 32 (SWUSR_20)

Bit 0: Quotation priority for a destination when there is no destination of the specified type

0: Paper output priority = Priority order: 1. IP-fax destination, 2. Fax Number, 3. E-mail address, 4. Folder

1: Electric putout order = Priority order: 1. E-mail address, 2. Folder, 3. IP-fax destination, 4. Fax number

Bits 1 to 7: Not used

6800F1(H) - User parameter switch 33 (SWUSR_21): Not used

6800F2(H) - User parameter switch 34 (SWUSR_22)

Bit 0: Gatekeeper server used with IP-Fax 0: Disabled, 1: Enabled

Bit 1: SIP server used with IP-Fax 0: Disabled, 1: Enabled

Bits 2 to 7: Not used

6800F3(H) - User parameter switch 35 (SWUSR_23)

Redial interval when sending a backup file

6800F4(H) - User parameter switch 36 (SWUSR_24)

Maximum number of redials when sending a backup file

6800F5-6800F8(H) - User parameter switch 37 (SWUSR_25)

Bit 0: Stop sending a backup file if the destination folder becomes full while the machine is sending or waiting to send a fax or the backup file 0: Disabled, 1: Enabled

Bit 1: Not used

Bit 2 and 3: Backup file is printed along with the TX communication failure report when a backup file transmission failure occurs. 00: Do not print, 01: Print first page only, 10: Print whole file

Bit 4: Display the sender's information in the file name of documents that are forwarded to folder destinations. 0: Disabled, 1: Enabled

Bit 5: Limit the file names of documents that are forwarded to folder destinations to plain characters only. 0: Disabled, 1: Enabled

Bit 6 to 7: Not used

6800F9(H) - User parameter switch 40 (SWUSR_28)

Bit 0: When memory space is insufficient, the machine prints and then deletes the oldest faxes, creating memory space for storage of new faxes. 0: Disabled, 1: Enabled

Bit 1 to 7: Not used

6800FF(H) - User parameter switch 45 (SWUSR_2D)

Bit 0 and 1: File format for files transmitted to e-mail addresses and folders registered as forwarding, destinations of backup file transmission, receivers for Personal Box, or end receivers for Transfer Box. 0: PDF 1: PDF/A

Bit 2 to 7: Not used

680100 to 68010F(H) - G4 Parameter Switches – Not used

680110 to 68012F(H) - G4 Internal Switches – Not used

680130 to 68016F(H) - Service Switches

680170 to 68017F(H) - IFAX Switches

680180 to 68018F(H) - IP-FAX Switches

680190 to 6801AF(H) - Service station's fax number (SP3-101)

6801B0 to 6801B9(H) - Own fax PABX extension number – Not used

6801BA to 6801C3(H) - Own fax number (PSTN) – Not used

6801C4 to 6801D7(H) - Own fax number (ISDN G4) – Not used

6801D8 to 6801E3(H) - The first subscriber number (ISDN G3) – Not used

6801E4 to 6801EF(H) - The second subscriber number (ISDN G3) – Not used

6801F0 to 6801FB(H) - The first subscriber number (ISDN G4) – Not used

6801FC to 680207(H) - The second subscriber number (ISDN G4) – Not used

680208 to 68021B(H) - PSTN-1 RTI (Max. 20 characters - ASCII) - See the following note.

68021C to 68022F(H) - PSTN-2 RTI (Max. 20 characters - ASCII) - Not used

680230 to 680246(H) - PSTN-3 RTI (Max. 20 characters - ASCII) - Not used

680247 to 680286(H) - TTI 1 (Max. 64 characters - ASCII) - See the following note.

680287 to 6802C6(H) - TTI 2 (Max. 64 characters - ASCII) - Not used

6802C7 to 680306(H) - TTI 3 (Max. 64 characters - ASCII) - Not used

680307 to 68031A(H) - PSTN-1 CSI (Max. 20 characters - ASCII)

68031B to 68032E(H) - PSTN-2 CSI (Max.20 characters - ASCII) - Not used

68032F to 680342(H) - PSTN-3 CSI (Max.20 characters - ASCII) - Not used

680343(H) - Number of PSTN-1 CSI characters (Hex)

680344(H) - Number of PSTN-2 CSI characters (Hex) - Not used

680345(H) Number of PSTN-3 CSI characters (Hex) - Not used

Note

- If the number of characters is less than the maximum (20 for RTI, 32 for TTI), add a stop code (00[H]) after the last character.

680380 to 680387(H) - Last power off time (Read only)

680380(H) - 01(H) - 24-hour clock, 00(H) - 12-hour clock (AM), 02(H) - 12-hour clock (PM)

680381(H) - Year (BCD)

680382(H) - Month (BCD)

680383(H) - Day (BCD)

680384(H) – Hour

680385(H) – Minute

680386(H) – Second

680387(H) - 00: Monday, 01: Tuesday, 02: Wednesday, /// , 06: Sunday

680394(H) - Optional equipment (Read only – Do not change the settings)

Bit 0: Page Memory 0: Not installed, 1: Installed

Bit 1: SAF Memory 0: Not installed, 1: Installed

Bits 2 to 7; Not used

680395(H) - Optional equipment (Read only – Do not change the settings)

Bits 0 to 3: Not used

Bit 4: G3-2 0: Not installed, 1: Installed

Bit 5: G3-3 0: Not installed, 1: Installed

Bit 6 and 7: Not used

680406 to 68040A – Option G3 board (G3-2) ROM information (Read only)

680406(H) - Suffix (BCD)

680407(H) - Version (BCD)

680408(H) - Year (BCD)

680409(H) - Month (BCD)

68040A(H) - Day (BCD)

68040B to 68040F – Option G3 board (G3-3) ROM information (Read only)

68040B(H) - Suffix (BCD)

68040C(H) - Version (BCD)

68040D(H) - Year (BCD)

68040E(H) - Month (BCD)

68040F(H) - Day (BCD)

680410(H) - G3-1 Modem ROM version (Read only)

680412(H) - G3-2 Modem ROM version (Read only)

680414(H) - G3-3 Modem ROM version (Read only)

680420(H) - Number of multiple sets print (Read only)

680476(H) - Time for economy transmission (hour in 24h clock format - BCD)

680477(H) - Time for economy transmission (minute - BCD)

680492(H) - Transmission monitor volume 00 - 07(H)

680493(H) - Reception monitor volume 00 - 07(H)

680494(H) - On-hook monitor volume 00 - 07(H)

680495(H) - Dialing monitor volume 00 - 07(H)

680496(H) - Buzzer volume 00 - 07(H)

680497(H) - Beeper volume 00 - 07(H)

6804A8(H) - Machine code (Check ram 4)

68AFDA(H) - IP-Fax backup data 00 - 600 (H) - Not used

69A614(H) - Own e-mail address for internet fax (Max. 128 characters - ASCII)

69A794(H) - User code for fax e-mail account (Max. 192 characters - ASCII)

69A854(H) – Password for fax e-mail account (Max. 128 characters - ASCII)

69A914(H) - Transmission mail size restriction for internet fax (Max. 4 bit)

69A918(H) - E-mail address for SMTP reception (Max. 128 characters - ASCII)

69A998(H) – Destination number for reception report e-mail (Max. 4 byte)

69FB40(H) to 69FDC0(H) - SIP server address (Read only)

69FB40(H) - Proxy server - Main (Max. 128 characters - ASCII)

69FBC0(H) - Proxy server - Sub (Max. 128 characters - ASCII)

69FC40(H) - Redirect server - Main (Max. 128 characters - ASCII)

69FCC0(H) - Redirect server - Sub (Max. 128 characters - ASCII)

69FD40(H) - Registrar server - Main (Max. 128 characters - ASCII)

69FDC0(H) - Registrar server - Sub (Max. 128 characters - ASCII)

69FE40(H) - Gatekeeper server address - Main (Max. 128 characters - ASCII)

69FEC0(H) - Gatekeeper server address - Sub (Max. 128 characters - ASCII)

69FF40(H) - Arias Number (Max. 128 characters - ASCII)

69FFC0(H) - SIP user name (Max. 128 characters - ASCII)

6A0040H(H) - **SIP digest authentication password** (Max. 128 characters - ASCII)

6A00C0H(H) - Gateway address information (Max. 7100 characters - ASCII)

6A1C7C(H) - Stand-by port number for H.323 connection

6A1C7E(H) - Stand-by port number for SIP connection

6A1C80(H) - RAS port number

6A1C82(H) - Gatekeeper port number

6A1C84(H) - Port number of data waiting for T.38

6A1C86(H) - Port number of SIP server

6A1C88(H) - Priority for SIP and H.323 0: H.323, 1: SIP

6A1C89(H) - SIP function 0: Disabled, 1: Enabled

6A1C8A(H) - H.323 function 0: Disabled, 1: Enabled

6A1C8B(H) - **SIP digest authentication function** 0: Disabled, 1: Enabled

6B9000 to 6B91FF(H) - Error code (Max. 512 byte)

6B9200 to 6BD61F - Reception results (Max. 17440 byte)

6BD620 to 6BDFA7 - Transmission error (Max. 2440 byte)

6BEBFE(H) - 6BEC1E (H) - Dial tone detection parameter (Max. 11 x 3 lines)

This initializes following order. [0x04, 0x40, 0x03, 0x60, 0x64, 0xf4, 0x01,0x64, 0x04, 0xc8, 0x00]

6BEBFE(H) – Dial tone detection frequency – Upper limit (High)

Defaults: NA: 06, EU: 06, ASIA: 06

6BEBFF(H) – Dial tone detection frequency – Upper Limit (Low)

Defaults: NA: 50, EU: 50, ASIA: 50

6BEC00(H) – Dial tone detection frequency – Lower Limit (High)

Defaults: NA: 03, EU: 02, ASIA: 02

6BEC01(H) – Dial tone detection frequency – Lower Limit (Low)

Defaults: NA: 60, EU: 90, ASIA: 90

6BEC02(H) –Dial tone detection waiting time (20 ms)

Defaults: NA: 64, EU 64, ASIA: 64

6BEC03 to 6BEC04 – Dial tone detection monitoring time (20 ms)

Defaults

Area	6BEC03	6BEC04
NA	F4	01
EU	F4	01
ASIA	F4	01

6BEC05(H) – Dial tone detect judge time (20 ms)

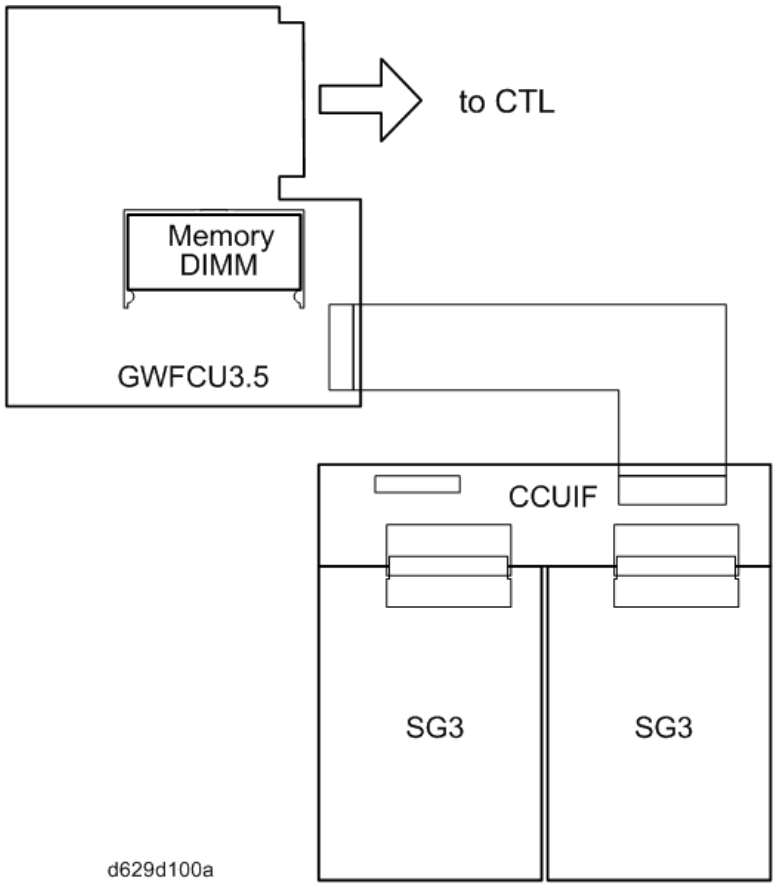
Defaults: NA: 64, EU: 1B, ASIA: 32

6BEC06(H) – Dial tone disconnect permission time (20 ms)

Defaults: NA: 11, EU: 0F, ASIA: 11

5. DETAILED SECTION DESCRIPTIONS

5.1 OVERVIEW



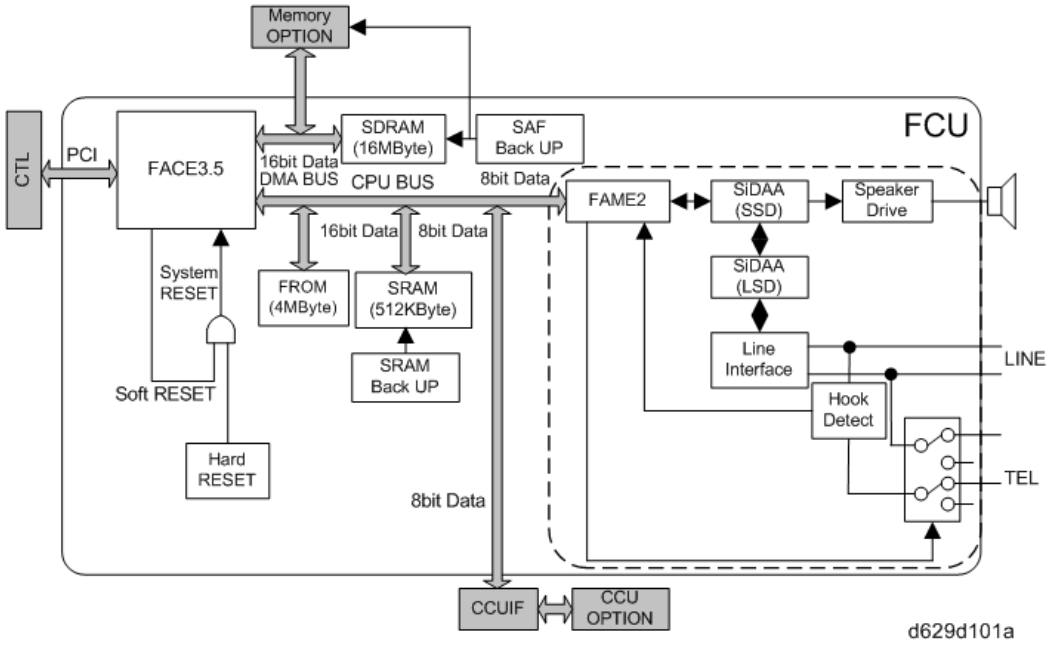
The FCU controls all the fax communications and fax features, in cooperation with the controller board. Also, the FCU contains the ROM, SRAM and NCU circuit.

Fax Options:

- Extra G3 Interface option: This provides one more analog line interface. This allows full dual access. Two extra G3 interface options can be installed.
- Memory Expansion: This expands the SAF memory and the page memory (used for image rotation); without this expansion, the page memory is not big enough for image rotation at 400 dpi, so transmission at 400 dpi is not possible.

5.2 BOARDS

5.2.1 FCU



The FCU (Facsimile Control Unit) controls fax communications, the video interface to the base copier's engine, and all the fax options.

FACE3.5 (Fax Application Control Engine)

- CPU
- Data compression and reconstruction (DCR)
- DMA control
- Clock generation
- DRAM backup control

Modem (FAME2)

- V.34, V33, V17, V.29, V.27ter, V.21, and V.8

DRAM

- The 16 MB of DRAM is shared as follows.
  - SAF memory: 4MB
  - Working memory: 4MB
  - Page memory: 8MB
  - The SAF memory is backed up by a rechargeable battery.

ROM

- 4MB flash ROMs for system software storage

SRAM

- The 512 KB SRAM for system and user parameter storage is backed up by a lithium battery.

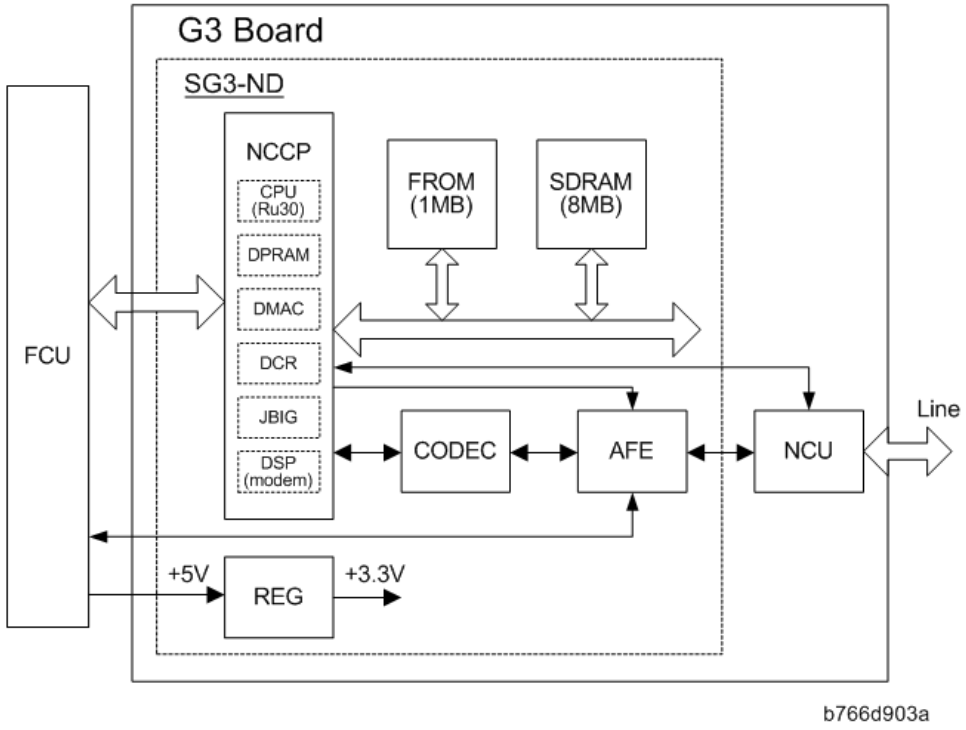
Memory Back-up

- A rechargeable battery backs up the SAF memory (DRAM) for 12 hours.
- A lithium battery backs up the system parameters and programmed items in the SRAM, in case the base copier's main switch is turned off.

Switches

Item	Description
SW1	Switches the SRAM backup battery on/off.

5.2.2 SG3 BOARD



The SG3 board allows up to three simultaneous communications when used in combination with the FCU and optional G3 boards. The NCU is on the same board as the common SG-3 board. This makes the total board structure smaller. But, the specifications of the SG3 board do not change.

NCCP (New Communication Control Processor)

- Controls the SG3 board.
- CPU (RU30)
- DPRAM (Dual Port RAM): Handshaking with the FCU is done through this block.
- DMA controller
- JBIG

- DSP V34 modem (RL5T892): Includes the DTMF Receiver function
- DCR for MH, MR, MMR, and JBIG compression and decompression

FROM

- 1Mbyte flash ROM for SG3 software storage and modem software storage

SDRAM

- 4Mbyte DRAM shared between ECM buffer, line buffer, and working memory

AFE (Analog Front End)

- Analog processing

CODEC (COder-DECoder)

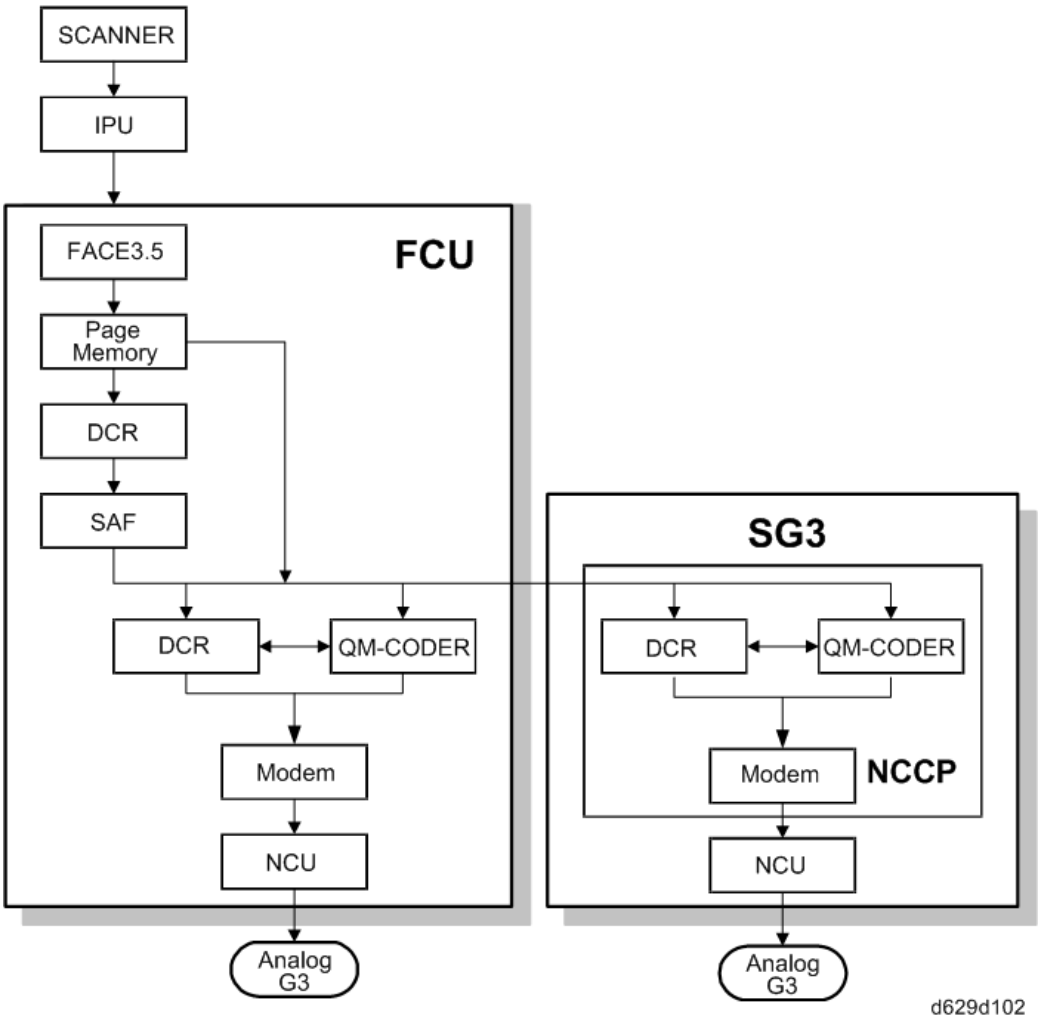
- A/D & D/A conversions for modem

REG

- Generates +3.3 V from the +5V from the FCU

5.3 VIDEO DATA PATH

5.3.1 TRANSMISSION



Memory Transmission and Parallel Memory Transmission

The base copier's scanner scans the original at the selected resolution in inch format. The IPU processes the data and transfers it to the FCU.

Note

- When scanning a fax original, the IPU uses the MTF, independent dot erase and threshold parameter settings programmed in the fax unit's scanner bit switches, not the copier's SP modes.

Then, the FCU converts the data to mm format, and compresses the data in MMR or raw format to store it in the SAF memory. If image rotation will be done, the image is rotated in page memory before compression.

At the time of transmission, the FCU decompresses the stored data, then re-compresses and/or reduces the data if necessary for transmission. The NCU transmits the data to the line.

Immediate Transmission

The base copier's scanner scans the original at the resolution agreed with the receiving terminal. The IPU video processes the data and transfers it to the FCU.

Note

- When scanning a fax original, the IPU uses the MTF, independent dot erase and thresholding parameter settings programmed in the fax unit's scanner bit switches, not the copier's SP modes.

Then the FCU stores the data in page memory, and compresses the data for transmission. The NCU transmits the data to the line.

JBIG Transmission

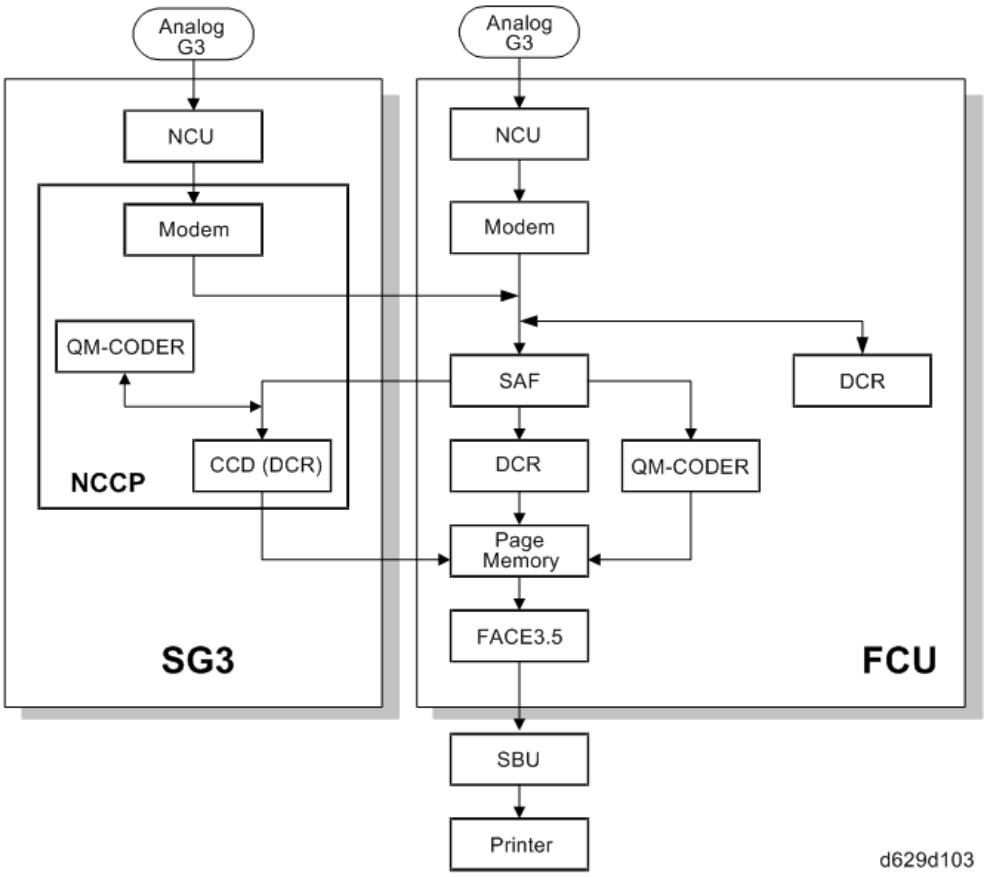
Memory transmission: If the receiver has JBIG compression, the data goes from the DCR to the QM-Coder. Then the NCU transmits the data to the line. When an optional G3 unit (SG3) is installed and PSTN2 is selected as the line type, JBIG compression is available, but only for the PSTN-2 line.

Immediate transmission: If the receiver has JBIG compression, the data goes from the page memory to the QM-Coder. Then the NCU transmits the data to the line. When an optional G3 unit (SG3) is installed and PSTN2 is selected as the line type, JBIG compression is available, but only for the PSTN-2 line.

Adjustments

- Priority for the line used for G3 transmissions (PSTN 1/PSTN 2 or 3): System switch 16 bit 1

5.3.2 RECEPTION



First, the FCU stores the incoming data from either an analog line to the SAF memory. (The data goes to the FACE3 at the same time, and is checked for error lines/frames.)
The FCU then decompresses the data and transfers it to page memory. If image rotation will be done, the image is rotated in the page memory. The data is transferred to the IPU.
If the optional G3 unit is installed, the line that the message comes in on depends on the telephone number dialled by the other party (the optional G3 unit has a different telephone number from the main fax board).

JBIG Reception

When data compressed with JBIG comes in on PSTN-1 (the standard analog line), the data is sent to the QM-CODER for decompression. Then the data is stored in the page memory, and transferred to the IPU.
When data compressed with JBIG comes in on PSTN-2 (optional extra analog line), the data is sent to the QM-CODER on the SG3 board for decompression.

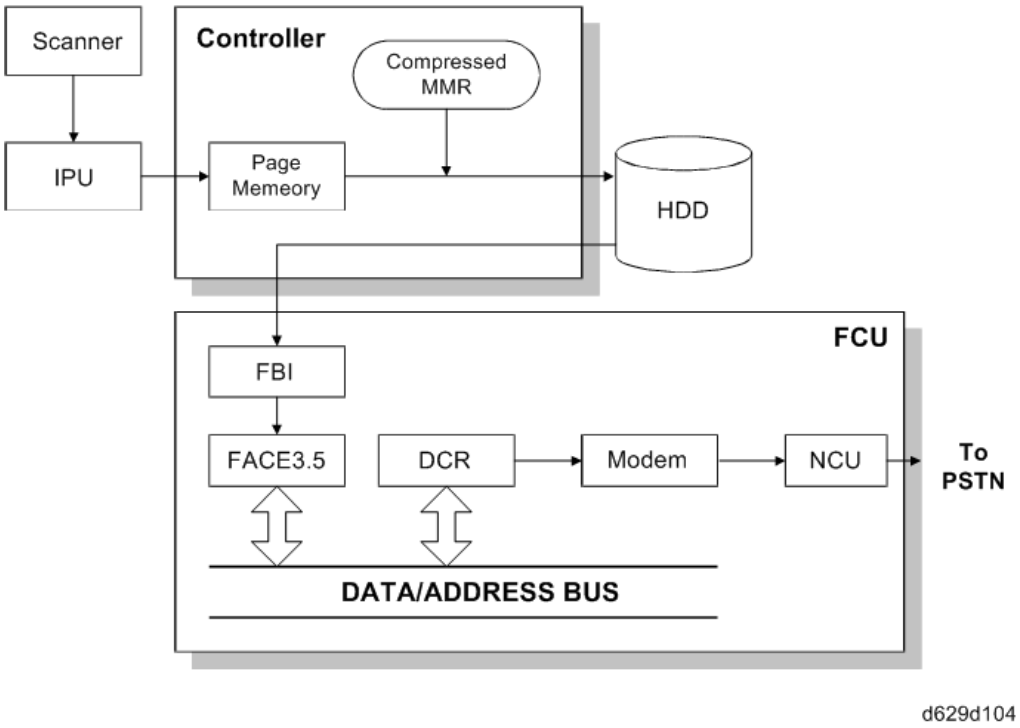
5.4 FAX COMMUNICATION FEATURES

5.4.1 MULTI-PORT

When the optional extra G3 Interface Unit is installed, communication can take place at the same time through the two or three lines at once.

Option	Available Line Type	Available protocol Combinations
Standard only	PSTN	G3
Extra G3 Interface Unit (single)	PSTN + PSTN	G3 + G3
Extra G3 Interface Unit (double)	PSTN + PSTN +PSTN	G3 + G3 +G3

5.4.2 DOCUMENT SERVER



The base copier's scanner scans the original at the selected resolution. The IPU video processes the data and transfers it to the controller board.

Then the controller stores the data in the page memory for the copier function, and compresses the data in MMR (by software) to store it in the HDD. If image rotation will be done, the image is

rotated in the page memory before compression.
For transmission, the stored image data is transferred to the FCU. The FCU decompresses the image data, then recompresses and/or reduces the data if necessary for transmission. The NCU transmits the data to the line.
The documents can be stored in the HDD (Document Server) from the fax application. The stored documents in the document sever can be used for the fax transmission in many times. More than one document and the scanned document can be combined into one file and then the file can be transmitted.

- When using the document server, the SAF memory is not used.
- The document is compressed with MMR and stored.
- Up to 9,000 pages can be stored (1 file: Up to 1,000 pages) from the fax application.
- Only stored documents from the fax application can be transmitted.
- Scanned documents are given a name automatically, such as "FAX001". But it is possible to change the file name, user name and password.
- Up to 30 files can be selected at once.

Note

- The compression method of the fax application is different from the copy application. The storing time is longer than the copier storing.
- When selecting "Print 1st page", the stored document will be reduced to A4 size.

5.4.3 INTERNET MAIL COMMUNICATION

Mail Transmission

T.37 simple and full modes

This machine supports T.37 full mode. (ITU-T Recommendation, RFC2532). The difference between T.37 simple mode and full mode is as follows.

Function	T.37 Simple Mode	T.37 Full Mode
Resolution	200 x 100 200 x 200	200 x100 200 x 200 200 x 400 400 x 400 (if available)
RX Paper Width	A4	A4, B4, A3
RX Data Compression Method	MH	MH (default), MR, MMR,

Function	T.37 Simple Mode	T.37 Full Mode
Signals	Image data transmission only	Image data transmission, exchange of capability information between the two terminals, and acknowledgement of receipt of fax messages

Data Formats

The scanned data is converted into a TIFF-F formatted file.

The fields of the e-mail and their contents are as follows:

Field	Content
From	Mail address of the sender
Reply To	Destination requested for reply
To	Mail address of the destination
Bcc	Backup mail address
Subject	From CSI or RTI (Fax Message No. xxxx)
Content Type	Multipart/mixed Attached files: image/tiff
Content Transfer Encoding	Base 64, 7-bit, 8-bit, Quoted Printable
Message Body	MIME-converted TIFF-F (MIME standards specify how files are attached to e-mail messages)

Direct SMTP Transmission

Internet Fax documents can be sent directly to their destinations without going through the SMTP server. (Internet Faxes normally transmit via the SMTP server.)

For example:

e-mail address:	gts@ricoh.co.jp
SMTP server address:	gts.abcd.com

In this case, this feature destination e-mail address (gts@ricoh.co.jp) is read as the SMTP server address "gts.abcd.com", and the transmissions bypass the SMTP server.

Selectable Options

These options are available for selection:

- With the default settings, the scan resolution can be either standard or detail. Inch-mm conversion before TX depends on IFAX SW01 Bit 7. Detail resolution will be used if Super Fine resolution is selected, unless Fine resolution is enabled with IFAX SW01.
- The requirements for originals (document size, scan width, and memory capacity) are the same as for G3 fax memory TX.
- The default compression is TIFF-F format.
- IFAX SW00: Acceptable paper widths for sending
- IFAX SW09: Maximum number of attempts to the same destination

Secure Internet Transmission

SMTP Authentication:

- User Tools> System Settings> File Transfer> SMTP Authentication

POP Before SMTP:

- User Tools> System Settings> File Transfer> POP Before SMTP

Mail Reception

Three Types

This machine supports three types of e-mail reception:

- POP3 (Post Office Protocol Ver. 3.)
- IMAP4 (Internet Messaging Access Protocol)
- SMTP (Simple Mail Transfer Protocol)

Note

- For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – Mail Reception

POP3/IMAP4 Mail Reception Procedure

The machine automatically picks up e-mail from the server at an interval which is adjustable in the range 2 to 1440 min. in 1-minute steps:

- User Tools> System Settings> File Transfer> E-mail Reception Interval

SMTP Reception

1. The IFAX must be registered as an SMTP server in the MX record of the DNS server, and the address of the received mail must specify the IFAX.
2. To enable SMTP reception: User Tools> System Settings> File Transfer> Reception Protocol
   - Even if the MX record on the DNS server includes the IFAX, mail cannot be received with SMTP until SMTP reception is enabled:
   - However, if SMTP reception is selected and the machine is not registered in the MX record of the DNS server, then either IMAP4 or POP3 is used, depending on the setting: User Tools> System Settings> File Transfer> Reception Protocol

Mail Delivery Conditions: Transferring Mail Received With SMTP

1. The machine must be set up for SMTP mail delivery:
   - User Tools> Facsimile Features> Reception Settings> SMTP RX File Delivery Settings
2. If the user wishes to limit this feature so that the machine will only deliver mail from designated senders, the machine's "Auth. E-mail RX" feature must be set (User Tools> Facsimile Features> Reception Settings> SMTP RX File Delivery Settings).
3. If the "SMTP RX File Delivery Setting" is set to “Off” to prohibit SMTP receiving, and if there is mail designated for delivery, then the machine responds with an error. (User Tools> Facsimile Features> Reception Settings> SMTP RX File Delivery Settings)
4. If the quick dial, speed dial, or group dial entry is incorrect, the mail transmission is lost, and the IFAX issues an error to the SMTP server and outputs an error report.

Auth. E-mail RX

In order to limit access to mail delivery with IFAX, the addresses of senders must be limited using the Access Limit Entry. Only one entry can be registered.

1. Access Limit Entry

For example, to limit access to @IFAX.ricoh.co.jp:

gts@IFAX.ricoh.co.jp	Matches and is delivered.
gts@IFAX.abcde.co.jp	Does not match and is not delivered.
IFAX@ricoh.co.jp	Does not match and is not delivered.

1. Conditions
   - The length of the Access Limit Entry is limited to 127 characters.
   - If the Access Limit Entry address and the mail address of the incoming mail do not match, the incoming mail is discarded and not delivered, and the SMTP server responds with an error. However, in this case an error report is not output.
   - If the Access Limit Entry address is not registered, and if the incoming mail specifies a delivery destination, then the mail is delivered unconditionally.

Handling Mail Reception Errors

Abnormal files

When an error of this type occurs, the machine stops receiving and commands the server to erase the message. Then the machine prints an error report and sends information about the error by e-mail to the sender address (specified in the "From" or "Reply-to" field of the message). If there is an incomplete received message in the machine memory, it will be erased.

The machine prints an error message when it fails to send the receive error notification after a certain number of attempts.

The following types of files are judged to be abnormal if one or more of the following are detected:

1. Unsupported MIME headers.
   Supported types of MIME header

Header	Supported Types
Content-Type	Multipart/mixed, text/plain, message/rfc822 Image/tiff
Charset	US-ASCII, ISO 8859 X. Other types cannot be handled, and some garbage may appear in the data.

Header	Supported Types
Content-Transfer-Encoding	Base 64, 7-bit, 8-bit, Quoted Printable

2. MIME decoding errors
3. File format not recognized as TIFF-F format
4. Resolution, document size, or compression type cannot be accepted

Remaining SAF capacity error

The machine calls the server but does not receive e-mail if the remaining SAF capacity is less than a certain value (the value depends on IFAX Switch 08. The e-mail will be received when the SAF capacity increases (for example, after substitute reception files have been printed). The error handling method for this type of error is the same as for "Abnormal files".

If the capacity of the SAF memory drops to zero during reception, the machine operates in the same way as when receiving an abnormal file (refer to "Abnormal files" above).

Secure Internet Reception

To enable password encryption and higher level security: User Tools> System Settings> File Transfer> POP3/IMAP4 Settings> Encryption (set to "On")

Transfer Request: Request By Mail

For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – Transfer Request

The fields of the e-mail and their contents are as follows:

Field	Content
From	E-mail address of the requesting terminal
To	Destination address (Transfer Station address)
Bcc	Backup mail address
Subject	From TSI (Fax Message No. xxxx)
Content-Type	Multipart/mixed Text/Plain (for a text part), image/tiff (for attached files)
Content-Transfer-Encoding	Base 64, 7-Bit, 8-bit, Quoted Printable

Field	Content
Mail body (text part)	RELAY-ID-: xxxx (xxxx: 4 digits for an ID code) RELAY: #01#*X#**01….
Message body	MIME-converted TIFF-F.

E-Mail Options (Sub TX Mode)

The following features are available as options for mail sending: entering a subject, designating the level of importance, confirming reception of the mail.

Subject and Level of Importance

You can enter a subject message with: TX Mode> Subject

The Subject entry for the mail being sent is limited to 128 characters. The subject can also be prefixed with an "Confidential", "Urgent", "Please phone" or "Copy to corres. Section" notation.

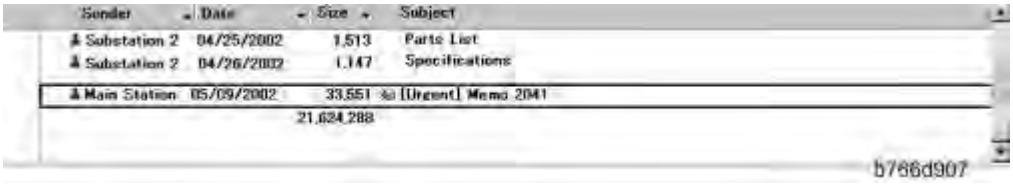
- How the Subject Differs According to Mail Type -

<table>
<tr><th>Mail Type</th><th>Item 1</th><th colspan="2">Item 2</th><th>Item 3</th></tr>
<tr><td>Subject Entry</td><td>---</td><td colspan="2">Entry Condition</td><td rowspan="5">Fax Message No.
+
File No.</td></tr>
<tr><td rowspan="4">No Subject Entry</td><td rowspan="4"></td><td colspan="2">1. "CSI" ("RTI")</td></tr>
<tr><td>2. "RTI"</td><td>CSI not registered</td></tr>
<tr><td>3. "CSI"</td><td>RTI not registered</td></tr>
<tr><td>4. None</td><td>CSI, RTI not registered</td></tr>
<tr><td rowspan="4">Confirmation of Reception</td><td rowspan="4">From</td><td colspan="2">1. "CSI" ("RTI")</td><td rowspan="2">Normal:
Return Receipt (dispatched).
You can select "displayed" with IFAX SW02 Bits 2 and 3.</td></tr>
<tr><td>2. "RTI"</td><td>CSI not registered</td></tr>
<tr><td>3. "CSI"</td><td>RTI not registered</td><td rowspan="2">Error:
Return Receipt (processed/error)</td></tr>
<tr><td>4. None</td><td>CSI, RTI not registered</td></tr>
</table>

<table>
<tr><th>Mail Type</th><th>Item 1</th><th colspan="2">Item 2</th><th>Item 3</th></tr>
<tr><td rowspan="4">Mail delivery, memory transfer, SMTP receiving and delivery</td><td rowspan="4">From</td><td>RTI or CSI of the station designated for delivery</td><td>Mail delivery</td><td rowspan="4">Fax Message No. + File Number</td></tr>
<tr><td>RTI or CSI of sender</td><td>Mail sending from G3 memory</td></tr>
<tr><td>Mail address of sender</td><td>Memory sending</td></tr>
<tr><td>Mail address of sender</td><td>SMTP receiving and delivery (Off Ramp Gateway)</td></tr>
<tr><td>Mail error notification</td><td>---</td><td colspan="3">Error Message No. xxxx From CSI (RTI)</td></tr>
</table>

Items 1, 2, and 3 in the table above are in the Subject.

- Subjects Displayed on the PC -



E-mail Messages

After entering the subject, you can enter a message with: TX Mode> Text

An e-mail message (up to 5 lines) can be pre-registered with: User Tools> System Settings> File Transfer> Program/Change/Delete E-mail Message

- Limitations on Entries -

Item	Maximum
Number of Lines	5 lines
Line Length	80 characters
Name Length	20 characters

Message Disposition Notification (MDN)

For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – E-mail Options

The network system administrator can confirm whether a sent mail has been received correctly or not. This confirmation is done in four steps.

1. Send request for confirmation of mail reception. To enable or disable this request (known as MDN): TX Mode> Reception Notice
2. Mail reception (receive confirmation request)
3. Send confirmation of mail reception
4. Receive confirmation of mail reception

The other party's machine will not respond to the request unless the two conditions below are met:

- The other party's machine must be set up to respond to the confirmation request.
- The other party's machine must support MDN (Message Disposition Notification).

- Setting up the Receiving Party -

The receiving party will respond to the confirmation request if:

1. The "Disposition Notification To" field is in the received mail header (automatically inserted in the 4th line in the upper table on the previous page, if MDN is enabled), and
2. Sending the disposition notification must be enabled (User Parameter Setting SW21 (15 [H]) Bit 1 for this model). The content of the response is as follows:

Normal reception:	"Return Receipt (dispatched)" in the Subject line
IFAX SW02 (Bit 2, 3)	"Return Receipt (displayed)" in the Subject line
Error:	"Return Receipt (processed/error)" in the Subject line

Handling Reports

- Sending a Request for a Return Receipt by Mail -

After the mail sender transmits a request for a return receipt, the mail sender's journal is annotated with two hyphens (--) in the Result column and a "Q" in the Mode column.

- Mail Receipt (Request for Receipt Confirmation) and Sending Mail Receipt Response -

After the mail receiver sends a response to the request for a return receipt, the mail receiver's journal is annotated with two hyphens (--) in the Result column and an "A" in the Mode column.

- Receiving the Return Receipt Mail -

- After the mail sender receives a return receipt, the information in the mail sender's journal about the receipt request is replaced, i.e. the journal is annotated with "OK" in the Result column.
- When the return receipt reports an error, the journal is annotated with an "E" in the Result column.

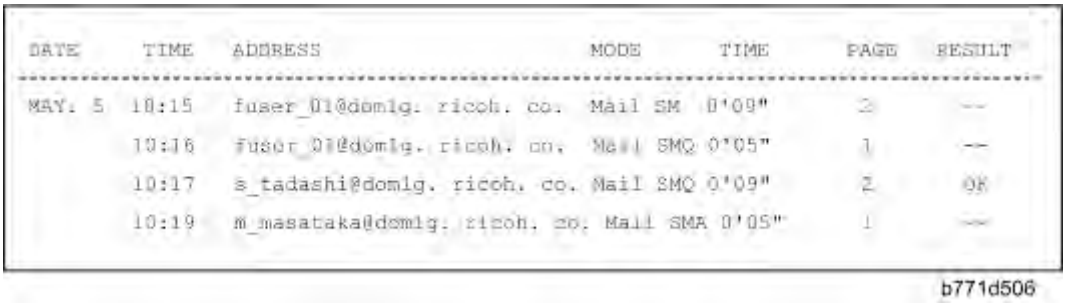
- The arrival of the return receipt is not recorded in the journal as a separate communication. Its arrival is only reported by the presence of "OK" or "E" in the Result column.
- If the mail address used by the sender specifies a mailing list (i.e., a Group destination; the machine sends the mail to more than one location. See "How to set up Mail Delivery"), the Result column of the Journal is updated every time a return receipt is received. For example, if the mailing list was to 5 destinations, the Result column indicates the result of the communication with the 5th destination only. The results of the communications to the first 4 destinations are not shown.

  Exceptions:

  If one of the communications had an error, the Result column will indicate E, even if subsequent communications were OK.

  If two of the communications had an error, the Journal will indicate the destination for the first error only.

- Report Sample -



DATE	TIME	ADDRESS	MODE	TIME	PAGE	RESULT
MAY. 5	10:15	fuser_01@domlg. ricoh. co.	Mail SM	0'09"	2	--
	10:16	fuser_01@domlg. ricoh. co.	Mail SMQ	0'05"	1	--
	10:17	s_tadashi@domlg. ricoh. co.	Mail SMQ	0'09"	2	OK
	10:19	m_masataka@domlg. ricoh. co.	Mail SMA	0'05"	1	--

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5.5 IP-FAX

5.5.1 WHAT IS IP-FAX?

For details: Core Technology Manual – Facsimile Processes – Faxing from a PC – Internet/LAN Fax Boards – IP-FAX

5.5.2 T.38 PACKET FORMAT

TCP is selected by default for this machine, but you can change this to UDP with IPFAX SW 00 Bit 1.

UDP Related Switches

<table>
<tr><th colspan="7">IP-Fax Switch 01</th></tr>
<tr><th>No.</th><th colspan="5">Function</th><th>Comments</th></tr>
<tr><td rowspan="6">0-3</td><td colspan="5">Select IP FAX Delay Level</td><td rowspan="6">Raise the level by selecting a higher setting if too many transmission errors are occurring on the network.
If TCP/UDP is enabled on the network, raise this setting on the T.30 machine.
Increasing the delay time allows the recovery of more lost packets.
If only UDP is enabled, increase the number of redundant packets.
Level 1~2: 3 Redundant packets
Level 3: 4 Redundant packets</td></tr>
<tr><td>Bit 3</td><td>Bit 2</td><td>Bit 1</td><td>Bit 0</td><td>Level</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>0</td><td>2</td></tr>
<tr><td>0</td><td>0</td><td>1</td><td>1</td><td>3</td></tr>
</table>

5.5.3 SETTINGS

User parameter switch 34 (22[H]), bit 0

IP-Fax Gate Keeper usage, 0: No, 1: Yes

IP Fax Switches: Various IP-FAX settings (see the bit switch table)

6. SPECIFICATIONS

6.1 GENERAL SPECIFICATIONS

6.1.1 FCU

Type:	Desktop type transceiver
Circuit:	PSTN (max. 3ch.) PABX
Connection:	Direct couple
Original Size:	Book (Face down) Maximum Length: 432 mm [17 ins] Maximum Width: 297 mm [11.7 ins] ARDF (Face up) (Single-sided document) Length: 128 - 1200 mm [5.0 - 47.2 ins] Width: 105 - 297 mm [4.1 - 11.7 inch] (Double-sided document) Length: 128 - 432 mm [5.0 - 17 inch] Width: 105 - 297 mm [4.1 - 11.7 inch]
Scanning Method:	Flat bed, with CCD
Resolution:	G3 8 x 3.85 lines/mm (Standard) 8 x 7.7 lines/mm (Detail) 8 x 15.4 line/mm (Fine) See Note1 16 x15.4 line/mm (Super Fine) See Note 1 200 x 100 dpi (Standard) 200 x 200 dpi (Detail) 400 x 400 dpi (Super Fine) See Note 1 **Note**: Optional Expansion Memory required
Transmission Time:	G3: 3 s at 28800 bps; Measured with G3 ECM using memory for an ITU-T #1 test document (Slerexe letter) at standard resolution

Data Compression:	MH, MR, MMR, JBIG
Protocol:	Group 3 with ECM
Modulation:	V.34, V.33, V.17 (TCM), V.29 (QAM), V.27ter (PHM), V.8, V.21 (FSK)
Data Rate:	G3: 33600/31200/28800/26400/24000/21600/ 19200/16800/14400/12000/9600/7200/4800/2400 bps Automatic fallback
I/O Rate:	With ECM: 0 ms/line Without ECM: 2.5, 5, 10, 20, or 40 ms/line
Memory Capacity:	SAF Standard: 4 MB With optional Expansion Memory: 28 MB (4 MB+ 24 MB) Page Memory Standard: 8 MB (Print: 4 MB + Scanner: 4 MB) With optional Expansion Memory: 16 MB (8 MB + 8 MB) (Print 8 MB + Scanner: 8 MB)

6.2 CAPABILITIES OF PROGRAMMABLE ITEMS

The following table shows the capabilities of each programmable items.

Item	Standard
Quick Dial	2000
Groups	100
Destination per Group	500
Destinations dialed from the ten-key pad overall	500
Programs	100
Auto Document	6
Communication records for Journal stored in the memory	200
Specific Senders	30

The following table shows how the capabilities of the document memory will change after the Expansion Memory are installed.

	Without the Expansion Memory	With the Expansion Memory
Memory Transmission file	400	400
Maximum number of page for memory transmission	1000	1000
Memory capacity for memory transmission (Note1)	320	2240

Note

- Measured using an ITU-T #1 test document (Slerexe letter) at the standard resolution, the auto image density mode and the Text mode.

6.3 I-FAX SPECIFICATIONS

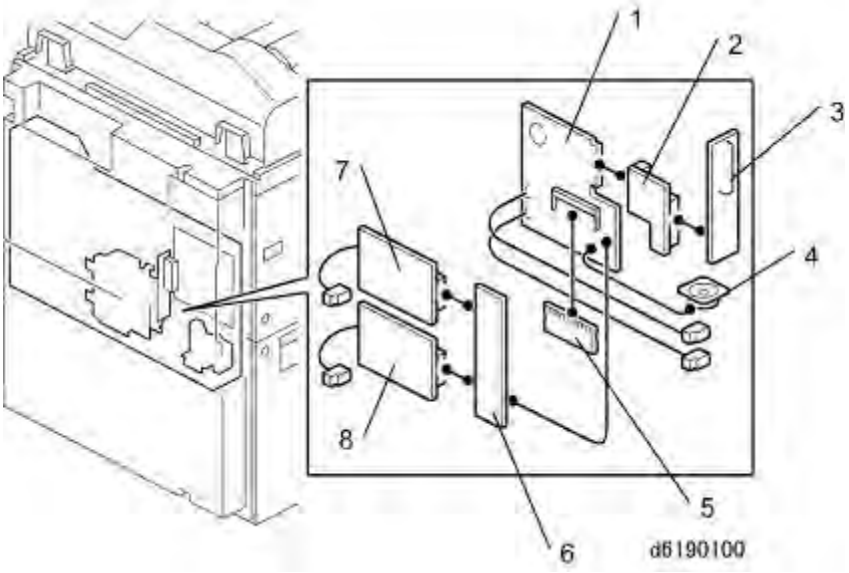
Connectivity:	Local area network Ethernet 100base-Tx/10base-T Gigabit Ethernet 1000 Base-T IEEE802.11a/g, g (wireless LAN),
Resolution:	200 × 100 dpi (Standard resolution), 200 × 200 dpi (Detail resolution), 200 × 400 dpi (Fine resolution)*1, 400 × 400 dpi (Super Fine resolution) **Note**: To use 200 × 400 dpi and 400 × 400 dpi, IFAX SW01 Bit 2 and/or Bit 4 must be set to “1”.
Transmission Time:	1 s (through a LAN to the server) Condition: ITU-T #1 test document (Selerexe Letter) MTF correction: OFF TTI: None Resolution: 200 x 100 dpi Communication speed: 10 Mbps Correspondent device: E-mail server Line conditions: No terminal access
Document Size:	Maximum Original Size: A3/DLT. **Note**: To use B4 and A3 width, IFAX SW00 Bit 1 (B4) and/or Bit 2 (A3) must be set to “1”.
E-mail File Format:	Single/multi-part MIME conversion Image: TIFF-F (MH, MR, MMR)
Protocol:	**Transmission:** SMTP, TCP/IP **Reception:** POP3, SMTP, IMAP4, TCP/IP
Data Rate:	1000 Mbps (1000 Base-T) 100 Mbps (100base-Tx) 10 Mbps (10base-T)

Authentication Method:	SMTP-AUTH POP before SMTP A-POP
Remark:	The machine must be set up as an e-mail client before installation. Any client PCs connected to the machine through a LAN must also be e-mail clients, or some features will not work (e.g. Autorouting).

6.4 IP-FAX SPECIFICATIONS

Network:	Local Area Network Ethernet/10base-T, 100base-TX Gigabit Ethernet/1000 Base-T IEEE802.11a/g, g (wireless LAN)
Scan line density:	8 x 3.85 lines/mm, 200x100dpi (standard character), 8 x 7.7lines/mm, 200x200dpi (detail character), 8 x 15.4lines/mm (fine character: optional expansion memory required), 16 x 15.4lines/mm, 400x400dpi (super fine character: optional expansion memory required)
Maximum Original size:	A3 or 11" x 17" (DLT) Custom: 297mm x 1200mm (11.7” x 47.3”)
Maximum scanning size:	297mm x 1200mm (11.7” x 47.3”)
Transmission protocol:	Recommended: T.38 Annex protocol, TCP, UDP/IP communication, SIP (RFC 3261 compliant), H.323 v2
Compatible machines:	IP-Fax compatible machines
IP-Fax transmission function:	Specify IP address and send faxes to an IP-Fax compatible fax through a network. Also capable of sending faxes from a G3 fax connected to a telephone line via a VoIP gateway.
IP-Fax reception function:	Receive faxes sent from an IP-Fax compatible fax through a network. Also capable of receiving faxes from a G3 fax connected to a telephone line via a VoIP gateway.

6.5 FAX UNIT CONFIGURATION



No.	Item	Remarks
1	FCU	Fax Option Type 9002 (D619)
2	FCU I/F	
3	FCU GW I/F	
4	Speaker	
5	Memory Unit (G578)	Option
6	CCU I/F Board*1	G3 Interface Unit Type 9002 (D619)
7	G3 Board 1*2	
8	G3 Board 2	

*1 Provided with Fax Option Type 9002 (D619) for G3 installation.

*2 At least one G3 line is required for installation of Fax Connection Unit Type E (D621).

LARGE CAPACITY TRAY
RT43 (B473) / RT4010 (D613)

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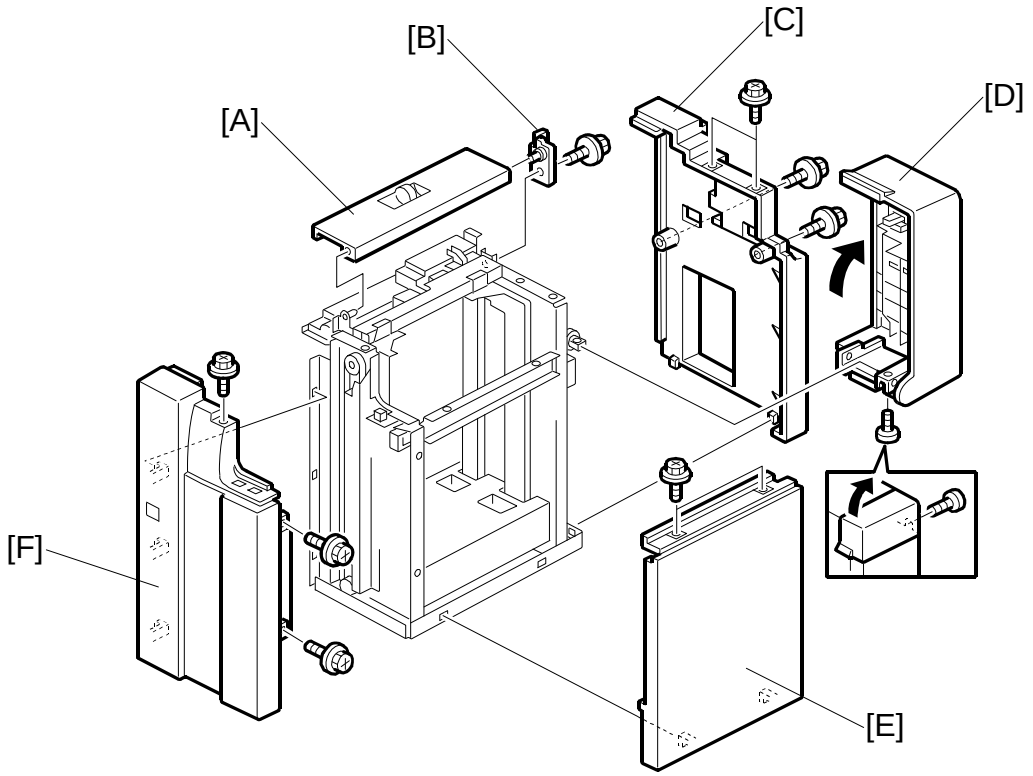
LARGE CAPACITY TRAY
RT43 (B473) / RT4010 (D613)
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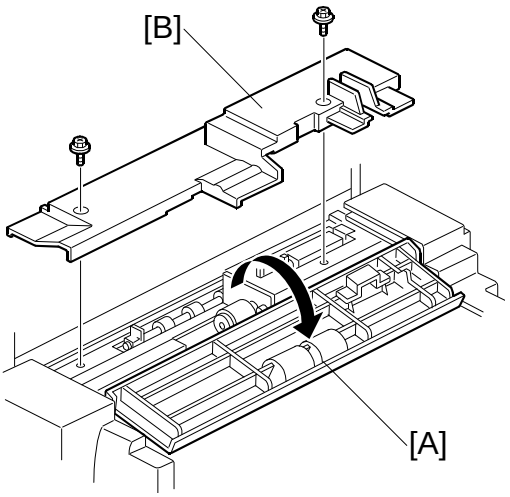
1. REPLACEMENT AND ADJUSTMENT

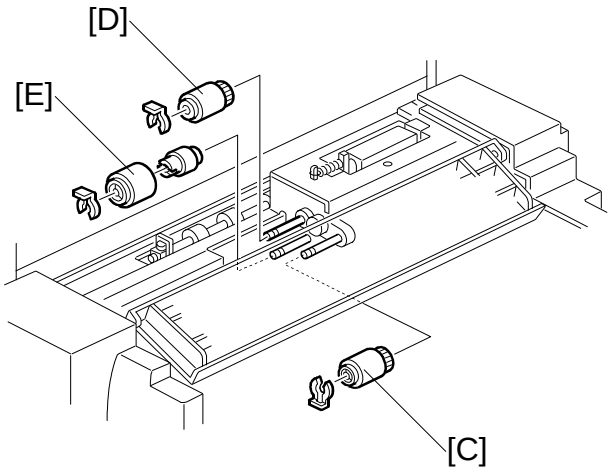
1.1 EXTERNAL COVERS



[A]: Transport cover
[B]: Transport cover hinge (x 1)
[C]: Rear cover (x 4)
[D]: Top cover (x 1)
[E]: Right cover (x 2)
[F]: Front cover (x 3)

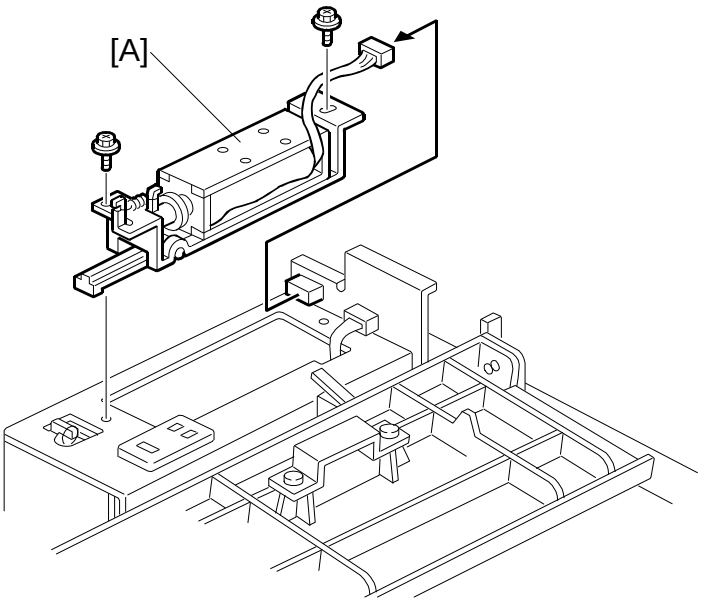
1.2 PICK-UP/FEED/SEPARATION ROLLERS





[A]: Open the transport cover
[B]: Bracket cover (x 2)
[C]: Pick-up roller (x 1)
[D]: Feed roller (x 1)
[E]: Separation roller (x 1)

1.3 PICK-UP SOLENOID



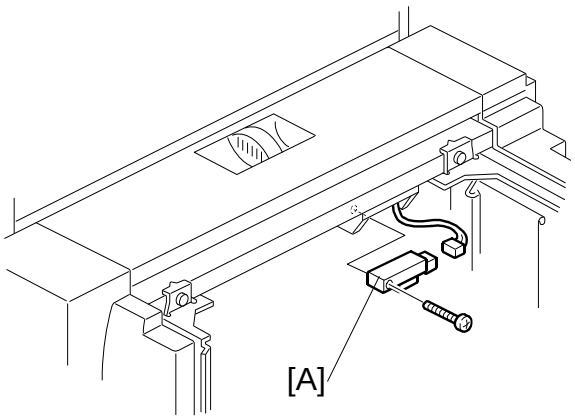
Rear cover (x 4)

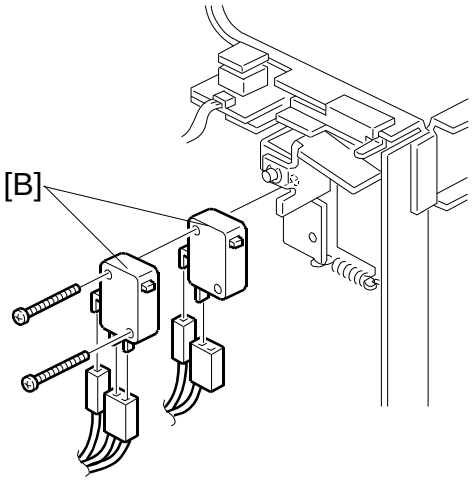
Open the transport cover (☛ 1.2)

Bracket cover (☛ 1.2)

[A]: Pick-up solenoid (x 2, x 1)

1.4 PAPER END SENSOR, UPPER COVER SWITCHES





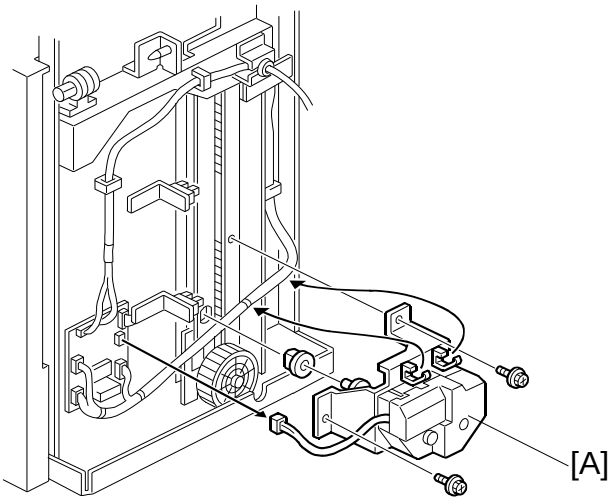
Open the top cover.

Right cover (☛ 1.1)

[A]: Paper end sensor (🔩 x 1)

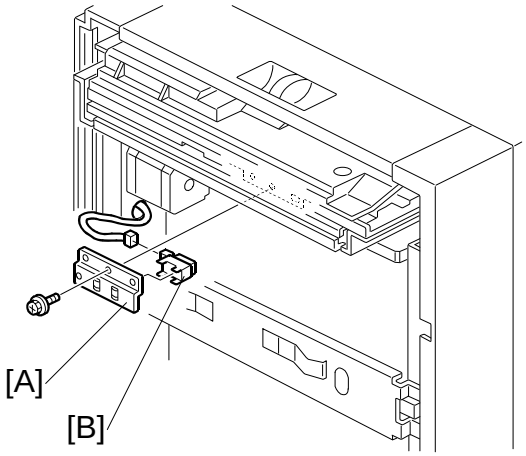
[B]: Upper cover switches 1, 2 (✋ x 2)

1.5 TRAY MOTOR



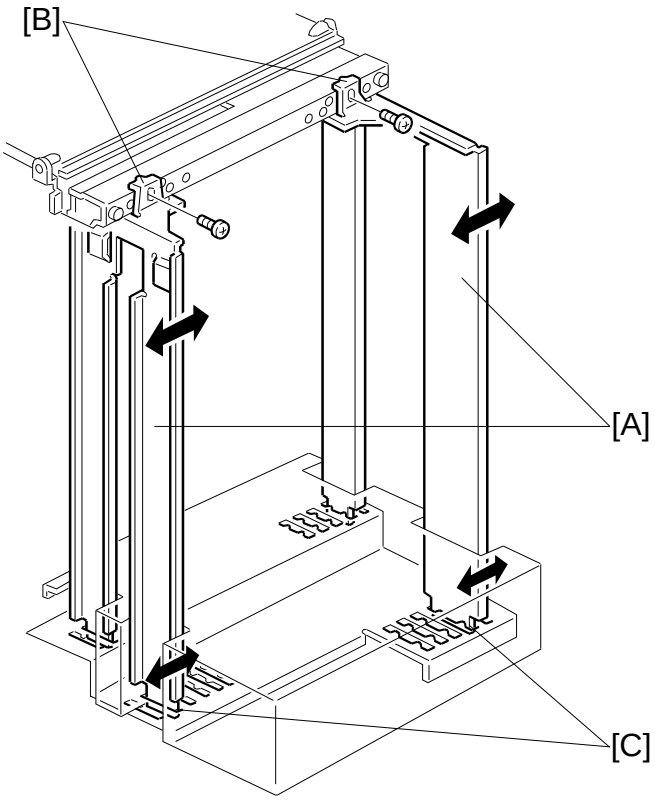
Rear cover (☛ 1.1)
[A]: Tray motor (🔩 x 2, 🖐 x 1)

1.6 PAPER STACK SENSOR



Disconnect the LCT from the machine
[A]: Sensor cover (🔩 x 1)
[B]: Paper stack sensor (🖐 x 1)

1.7 PAPER SIZE ADJUSTMENT



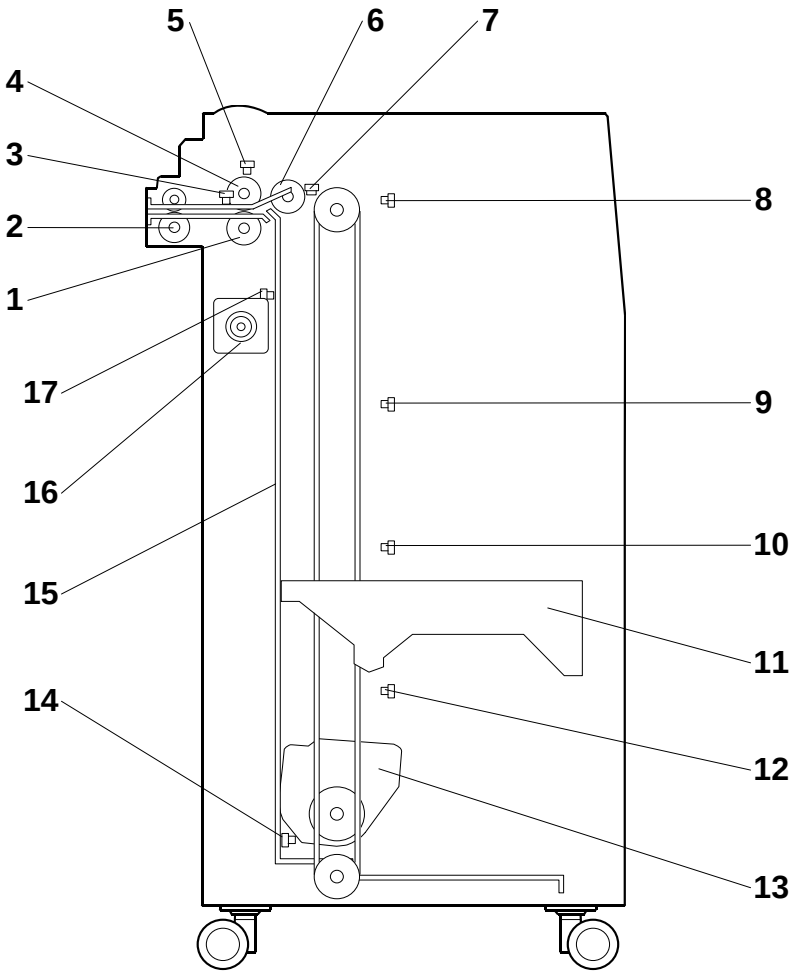
The side fences [A] can be adjusted for A4 Sideways, B5 Sideways, or LT sideways at the top [B] and bottom brackets [C].

After changing the side fences to accept another paper size, you must execute SP5959 005 (Paper Type – Tray 4) and select the paper size of the side fence positions. For details, see SP5959 in section “5. Service Tables” of the B064/B065 manual.

2. DETAILS

2.1 OVERVIEW

2.1.1 LCT MAIN COMPONENTS



1. Separation Roller
2. Transport Roller
3. Feed Sensor
4. Feed Roller
5. Lift Sensor
6. Pick-up Roller
7. Paper End Sensor
8. Paper Near End Sensor
9. Paper Height Sensor 1
10. Paper Height Sensor 2
11. Paper Tray
12. Paper Height Sensor 3
13. Paper Tray Motor
14. Low Limit Sensor
15. Tray Drive Belt
16. Feed Motor
17. Stack Sensor

Pick-up, Separation, Feed. Non-contact, maintenance free FRR sysem. (CT Handling Paper> Paper Feed Methods> **Forward and Reverse Roller (FRR)**)

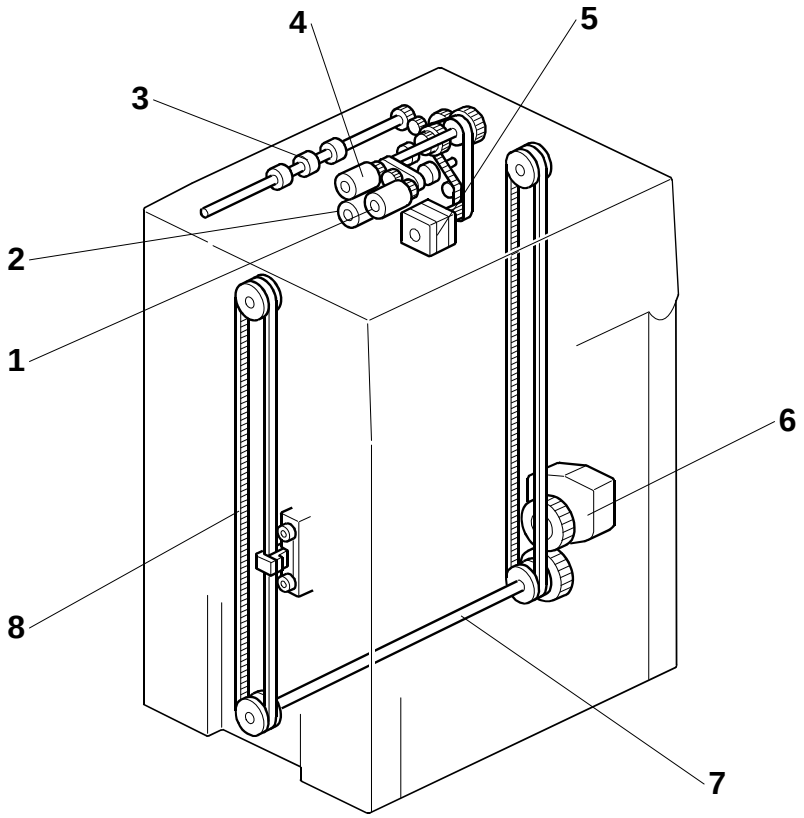
Tray Lift. Tray lift motor and timing belt raise and lower the paper tray.

Paper Size Detection. The side fences cannot be adjusted by customers. The paper size must be entered with SP5959 005. For details, see SP5959 in section “4. Service Tables.”

Paper Height Detection. A feeler and four photointerrupters are used.

Paper End Detection. A reflective sensor on the upper stay detects paper end.

2.1.2 LCT DRIVE LAYOUT

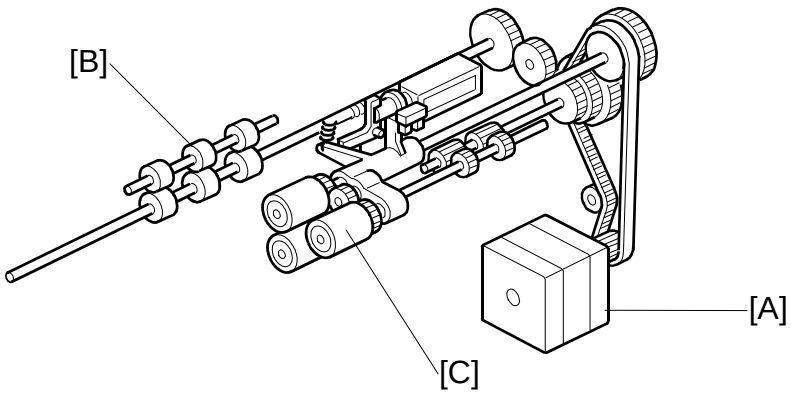


1. Pick-up Roller
2. Separation Roller
3. Transport Rollers
4. Feed Roller
5. Feed Motor
6. Tray Motor
7. Tray Lift Shaft
8. Tray Drive Belt

2.2 PAPER FEED AND SEPARATION

A standard FRR system is used. It consists of the pick-up, feed, and separation rollers.

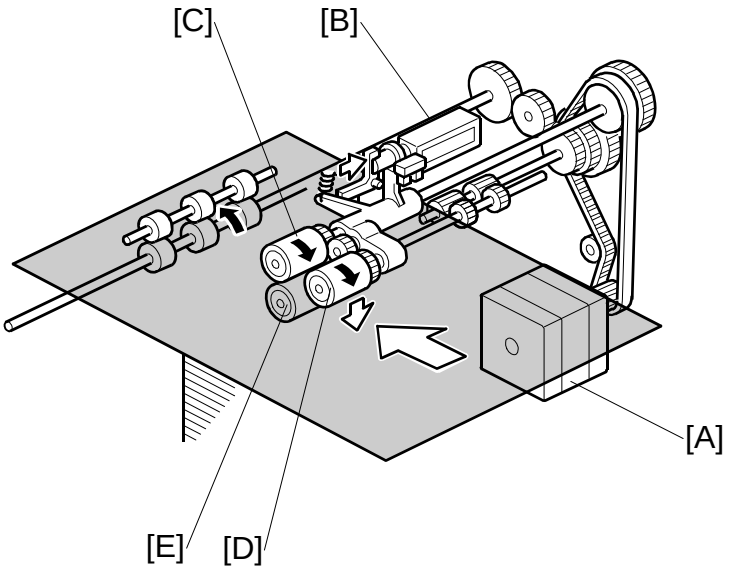
2.2.1 STARTING PAPER FEED



The feed motor [A] drives the transport rollers [B].

The separation roller [C], which is free to rotate in the direction indicated by the arrow, remains at rest.

2.2.2 FEED AND SEPARATION



The feed motor [A] switches on, then the pick-up solenoid [B] switches on and transfers drive to the paper feed roller [C] and pick-up roller [D].

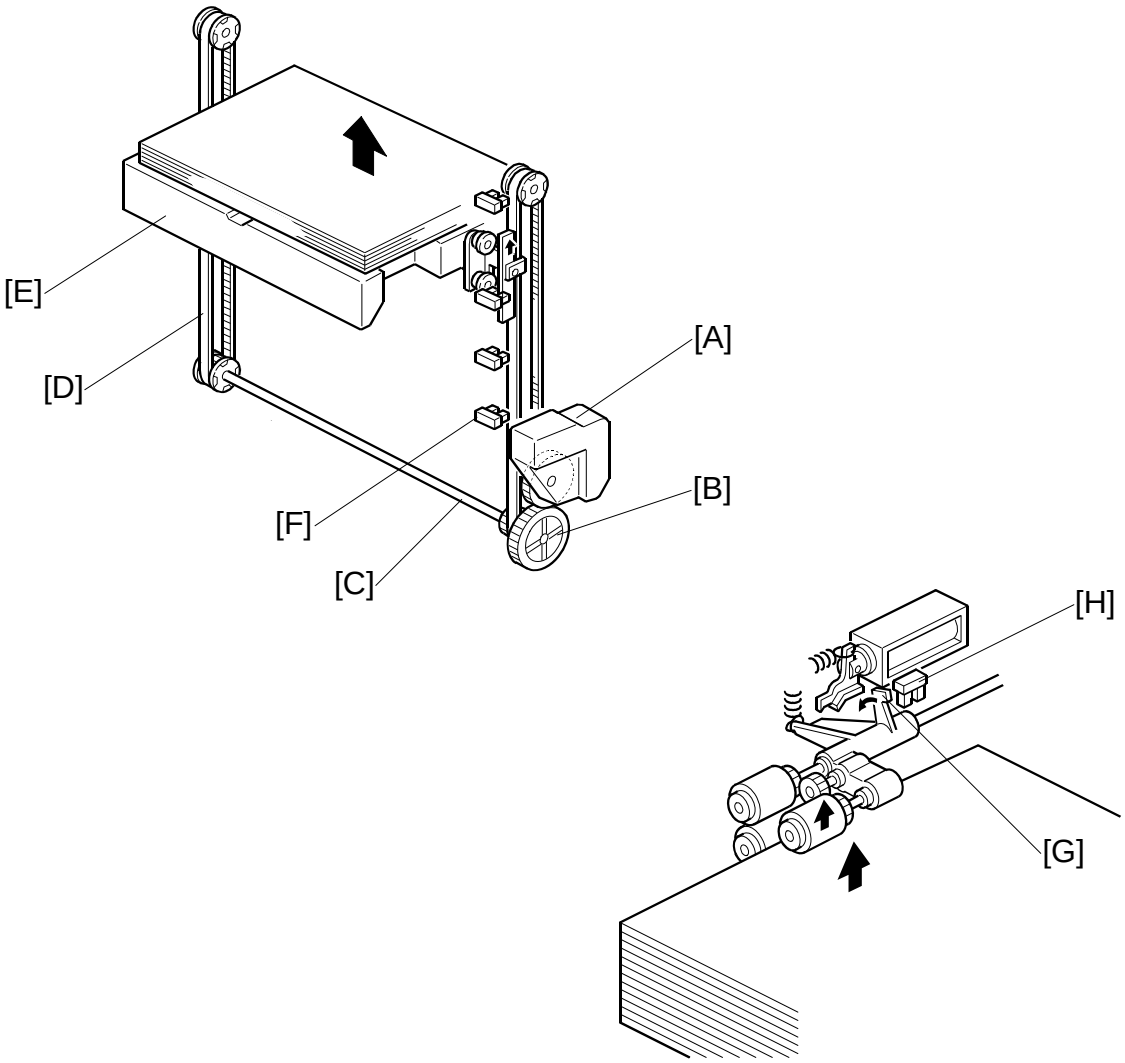
The rotating pick-up roller lowers and feeds the first sheet when it contacts the top of the stack.

The separation roller [E], in contact with the feed roller, only allows one sheet out of the tray.

As soon as the paper feed sensor (not shown) detects the leading edge of the paper, it switches off the pick-up solenoid which raises the pick-up roller. The feed roller feeds the sheet to the registration roller.

This process is repeated for each sheet.

2.3 PAPER LIFT

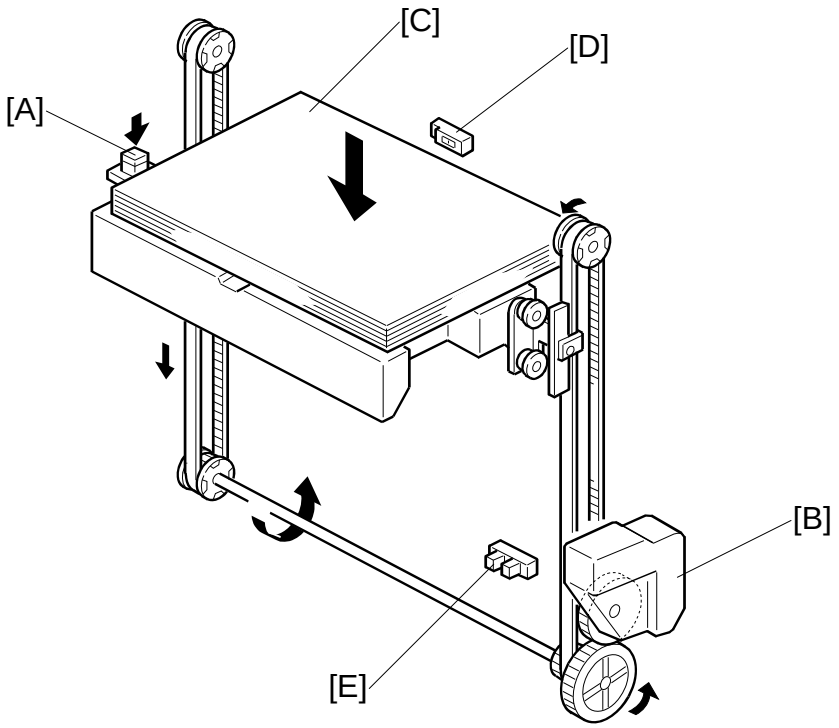


Tray motor [A] → Gear [B] → Shaft [C] → Tray belts [D] raise and lower the paper tray [E].

After paper is set in the LCT and the upper cover is closed, if the paper height sensor [F] is not activated, the tray motor lowers the tray and stops. When the paper height sensor activates, the tray motor lifts the tray.

After several sheets have been fed, the paper level lowers, the actuator [G] activates the lift sensor [H], and switches on the motor again. The motor raises stack until the actuator de-activates the lift sensor.

This cycle repeats to maintain the correct height of the stack until the end of the job.



Pressing the tray down button [A] reverses the rotation of the tray motor [B] and lowers the tray [C].

The tray lowers until the stack sensor [D] detects the top of the stack and stops the tray motor.

- This mechanism lowers the tray by 5 cm, which gives the user enough space to add 500 sheets of paper.
- If the down switch is then pressed again, the bottom plate moves down once again by 5 cm. This allows the customer to replenish paper in convenient amounts and at the same position.

A lower limit sensor [E] (triggered by an actuator on the bottom of the tray) is also provided to stop the tray motor if the stack sensor should fail.

Summary

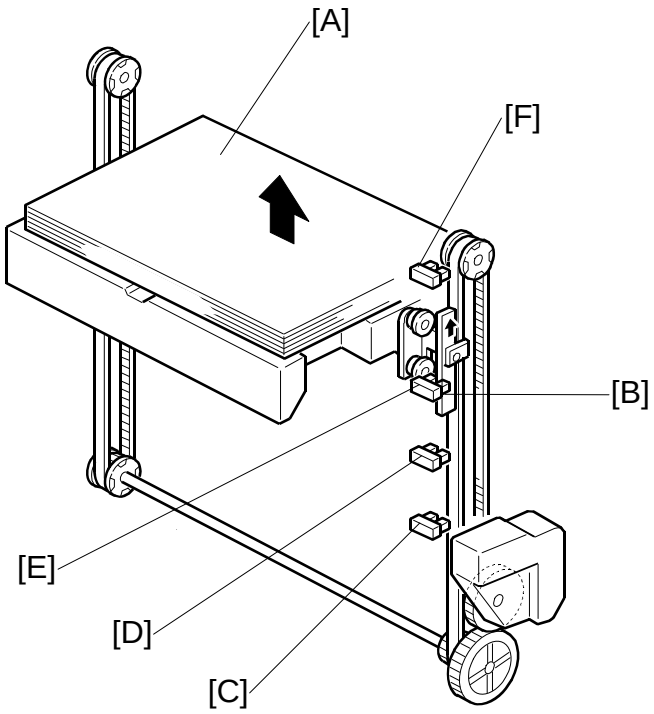
The tray raises when:

- The main power switch is turned on
- When the lift sensor switches on during copying
- The top cover is closed and the lift sensor switches on

The tray lowers when:

- The tray down button is pressed.
- The paper end sensor signals that there is no paper in the tray.

2.4 PAPER HEIGHT DETECTION



As paper is consumed from the top of the stack [A], the paper tray rises and the actuator [B] attached to the tray passes through paper height sensor 3 [C], paper height sensor 2 [D], and paper height sensor 1 [E] until the actuator reaches the paper near end sensor [F].

The operation panel displays a message for each paper height until the actuator reaches the near-end sensor, then a message warns the user that the tray is nearly empty.

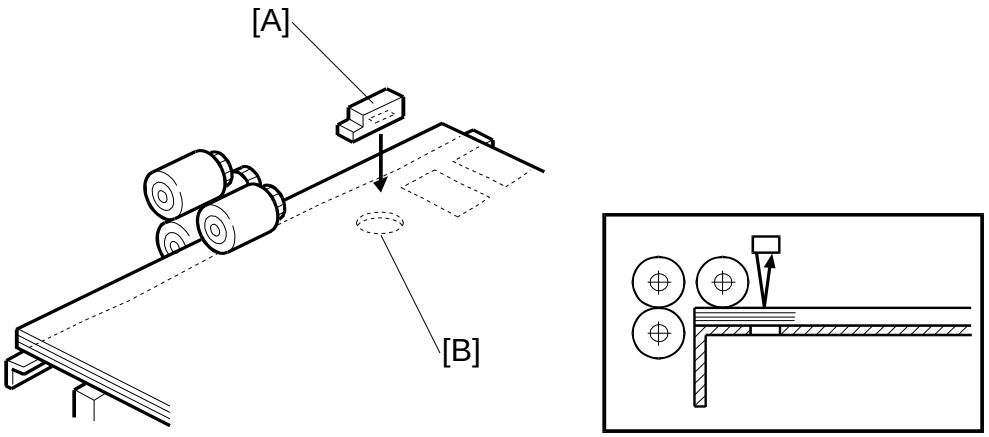
The table summarizes the relation between sensor detection and the number of sheets remaining in the stack.

Sheet Remaining	Bars *1	Sensors			
		Near-end	P.Height 1	P.Height 2	P.Height 3
75	1	●	—	—	—
1500	2	❍	●	—	—
2500	3	❍	❍	●	—
3500	4	❍	❍	❍	●

*1: The number of vertical bars in the paper height display on the operation panel.

●: Actuator blocking the sensor gap.
❍: Sensor gap is open

2.5 PAPER END DETECTION



The paper end sensor [A] monitors the light reflected by each sheet on top of the stack.

When the last sheet feeds, the cutout [B] is exposed, and the paper end sensor receives no reflected light from below because there is no paper and this signals paper end.

A3/DLT TRAY KIT (B475) / A3/11”x17” TRAY TYPE 9001 (D482)

REVISION HISTORY		
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A3/DLT TRAY KIT (B475) / A3/11”x17” TRAY TYPE 9001 (D482)

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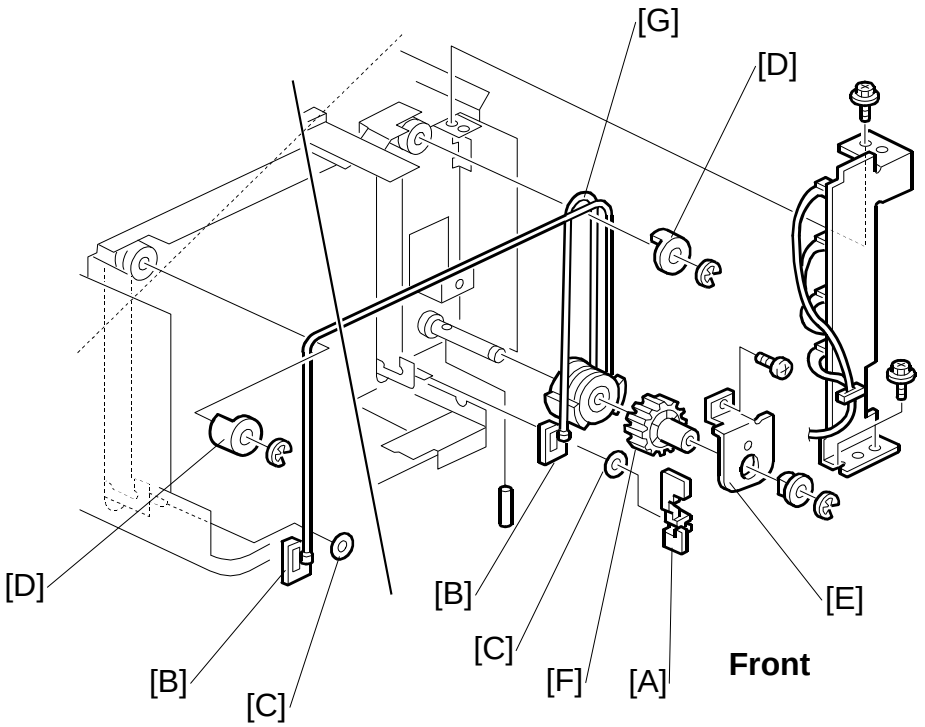
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1. REPLACEMENT AND ADJUSTMENT

1.1 BOTTOM PLATE LIFT WIRE REPLACEMENT

1.1.1 REMOVING THE LIFT WIRE

NOTE: The procedures for front and rear wire removal are the same.

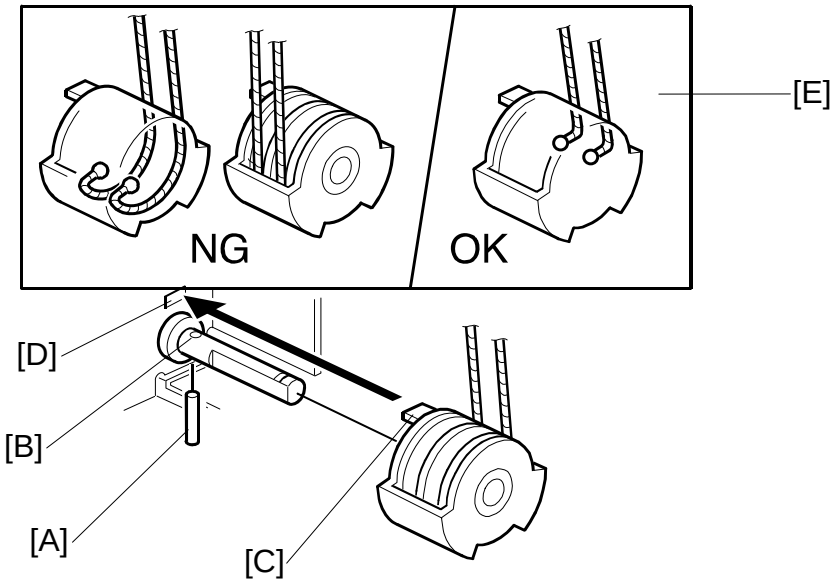


Remove the A3/DLT tray from the machine.

Inner cover (🖉 x 2)

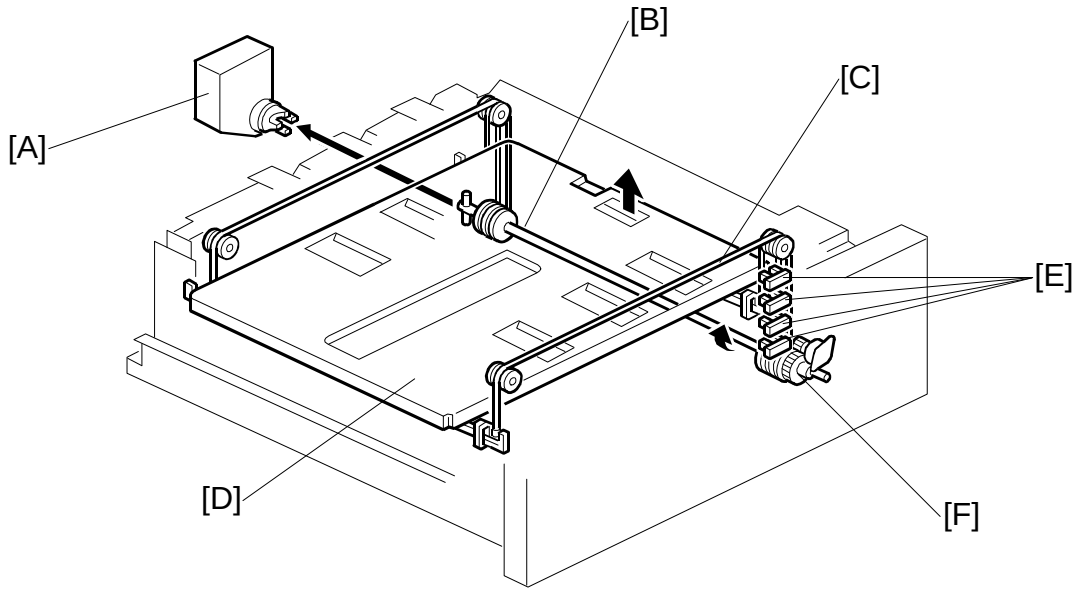
[A]: Sensor bracket (🖉 x 1)
[B]: Wire stoppers
[C]: Wire stopper rings
[D]: Wire covers x 2 (ℂ x 1 each)
[E]: Bracket (🖉 x 1, ℂ x 1, Bushing x 1)
[F]: Gear
[G]: Bottom plate lift wire

1.1.2 INSTALLING THE LIFT WIRE



1. Put the positioning pin [A] in hole [B]
2. Fit the projection [C] into slot [D].
3. Attach the wire as shown [E].
   NOTE: Make sure that the wires are not crossed.

2. DETAILS



With this option installed, only one stack of paper can be loaded.

Lift motor [A] → Shaft and pulleys [B] → Tray wires [C] → Tray bottom plate [D].

An array of four paper height sensors [E] provide paper supply detection. As each sensor is actuated, a message (percent of paper remaining) alerts the user about the remaining amount of paper. When the bottom sensor [F] of the four sensors is actuated, the paper end message is displayed.

B513/B531
OUTPUT JOGGER UNIT TYPE 1075/PUNCH UNIT TYPE 1075

REVISION HISTORY		
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OUTPUT JOGGER UNIT B513/PUNCH UNIT B531

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1. INSTALLATION

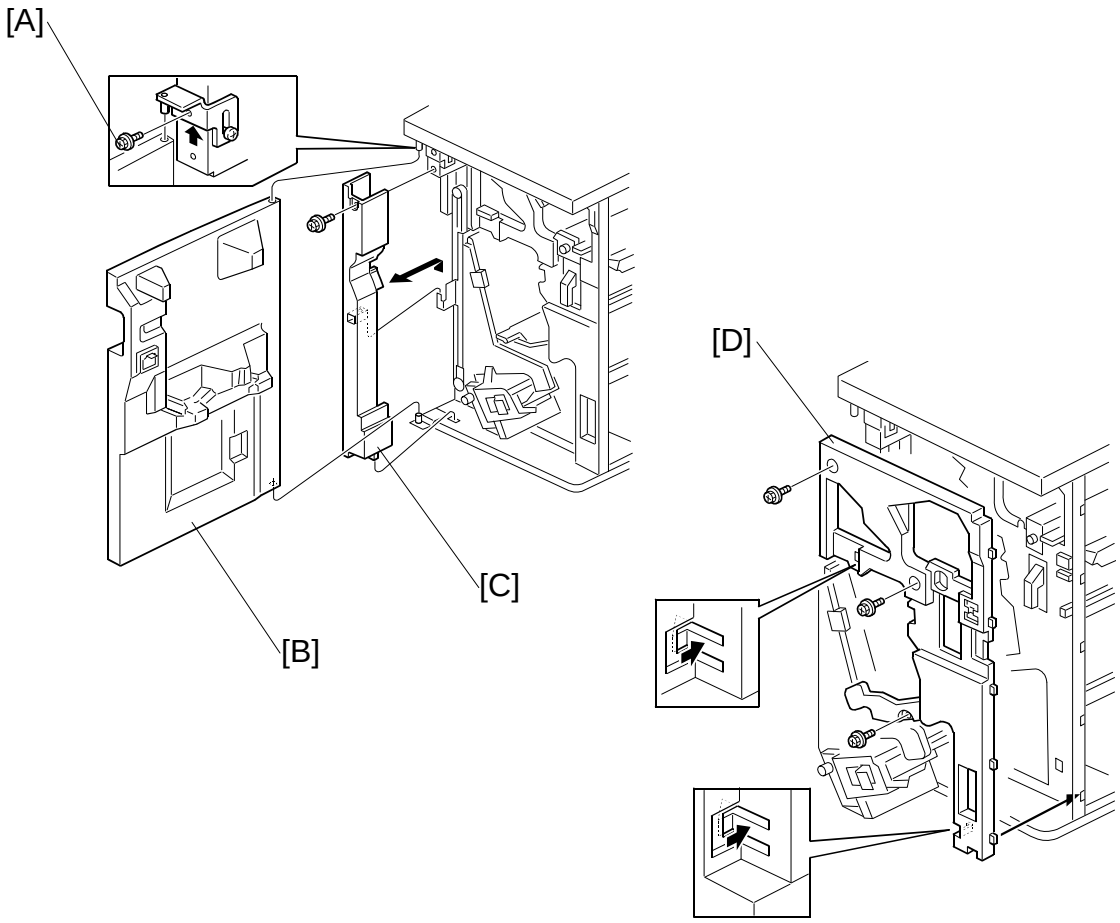
For details about installing the 3000 Sheet Finisher B478, please refer to the instructions you received with the instructions or the “1. Installation” in the main machine service manual.

2. PREVENTIVE MAINTENANCE

For details about the 3000 Sheet Finisher B478 PM table, please refer to Section “2. Preventive Maintenance” in the main Service Manual.

3. REPLACEMENT AND ADJUSTMENT

3.1 DOOR AND COVER



Front Door

1. Remove the front door screw [A] (🔩 x 1).
2. Remove the front door [B].

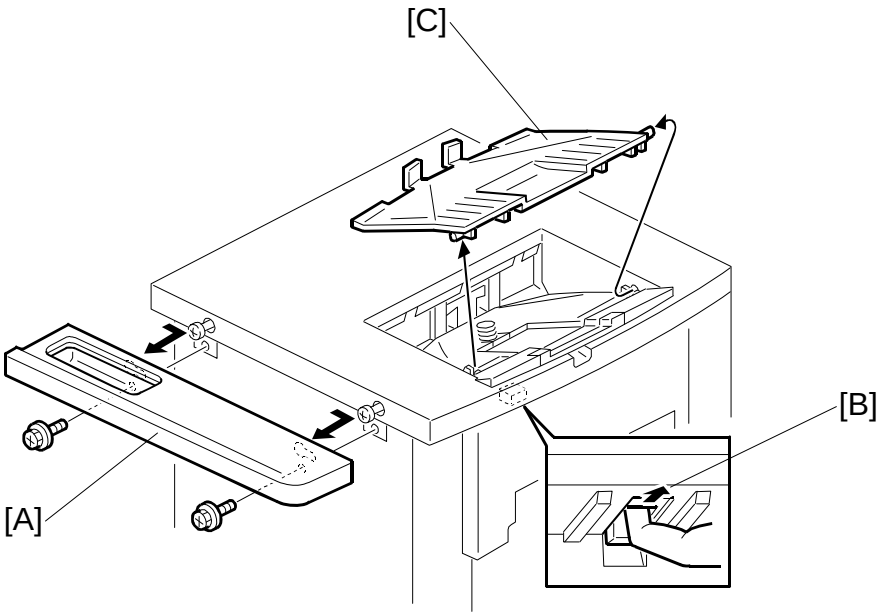
Left Inner Cover

1. Remove the front door.
2. Remove the left inner cover [C] (🔩 x 1).

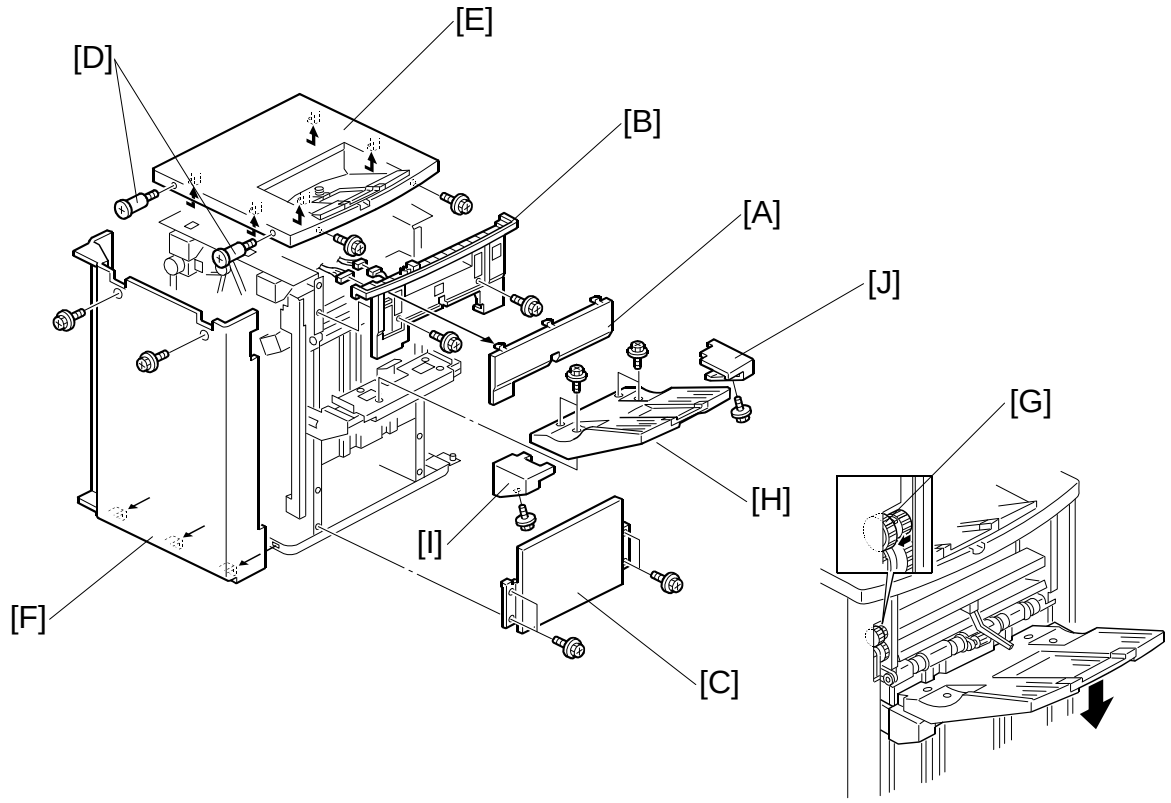
Inner Cover

1. Remove the inner cover [D] (🔩 x 3).

Side Table and Upper Tray



1. Remove the side table [A] (☞ x 2). Slide to the right to remove it.
2. Click the release lever [B] and remove the upper tray [C].



Left Covers

1. Remove the left upper panel [A].
2. Remove the left upper cover [B] (x 2, x 2).
3. Remove the door and left inner cover. (See “Front Door and Left Inner Cover Replacement”.)
4. Remove the rear cover [F] (x 2).
5. Remove the left lower cover [C] (x 4).

Rear Cover and Top Cover

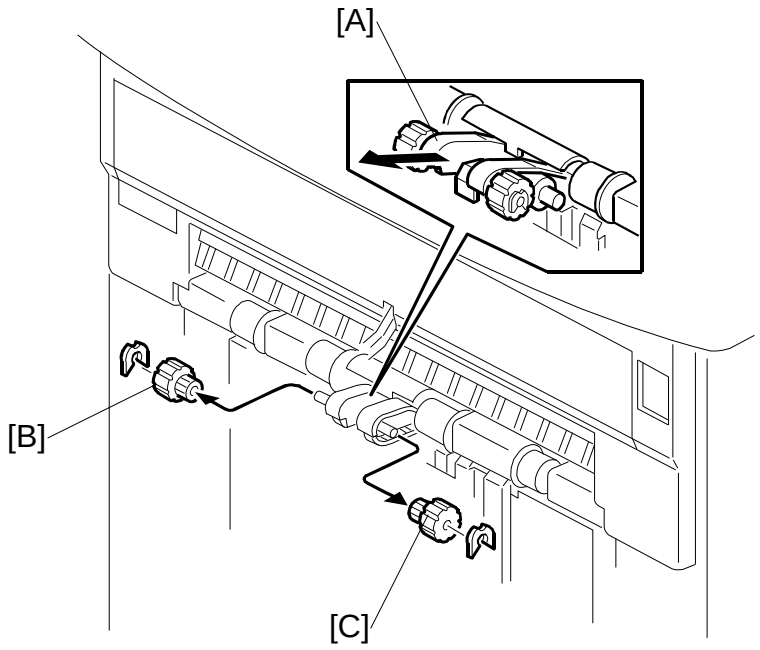
1. Remove the upper tray. (See “Side Table and Upper Tray”.)
2. Remove the step screws [D] (x 2).
3. Remove the top cover [E] (x 2). Slide to the right to remove.
4. Remove the rear cover [F] (x 2).

Shift Tray

1. If you need to lower the shift tray, support the bottom of the tray with your hand, then pull the gear toward you [G] to release the tray and lower it.
2. Remove the shift tray [H] (x 4).
3. Remove the shift tray rear cover [I] and front cover [J] (x 1 each).

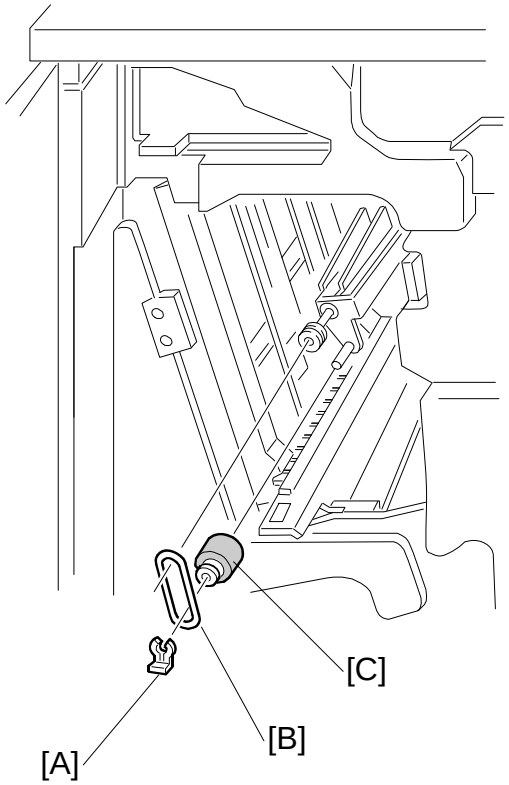
3.2 ROLLERS

3.2.1 SHIFT POSITIONING ROLLER



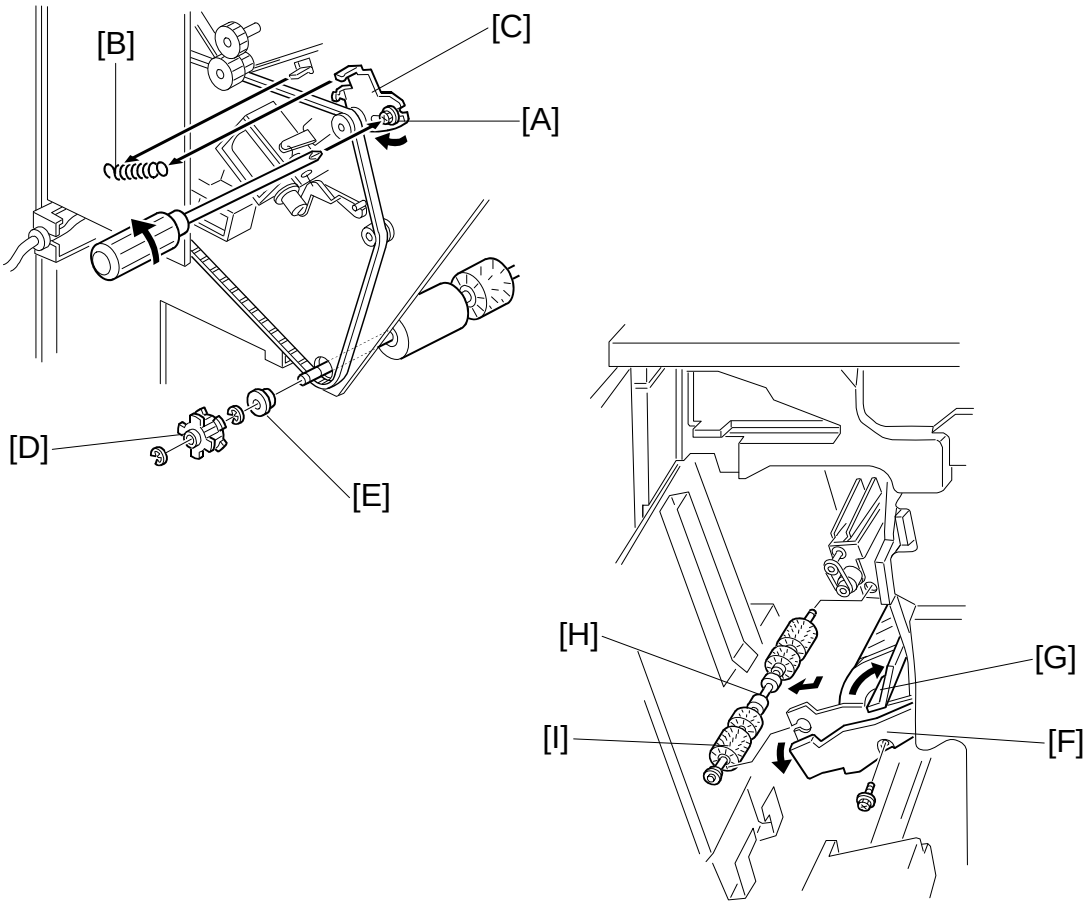
1. Above the shift tray, pull the roller mount [A] out.
2. Remove the rollers [B] and [C] (⟲ x 1 each)

3.2.2 POSITIONING ROLLER



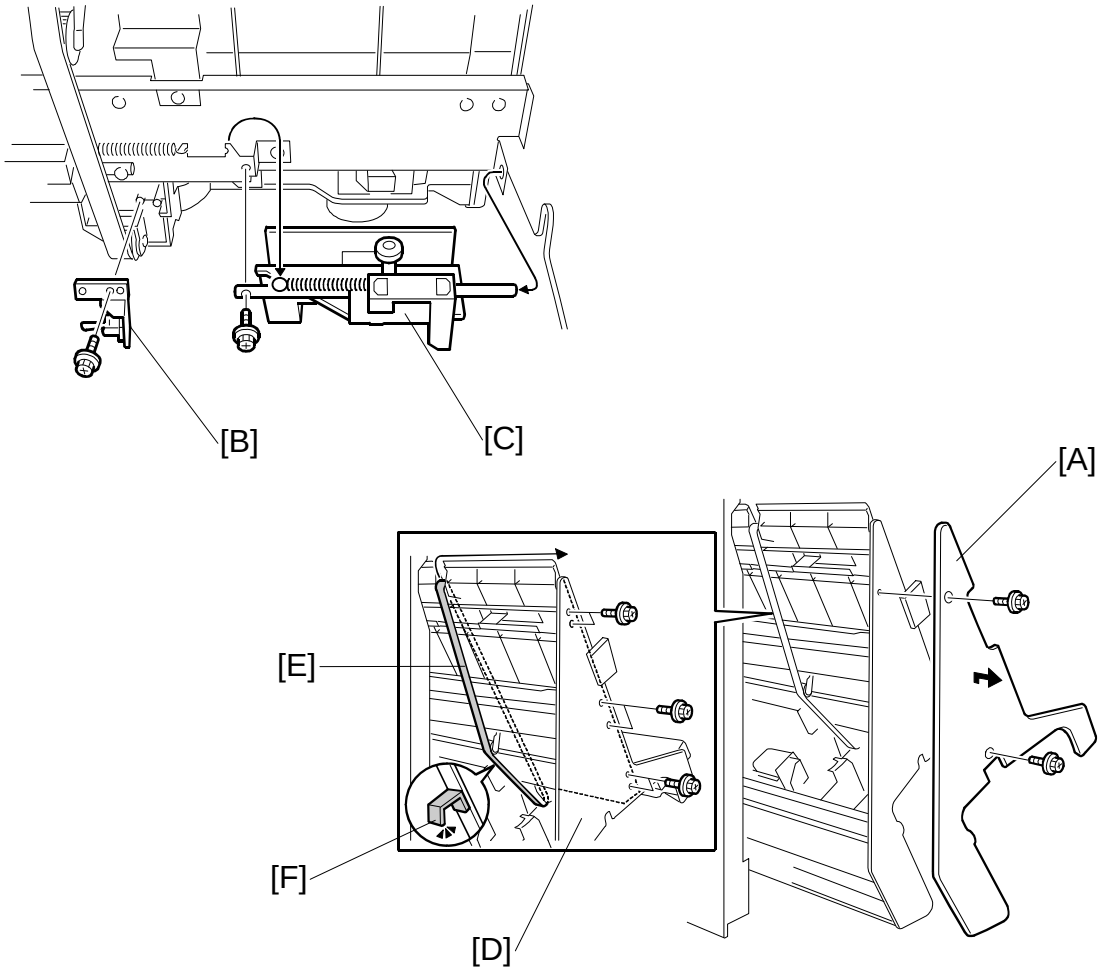
1. Open the front door.
2. Remove the snap ring [A].
3. Release the rubber belt [B].
4. Replace the positioning roller [C].

3.2.3 ALIGNMENT BRUSH ROLLER



1. Open the front door and pull out the staple unit.
2. Remove the rear cover.
3. Remove the main board and all connectors (x 8).
4. Remove the screw [A] and tension spring [B] for the tension bracket [C], and release the tension of the timing belt.
5. Remove the pulley [D] and bushing [E] (x 2).
6. Remove the inner cover [F] (x 1).
7. Open the guide [G], then remove the alignment brush roller assembly [H] (x 1).
8. Remove the alignment brush roller [I] (x 1, bushing x 1 front/back).

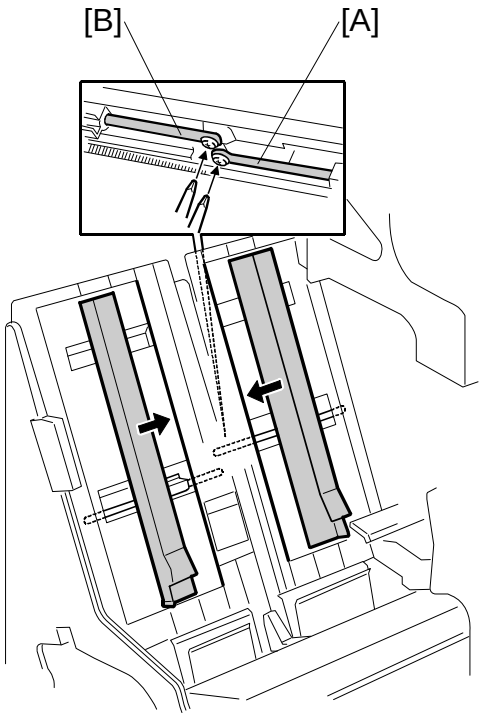
3.3 STACK FEED-OUT BELT



1. Open the front door.
2. Pull out the jogger and stapler unit.
3. Remove the inner cover [A] (screw x 2).
4. Remove the sensor bracket [B] (screw x 1, connector x 1, clamp x 1).
5. Remove the front guide [C] (screw x 1, spring x 1).
   NOTE: When re-installing, make sure that the flat end of the shaft is against the plate.
6. Remove the front panel [D] from the stays (screw x 6).
7. Remove the old belt [E] from the bottom, center, then the top.

NOTE: 1) Make sure the ribbed side of the new belt and pawl [F] are facing down.
2) Make sure the new belt is engaged at all three rollers.

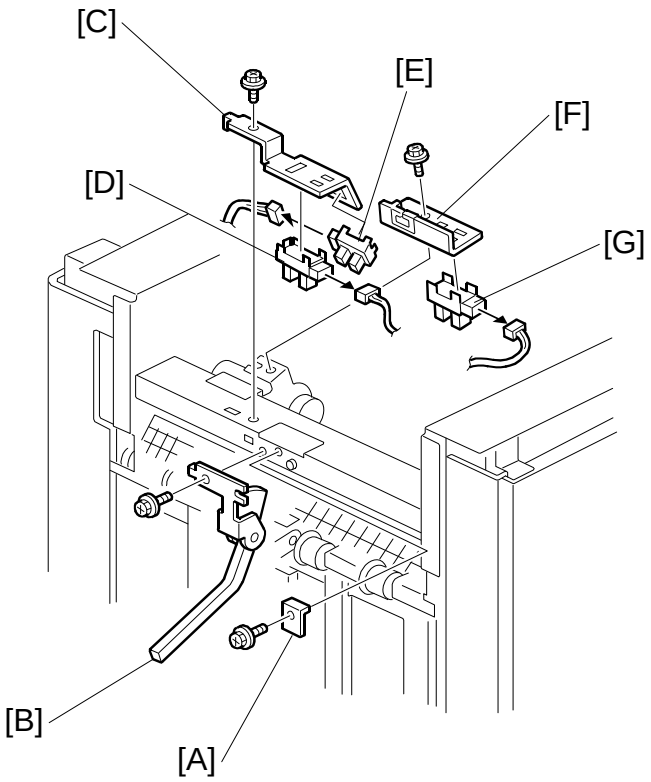
3.4 JOGGER FENCE



1. Open the front door.
2. Pull out the jogger and stapler unit.
3. Push both fences to the center.
4. Remove the left jogger fence [A] (🔩 x 1)
5. Remove the right jogger fence [B] (🔩 x 1).
   NOTE: If the screws are difficult to remove or re-attach, remove the jogger fence belt and spring plate.

3.5 SENSORS

3.5.1 STACK HEIGHT 1, 2 AND EXIT GUIDE OPEN SENSOR



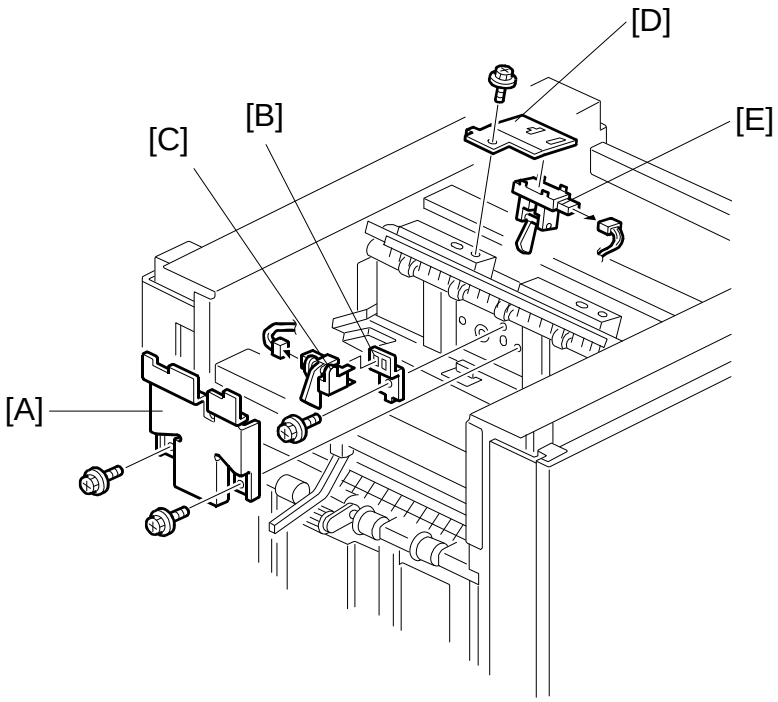
Stack Height Sensors 1 and 2

1. Remove the top cover. (☛ 3.1)
2. Remove the left upper panel and left upper cover (x 2, x 2).
3. Remove the protector plate [A] (x 1).
4. Remove the sensor feeler [B] (x 1).
5. Remove the sensor bracket [C] (x 1).
6. Replace the stack height sensor 1 [D] (x 1) or 2 [E] (x 1).

Exit Guide Open Sensor

1. Remove the sensor bracket [F] (x 1).
2. Replace the exit guide open sensor [G] (x 1).

3.5.2 UPPER TRAY PAPER LIMIT AND EXIT SENSOR



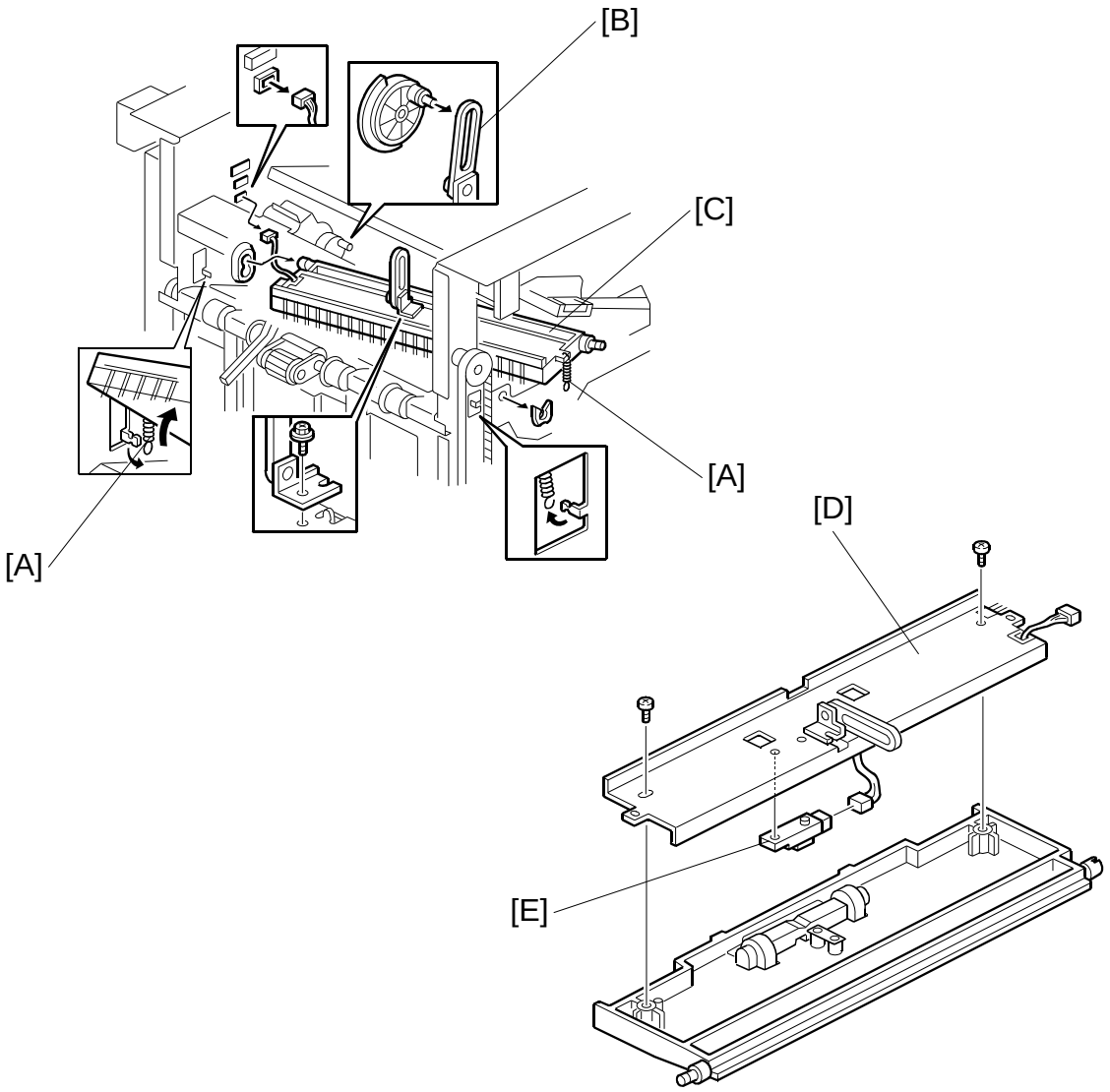
Upper Tray Paper Limit Sensor

1. Remove the top cover.
2. Remove the sensor cover [A] (☞ x 2).
3. Remove the sensor bracket [B] (☞ x 1).
4. Replace the upper tray paper limit sensor [C] (☜ x 1).

Upper Tray Exit Sensor

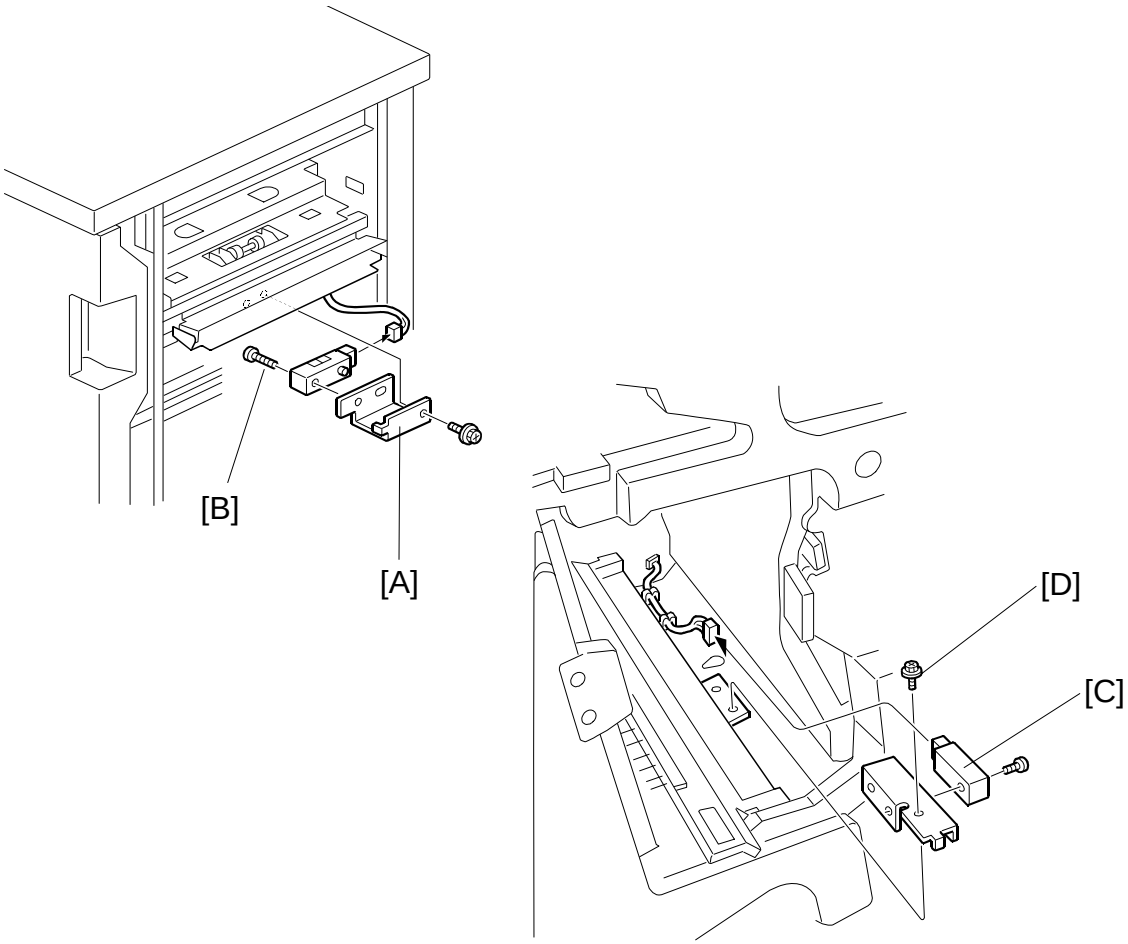
5. Remove the sensor bracket [D] (☞ x 1).
6. Replace the upper tray exit sensor [E] (☜ x 1).

3.5.3 SHIFT TRAY EXIT SENSOR



1. Remove the top cover.
2. Open the front door.
3. Remove the inner cover.
4. Release the upper exit guide springs [A] (x 2).
5. Disconnect the link [B] from the cam (x 1).
6. Remove the upper exit guide [C] (x 1, x 1).
7. Remove the guide stay [D] (x 2).
8. Replace the shift tray exit sensor [E] (x 1, x 1).

3.5.4 ENTRANCE AND STAPLER TRAY ENTRANCE SENSORS



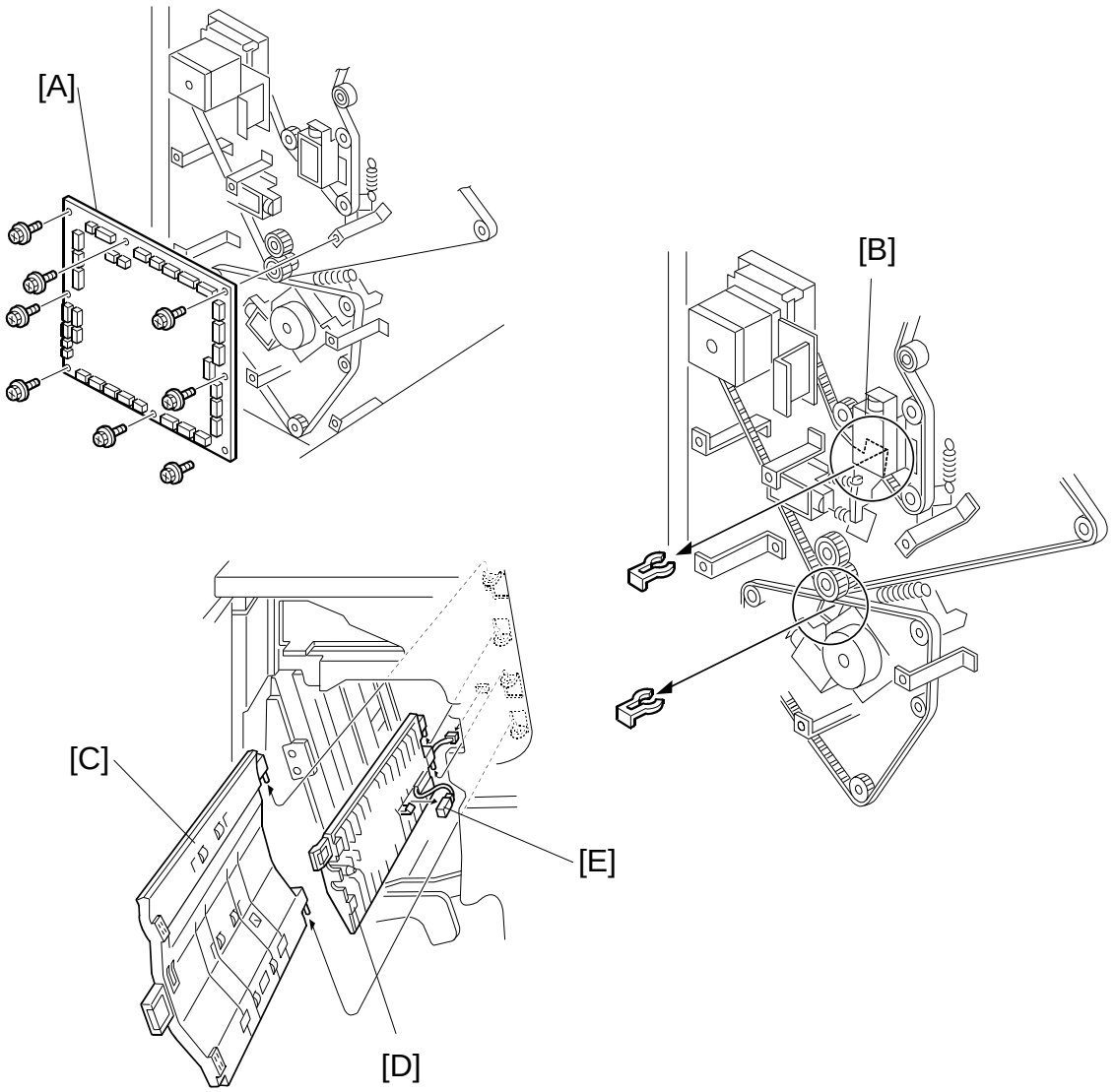
Entrance Sensor

1. Disconnect the finisher from the copier.
2. Remove the sensor bracket [A] (x 1).
3. Replace the entrance sensor [B] (x 1, x 1).

Stapler Tray Entrance Sensor

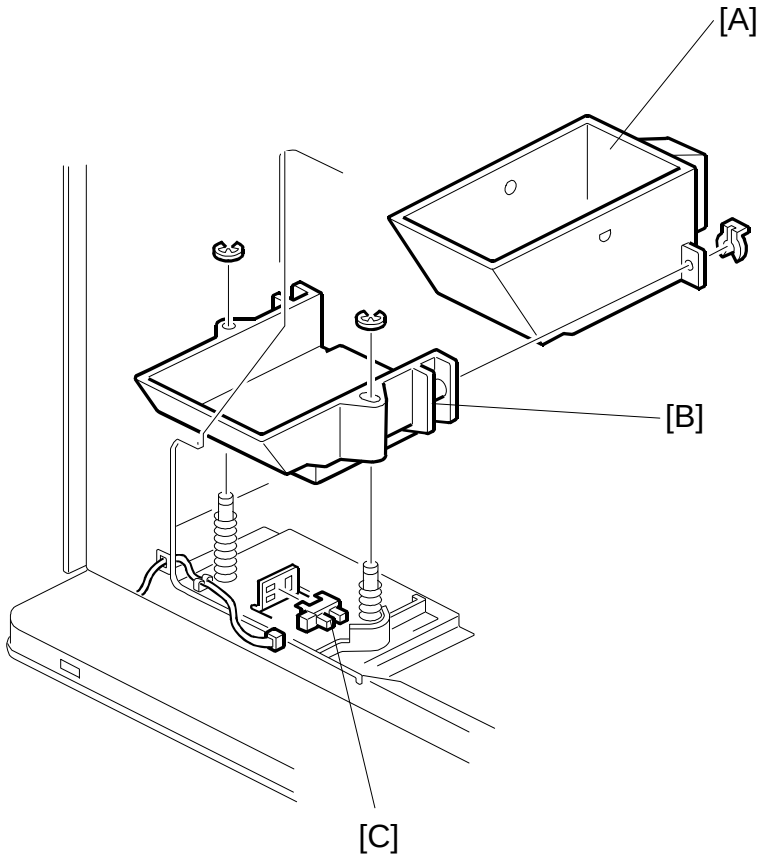
1. Open the front door.
2. Remove the sensor bracket [C] (x 1).
3. Replace the stapler tray entrance sensor [D] (x 1, x 1).

3.5.5 PRE-STACK PAPER SENSOR



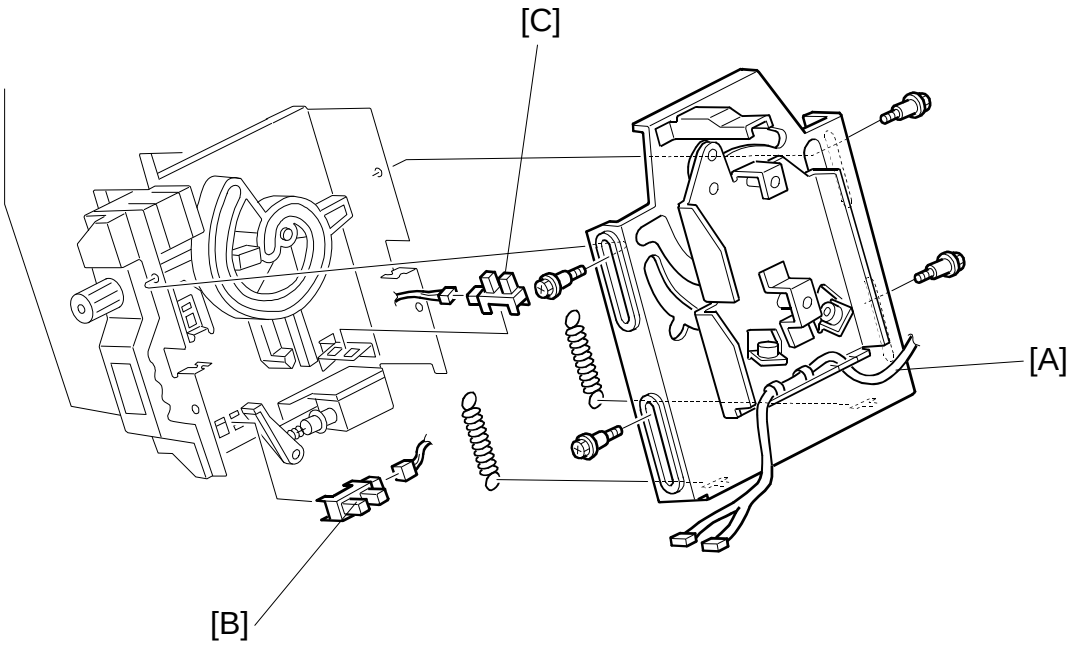
1. Remove the rear cover.
2. Remove the main board [A] (x 8, x all).
3. Release the guide [B] (x 2).
4. Open the front door.
5. Remove the left vertical transport guide [C].
6. Remove the middle vertical transport guide [D] (x 1).
7. Replace the pre-stack paper sensor [E] (x 1).

3.5.6 STAPLE WASTE HOPPER SENSOR



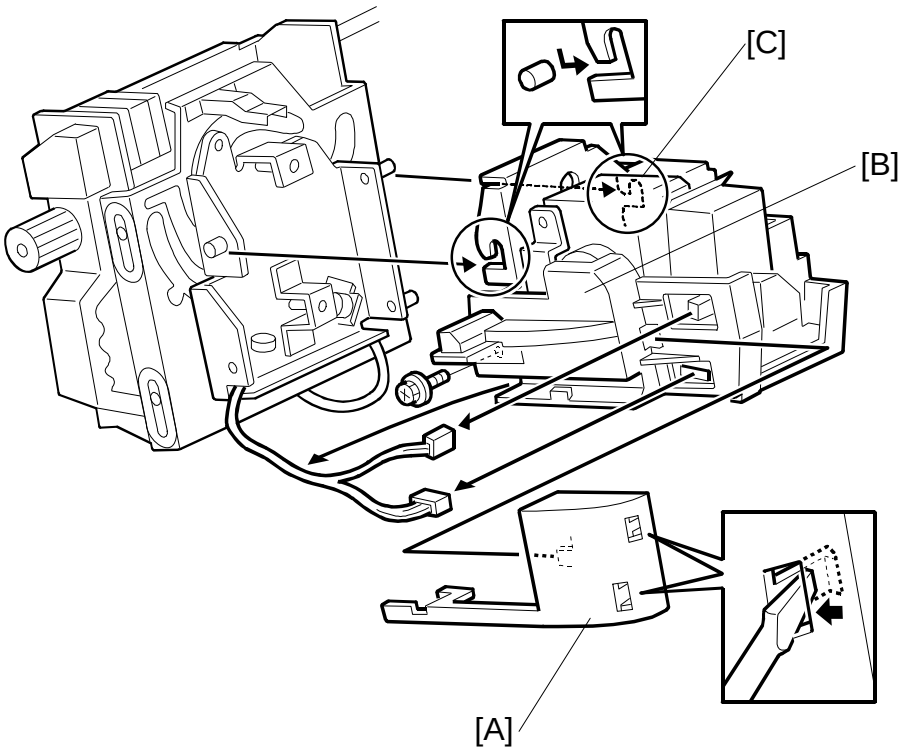
1. Open the front door, pull out the stapler unit, then remove the rear cover.
2. Remove the rear cover (x 2).
3. Remove the staple waste hopper [A] (x 1).
4. Remove the hopper holder [B] (x 2).
5. Replace the staple waste hopper sensor [C] (x 1).

3.5.7 STAPLER ROTATION HP AND STAPLER RETURN SENSORS



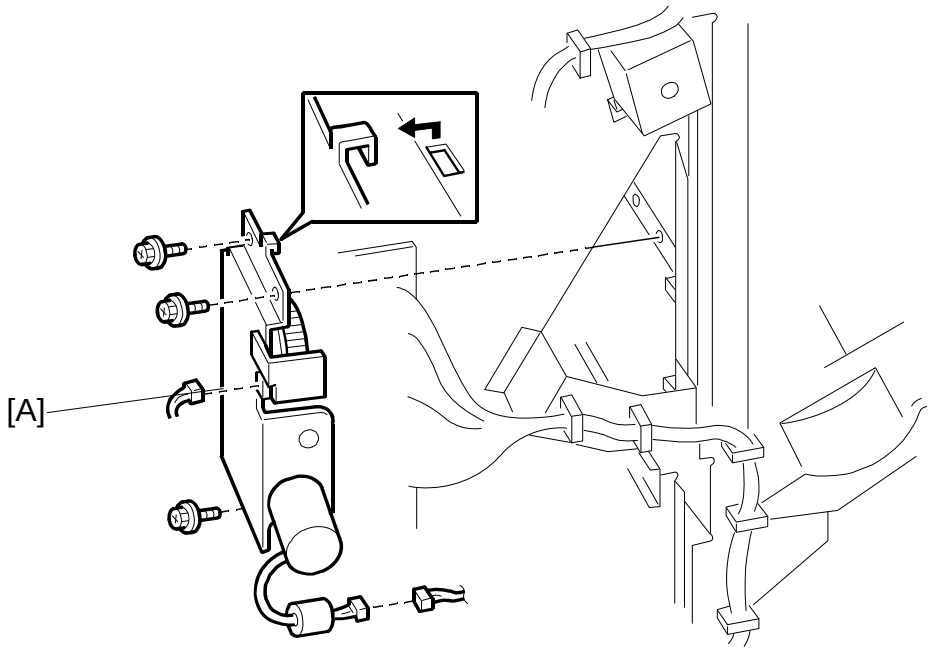
1. Remove the stapler unit. (See next page.)
2. Remove the stapler mount bracket [A] (x 4, springs x 2).
3. Replace the stapler rotation HP sensor [B] (x 1).
4. Replace the stapler return sensor [C] (x 1).

3.6 STAPLER



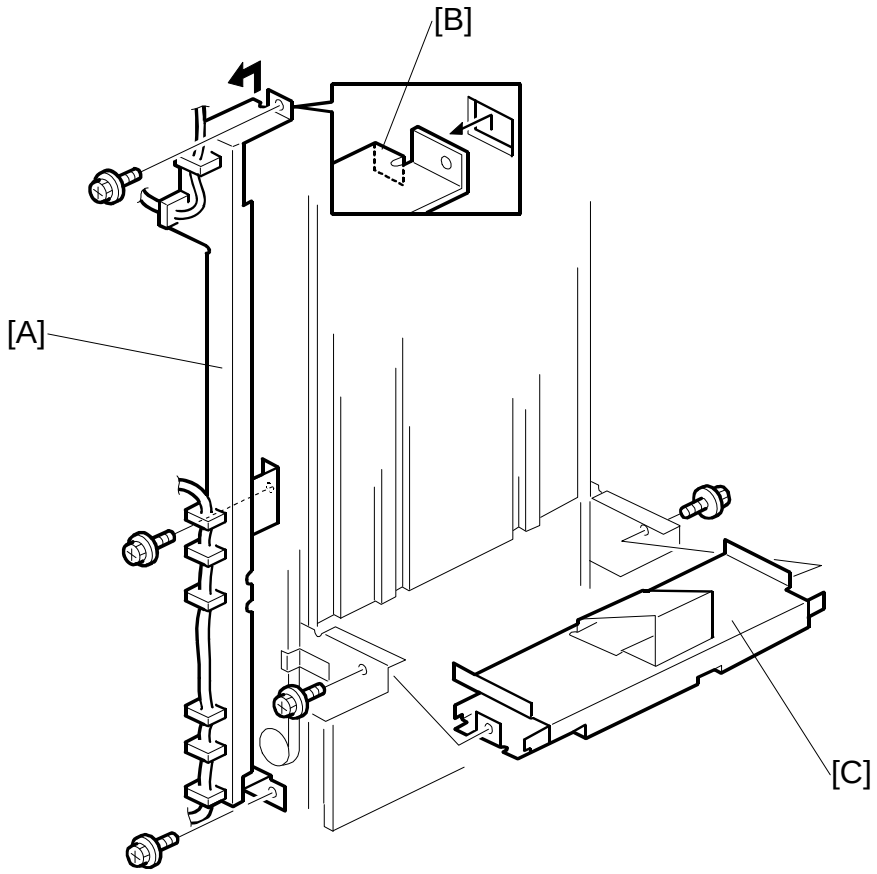
1. Open the front door and pull out the staple tray.
2. Remove the stapler unit harness cover [A].
3. Remove the stapler cover [B] (x 1, x 2).
4. Lift the stapler off of the pegs [C].

3.7 SHIFT TRAY MOTOR

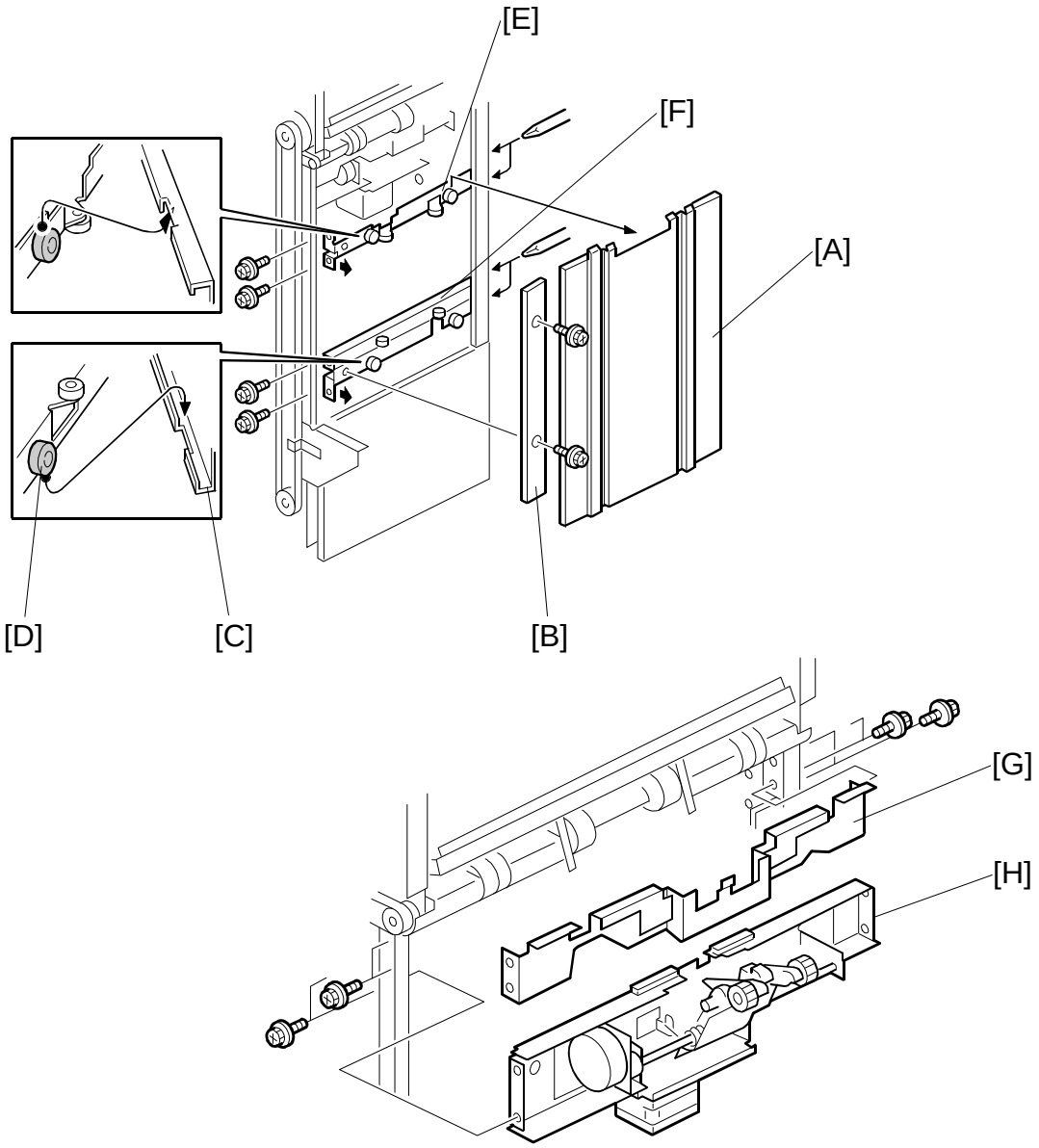


1. Remove the front door and rear cover (☛ 3.1).
2. Shift motor [A] (x 2, x 3)

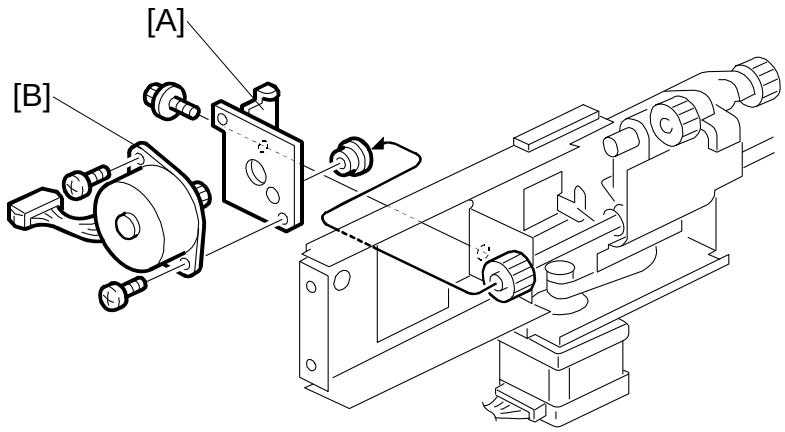
3.7.1 STACKING ROLLER/ROLLER DRAG MOTORS, RETURN HP SENSOR

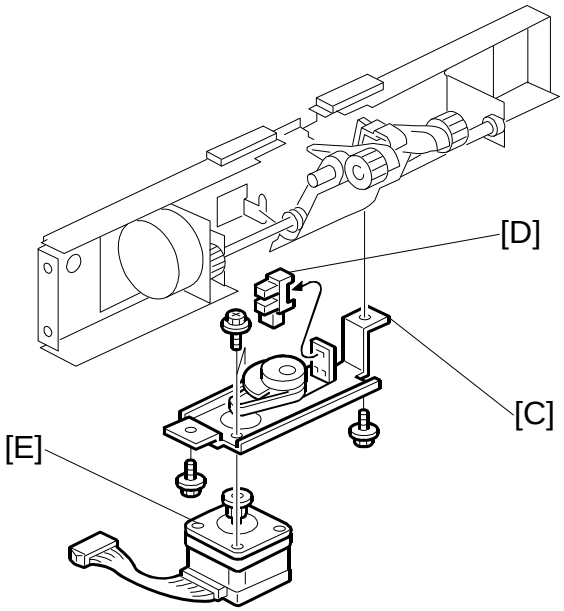


1. Do the procedures to remove the front door and all covers, with the exception of the left lower cover and top cover (labeled [C]: and [E]).
   NOTE: Be sure to lower the shift tray by pulling the gear toward you. The shift tray must be down.
2. Remove the shift tray motor. (☛ 3.7)
3. Remove the left stay [A] (🖉 x 3).
4. Unhook the stay at top [B].
5. Remove the shift tray mounting plate [C] (🖉 x 2).



6. Remove the end fence [A] and plate [B] (x 2).
7. Disengage the end fence races [C] from the rollers [D] behind the fence.
8. Remove the upper stay [E] (x 4).
9. Remove the lower stay [F] (x 4).
10. Remove the cover [G] (x 4).
11. Remove the stacking roller/drag motor stay [H] (x 3, x 4).
    NOTE: Make sure the motor and sensor connectors are disconnected before removing.

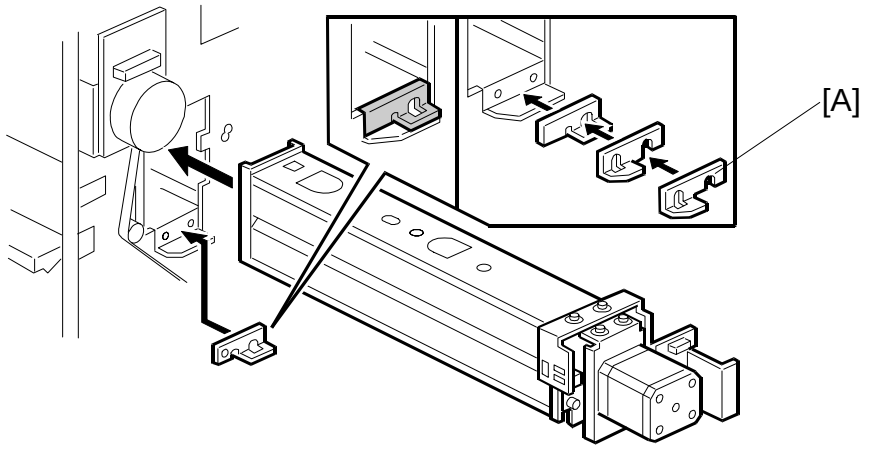




12. Remove the stacking motor bracket [A] (bushing x 1, x 1).
13. Remove the stacking motor [B] (x 2).
14. Remove the roller drag motor bracket [C] (x 2).
15. Remove return HP sensor [D].
16. Remove the roller drag motor [E] (x 1).

3.8 PUNCH UNIT B531 (OPTION)

3.8.1 PUNCH POSITION ADJUSTMENT



The position of the punched holes can be adjusted in two ways.

Front to Rear Adjustment

Three spacers [A] are provided with the punch unit for manual adjustment of the hole position in the main scan direction:

- 2 mm (x 1)
- 1 mm (x 2)

NOTE: One spacer was installed at installation and the remaining spacers were fastened with a screw to the rear frame of the finisher under the rear cover and slightly above the lock bar.

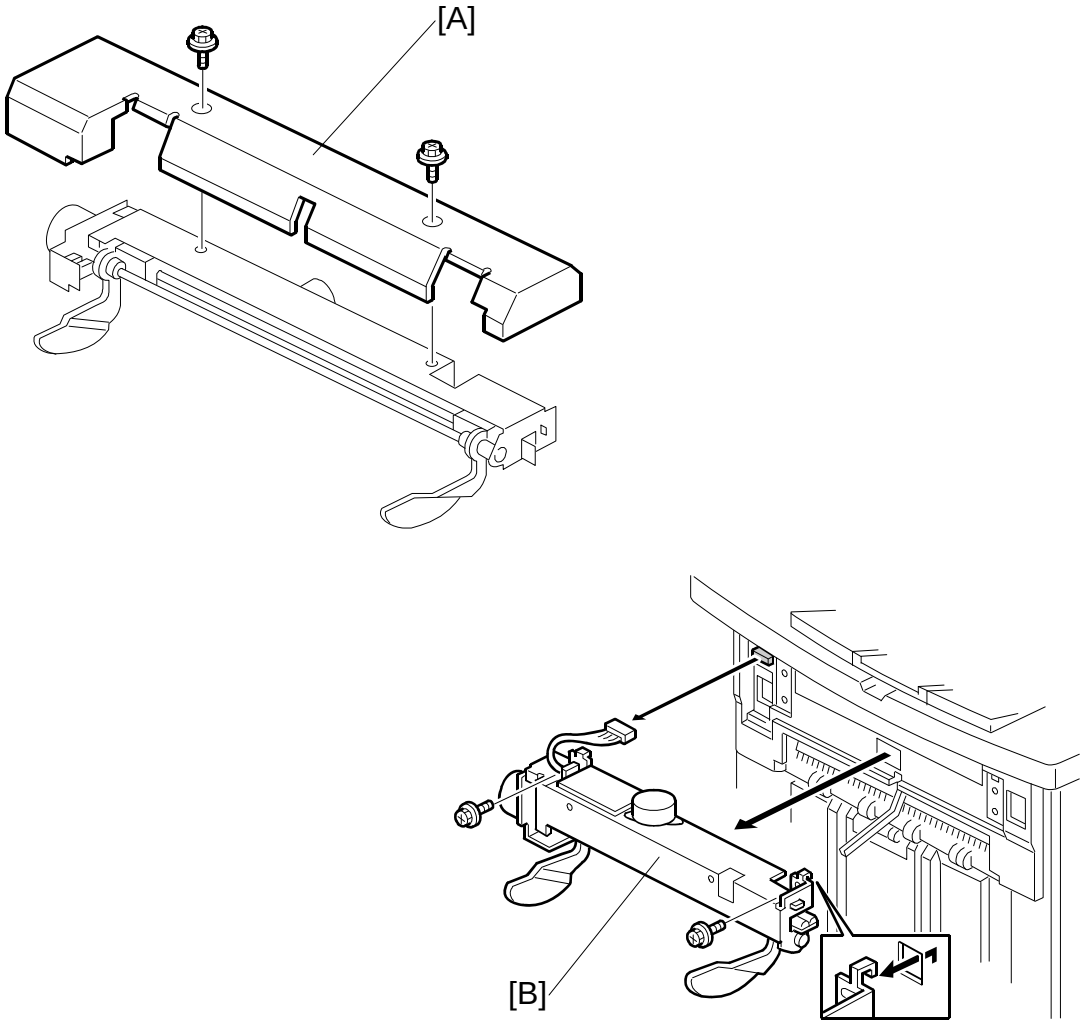
Right to Left Adjustment

The position of the punched holes can be adjusted right to left in the sub scan direction with SP6-113 Punch Hole Position Adjustment. The position can be adjusted in the range ±7.5 mm in 0.5 mm steps. The default setting is 0.

Press the ⊙/⊗ key to toggle the ± selection. A +VE value shifts the punch holes left toward the edge of the paper, and a -VE value shifts the holes right away from the edge.

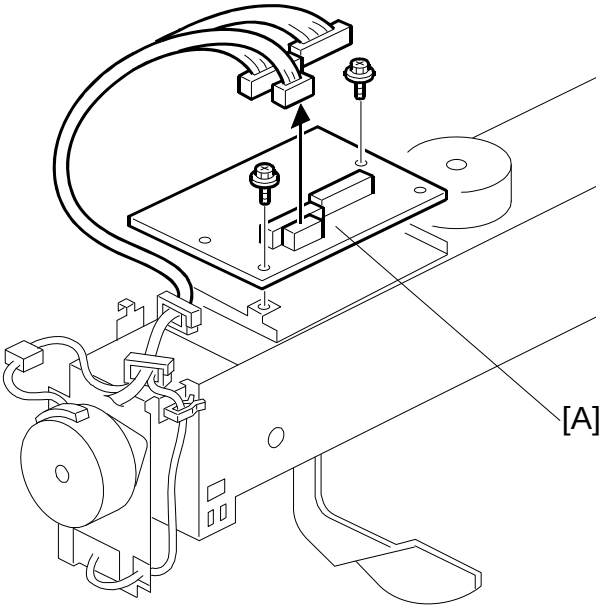
3.9 JOGGER UNIT B513 (OPTION)

3.9.1 JOGGER UNIT



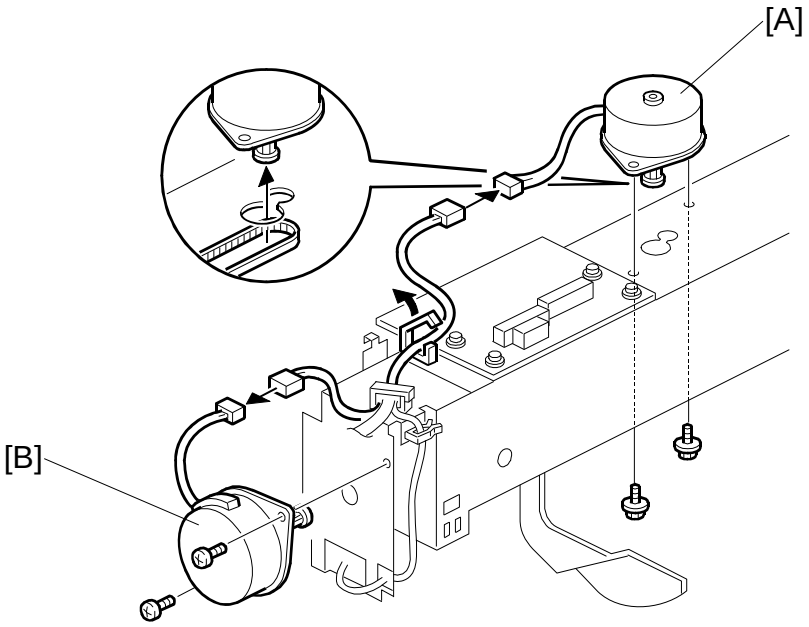
1. Remove the jogger unit cover [A] (x 2).
2. Remove the jogger unit [B] (x 2, x 1).

3.9.2 JOGGER UNIT PCB



1. Remove the jogger unit from the finisher. (☛ 3.9.1)
2. Remove the jogger unit control PCB [A] (🔩 x 2, 🖑 x 3).

3.9.3 JOGGER UNIT MOTOR



1. Remove the jogger unit from the finisher. (☛ 3.9.1)
2. Remove the shift jogger motor [A] (🔩 x 2, 🖐 x 1).
3. Remove the shift jogger lift motor [B] (🔩 x 2, 🖐 x 1).

4. TROUBLESHOOTING

If the machine logs an SC code in the display of the operation panel, see “Section 4 Troubleshooting” of the Service Manual. Section 4 contains a complete list of all service codes and how to troubleshoot the problem.

5. SERVICE TABLES

For details about 3000-Sheet Finisher B478 SP codes, please refer to “5. Service Tables” in the main machine service manual.

5.1 DIP SWITCHES

DPS100				Description
1	2	3	4	
0	0	0	0	Default
0	0	1	0	Free run: A4 LEF, staple mode
0	0	0	1	Free run: staple and tray shift

NOTE: Do not use any other settings.

5.2 TEST POINTS

No.	Label	Monitored Signal
TP100	(5V)	+5 V
TP101	(GND)	Ground
TP102	(RXD)	RXD
TP103	(TXD)	TXD

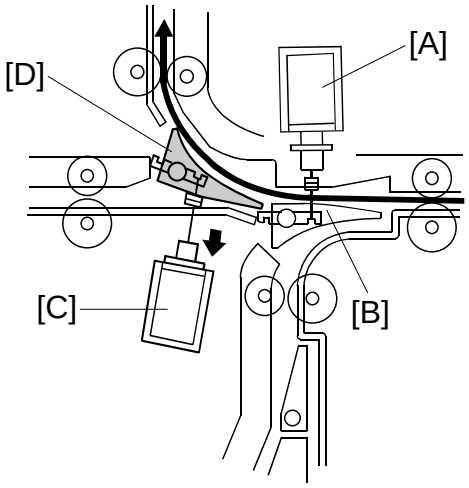
5.3 FUSES

No.	Function
FU100	Protects 24 V.

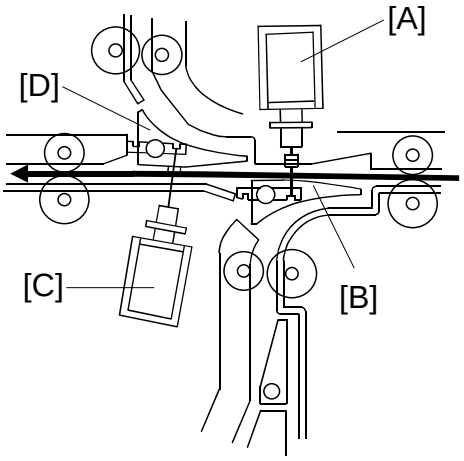
6. DETAILS

6.1 TRAY AND STAPLER JUNCTION GATE

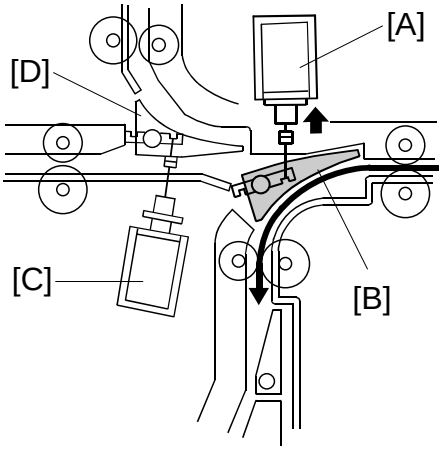
Upper Tray Mode



Sort/Stack Mode



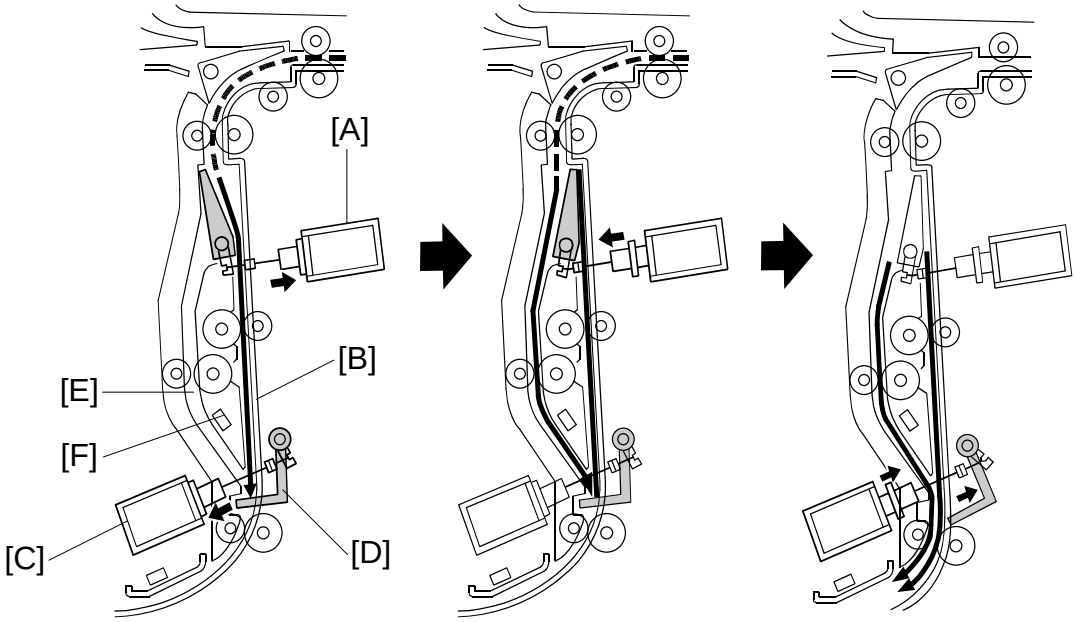
Staple Mode



Depending on the finishing mode, the copies are directed up, straight through, or down by the combinations of open and closed junction gates.

Solenoid/Gate		Selected Operation Mode		
		Upper Tray	Sort/Stack	Staple
[A]	Stapler junction gate solenoid	Off	Off	ON
[B]	Stapler junction gate	Closed	Closed	OPEN
[C]	Tray junction gate solenoid	ON	Off	Off
[D]	Tray junction gate	OPEN	Closed	Closed

6.2 PAPER PRE-STACKING



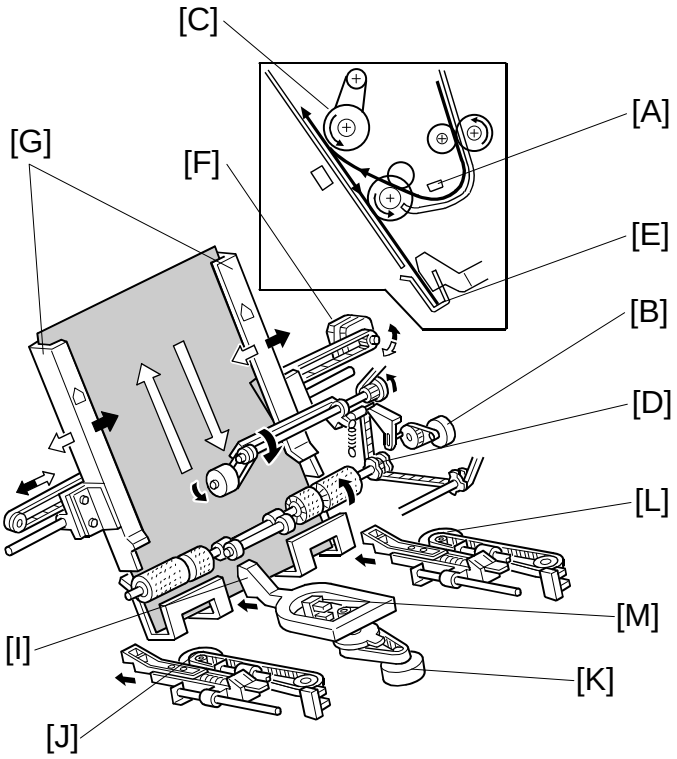
This mechanism improves productivity in staple mode. It is only used when copying on A4, LT, or B5 (all LEF).

During stapling, the copier has to wait. This mechanism reduces the wait by holding the first two sheets of a job while the previous job is still being stapled. It only works during the second and subsequent sets of a multi-set copy job.

The pre-stack junction gate solenoid [A] turns on 120 mm after the 1st sheet of paper turns on the entrance sensor, and this directs the sheet to the pre-stack tray [B]. (This sheet cannot be fed to the stapler yet, because the first set is still being stapled.) The pre-stack paper stopper solenoid [C] turns on 350 mm after the 1st sheet turns on the entrance sensor. The pre-stack paper stopper [D] then stops the paper.

The pre-stack junction gate solenoid turns off 230 mm after the trailing edge of the 1st sheet passes through the entrance sensor, and the 2nd sheet is sent to the paper guide [E]. The pre-stack paper stopper is released about 40 mm after the 2nd sheet turns on the pre-stack stopper sensor [F], and the two sheets of copy paper are sent to the stapler tray. All sheets after the 2nd sheet go to the stapler tray via the paper guide [E].

6.3 JOGGER UNIT PAPER POSITIONING



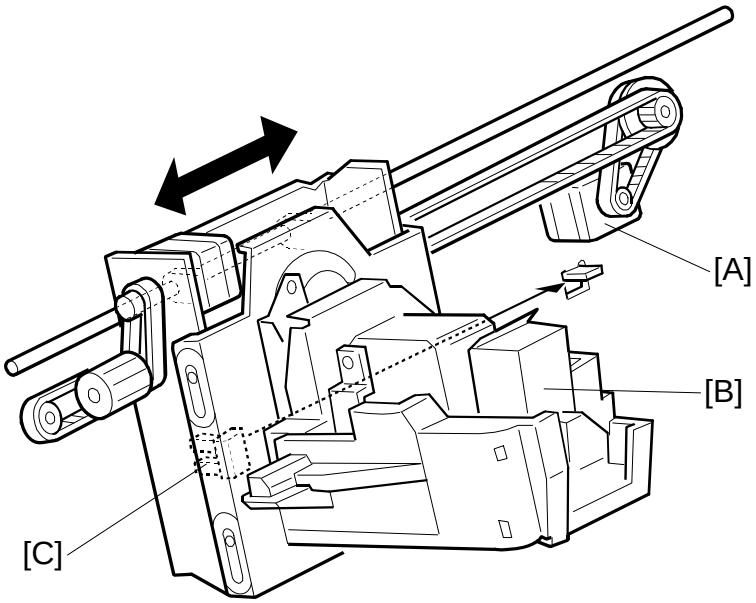
In the staple mode, as every sheet of paper arrives in the jogger unit, it is vertically and horizontally aligned, then the staple edge is pressed flat to ensure the edge of the stack is aligned correctly for stapling.

Vertical Paper Alignment: About 60 ms after the trailing edge of the copy passes the staple tray entrance sensor [A], the positioning roller motor [B] is energized to push the positioning roller [C] into contact with the paper. The positioning roller and alignment brush roller [D] rotate to push the paper back and align the trailing edge of the paper against the stack stopper [E].

Horizontal Paper Alignment: When the print key is pressed, the jogger motor [F] turns on and the jogger fences [G] move to the wait position about 7.2 mm wider than the selected paper size on both sides. When the trailing edge of the paper passes the staple unit entrance sensor, the jogger motor moves the jogger fences 3.7 mm towards the paper. Next, the jogger motor turns on again for 3.5 mm for the horizontal paper alignment then goes back to the wait position.

Paper Stack Correction: After the paper is aligned in the stapler tray, the left [J], center [K], and right [L] stack plate motors switch on briefly and drive the front stack, center stack, and rear stack plates against the edge of the stack to flatten the edge completely against the staple tray for stapling. When the next copy paper turns on the stapler entrance sensor, the stack plate motor turns on and returns to its home position. The home position is detected by stack plate HP sensor [M].

6.4 STAPLER UNIT MOVEMENT



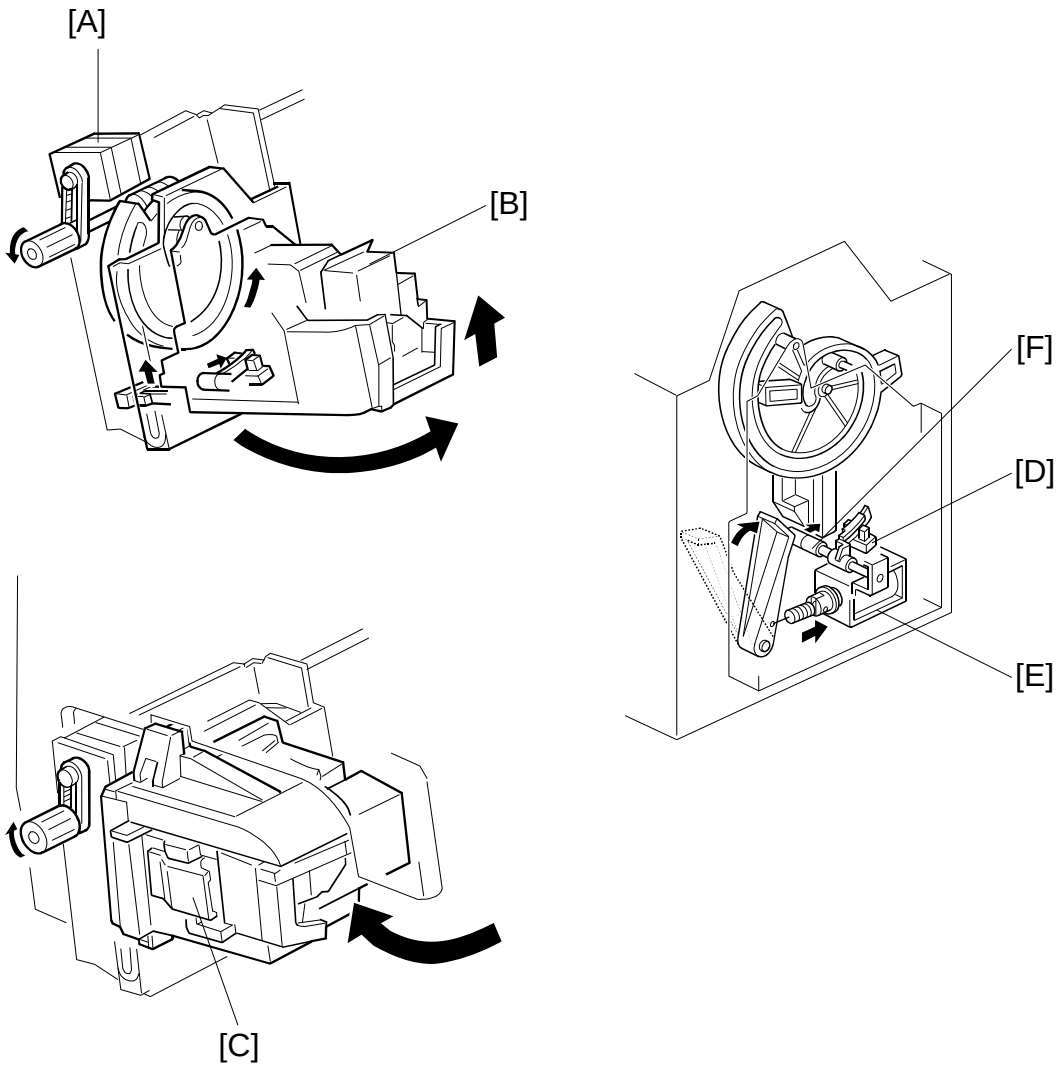
Side-to-Side

The stapler motor [A] moves the stapler [B] from side to side. After the start key is pressed, the stapler moves from its home position to the stapling position.

If two-staple-position mode is selected, for the first stack the stapler moves to the rear stapling position first, staples, moves to the front position, staples and waits at the front. For the second stack, the stapler staples the front corner first, then moves to the rear corner and staples.

NOTE: For continuous stapling jobs, the corners are stapled rear then front for the odd number stacks and stapled front then rear for even number stacks.

After the job is completed, the stapler returns to its home position. This is detected by the stapler HP sensor [C].



Rotation (1)

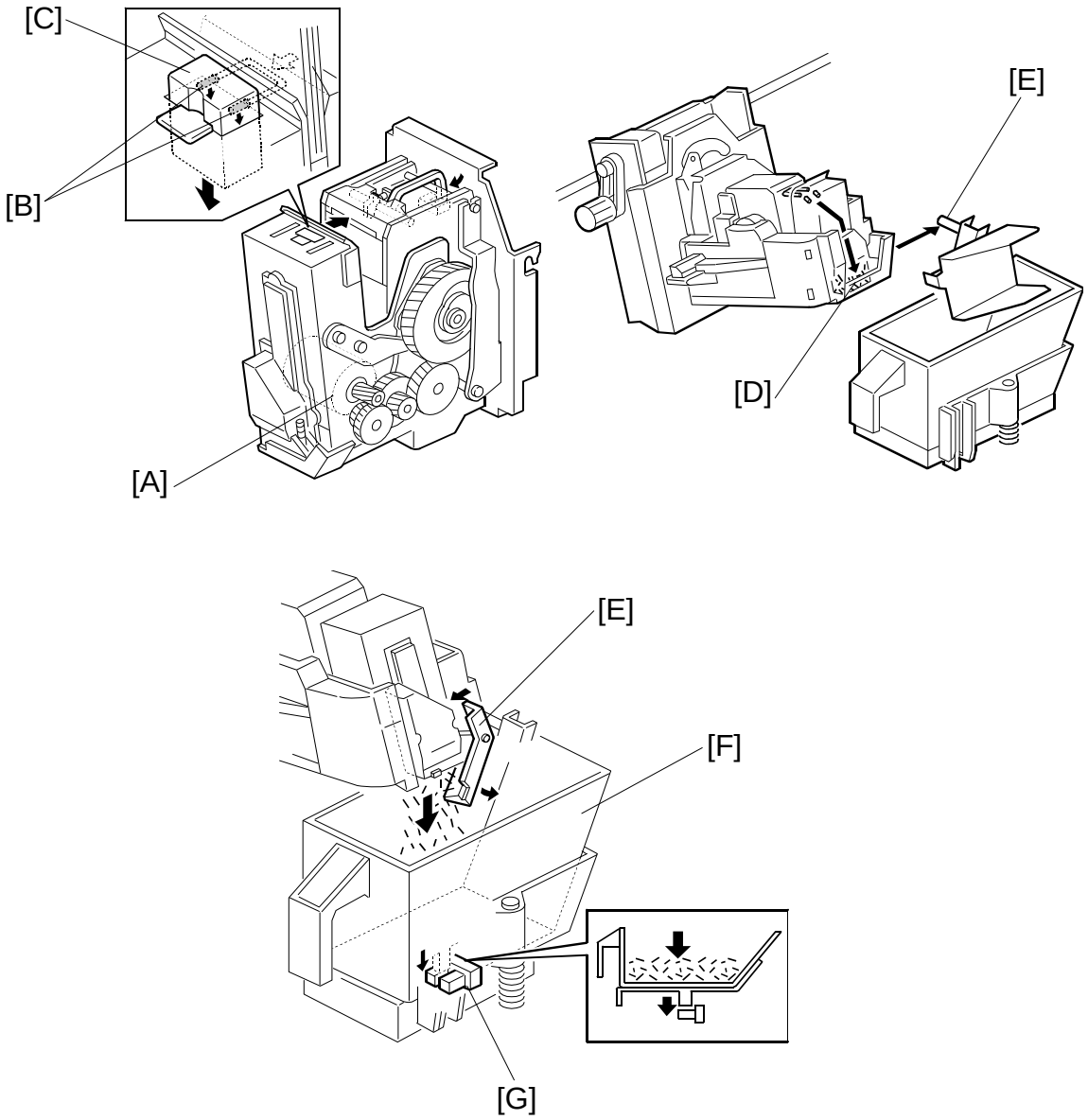
In the oblique staple position mode, the stapler rotation motor [A] rotates the stapler units [B] 45° to counterclockwise after it moves to the stapling position.

Rotation (2)

When the staple end condition arises, the stapler motor moves the stapler to the front and the stapler rotation motor rotates the stapler unit to clockwise to remove the staple cartridge [C]. This allows the user to add new staples.

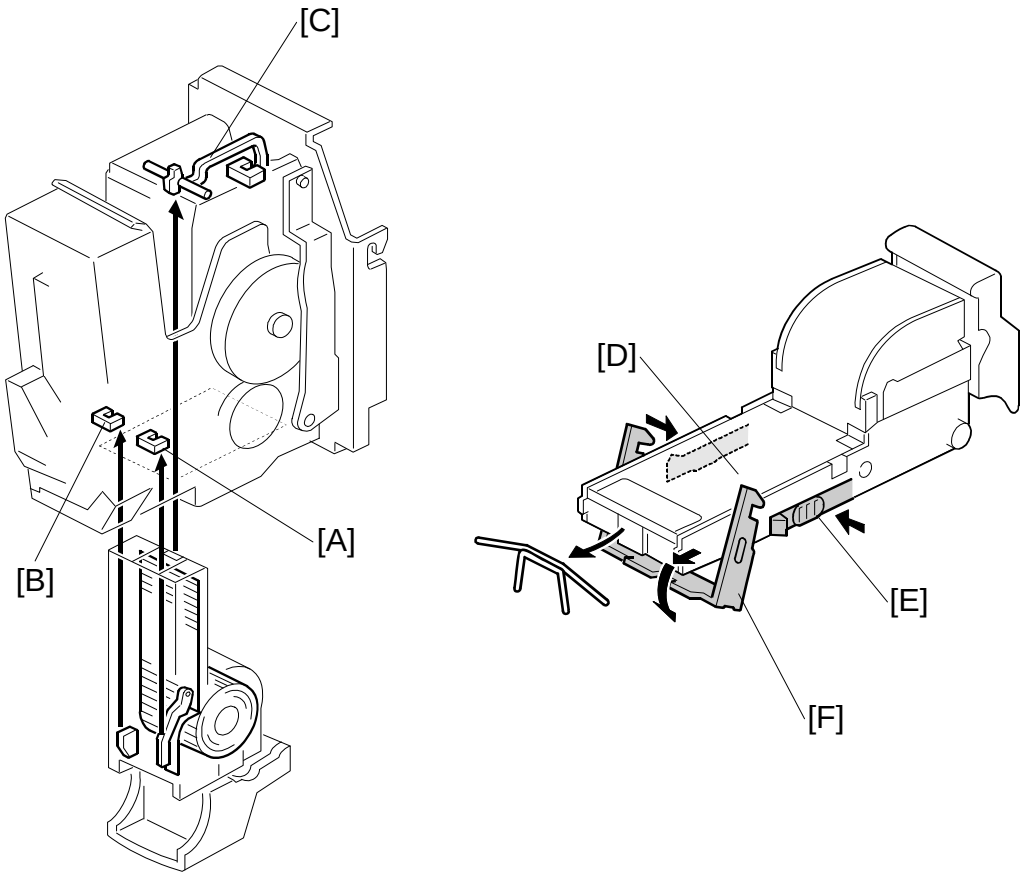
Once the staples have been installed, and the front door closed, the stapler unit returns to its home position. As the stapler unit is returning to the home position, the stapler return sensor [D] is activated, the return solenoid [E] turns on and it assists the guide roller [F] to return to its guide (this guide directs the stapler during rotation).

6.5 STAPLER



When the aligned copies are brought to the stapling position by the positioning roller and jogger fences, the staple hammer motor [A] starts stapling.

During stapling, the stapler trims off the excess length [B] of the staples by lowering the cutter [C]. This excess length depends on the number of copies in the set; there will be very little for a stack containing 100 sheets. The staple waste drops into the tray [D] in the stapler. When the stapler unit returns to its home position, the tray hits the shaft [E] and the tray opens. The staple waste drops into the staple waste hopper [F]. When the staple waste hopper is full, the actuator on its base activates the staple waste hopper sensor [G]. An SC737 (Full Finisher Staple Waste Hopper) is displayed.

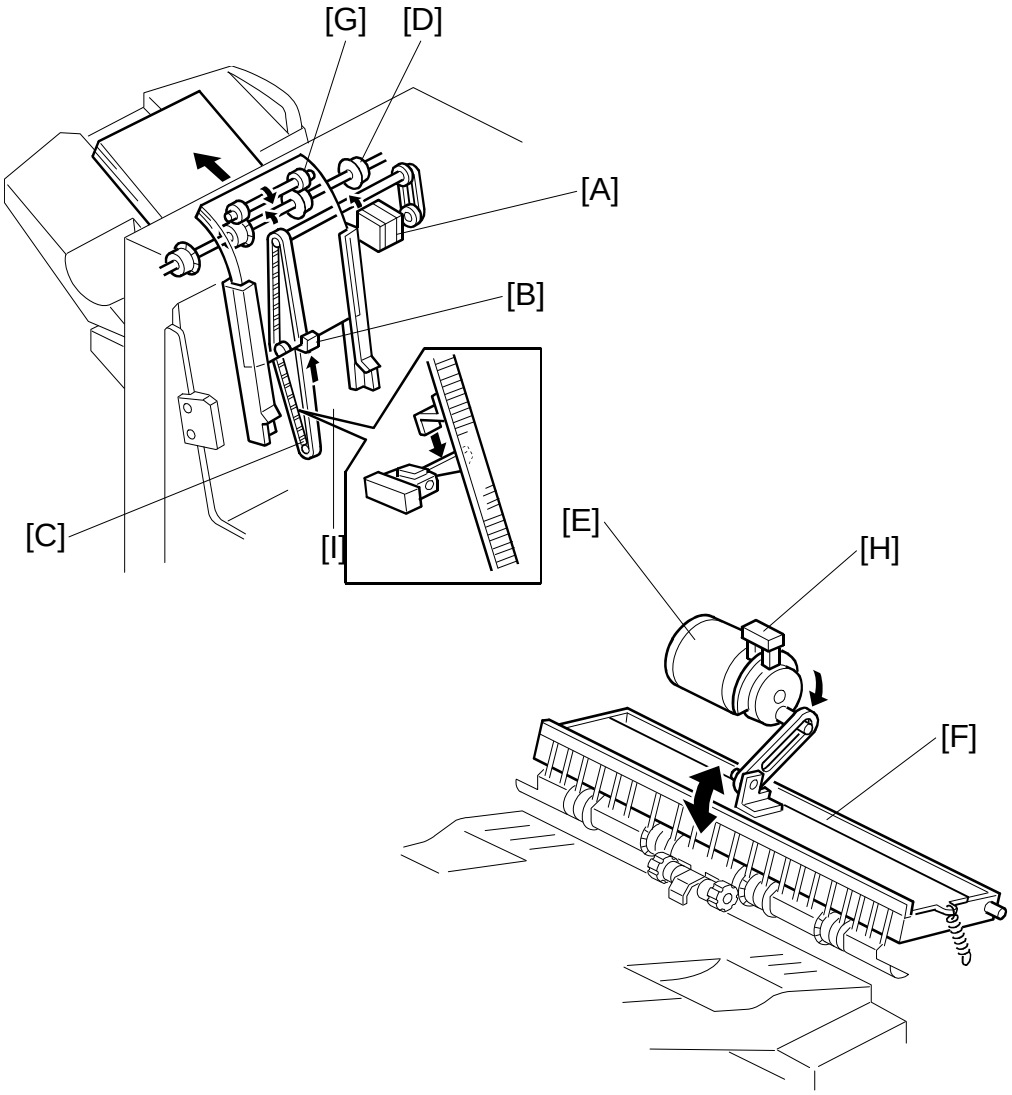


The stapler has a staple end sensor [A], cartridge set sensor [B] and staple hammer HP sensor [C].

When a staple end or no cartridge condition is detected, a message is displayed advising the operator to install a staple cartridge. If this condition is detected during a copy job, the indication will appear, and the copy job will stop.

The staple cartridge has a clinch area [D] where jammed staples collect. The operator can remove the jammed staples from the clinch area by pressing in the releases [E] on both sides, then lowering the bracket lever [F].

6.6 FEED-OUT

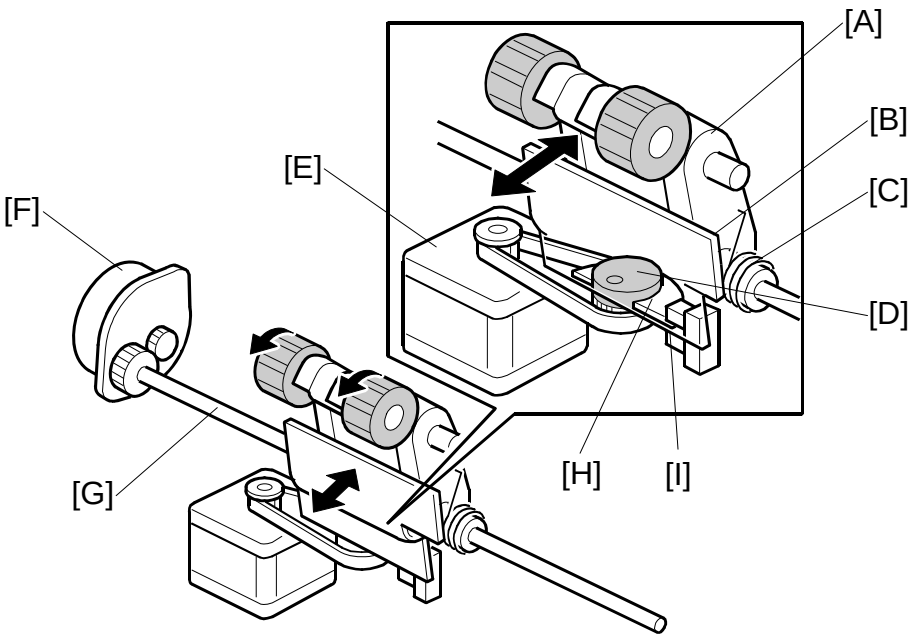


After the copies have been stapled, the stack feed-out motor [A] starts. The pawl [B] on the stack feed-out belt [C] transports the set of stapled copies up and feeds it to the shift tray exit roller [D]. When stapling starts, the exit guide motor [E] opens the upper exit guide [F], which includes the upper shift tray exit roller [G], in order to feed out the leading edge of the copy set smoothly. The exit guide motor turns on again a certain time after stapling is complete, and the upper exit guide plate is lowered. Then the shift tray exit roller takes over the stack feed-out.

The on-off timing of the exit guide motor is detected by the exit guide open sensor [H].

The stack-feed-out motor turns off when the pawl actuates the stack feed-out belt home position sensor [I].

6.7 PAPER EXIT STACKING



The stacking roller assembly [A] is fastened to a plate [B] on a shaft by a spring [C]. The cam [D], in contact with the bottom of the plate, is connected to the stacking roller drag motor [E] via a timing belt.

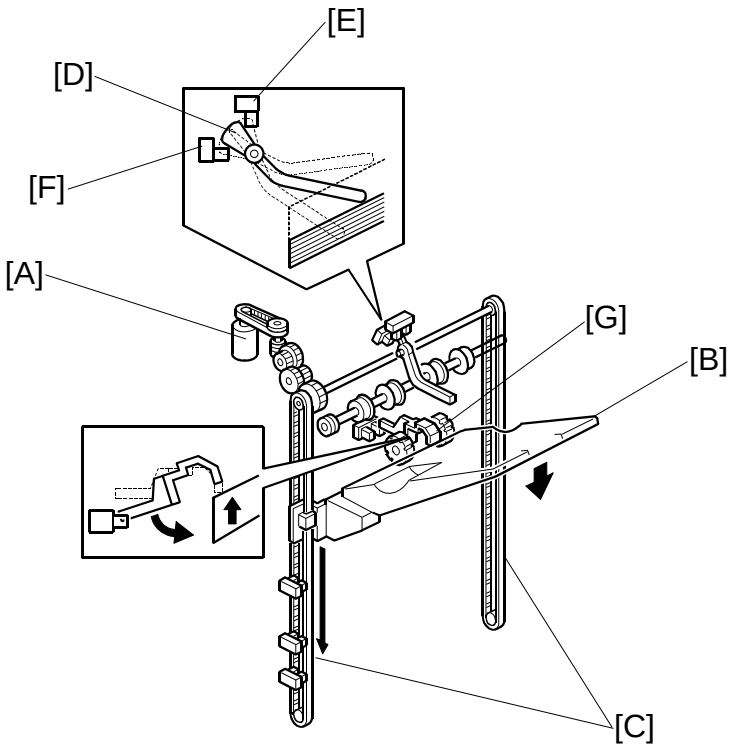
The stacking roller drag motor and timing belt rotate the cam against the bottom of the plate to move the rollers forward and back with each sheet ejected onto the shift tray.

The stacking roller motor [F] drives the shaft [G] that rotates the stacking rollers counter-clockwise as the rollers move back. The simultaneous rotation and backward movement of the roller assembly pulls each sheet back toward the copier to align the edges of the stack on the shift tray.

The actuator [H] is mounted on the cam and rotating with both rotating clockwise) and detects the roller assembly home position when the actuator leaves the gap of the return drive HP sensor [I] and signals the machine that the rollers are at the home position. The machine uses this information to control paper feed timing and confirm that the mechanism is operating correctly. The cam and actuator make one complete rotation for every sheet fed out of the machine onto the shift tray.

6.8 SHIFT TRAY

6.8.1 OVERVIEW



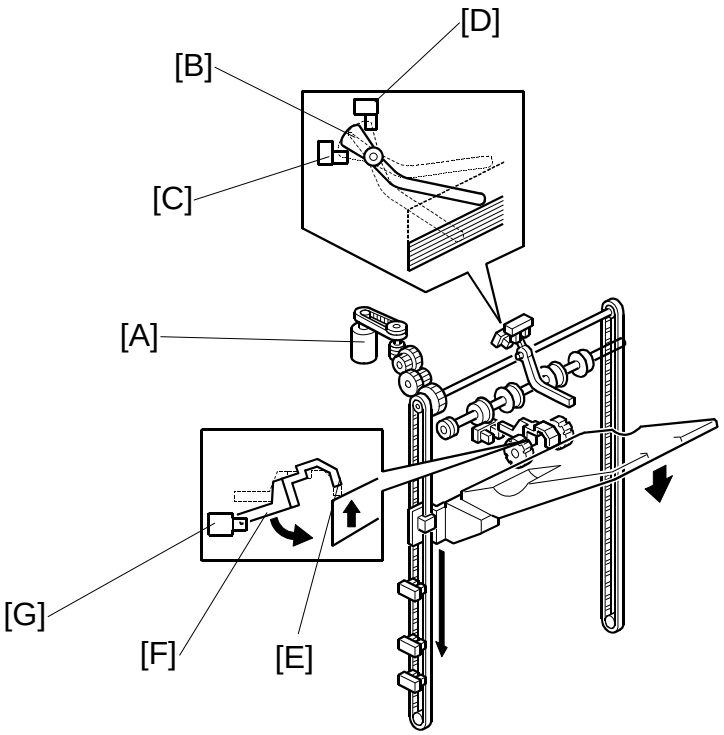
The shift tray lift motor [A] controls the vertical position of the shift tray [B] through gears and timing belts [C].

Stand-by Mode

After the main switch is turned on, or when the stack is removed from the tray, the end of the feeler on the tray falls and its actuator [D] rotates up into staple mode HP sensor 2 [E] (S7) and switches it on. This switches on the lift motor, which raises the tray until the tray pushes the actuator out of the sensor [E]. Then, the lift motor stops the shift tray; this is the home position (the actuator [D] is between the two sensors [E] and [F].

The shift tray upper limit switch (SW1) prevents the drive gear from being damaged if staple mode HP sensor 2 [E] fails. In case of a failure, when the shift tray pushes up the actuator [G] and positioning rollers, the switch will cut the power to the shift tray lift motor.

6.8.2 SHIFT TRAY UP/DOWN MOVEMENT



Sort/Stack Mode (Shift Mode)

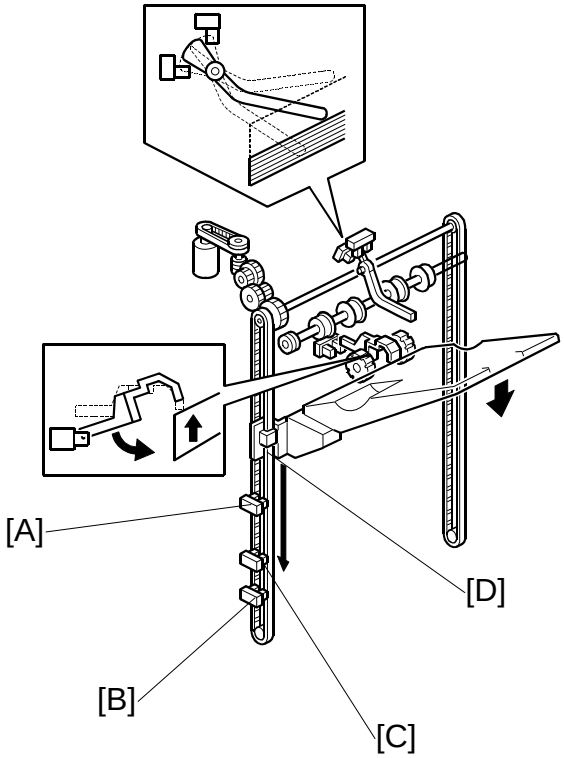
The shift tray moves to home position, which is when the actuator [F] has just exited the shift mode home position sensor [G] (S12). During feed-out, the tray is lowered automatically at prescribed intervals; sensor [D] (S7) is ignored. When the stack is removed from the tray, the end of the feeler [E] between the arms of the stacking roller falls, and its actuator [F] enters sensor [G] (S12) and switches it on. This switches on the lift motor [A], which raises the tray until the actuator leaves the sensor. Then, the lift motor stops the tray; this is the home position.

In sort/stack mode, if S12 fails when the tray is being lifted, the shift tray upper limit switch (SW1) prevents the drive gear from being damaged.

Staple Mode

The shift tray moves to home position, which is when the actuator [B] is between the staple mode home position sensors [C] and [D]. During feed-out, the shift tray is lowered automatically at prescribed intervals. When the stack is removed from the tray, the tray returns to the home position for stand-by mode. (☛ 6.8.1)

6.8.3 SHIFT TRAY LOWER LIMIT DETECTION



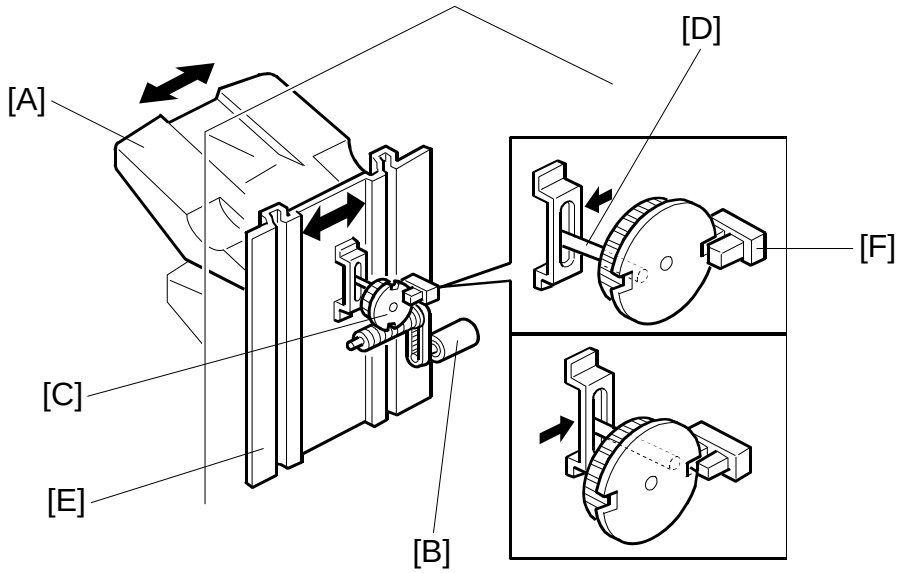
This machine has two shift tray lower limit sensors: shift lower limit sensor [A] (S9) for large paper (B4 and larger) and shift lower limit sensor [B] (S11) for small paper (smaller than B4).

NOTE: Sensor [C] (S10) is not used.

When the actuator [D] enters sensor [A] while using large paper (about 1500 sheets are on the tray), a message will be displayed and copying will stop.

When the actuator [D] enters sensor [B] while using small paper (about 3,000 sheets are on the tray), a message will be displayed and copying will stop.

6.9 SHIFT TRAY SIDE-TO-SIDE MOVEMENT



In sort/stack mode, the shift tray [A] moves from side to side to separate the sets of copies.

The horizontal position of the shift tray is controlled by the shift motor [B] and shift gear disk [C]. After one set of copies is made and delivered to the shift tray, the shift motor turns on, driving the shift gear disk and the shaft [D]. The end fence [E] is positioned by the shaft, creating the side-to-side movement.

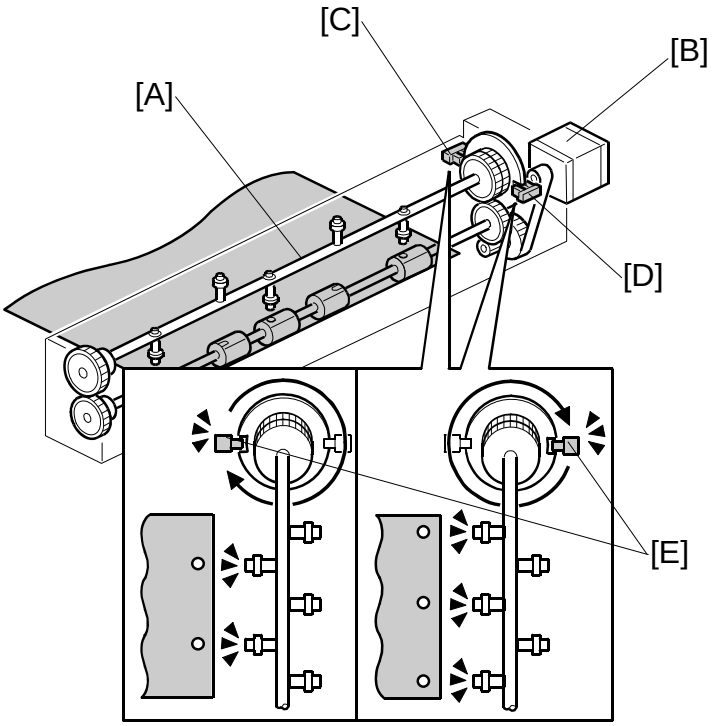
When the shift gear disk has rotated 180 degrees (when the shift tray is fully shifted across), the cut-out in the shift gear disk turns on the shift tray half-turn sensor [F] and the shift motor stops. The next set of copies is then delivered. The motor turns on, repeating the same process and moving the tray back to the previous position.

6.10 JAM CONDITIONS

1. The entrance sensor does not turn on when the copier has fed paper 426 mm after the copier exit sensor turned off.
2. The entrance sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
3. The upper tray exit sensor does not turn on when the upper transport motor has fed paper 574 mm after the entrance sensor turned on.
4. The upper tray exit sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
5. In sort/stack mode, the shift tray exit sensor does not turn on when the upper transport motor has fed paper 733 mm after the entrance sensor turned on.
6. In sort/stack mode, the shift tray exit sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
7. In staple mode, the stapler tray entrance sensor does not turn on when the upper and lower transport motor have fed paper 835 mm after the entrance sensor turned on.
8. In staple mode, the stapler tray entrance sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
9. In staple mode, the stapler tray paper sensor does not turn off within 250 pulses of the stack feed-out motor after it started.
10. In staple mode, the shift tray exit sensor does not turn off within 1,260 ms after the stack feed-out motor started.

6.11 PUNCH UNIT B531 (OPTION)

6.11.1 PUNCH UNIT DRIVE



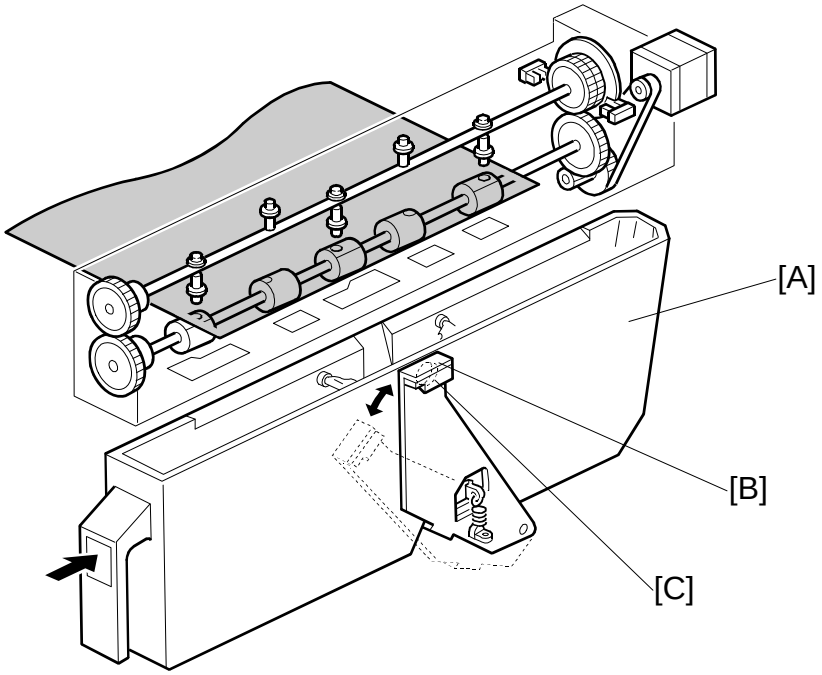
The punch unit makes 2 or 3 holes at the trailing edge of the paper. The number of holes depends on a selection made on the operation panel.

The cam [A] has 2 punches on one side and 3 punches on the other, and is turned by the punch motor [B]. The punch motor turns on immediately after the trailing edge of the paper passes the entrance sensor. The punches on the cam rotate downward and punch holes in the paper.

After punching a sheet of paper, the cam returns to home position and stops. Home position depends on whether 2 holes or 3 holes are being made, so there are two punch HP sensors. Punch HP sensor 1 [C] is used when 2-hole punching is selected, and punch HP sensor 2 [D] is used when 3-hole punching is selected. When the cut-out [E] enters the slot of the punch HP in use (sensor 1 or 2-hole punching or sensor 2 for 3/4-hole punching) the motor stops.

The knob (not shown) on the front end of the punch unit can be turned in either direction to clear paper jammed in the punch unit.

6.11.2 PUNCH WASTE COLLECTION



Punch waste is collected in the punch waste hopper [A] positioned under the punch unit.

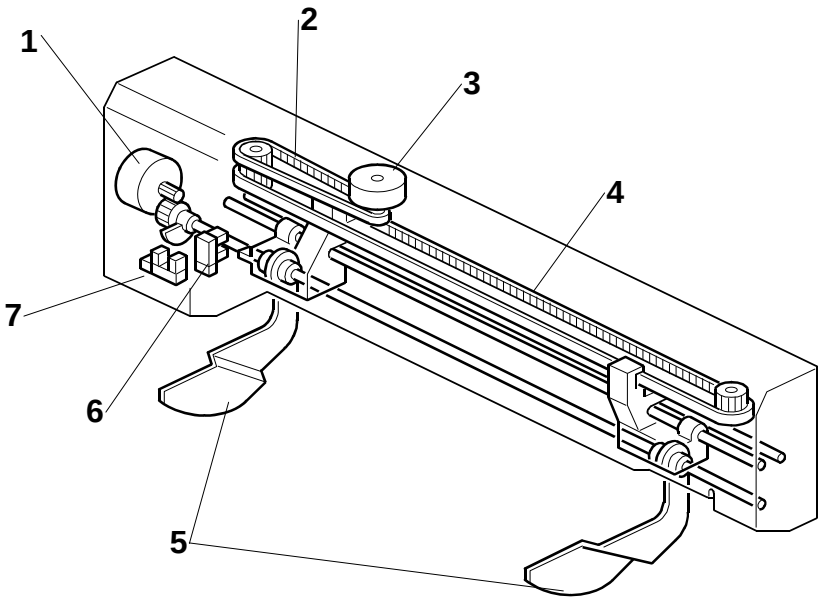
When the level of the punch waste in the hopper rises as far as the hole [B] in the hopper, the punch waste sensor [C] turns on, stops the job, and triggers a message on the operation to indicate that the hopper is full and must be removed and emptied.

The job resumes automatically after the hopper is emptied and returned to the finisher.

The punch waste hopper sensor also functions as the hopper set sensor. When the hopper is not in the finisher, or if it is not inserted completely, the spring loaded sensor arm rotates up and to the right with the punch waste sensor away from the hole in the hopper holder and a message is displayed. The message in this case is the same as the hopper full message.

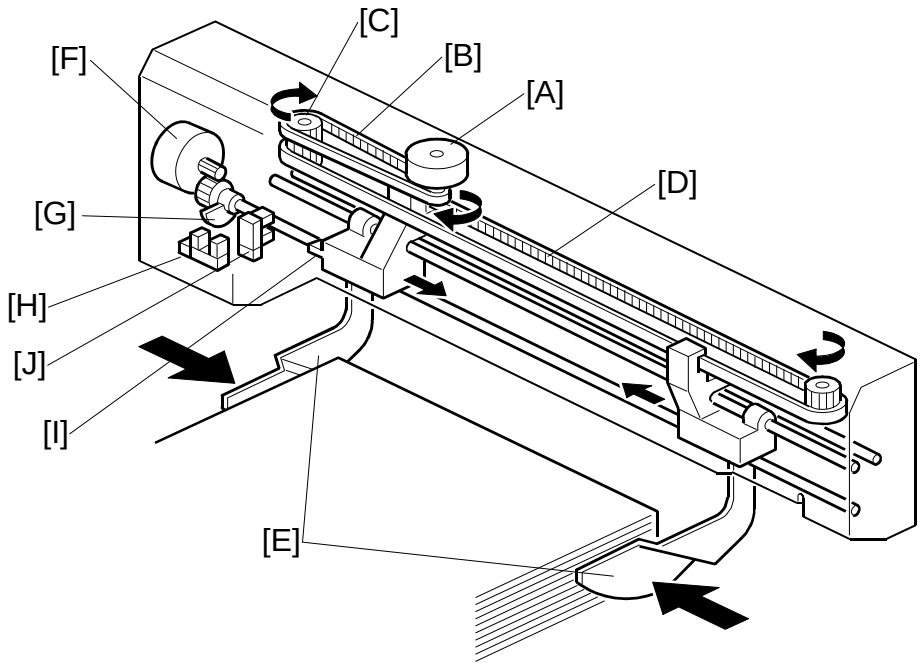
6.12 JOGGER UNIT B513 (OPTION)

6.12.1 JOGGER UNIT MECHANICAL LAYOUT



1. Shift Jogger Fence Lift Motor
2. Shift Jogger Motor Timing Belt
3. Shift Jogger Motor
4. Shift Jogger Fence Timing Belt
5. Shift Jogger Fences
6. Shift Jogger HP Sensor
7. Shift Jogger Lift HP Sensor

6.12.2 JOGGER UNIT DRIVE



At prescribed intervals, the jogger motor [A] switches on and drives the jogger timing belt [B], gear [C] and jogger fence timing belt [D] which drives the shift jogger fences [E] against the sides of the stack to align its edges.

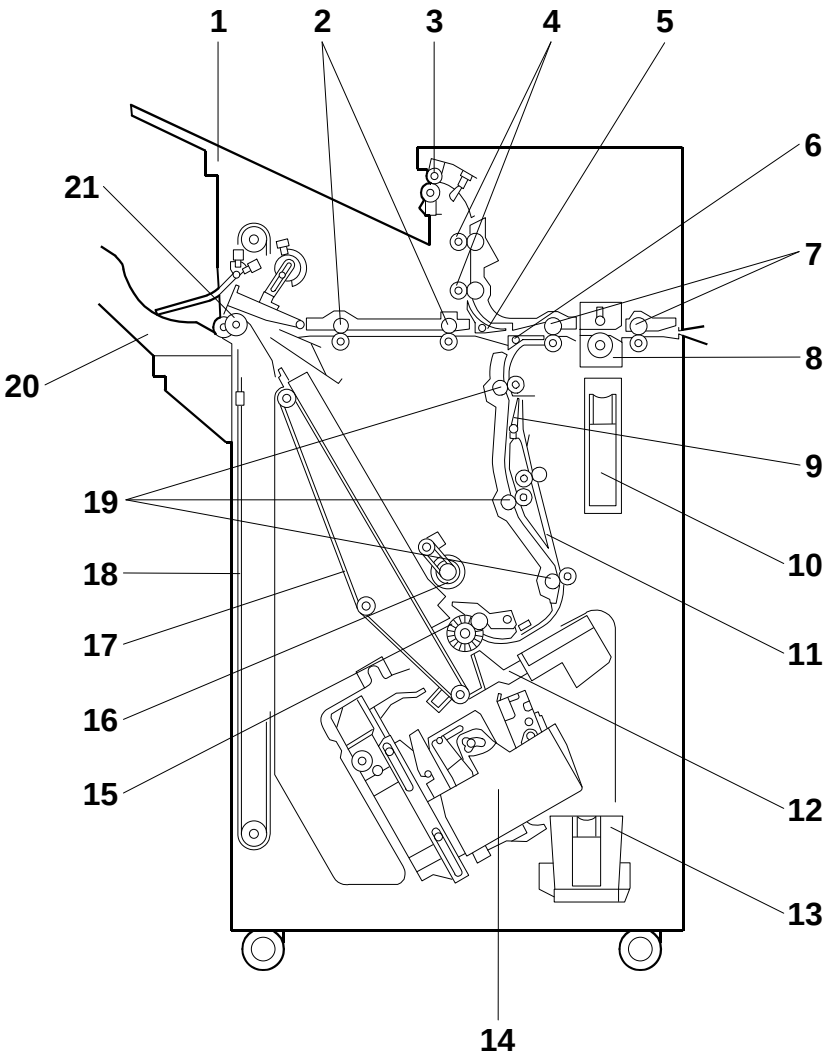
At the end of the job, the jogger fence lift motor [F] switches on and raises the fences until the actuator [G] leaves the slot of the shift jogger fence lift HP sensor [H] and shuts off the shift jogger fence lift motor.

At the same time, the jogger motor reverses and drives the fences away from the sides of the stack until the actuator [I] deactivates the shift jogger fence HP sensor [J] and switches off the jogger motor.

The jogger fences remain up in the standby position until the next job starts.

7. OVERALL MACHINE INFORMATION

7.1 MECHANICAL COMPONENT LAYOUT



1. Upper Tray
2. Middle Transport Rollers
3. Upper Tray Exit Roller
4. Upper Transport Rollers
5. Tray Junction Gate
6. Stapler Junction Gate
7. Entrance Rollers
8. Punch Unit
9. Pre-stack Junction Gate
10. Punch Waste Hopper
11. Pre-stack Tray
12. Stack Plate
13. Staple Waste Hopper
14. Stapler
15. Alignment Brush Roller
16. Positioning Roller
17. Stack Feed-out Belt
18. Shift Tray Drive Belt
19. Lower Transport Rollers
20. Shift Tray
21. Shift Tray Exit Roller

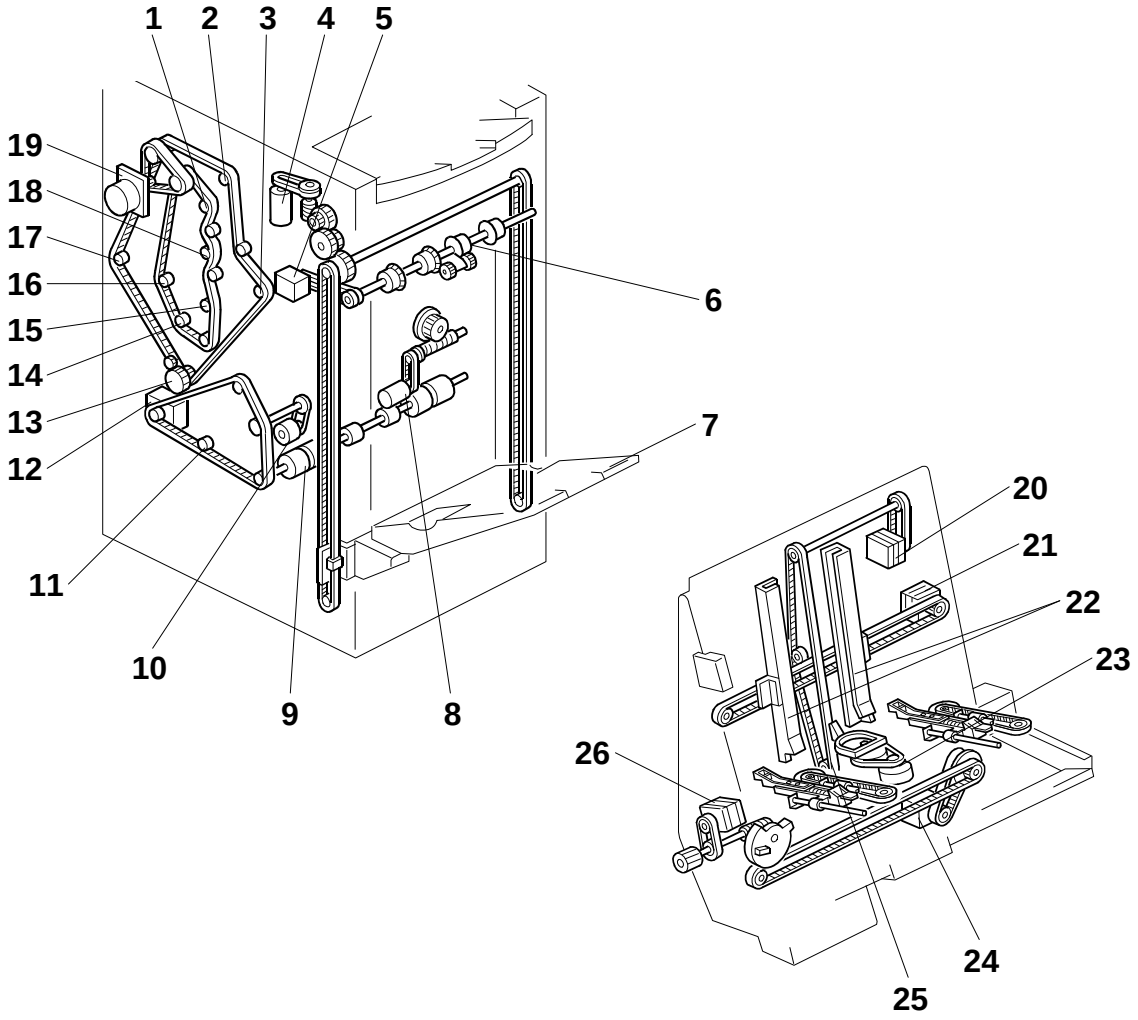
7.2 ELECTRICAL COMPONENT DESCRIPTION

Symbol	Name	Function
Motors		
M01	Shift Tray Exit	Drives the exit roller for the shift tray.
M02	Shift Tray Lift	Moves the shift tray up or down.
M03	Exit Guide	Opens and closes the upper exit guide.
M04	Lower Transport	Drives the lower transport rollers, the positioning roller and the alignment brush roller
M05	Shift	Moves the shift tray from side to side.
M06	Positioning Roller	Moves the positioning roller into contact with the paper.
M07	Stacking Roller Drag	Moves the stacking roller in and out.
M08	Stacking Roller	Rotates the stacking roller.
M09	Jogger	Moves the jogger fences.
M10	Stack Feed-Out Belt	Drives the stack feed-out belt.
M11	Stack Plate - Center	Presses down the center of the edge for stapling.
M12	Stapler	Moves the staple unit from side to side.
M13	Stack Plate – Front	Presses down the front corner of the edge for stapling.
M14	Stack Plate – Rear	Presses down the rear corner of the edge for stapling.
M15	Stapler Rotation	Rotates the stapler 45 degrees for oblique stapling.
M16	Staple Hammer	Drives the staple hammer.
M17	Punch	Drives the punch shaft and roller. Punch Unit B531 (option).
M18	Upper Transport	Drives the entrance rollers, the middle and upper transport rollers, and upper tray exit roller.
M19	Shift Jogger	Drives the shift jogger fences against the sides of the sheets to align the stack, then reverses to return them to the home position. Jogger Unit B513 (option).
M20	Shift Jogger Lift	Raises the shift jogger fences after aligning the stack, then reverses and lowers them when returning to the home position. Jogger Unit B513 (option).
BOARDS		
PCB	Main	Controls the finisher and communicates with the copier.
PCB	Stapler	Controls the stapler unit.
PCB	Punch	Passes signals between the punch unit and the finisher main board. Punch Unit B531 (option).
PCB	Jogger	Controls the shift/jogger unit B513 (option).
SENSORS		
S01	Entrance	Detects the copy paper entering the finisher and checks for misfeeds.
S02	Upper Tray Exit	Checks for misfeeds at the upper tray.

Symbol	Name	Function
S03	Upper Tray Limit	Detects when the paper stack height in the upper tray is at its upper limit.
S04	Shift Tray Exit	Checks for misfeeds at the shift tray exit.
S05	Exit Guide Open	Detects whether the guide plate is opened or not.
S06	Staple Mode HP 1	Detects the shift tray home position for standby mode and for staple mode.
S07	Staple Mode HP 2	Detects the shift tray home position for standby mode and for staple mode.
S09	Shift Lower Limit – Large Paper	Detects the lower limit for the shift tray when large paper sizes are being used
S10	Shift Tray Lower Limit 2	Not used.
S11	Shift Tray Lower Limit 3	Detects when the shift tray is at its lower limit.
S12	Shift Mode HP	Detects the shift tray home position in sort/stack mode.
S13	Stacking Roller HP	Detects when the stacking roller is at home position.
S14	Shift Tray Half-Turn	Detects whether the shift tray is at either the front or home HP.
S15	Pre-Stack Tray Paper	Determines when to turn off the pre-stack paper stopper solenoid.
S16	Stapler Tray Exit	Detects jams at the staple tray exit.
S17	Positioning Roller HP	Detects the home position of the positioning roller.
S18	Stack Feed-Out Belt HP	Detects the home position of the stack feed-out belt.
S19	Stapler Tray Paper	Detects the copy paper in the stapler tray.
S20	Jogger HP	Detects the home position of the shift jogger fences.
S21	Stack Plate - Center HP	Detects the home position of the center stack plate.
S22	Stack Plate – Front	Detects the home position of the front stack plate.
S23	Stack Plate – Rear	Detects the home position of the rear stack plate.
S24	Stapler HP	Detects the home position of the staple unit for side-to-side movement.
S25	Stapler Rotation HP	Detects the home position of the stapler unit for 45-degree rotation.
S26	Stapler Return	Detects the on timing of the stapler return solenoid.
S27	Staple Waste Hopper	Detects when the staple waste hopper is full.
S28	Punch Waste Hopper	Detects when the punch waste hopper is full and detects when the punch tray is set. Punch Unit B531 (option).
S29	Punch HP 1	Detects the cam home position for the 2-hole punch. Punch Unit B531 (option).
S30	Punch HP 2	Detects the cam home position for 3/4 punch. Punch Unit B531 (option).
S31	Shift Jogger HP	Detects the home position of the jogger unit arms during paper alignment. Jogger Unit B513 (option).
S32	Shift Jogger Lift HP	Detects the when both shift jogger fences are at the lowered position and ready to move against the sides of the stack. Jogger Unit B513 (option).

Symbol	Name	Function
SOLENOIDS		
SOL1	(Upper) Tray Junction Gate	Drives the tray junction gate.
SOL2	Stapler Junction Gate	Drives the stapler junction gate.
SOL3	Pre-Stack Junction Gate	Drives the pre-stack junction gate.
SOL4	Pre-stack Paper Stopper	Drives the stopper pawl of the pre-stacking tray.
SOL5	Stapler Return	Positions the stapler correctly on its return from the staple supply point.
SWITCHES		
SW1	Shift Tray Upper Limit	Cuts the power to the shift tray lift motor when the shift tray position is at its upper limit.
SW2	Front Door Safety	Cuts the dc power when the front door is opened.
SW3	Emergency Stop	Switches the current job off and on to allow time for the operator to remove paper from the shift tray.

7.3 DRIVE LAYOUT



1. Upper Transport Roller 2
2. Upper Tray Exit Roller
3. Lower Transport Roller 2
4. Shift Tray Lift Motor
5. Shift Tray Exit Motor
6. Shift Tray Exit Roller
7. Shift Tray
8. Shift Motor
9. Staple Tray Exit Roller
10. Positioning Roller
11. Lower Transport Roller 3
12. Lower Transport Motor
13. Lower Transport Rollers 2
14. Lower Transport Roller 1
15. Transport Roller 1
16. Entrance Roller 2
17. Entrance Roller
18. Upper Transport Roller 1
19. Upper Transport Motor
20. Stack Feed-out Motor
21. Jogger Motor
22. Jogger Fence
23. Stack Plate Motor
24. Stapler Motor
25. Stack Feed-out Belt
26. Stapler Rotation Motor

COVER INTERPOSER TRAY
TYPE 3260(B704) / TYPE CI4000(D614)

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

COVER INTERPOSER TRAY B704

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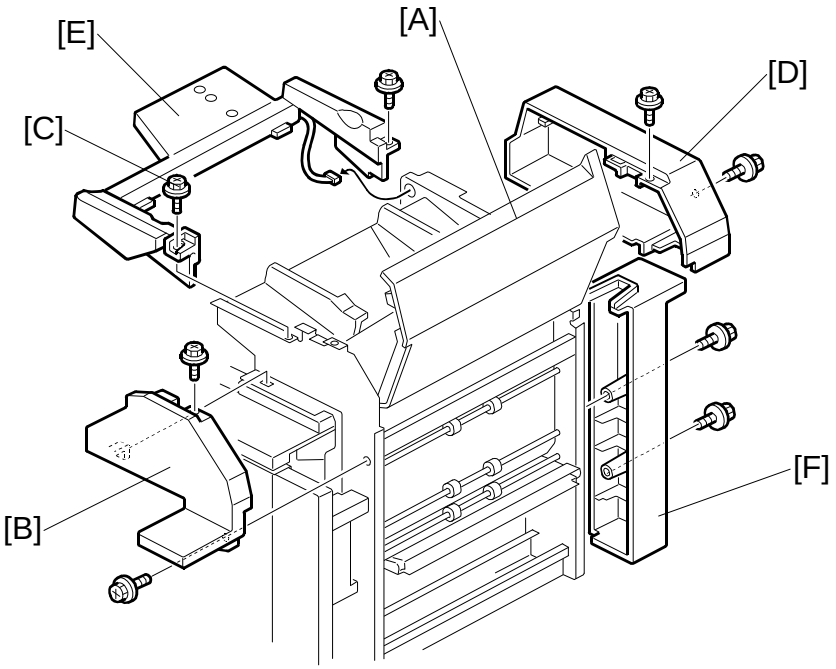
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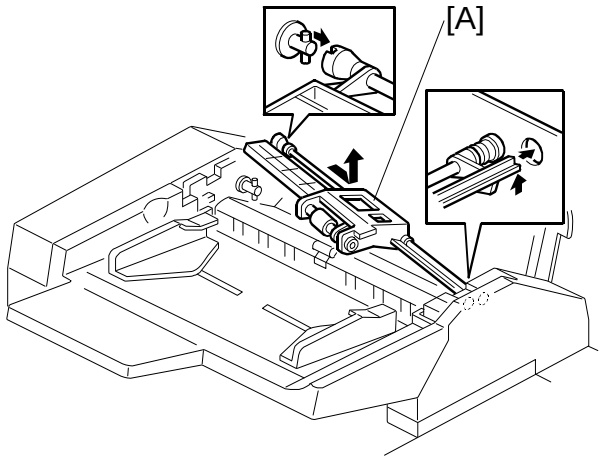
1. REPLACEMENT AND ADJUSTMENT

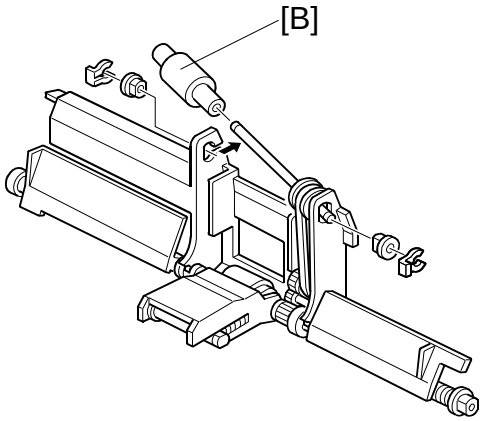
1.1 EXTERNAL COVERS



[A]: Open the feed cover.
[B]: Upper front cover (🔩 x 2)
NOTE: To remove the upper front cover, screw [C] must be removed.
[D]: Rear upper cover (🔩 x 2)
[E]: Slip sheet tray (🔩 x 2, 🖐 x 1)
[F]: Rear middle cover (🔩 x 2)

1.2 FEED UNIT AND PICK-UP ROLLER





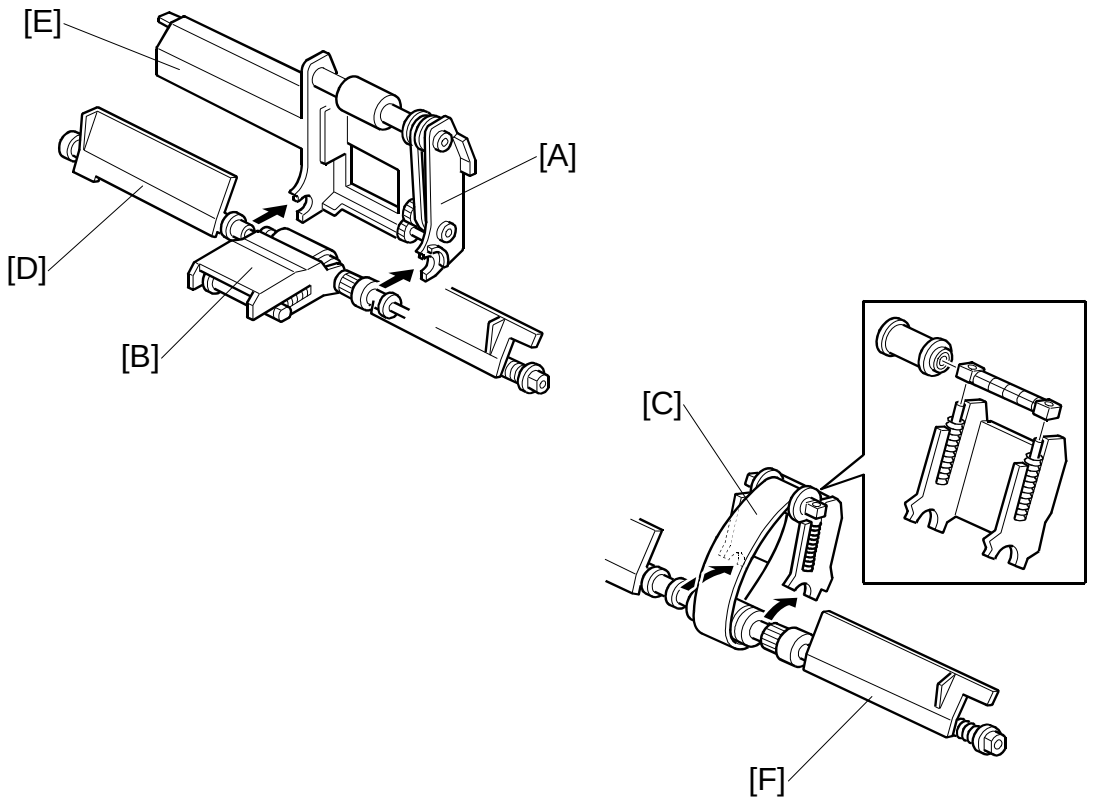
Open the feed cover.

[A]: Feed unit

- The unit is spring loaded. Push it to the right to release it, then lift it out.

[B]: Pick-up roller (x 2, bushings x 2)

1.3 FEED BELT



Feed unit (☛ 1.2)

[A]: Pick-up roller unit.
- Pull the unit away from the bushings in the direction of the arrow.

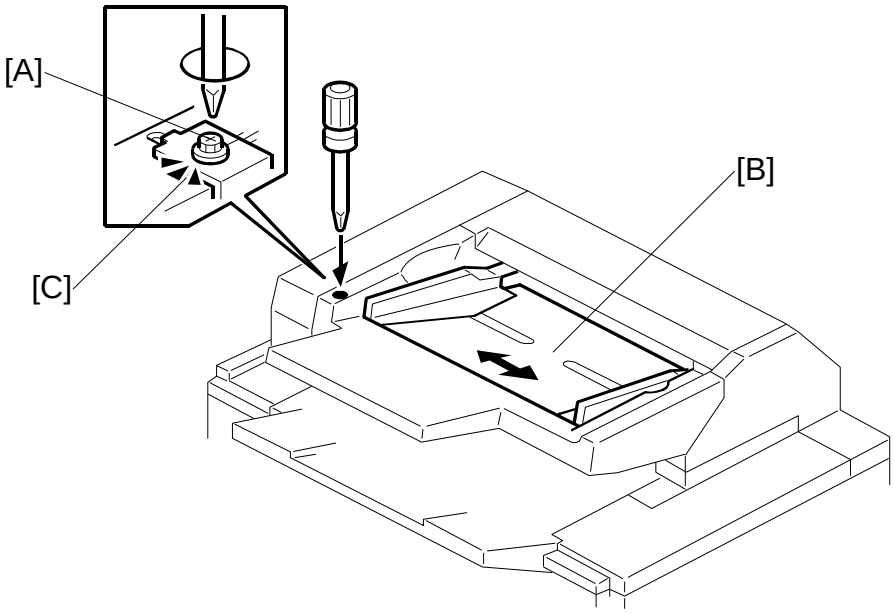
[B]: Feed belt holder
- Hold the feed belt holder by the sides, then lift up to separate from the holder.
- Pull slowly to avoid losing the springs.

[C]: Feed belt.

Re-assembly

1. Position the pick-up roller unit [A] and feed belt holder [B] as shown above.
2. On the rear side, slide out the bushing, and rotate [D] until its flat side is parallel with [E], then snap it on.
3. On the front side, rotate [F] until its flat side is parallel with [D], then snap it on. Viewed from the bottom, the plates must be aligned.

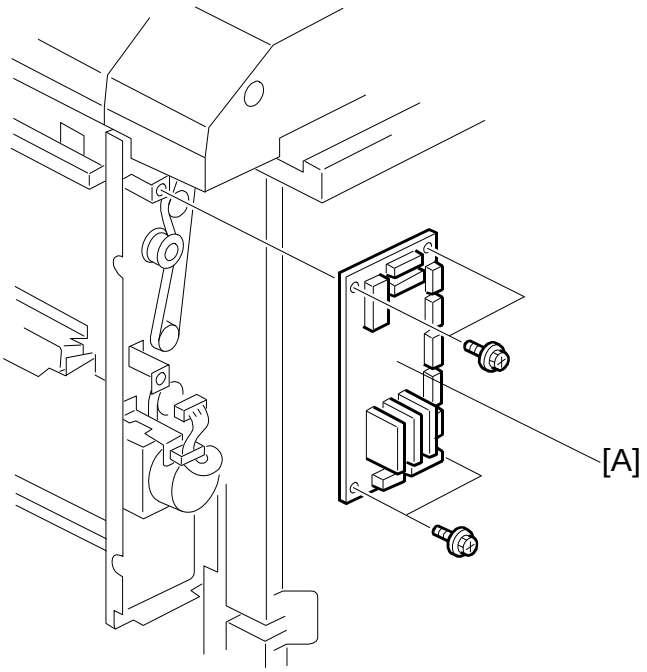
1.4 GUIDE PLATE ADJUSTMENT



Adjust the guide plate if the holes punched in the covers or slip sheets are not correctly aligned with holes punched in the other sheets.

1. Open the feed cover.
2. Loosen the screw [A].
3. Push the table [B] left or right to change its position, then tighten the screw.
   NOTE: If you want to see the scale [C], you must remove the rear cover and the support tray.

1.5 MAIN BOARD



Open the top cover.

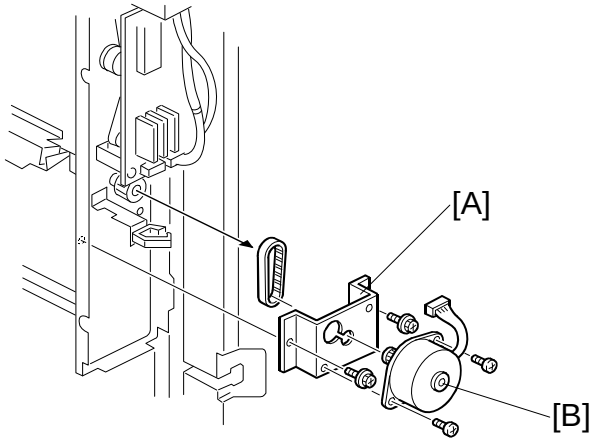
Rear cover (x 1)

[A]: Main board (x 9, x 4)

NOTE: All DIP switch settings on the main board of the cover sheet unit should be set to OFF.

1.6 MOTOR REPLACEMENT

1.6.1 VERTICAL TRANSPORT MOTOR



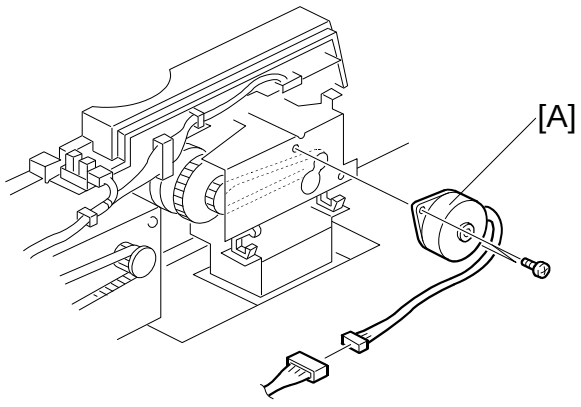
Open the top cover.

Rear middle cover (x 1) (☛ 1.1)

[A]: Motor bracket (x 1, harness x 1, x 2, timing belt x 1)

[B]: Motor (x 2)

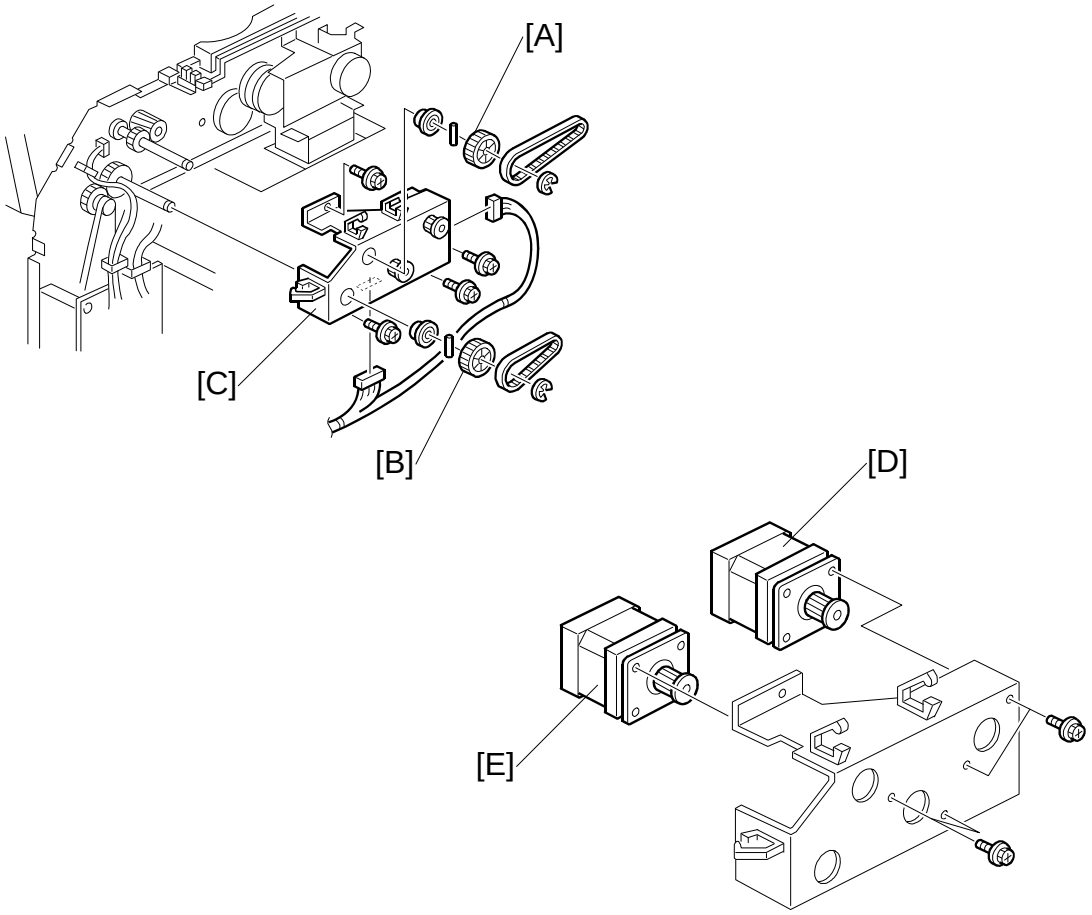
1.6.2 BOTTOM PLATE LIFT MOTOR



Rear upper cover (☛ 1.1)

[A]: Bottom plate lift motor (harness x 2, x 1, x 2)

1.6.3 FEED MOTOR, TRANSPORT MOTOR



Rear upper cover (☛ 1.1)

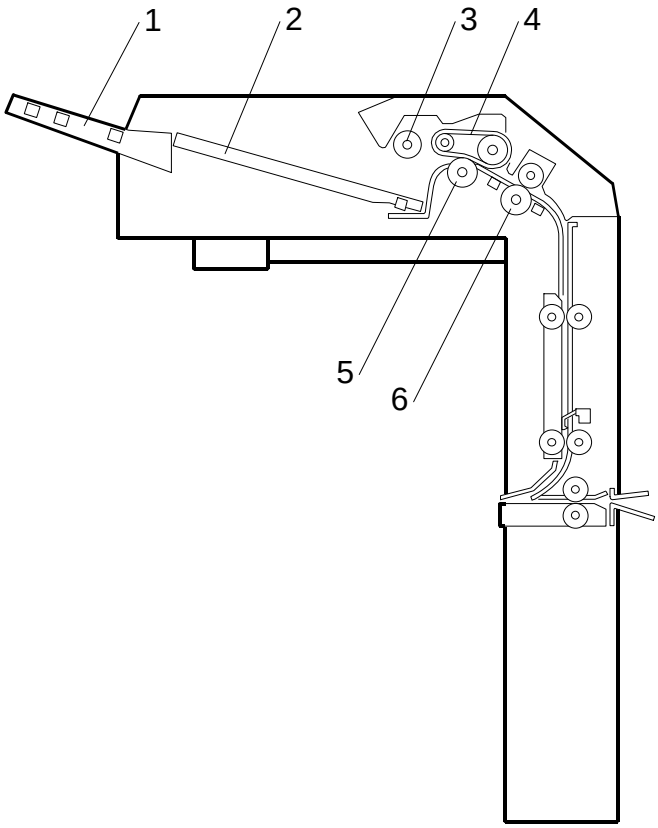
NOTE: When removing the feed gear and transport gear, hold one hand under the gear to catch the pin as it falls from the hole in the shaft.

[A]: Feed gear (ℂ x 1, pin x 1, timing belt x 1, bushing x 1)
[B]: Transport gear (ℂ x 1, pin x 1, timing belt x 1, bushing x 1)
[C]: Motor bracket (harness x 5, 🔩 x 4)
[D]: Feed motor (🖐 x 1, 🔩 x 2)
[E]: Transport motor (🖐 x 1, 🔩 x 2)

2. DETAILS

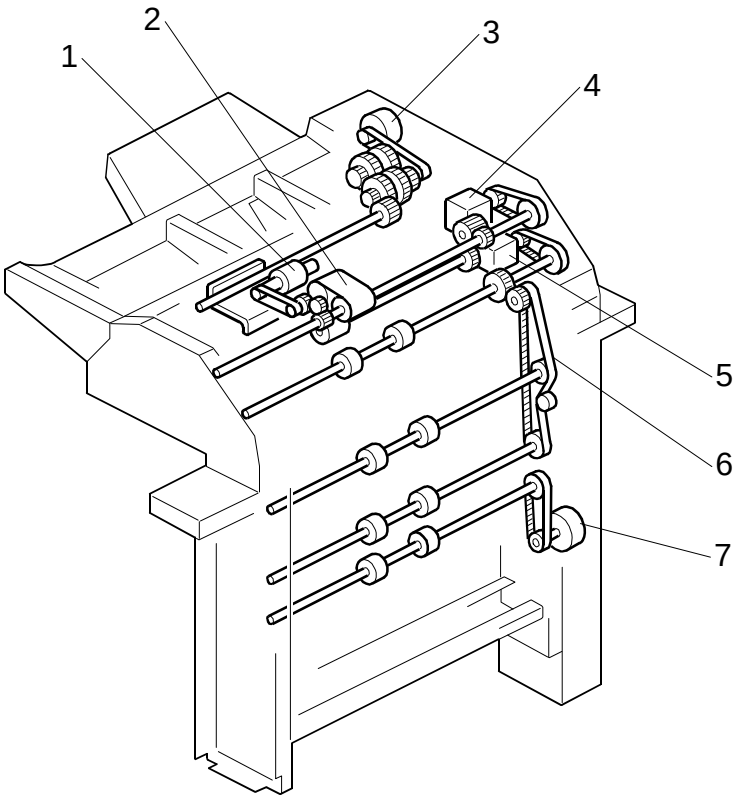
2.1 OVERVIEW

2.1.1 MAIN LAYOUT



1. Support tray
2. Slip sheet tray
3. Pick-up roller
4. Feed belt
5. Separation roller
6. Grip roller

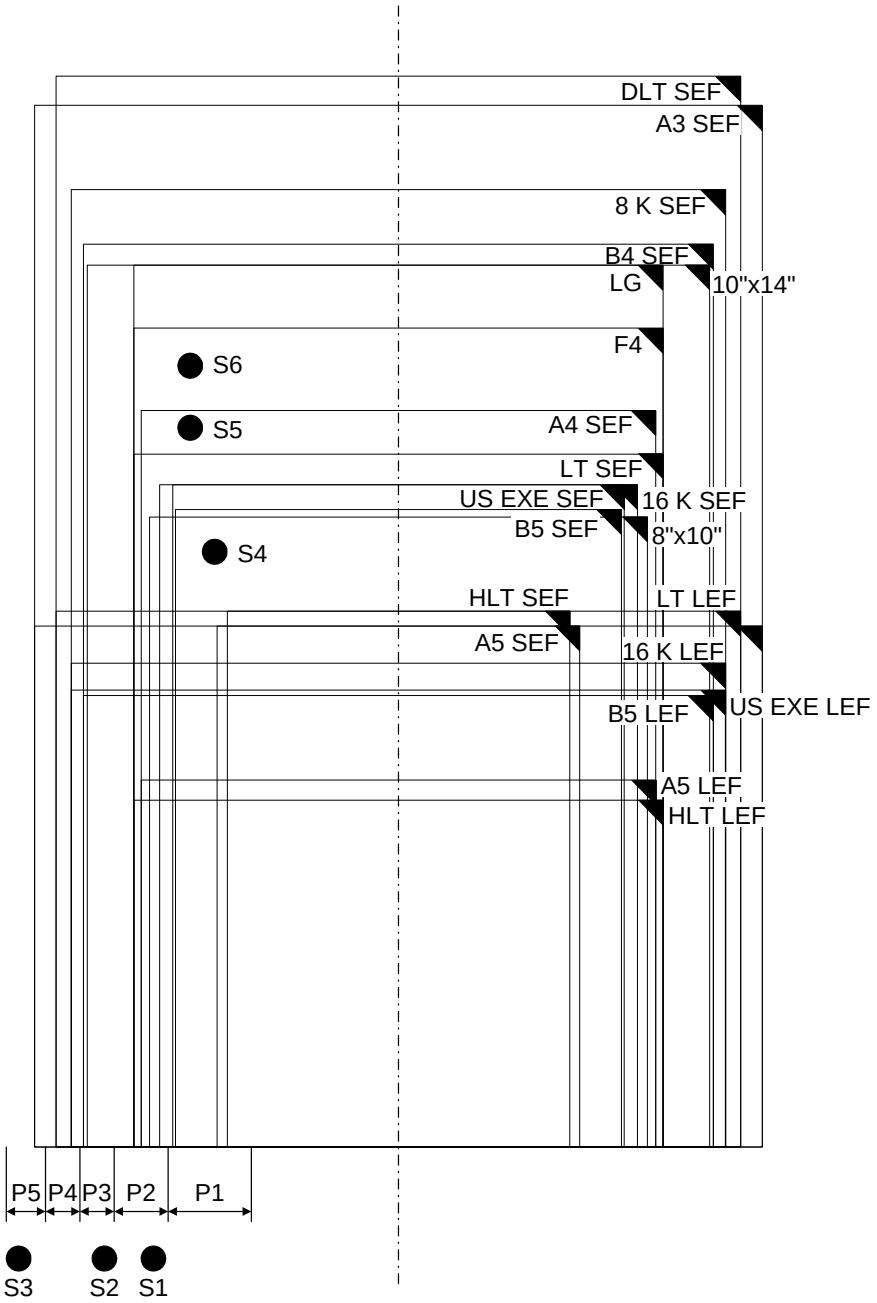
2.1.2 DRIVE LAYOUT



1. Pick-up Roller
2. Feed Belt
3. Bottom Plate Lift Motor
4. Feed Motor
5. Transport Motor
6. Timing Belt
7. Vertical Transport Motor

2.1.3 PAPER SIZE DETECTION

The width sensors [A] (S1, S2, S3) and length sensors [B] (S4, S5, S6) detect the width and length of the original on the interposer feed tray.



The table below lists the sensor output for each paper size.

	S1	S2	S3	S4	S5	S6
A3	0	1	1	1	1	1
B4	1	1	0	1	1	1
A4 SEF	1	0	0	1	1	0
A4 LEF	0	1	1	0	0	0
B5 SEF	0	0	0	1	0	0
B5 LEF	1	1	0	0	0	0
A5 SEF	0	0	0	0	0	0
A5 LEF	1	0	0	0	0	0
11" x 17"	1	1	1	1	1	1
10" x 14" SEF	1	1	0	1	1	1
8 1/2" x 14"	1	0	0	1	1	1
8 1/2" x 13"	1	0	0	1	1	1
8 1/2" x 11"	1	0	0	1	0	0
11" x 8 1/2"	1	1	1	0	0	0
8" x 10"	1	0	0	1	0	0
5 1/2" x 8 1/2"	0	0	0	0	0	0
8 1/2" x 5 1/2"	1	0	0	0	0	0
7 1/2" x 10 1/2" (US Exec.)	0	0	0	1	0	0
10 1/2" x 7 1/2" (US Exec.)	1	1	1	0	0	0
8 K	1	1	1	1	1	1
16 K SEF	1	0	0	1	0	0
16 K LEF	1	1	1	0	0	0

The cover interposer tray detects all the paper sizes listed above. However, there are some limitations on the display of the correct paper size.

		North America	Europe/Asia
B4 SEF	257 x 364 mm	Displays 10"x14 *1	
B5 SEF	182 x 257	Displays "US Exec." *1	
A5 SEF	148 x 210	Displays "HLT SEF" *1	
A5 LEF	210 x 148	Displays "HLT LEF" *1	
DLT SEF	11" x 17"		Displays "8K LEF" *2
LG SEF	8 1/2" x 14"		Displays "F4 SEF" *2
LT SEF	8 1/2" x 11"		Displays "16 K SEF" *2
LT LEF	11" x 8 1/2"		Displays "16 K LEF" *2

*1: Cannot be corrected.

*2: B064 series: Can be corrected with SP5959 006 (Paper Size – Cover Sheet).
B140 series: Can be corrected with SP5158

B064 series: Paper Size Detection

North America

Execute SP5959 006 and enter the correct number for the size of the paper loaded for feeding from the cover interposer tray.

Loaded	Display (Default)	To Select for Display	Enter
8 1/2" x 13"	8 1/2" x 14"	8 1/2" x 13"	165
10 1/2" x 7 1/2"	8 1/2" x 11"	10 1/2" x 7 1/2"	173
8" x 10"	8 1/2" x 11"	8" x 10"	171

Europe/Asia

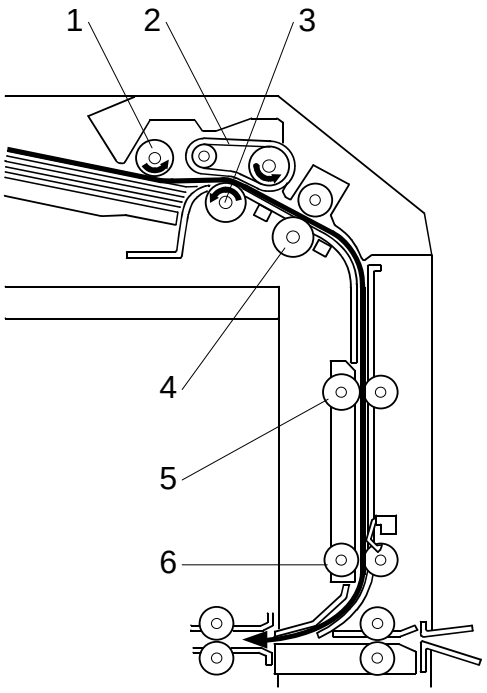
Execute SP5959 006 and enter the correct number for the size of the paper loaded for feeding from the cover interposer tray.

Loaded	Display (Default)	To Select for Display	Enter
11" x 17"	8 K	11" x 17"	160
8 1/2" x 11"	16 K SEF	8 1/2" x 11"	166
11" x 8 1/2"	16 K LEF	11" x 8 1/2"	38
8 1/4" x 13"	8 1/2" x 13" SEF	8 1/4" x 13"	168

B070/B071, B140 series: Paper Size Detection

Some paper sizes are almost the same and cannot be detected as different sizes by the sensors. To select the sizes that are detected, use SP 5158.

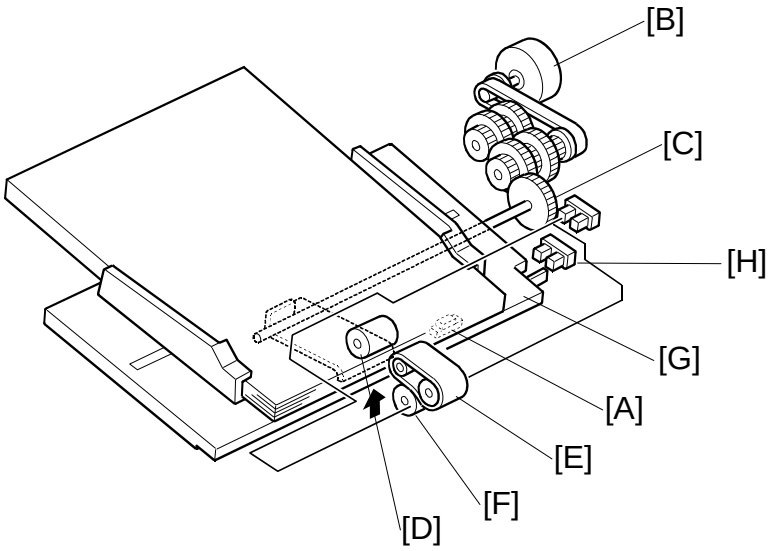
2.1.4 PAPER PATH



1. Pick-up Roller
2. Feed Belt
3. Separation Roller
4. Grip Roller
5. Transport Roller 1
6. Transport Roller 2

The paper feeds from the tray, to the feed belt, then to the grip roller and down into the paper path to the finisher below.

2.2 PAPER FEED



Power On

When paper is placed on the tray, the paper set sensor [A] in the tray actuates and switches on the bottom plate lift motor [B]. The top of the stack raises the pick-up roller unit until the actuator on this unit actuates the pick-up roller position sensor [C] and switches the motor off.

Paper Separation and Feed

The pick-up roller [D] picks up the original, and the feed belt [E] feeds the sheet to the grip roller. The separation roller [F] reverses if more than one sheet is fed

Bottom Tray Lift

As sheets feed from the top of the stack:

- The pick-up roller unit descends until the actuator on the pick-up roller unit drops out of the pick-up roller position sensor [C].
- The bottom plate lift motor switches on to raise the stack until the actuator enters the pick-up roller unit position sensor again and switches the motor off.
- This repeats until the end of the job or until paper runs out.

Paper Near-end

Near-end is detected when the actuator [G] on the bottom plate enters the near-end sensor [H].

Paper End

After the last sheet feeds the paper set sensor [A] goes off and signals paper out.

3000-SHEET FINISHER (B706)
SR4050 FINISHER (D460)
SR4080 FINISHER (D610)

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

3000-SHEET FINISHER
B706/D460/D610

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1. INSTALLATION

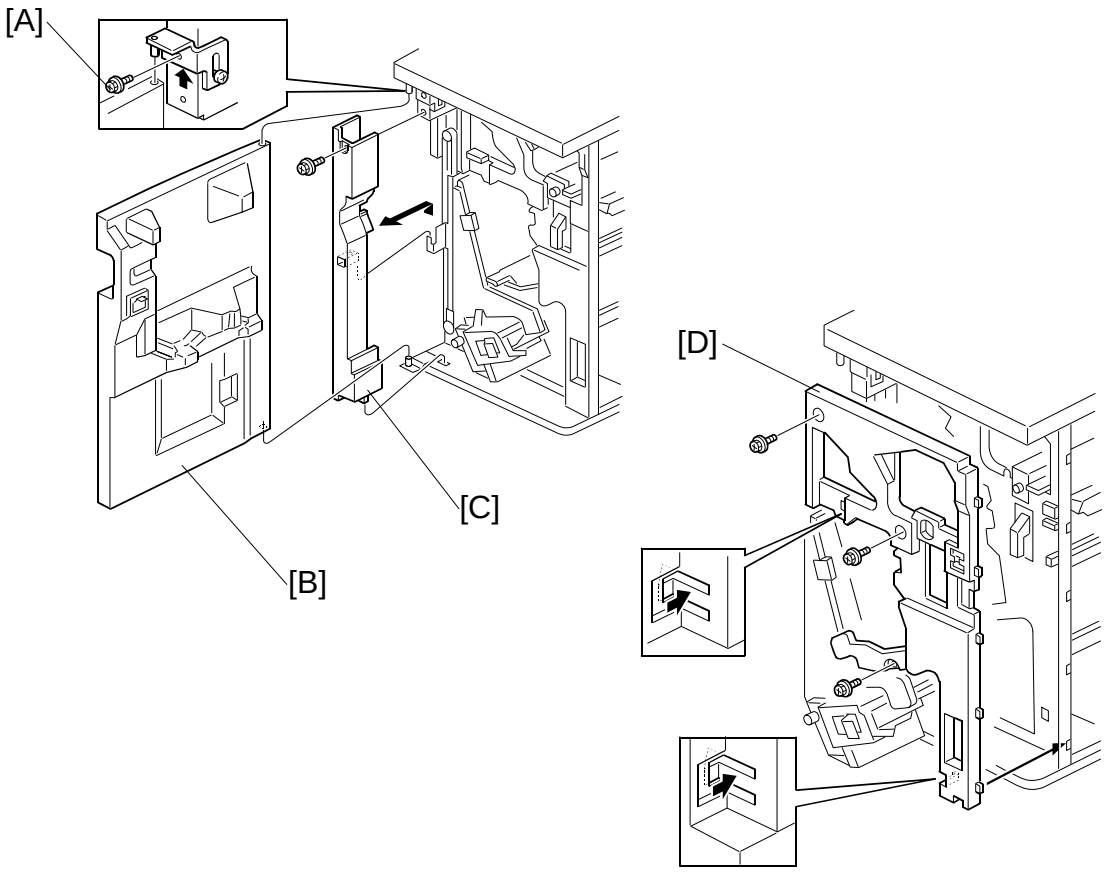
For details about installing the Sheet Finisher, please refer to the instructions you received with the instructions or the “Installation” Section in the main machine service manual.

2. PREVENTIVE MAINTENANCE

For details about the Sheet Finisher PM table, please refer to the Preventive Maintenance" Section in the main Service Manual.

3. REPLACEMENT AND ADJUSTMENT

3.1 DOOR AND COVER REPLACEMENT



Front Door

1. Remove the front door screw [A] (x 1).
2. Remove the front door [B].

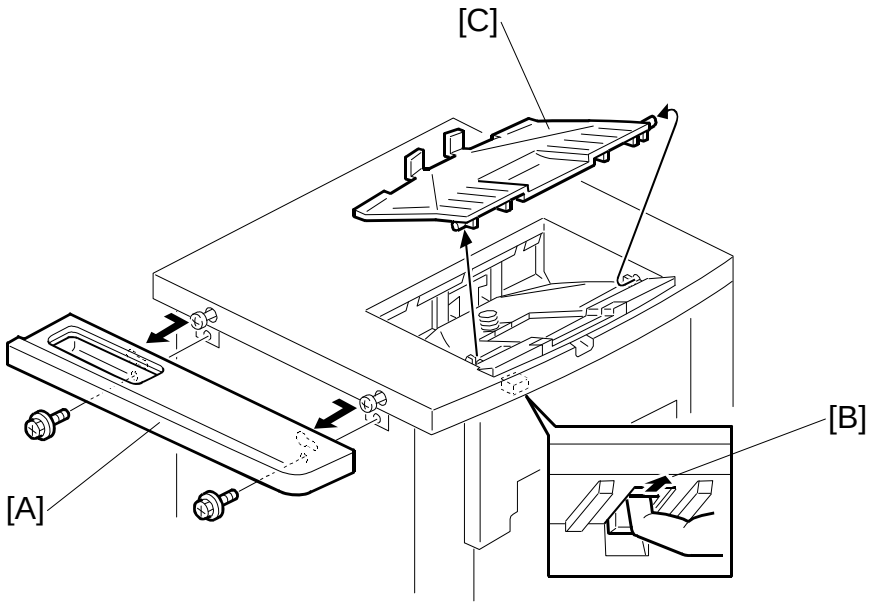
Left Inner Cover

1. Remove the front door.
2. Remove the left inner cover [C] (x 1).

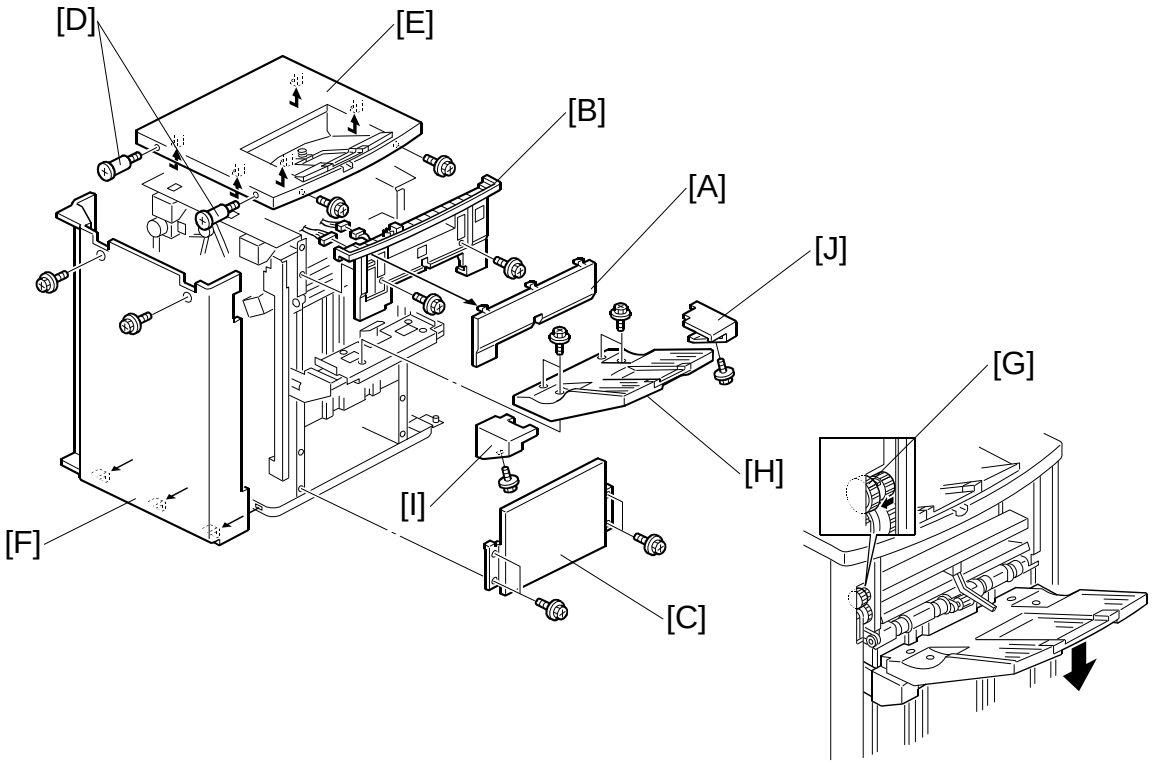
Inner Cover

1. Remove the inner cover [D] (x 3).

Side Table and Upper Tray



1. Remove the side table [A] (☞ x 2). Slide to the right to remove it.
2. Click the release lever [B] and remove the upper tray [C].



Left Covers

1. Remove the left upper panel [A].
2. Remove the left upper cover [B] (x 2, x 2).
3. Remove the door and left inner cover. (See “Front Door and Left Inner Cover Replacement”.)
4. Remove the rear cover [F] (x 2).
5. Remove the left lower cover [C] (x 4).

Rear Cover and Top Cover

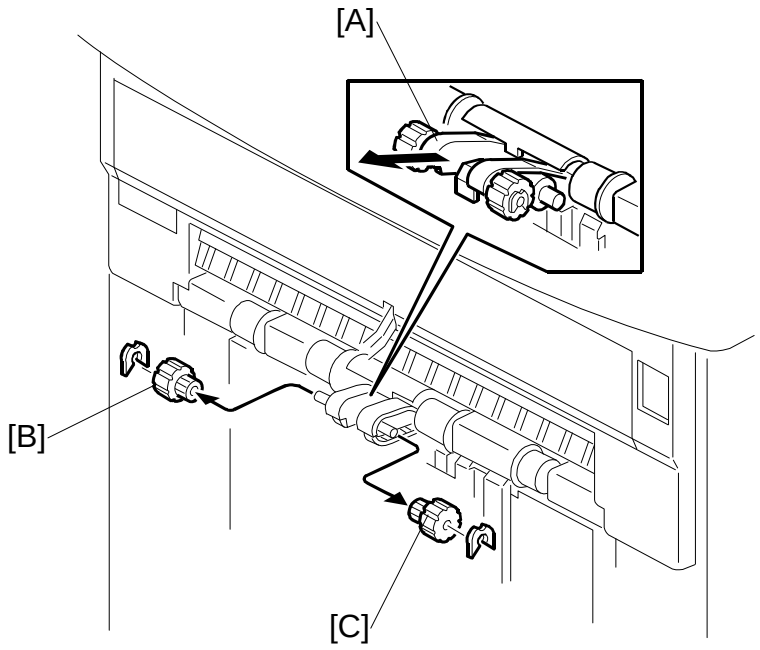
1. Remove the upper tray. (See “Side Table and Upper Tray”.)
2. Remove the step screws [D] (x 2).
3. Remove the top cover [E] (x 2). Slide to the right to remove.
4. Remove the rear cover [F] (x 2).

Shift Tray

1. If you need to lower the shift tray, support the bottom of the tray with your hand, then pull the gear toward you [G] to release the tray and lower it.
2. Remove the shift tray [H] (x 4).
3. Remove the shift tray rear cover [I] and front cover [J] (x 1 each).

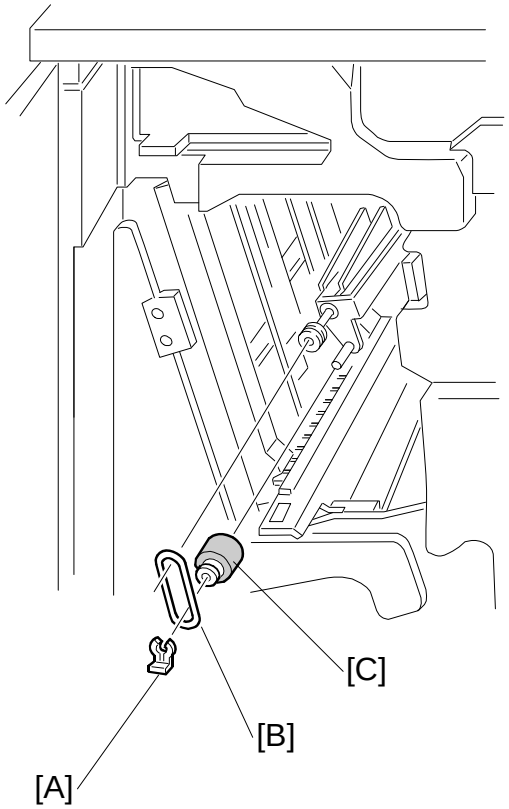
3.2 ROLLERS

3.2.1 SHIFT POSITIONING ROLLER



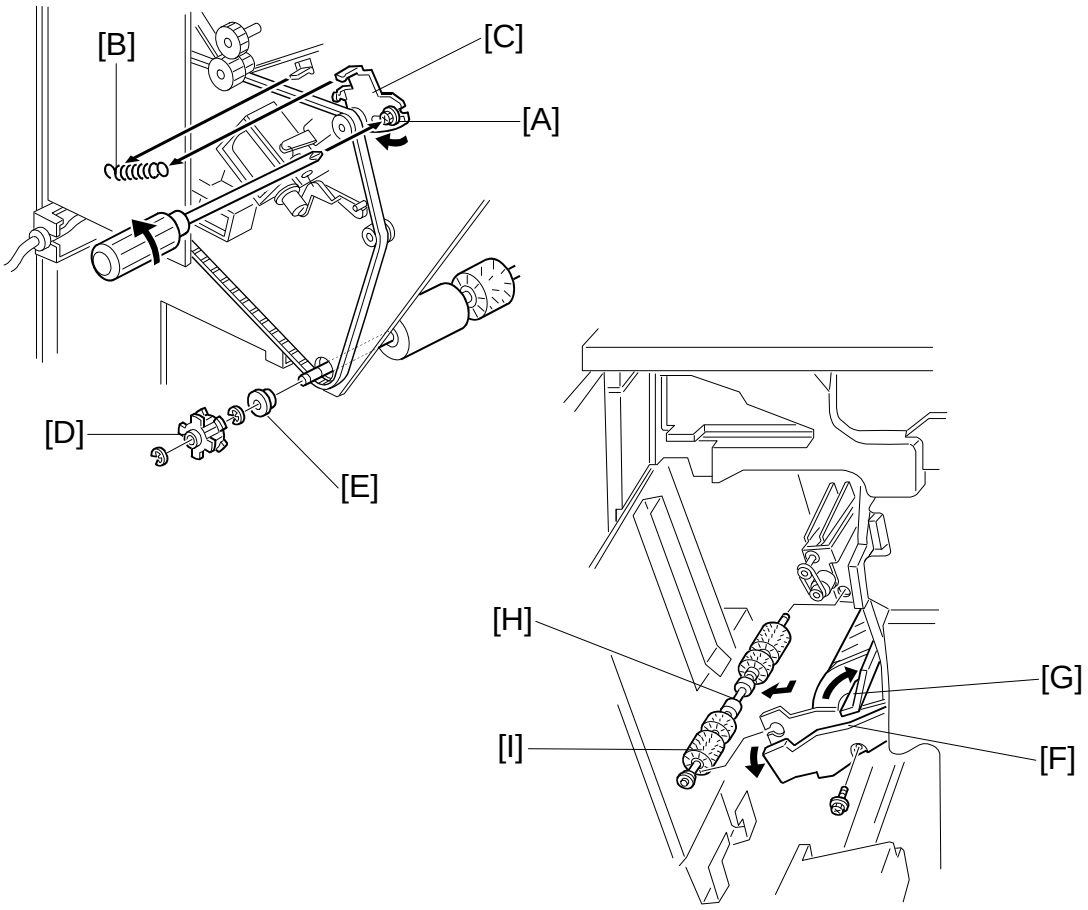
1. Above the shift tray, pull the roller mount [A] out.
2. Remove the rollers [B] and [C] (⌀ x 1 each)

3.2.2 POSITIONING ROLLER



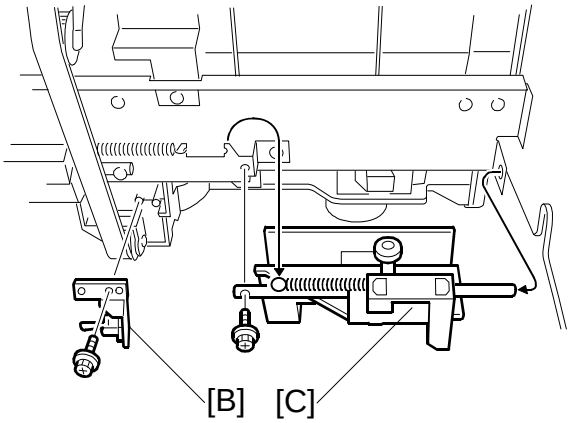
1. Open the front door.
2. Remove the snap ring [A].
3. Release the rubber belt [B].
4. Replace the positioning roller [C].

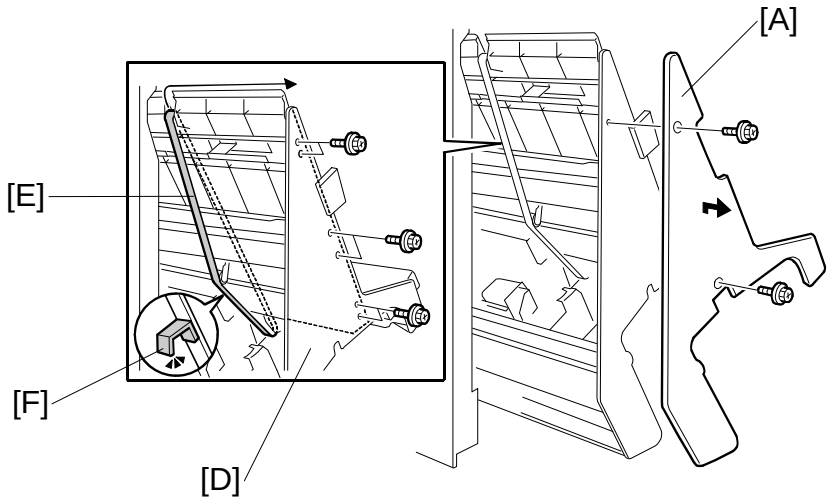
3.2.3 ALIGNMENT BRUSH ROLLER



1. Open the front door and pull out the staple unit.
2. Remove the rear cover.
3. Remove the main board and all connectors (x 8).
4. Remove the screw [A] and tension spring [B] for the tension bracket [C], and release the tension of the timing belt.
5. Remove the pulley [D] and bushing [E] (x 2).
6. Remove the inner cover [F] (x 1).
7. Open the guide [G], then remove the alignment brush roller assembly [H] (x 1).
8. Remove the alignment brush roller [I] (x 1, bushing x 1 front/back).

3.3 STACK FEED-OUT BELT

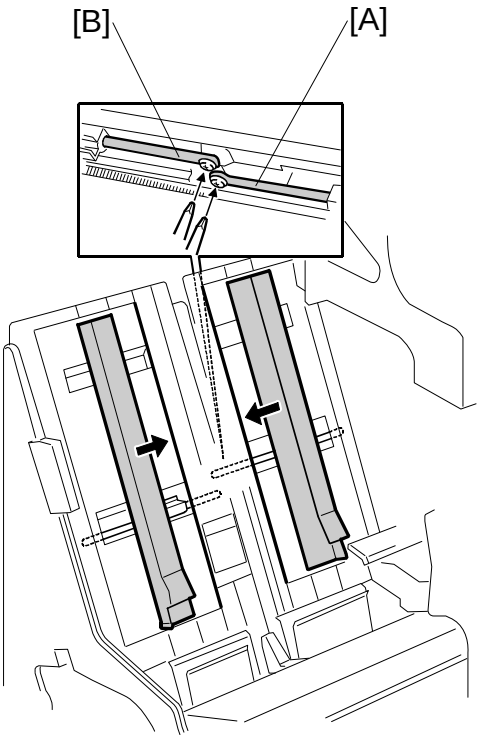




1. Open the front door.
2. Pull out the jogger and stapler unit.
3. Remove the inner cover [A] (x 2).
4. Remove the sensor bracket [B] (x 1, x 1, clamp x 1).
5. Remove the front guide [C] (x 1, spring x 1).
   NOTE: When re-installing, make sure that the flat end of the shaft is against the plate.
6. Remove the front panel [D] from the stays (x 6).
7. Remove the old belt [E] from the bottom, center, then the top.

NOTE: 1) Make sure the ribbed side of the new belt and pawl [F] are facing down.
2) Make sure the new belt is engaged at all three rollers.

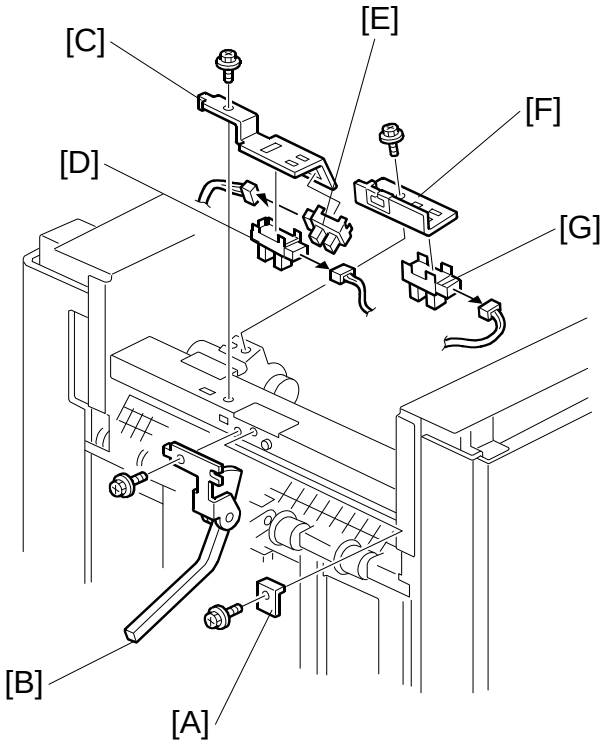
3.4 JOGGER FENCE



1. Open the front door.
2. Pull out the jogger and stapler unit.
3. Push both fences to the center.
4. Remove the left jogger fence [A] (🔩 x 1)
5. Remove the right jogger fence [B] (🔩 x 1).
   NOTE: If the screws are difficult to remove or re-attach, remove the jogger fence belt and spring plate.

3.5 SENSORS

3.5.1 STACK HEIGHT 1, 2 AND EXIT GUIDE OPEN SENSOR



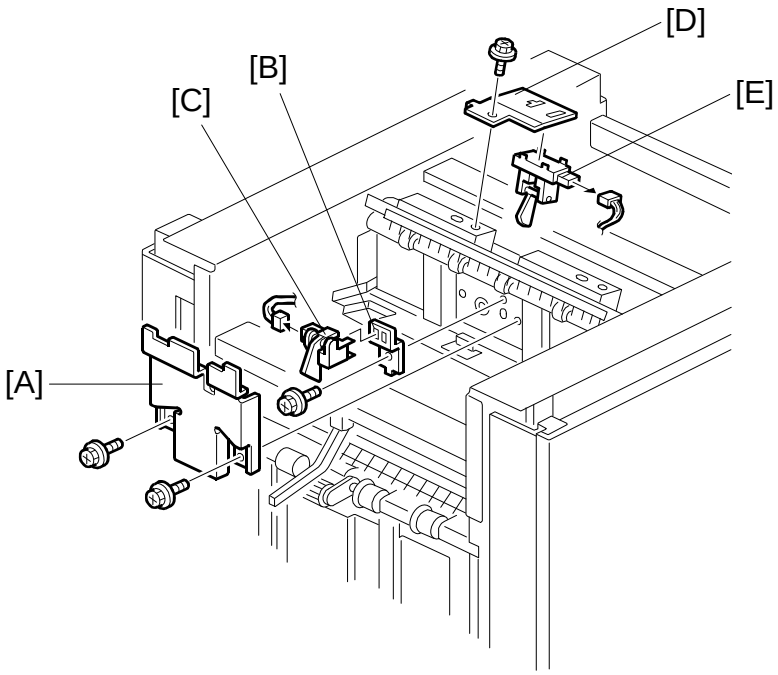
Stack Height Sensors 1 and 2

1. Remove the top cover. (☛ 3.1)
2. Remove the left upper panel and left upper cover (🔩 x 2, 🖐 x 2).
3. Remove the protector plate [A] (🔩 x 1).
4. Remove the sensor feeler [B] (🔩 x 1).
5. Remove the sensor bracket [C] (🔩 x 1).
6. Replace the stack height sensor 1 [D] (🖐 x 1) or 2 [E] (🖐 x 1).

Exit Guide Open Sensor

1. Remove the sensor bracket [F] (🔩 x 1).
2. Replace the exit guide open sensor [G] (🖐 x 1).

3.5.2 UPPER TRAY PAPER LIMIT AND EXIT SENSOR



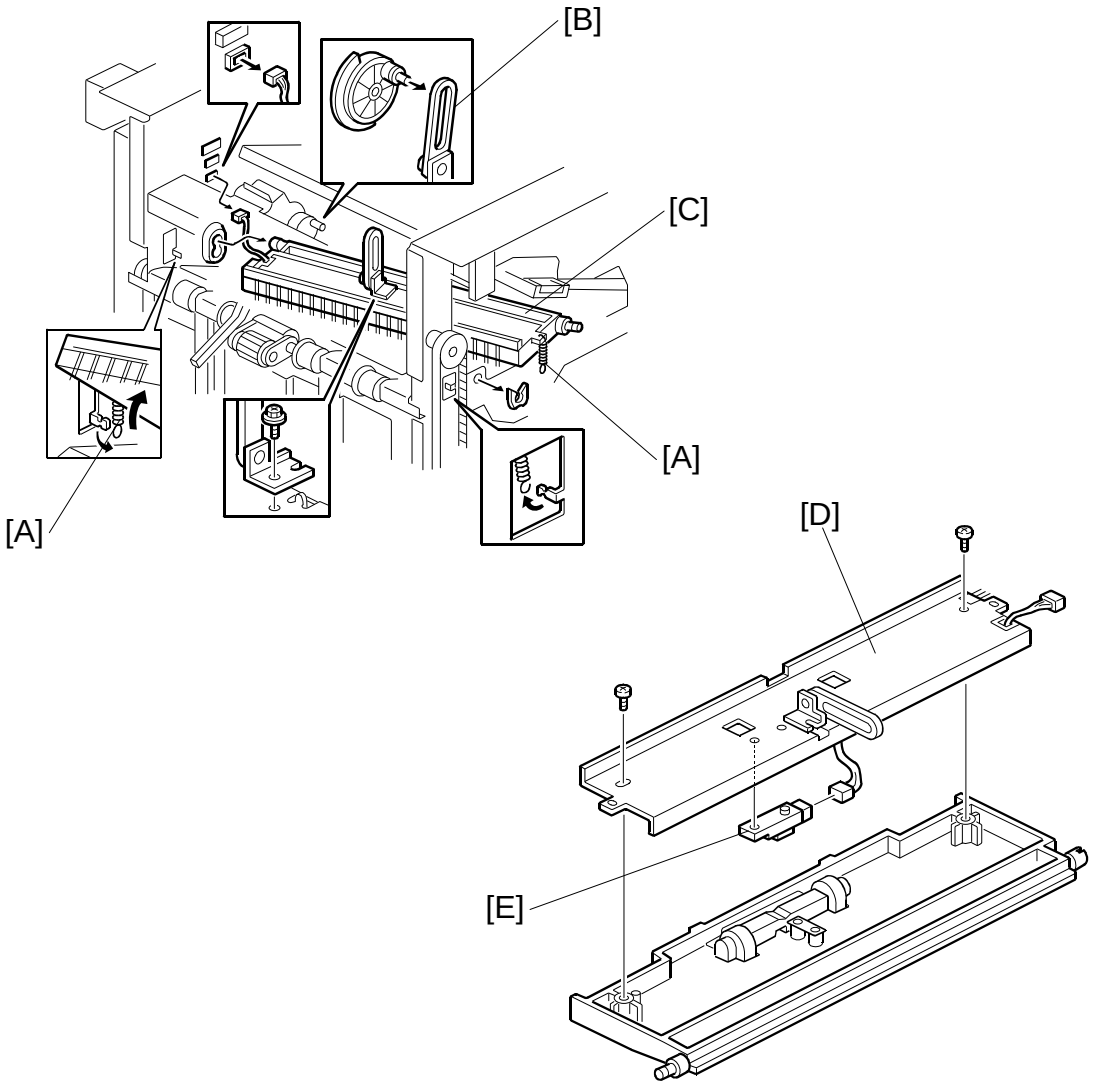
Upper Tray Paper Limit Sensor

1. Remove the top cover.
2. Remove the sensor cover [A] (☞ x 2).
3. Remove the sensor bracket [B] (☞ x 1).
4. Replace the upper tray paper limit sensor [C] (☜ x 1).

Upper Tray Exit Sensor

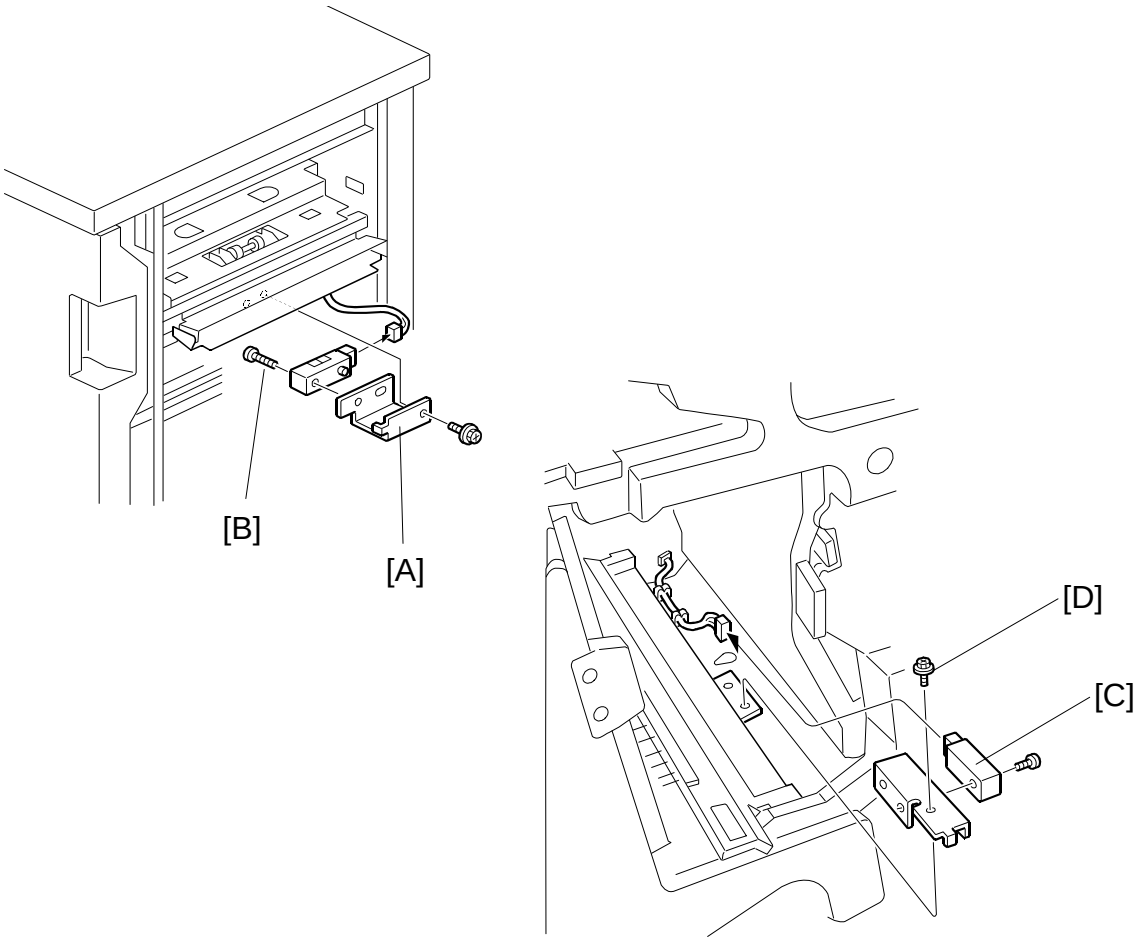
5. Remove the sensor bracket [D] (☞ x 1).
6. Replace the upper tray exit sensor [E] (☜ x 1).

3.5.3 SHIFT TRAY EXIT SENSOR



1. Remove the top cover.
2. Open the front door.
3. Remove the inner cover.
4. Release the upper exit guide springs [A] (x 2).
5. Disconnect the link [B] from the cam (x 1).
6. Remove the upper exit guide [C] (x 1, x 1).
7. Remove the guide stay [D] (x 2).
8. Replace the shift tray exit sensor [E] (x 1, x 1).

3.5.4 ENTRANCE AND STAPLER TRAY ENTRANCE SENSORS



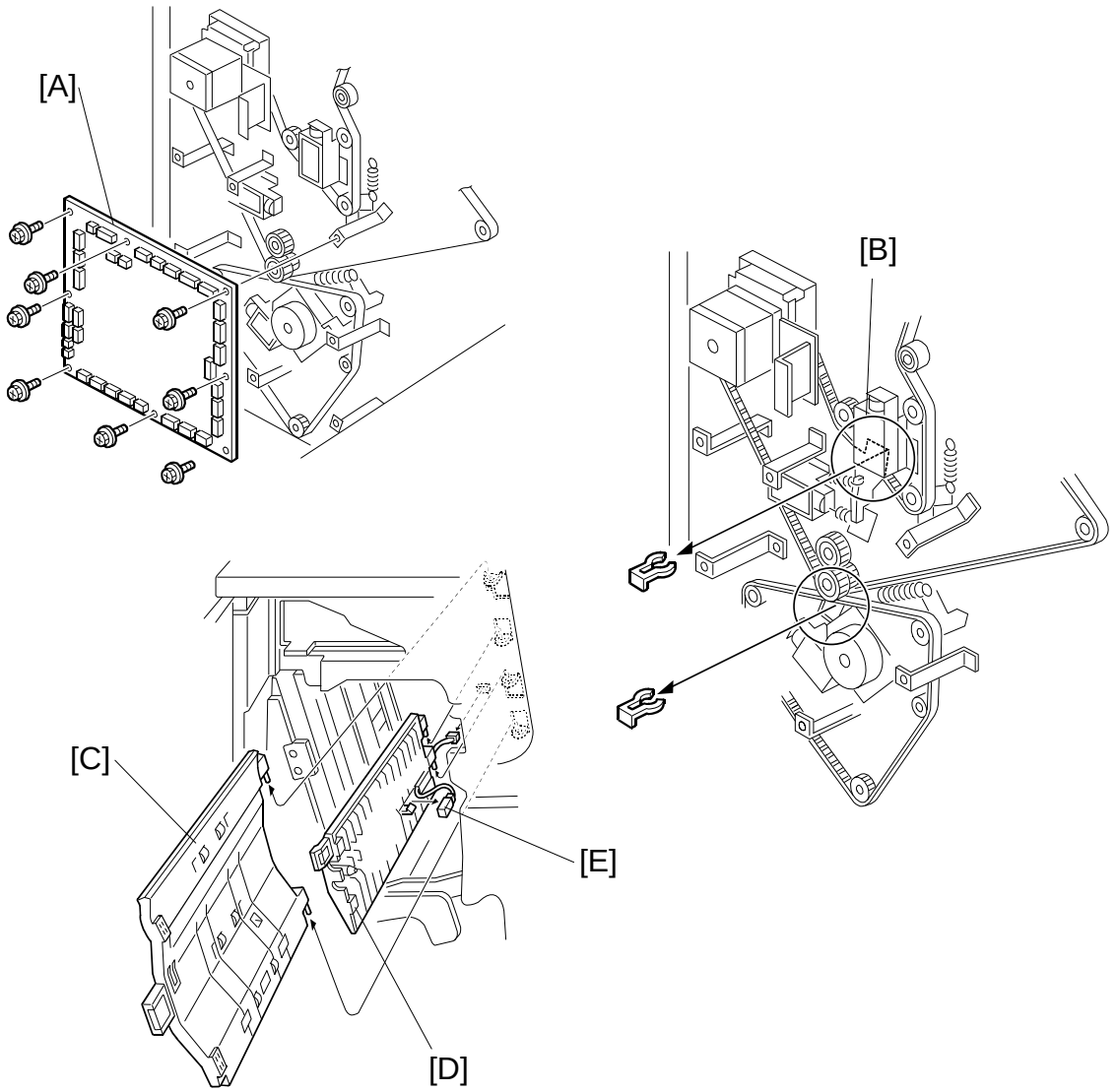
Entrance Sensor

1. Disconnect the finisher from the copier.
2. Remove the sensor bracket [A] (x 1).
3. Replace the entrance sensor [B] (x 1, x 1).

Stapler Tray Entrance Sensor

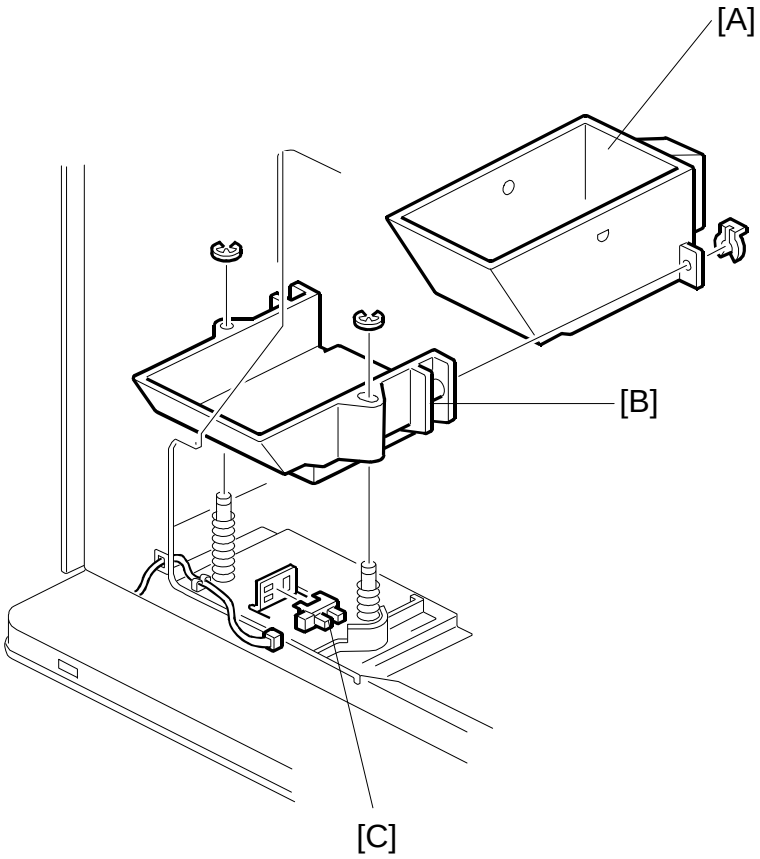
1. Open the front door.
2. Remove the sensor bracket [C] (x 1).
3. Replace the stapler tray entrance sensor [D] (x 1, x 1).

3.5.5 PRE-STACK PAPER SENSOR



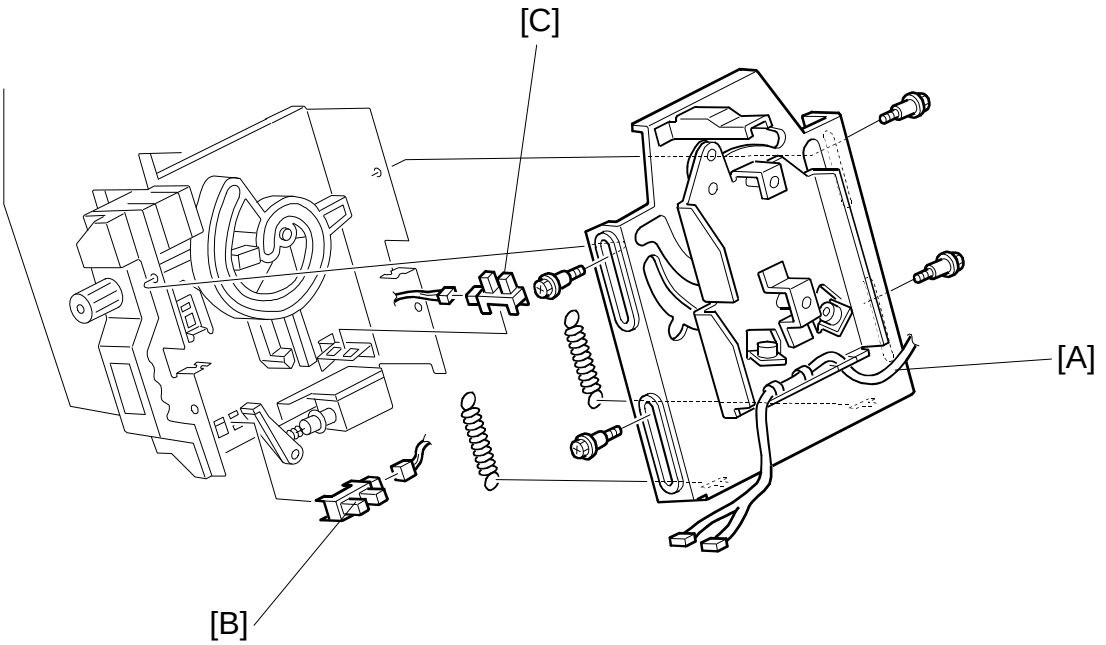
1. Remove the rear cover.
2. Remove the main board [A] (x 8, x all).
3. Release the guide [B] (x 2).
4. Open the front door.
5. Remove the left vertical transport guide [C].
6. Remove the middle vertical transport guide [D] (x 1).
7. Replace the pre-stack paper sensor [E] (x 1).

3.5.6 STAPLE WASTE HOPPER SENSOR



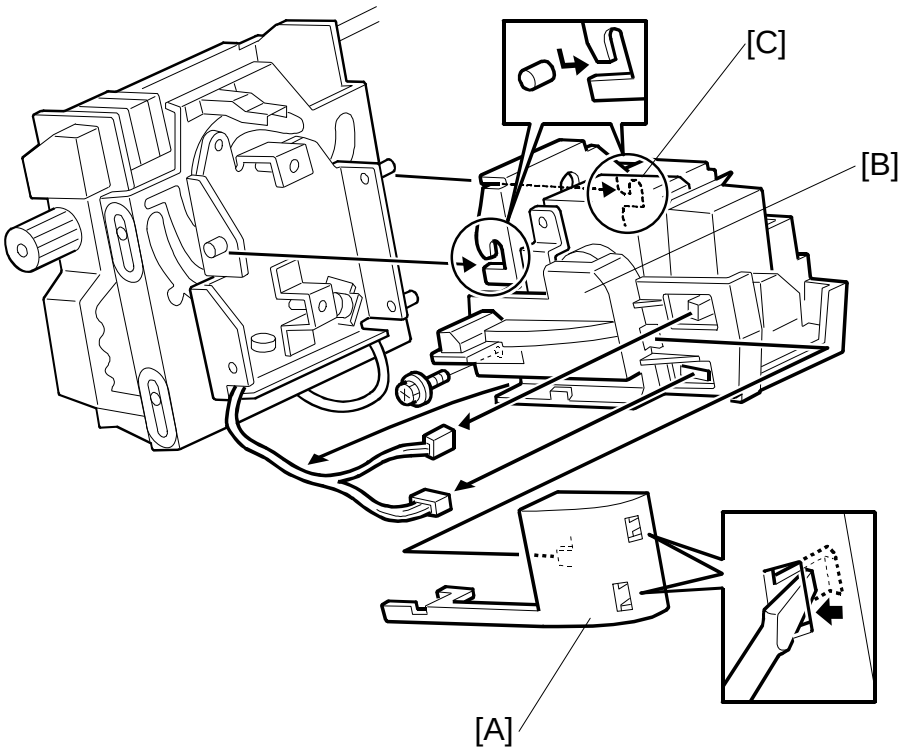
1. Open the front door, pull out the stapler unit, then remove the rear cover.
2. Remove the rear cover (x 2).
3. Remove the staple waste hopper [A] (x 1).
4. Remove the hopper holder [B] (x 2).
5. Replace the staple waste hopper sensor [C] (x 1).

3.5.7 STAPLER ROTATION HP AND STAPLER RETURN SENSORS



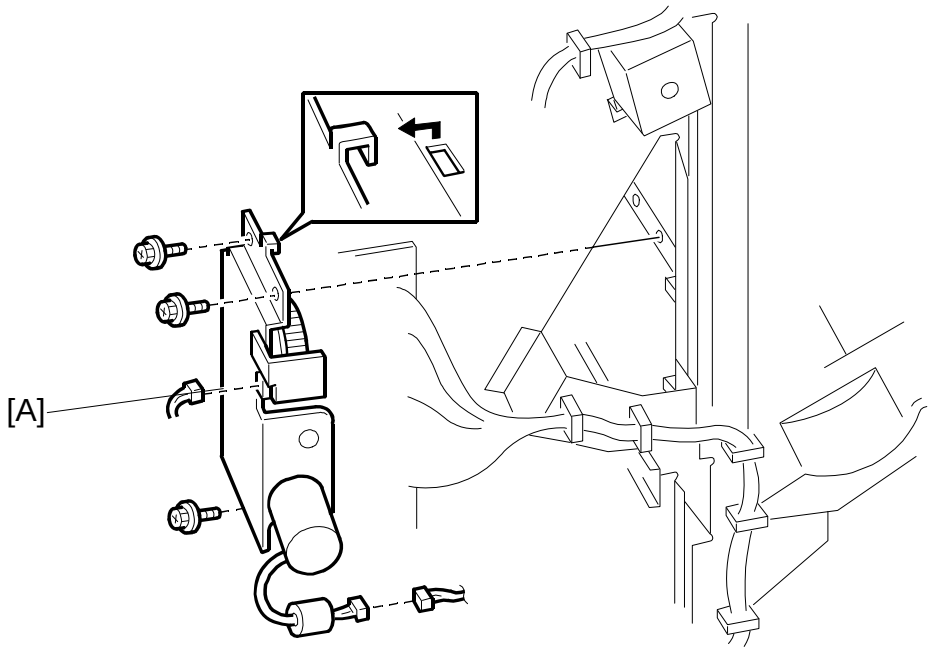
1. Remove the stapler unit. (See next page.)
2. Remove the stapler mount bracket [A] (x 4, springs x 2).
3. Replace the stapler rotation HP sensor [B] (x 1).
4. Replace the stapler return sensor [C] (x 1).

3.6 STAPLER



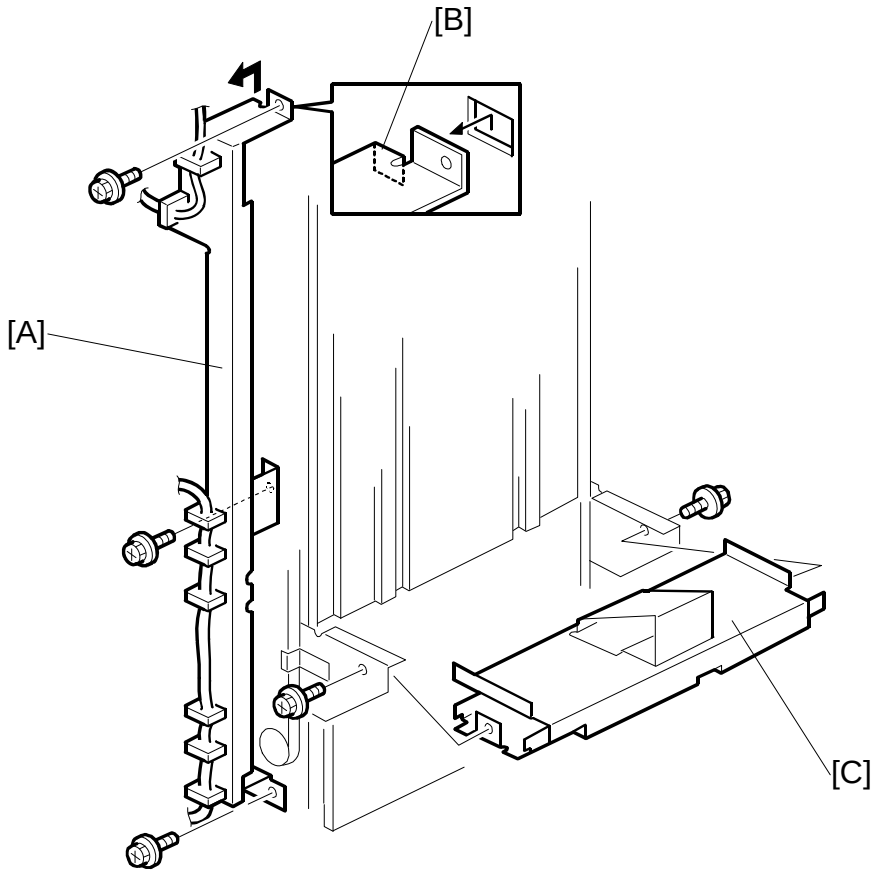
1. Open the front door and pull out the staple tray.
2. Remove the stapler unit harness cover [A].
3. Remove the stapler cover [B] (x 1, x 2).
4. Lift the stapler off of the pegs [C].

3.7 SHIFT TRAY MOTOR

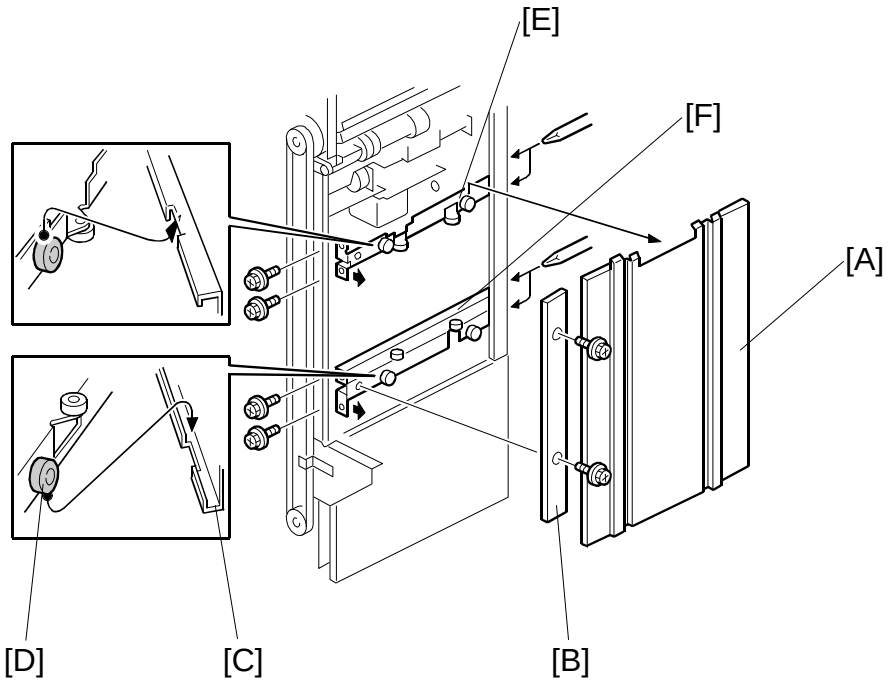


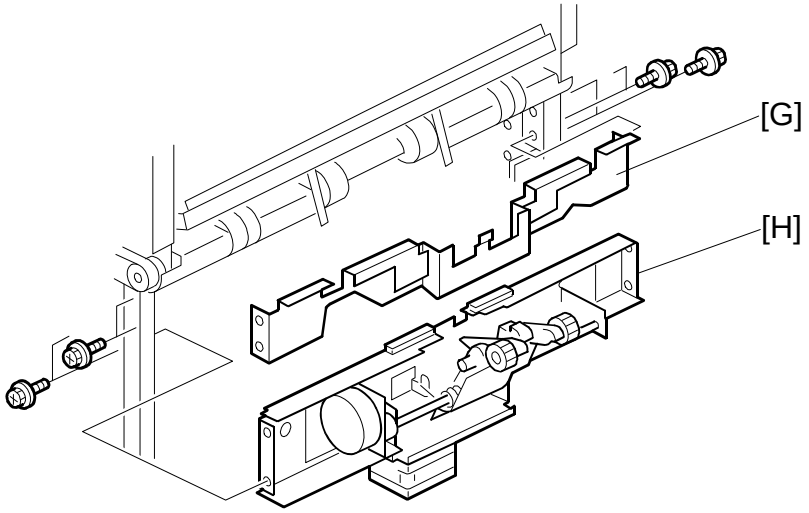
1. Remove the front door and rear cover (☛ 3.1).
2. Shift motor [A] (x 2, x 3)

3.7.1 STACKING ROLLER/ROLLER DRAG MOTORS, RETURN HP SENSOR

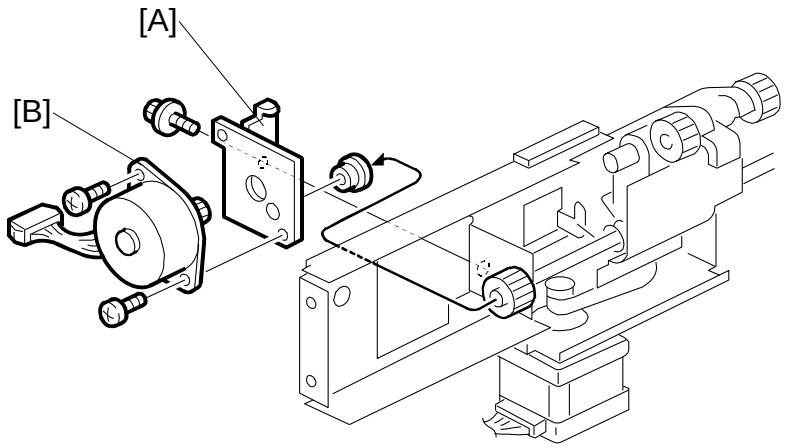


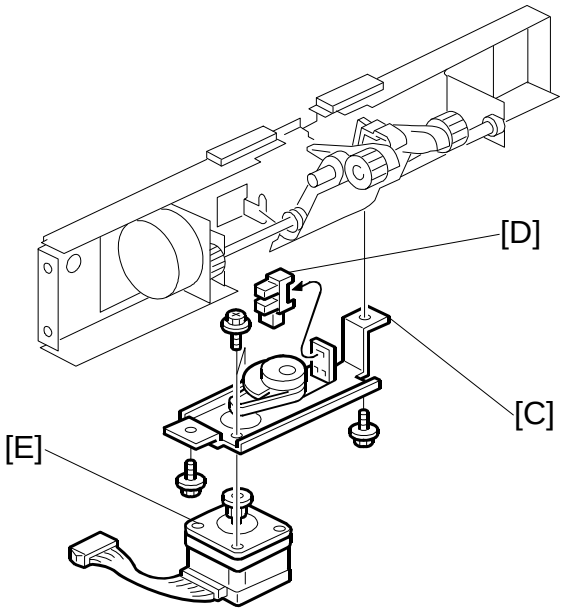
1. Do the procedures to remove the front door and all covers, with the exception of the left lower cover and top cover (labeled [C]: and [E]).
   NOTE: Be sure to lower the shift tray by pulling the gear toward you. The shift tray must be down.
2. Remove the shift tray motor. (☛ 3.7)
3. Remove the left stay [A] (🖉 x 3).
4. Unhook the stay at top [B].
5. Remove the shift tray mounting plate [C] (🖉 x 2).





6. Remove the end fence [A] and plate [B] (x 2).
7. Disengage the end fence races [C] from the rollers [D] behind the fence.
8. Remove the upper stay [E] (x 4).
9. Remove the lower stay [F] (x 4).
10. Remove the cover [G] (x 4).
11. Remove the stacking roller/drag motor stay [H] (x 3, x 4).
    NOTE: Make sure the motor and sensor connectors are disconnected before removing.

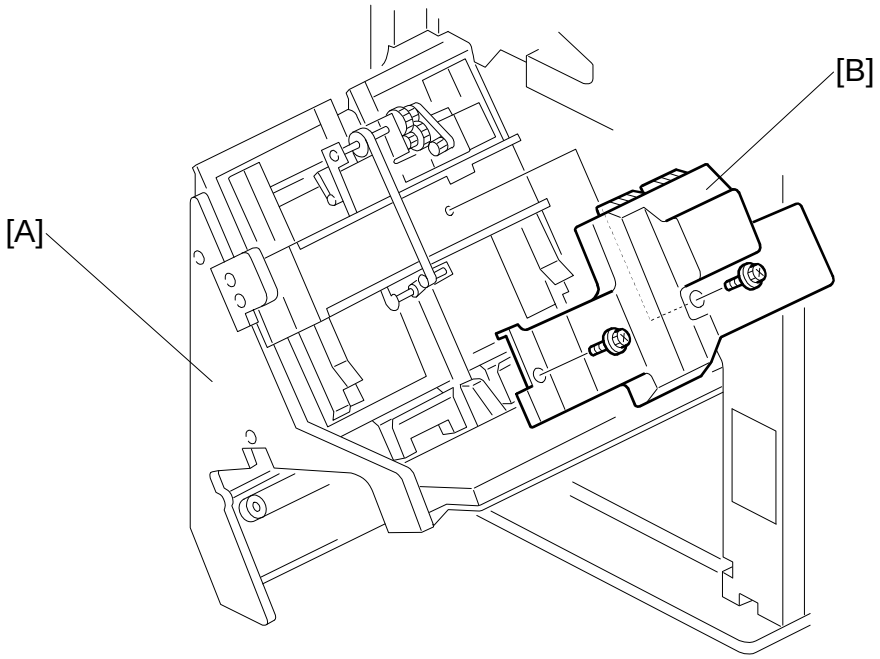




12. Remove the stacking motor bracket [A] (bushing x 1, ☞ x 1).
13. Remove the stacking motor [B] (☞ x 2).
14. Remove the roller drag motor bracket [C] (☞ x 2).
15. Remove return HP sensor [D].
16. Remove the roller drag motor [E] (☞ x 1).

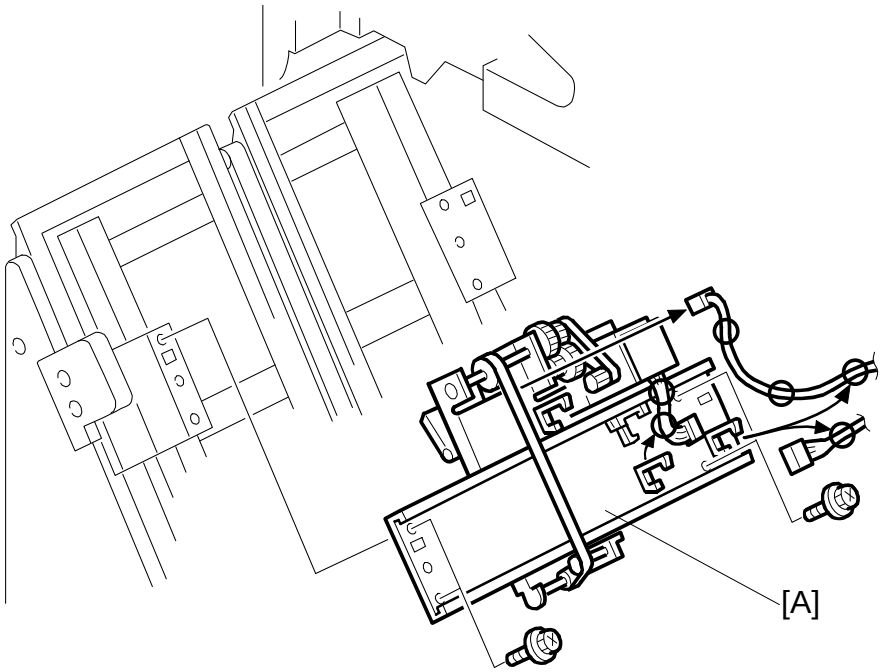
3.8 Z-FOLD JOGGER UNIT

3.8.1 Z-FOLD JOGGER UNIT COVER



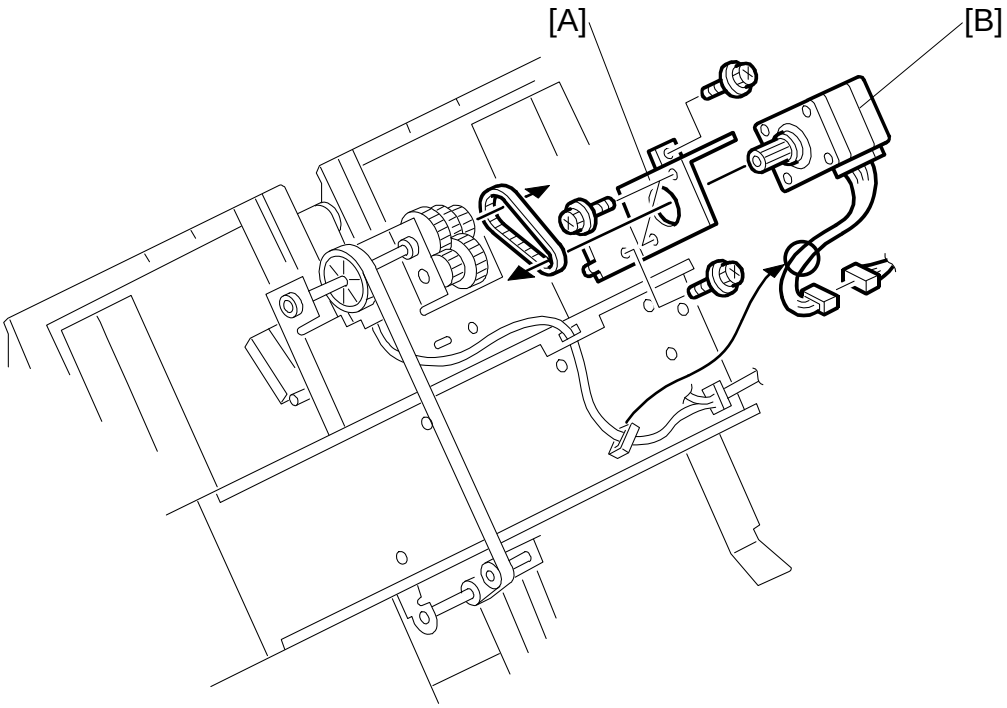
1. Open the front door.
2. Pull out the stapler tray unit [A].
3. Remove the Z-fold jogger unit cover [B] (x 2).

3.8.2 Z-FOLD JOGGER UNIT



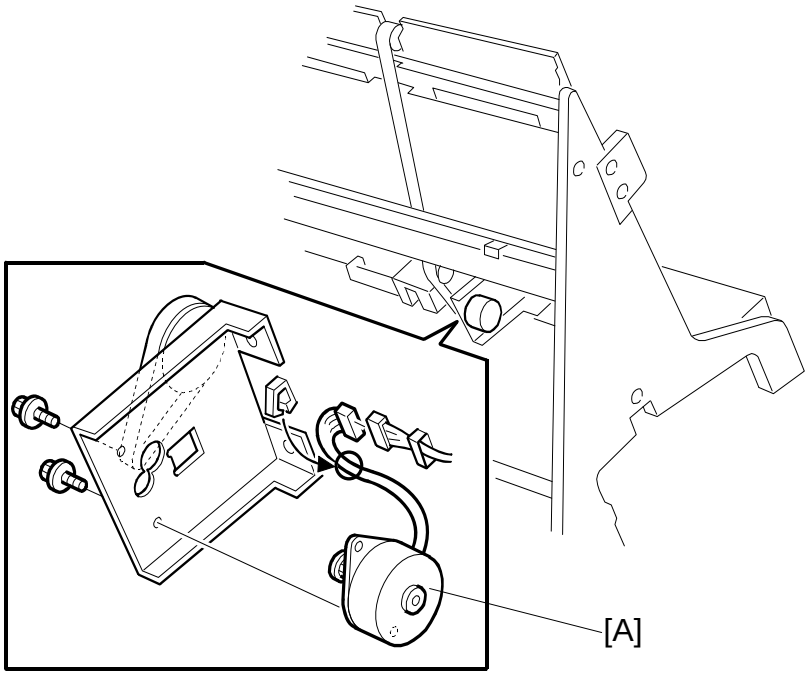
1. Open the front door and pull out the stapler tray unit.
2. Remove the Z-fold jogger unit cover (x 2).
3. Remove the Z-fold jogger unit [A] (x 4, x 4, x 2).

3.8.3 JOGGER TOP FENCE MOTOR



1. Open the front door and pull out the stapler tray unit.
2. Remove the Z-fold jogger unit cover (x 2).
3. Remove the motor bracket [A] (x 2, timing belt x 1).
4. Remove the jogger top fence motor [B] (x 2, x 1, x 1).

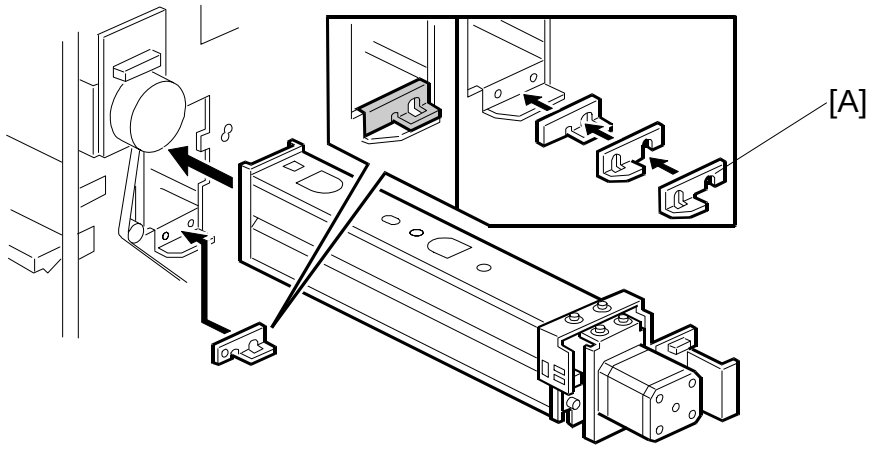
3.8.4 JOGGER BOTTOM FENCE MOTOR



1. Open the front door and pull out the stapler tray unit.
2. Remove the jogger bottom fence motor [A] (x 2, timing belt x 1, x 1, x 1).

3.9 PUNCH UNIT B531 (OPTION)

3.9.1 PUNCH POSITION ADJUSTMENT



The position of the punched holes can be adjusted in two ways.

Front to Rear Adjustment

Three spacers [A] are provided with the punch unit for manual adjustment of the hole position in the main scan direction:

- 2 mm (x 1)
- 1 mm (x 2)

NOTE: One spacer was installed at installation and the remaining spacers were fastened with a screw to the rear frame of the finisher under the rear cover and slightly above the lock bar.

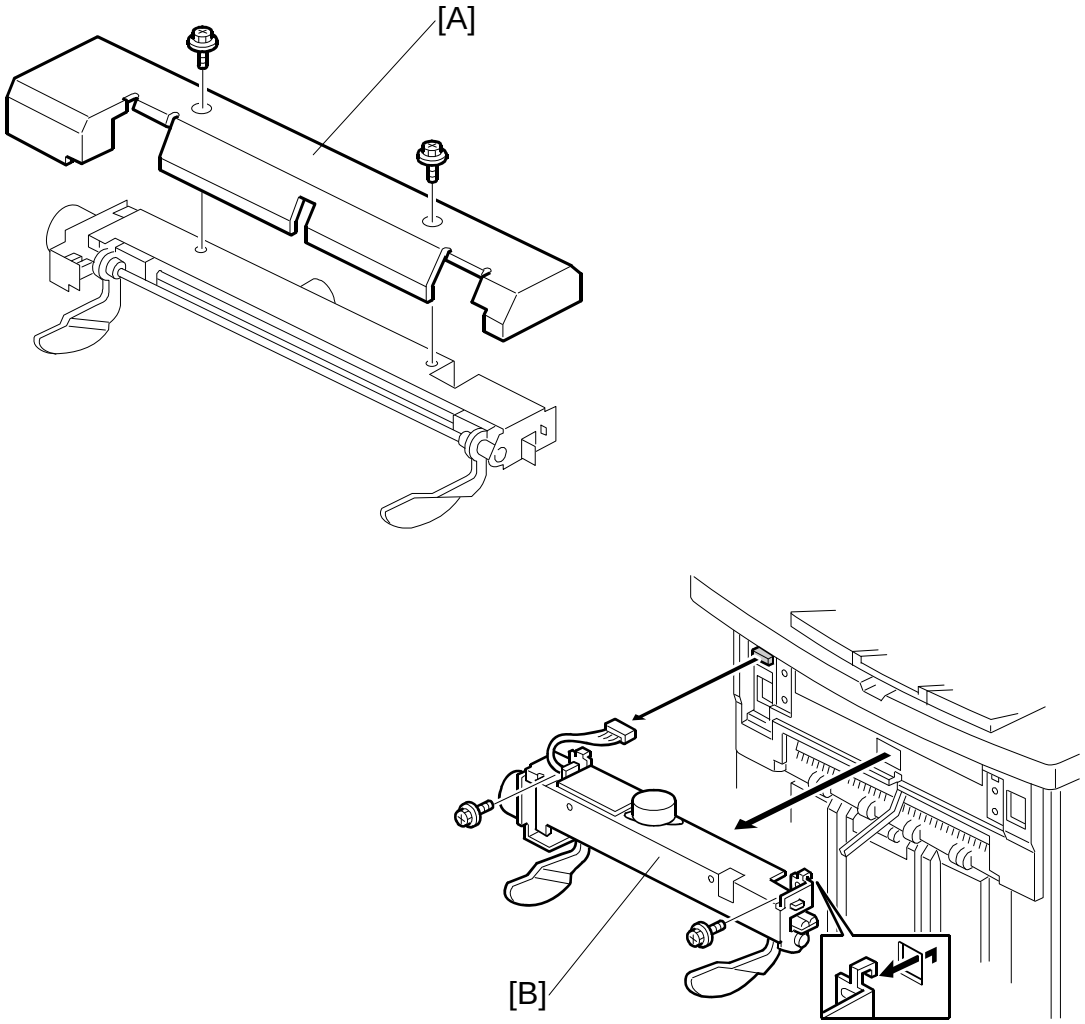
Right to Left Adjustment

The position of the punched holes can be adjusted right to left in the sub scan direction with SP6-113 Punch Hole Position Adjustment. The position can be adjusted in the range ±7.5 mm in 0.5 mm steps. The default setting is 0.

Press the [•/✳] key to toggle the ± selection. A +VE value shifts the punch holes left toward the edge of the paper, and a -VE value shifts the holes right away from the edge.

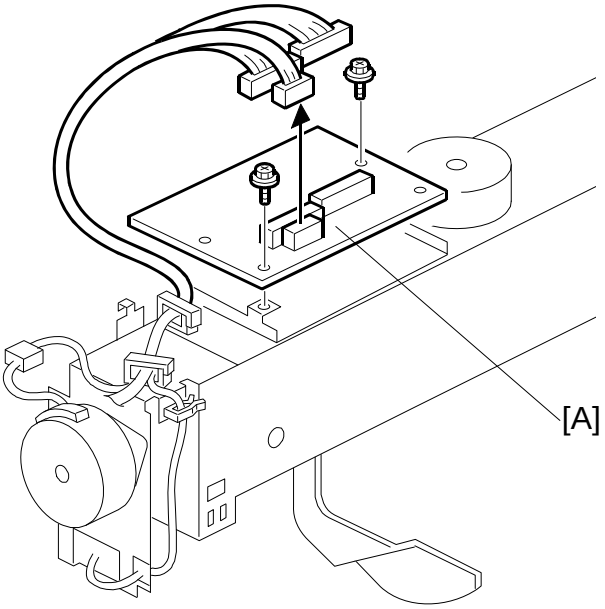
3.10 JOGGER UNIT B513 (OPTION)

3.10.1 JOGGER UNIT



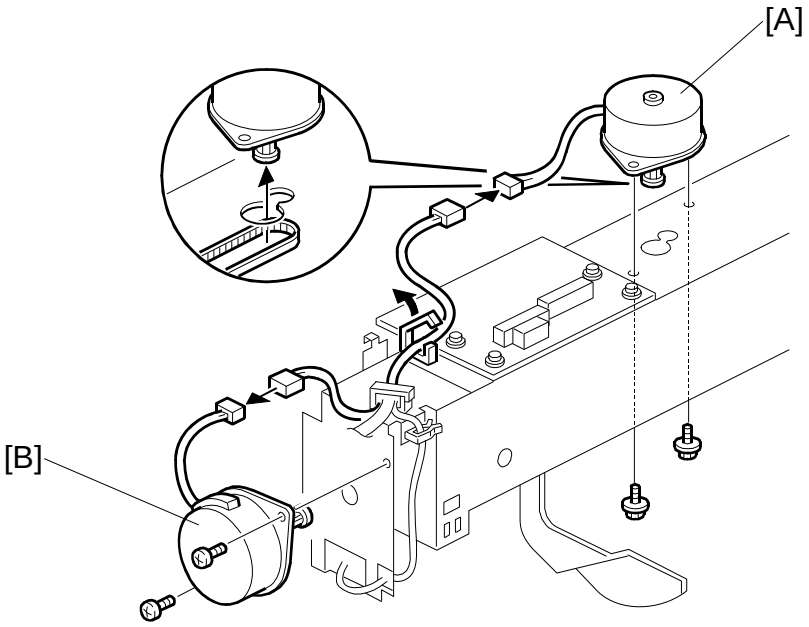
1. Remove the jogger unit cover [A] (x 2).
2. Remove the jogger unit [B] (x 2, x 1).

3.10.2 JOGGER UNIT PCB



1. Remove the jogger unit from the finisher. (☛ 3.10.1)
2. Remove the jogger unit control PCB [A] (🔩 x 2, 🖑 x 3)

3.10.3 JOGGER UNIT MOTOR



1. Remove the jogger unit from the finisher. (☛ 3.10.1)
2. Remove the shift jogger motor [A] (x 2, x 1).
3. Remove the shift jogger lift motor [B] (x 2, x 1).

4. TROUBLESHOOTING

If the machine logs an SC code in the display of the operation panel, see “Section 4 Troubleshooting” of the Service Manual. Section 4 contains a complete list of all service codes and how to troubleshoot the problem.

5. SERVICE TABLES

For details about 3000-Sheet Finisher B706 SP codes, please refer to “5. Service Tables” in the main machine service manual.

5.1 DIP SWITCHES

DPS100				Description
1	2	3	4	
0	0	0	0	Default
0	0	1	0	Free run: A4 LEF, staple mode
0	0	0	1	Free run: staple and tray shift

NOTE: Do not use any other settings.

5.2 TEST POINTS

No.	Label	Monitored Signal
TP100	(5V)	+5 V
TP101	(GND)	Ground
TP102	(RXD)	RXD
TP103	(TXD)	TXD

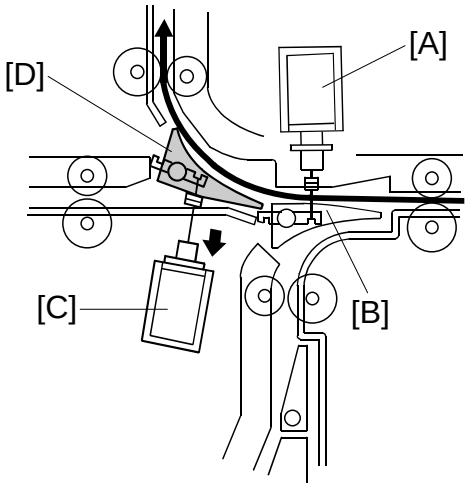
5.3 FUSES

No.	Function
FU100	Protects 24 V.

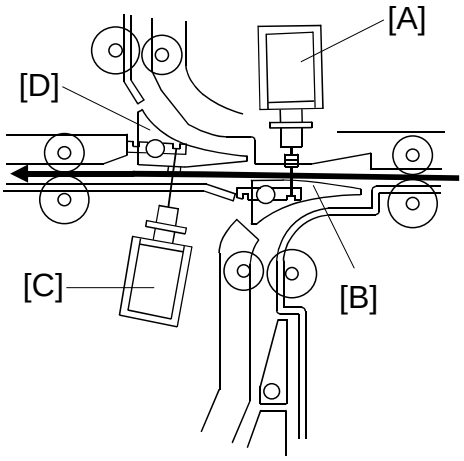
6. DETAILS

6.1 TRAY AND STAPLER JUNCTION GATE

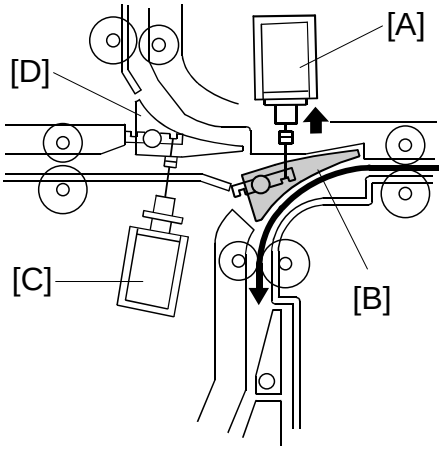
Upper Tray Mode



Sort/Stack Mode



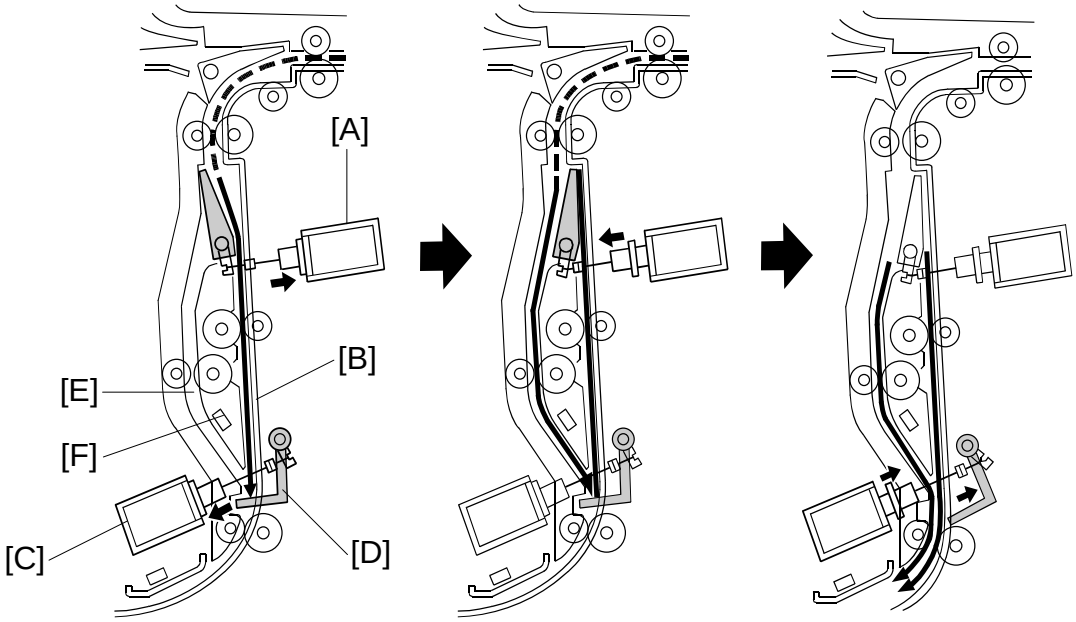
Staple Mode



Depending on the finishing mode, the copies are directed up, straight through, or down by the combinations of open and closed junction gates.

Solenoid/Gate		Selected Operation Mode		
		Upper Tray	Sort/Stack	Staple
[A]	Stapler junction gate solenoid	Off	Off	ON
[B]	Stapler junction gate	Closed	Closed	OPEN
[C]	Tray junction gate solenoid	ON	Off	Off
[D]	Tray junction gate	OPEN	Closed	Closed

6.2 PAPER PRE-STACKING



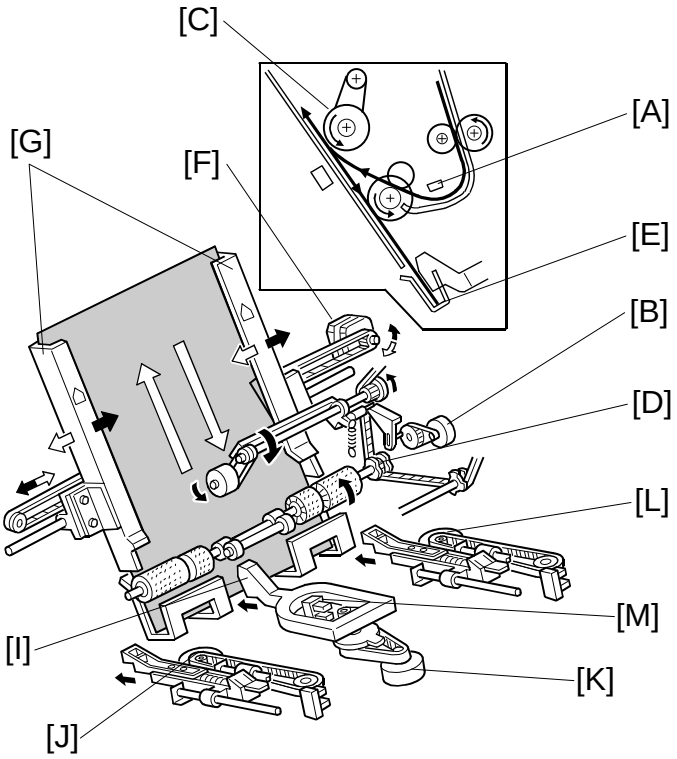
This mechanism improves productivity in staple mode. It is only used when copying on A4, LT, or B5 (all LEF).

During stapling, the copier has to wait. This mechanism reduces the wait by holding the first two sheets of a job while the previous job is still being stapled. It only works during the second and subsequent sets of a multi-set copy job.

The pre-stack junction gate solenoid [A] turns on 120 mm after the 1st sheet of paper turns on the entrance sensor, and this directs the sheet to the pre-stack tray [B]. (This sheet cannot be fed to the stapler yet, because the first set is still being stapled.) The pre-stack paper stopper solenoid [C] turns on 350 mm after the 1st sheet turns on the entrance sensor. The pre-stack paper stopper [D] then stops the paper.

The pre-stack junction gate solenoid turns off 230 mm after the trailing edge of the 1st sheet passes through the entrance sensor, and the 2nd sheet is sent to the paper guide [E]. The pre-stack paper stopper is released about 40 mm after the 2nd sheet turns on the pre-stack stopper sensor [F], and the two sheets of copy paper are sent to the stapler tray. All sheets after the 2nd sheet go to the stapler tray via the paper guide [E].

6.3 JOGGER UNIT PAPER POSITIONING



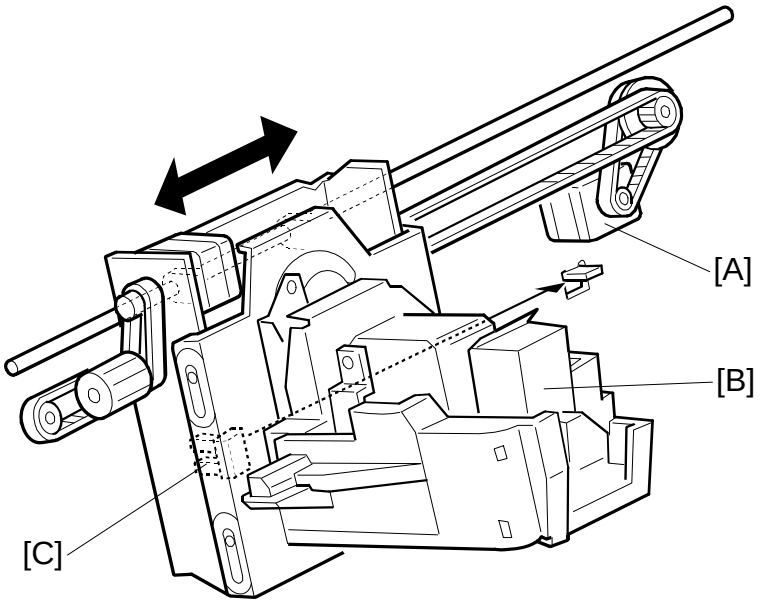
In the staple mode, as every sheet of paper arrives in the jogger unit, it is vertically and horizontally aligned, then the staple edge is pressed flat to ensure the edge of the stack is aligned correctly for stapling.

Vertical Paper Alignment: About 60 ms after the trailing edge of the copy passes the staple tray entrance sensor [A], the positioning roller motor [B] is energized to push the positioning roller [C] into contact with the paper. The positioning roller and alignment brush roller [D] rotate to push the paper back and align the trailing edge of the paper against the stack stopper [E].

Horizontal Paper Alignment: When the print key is pressed, the jogger motor [F] turns on and the jogger fences [G] move to the wait position about 7.2 mm wider than the selected paper size on both sides. When the trailing edge of the paper passes the staple unit entrance sensor, the jogger motor moves the jogger fences 3.7 mm towards the paper. Next, the jogger motor turns on again for 3.5 mm for the horizontal paper alignment then goes back to the wait position.

Paper Stack Correction: After the paper is aligned in the stapler tray, the left [J], center [K], and right [L] stack plate motors switch on briefly and drive the front stack, center stack, and rear stack plates against the edge of the stack to flatten the edge completely against the staple tray for stapling. When the next copy paper turns on the stapler entrance sensor, the stack plate motor turns on and returns to its home position. The home position is detected by stack plate HP sensor [M].

6.4 STAPLER UNIT MOVEMENT



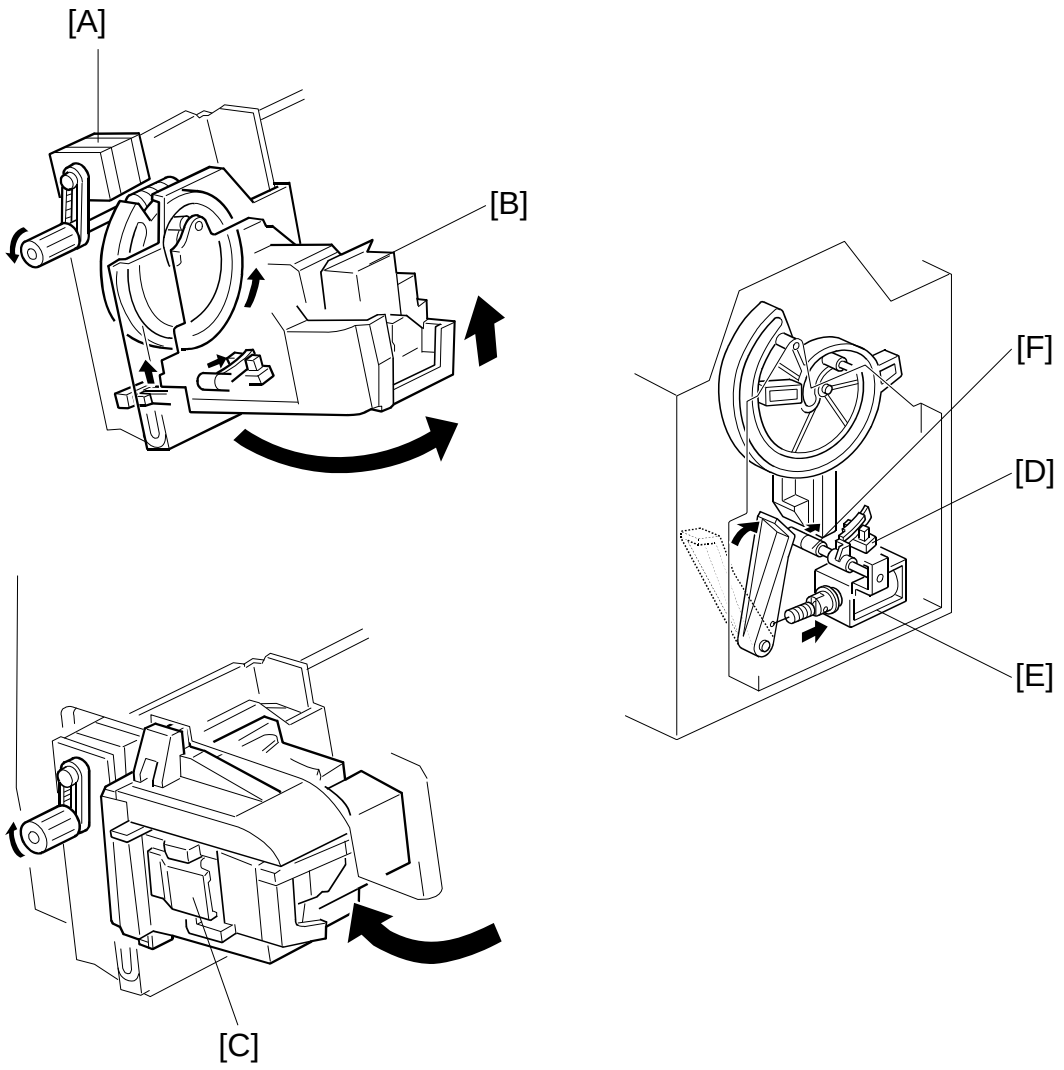
Side-to-Side

The stapler motor [A] moves the stapler [B] from side to side. After the start key is pressed, the stapler moves from its home position to the stapling position.

If two-staple-position mode is selected, for the first stack the stapler moves to the rear stapling position first, staples, moves to the front position, staples and waits at the front. For the second stack, the stapler staples the front corner first, then moves to the rear corner and staples.

NOTE: For continuous stapling jobs, the corners are stapled rear then front for the odd number stacks and stapled front then rear for even number stacks.

After the job is completed, the stapler returns to its home position. This is detected by the stapler HP sensor [C].



Rotation (1)

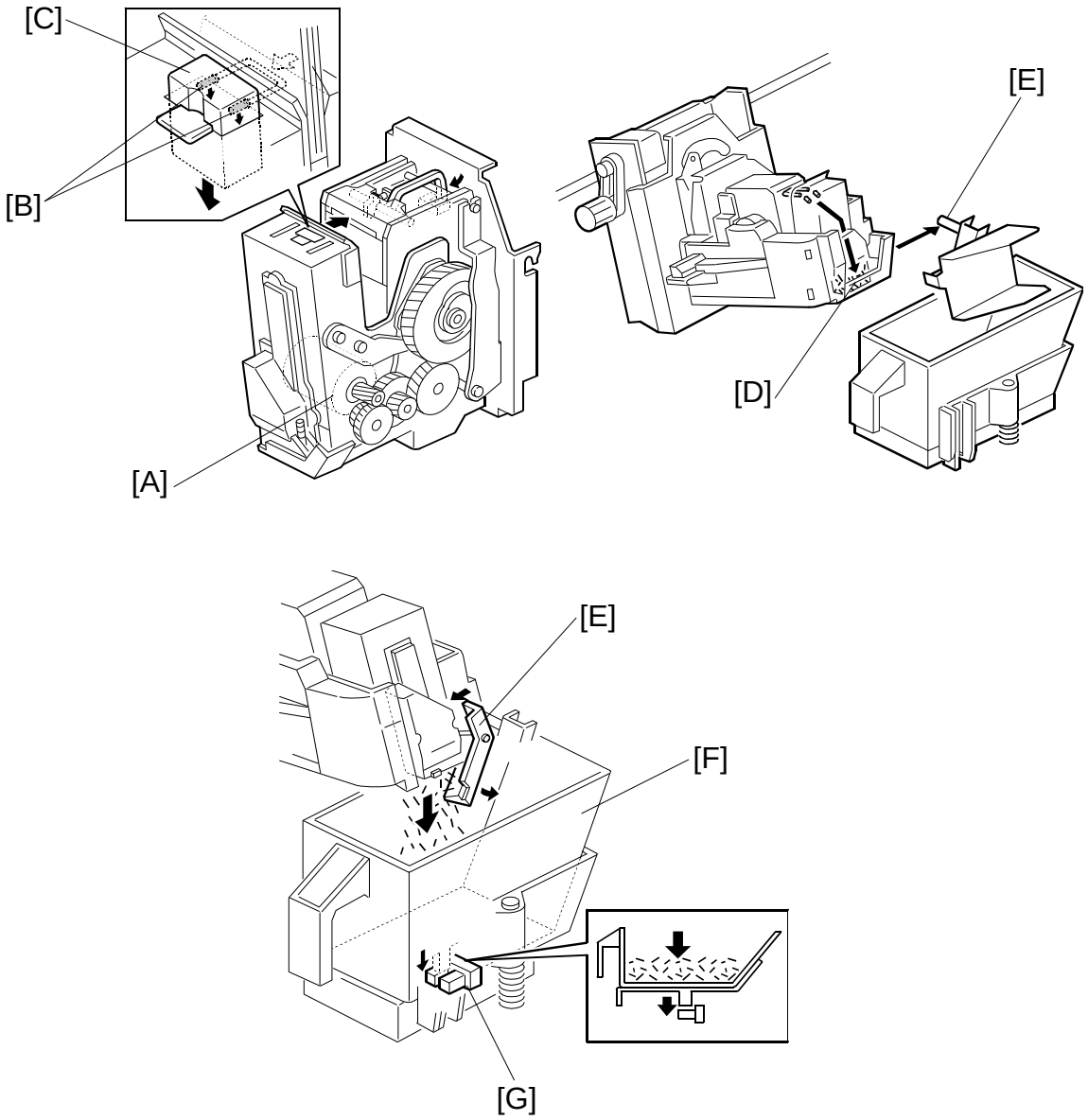
In the oblique staple position mode, the stapler rotation motor [A] rotates the stapler units [B] 45° to counterclockwise after it moves to the stapling position.

Rotation (2)

When the staple end condition arises, the stapler motor moves the stapler to the front and the stapler rotation motor rotates the stapler unit to clockwise to remove the staple cartridge [C]. This allows the user to add new staples.

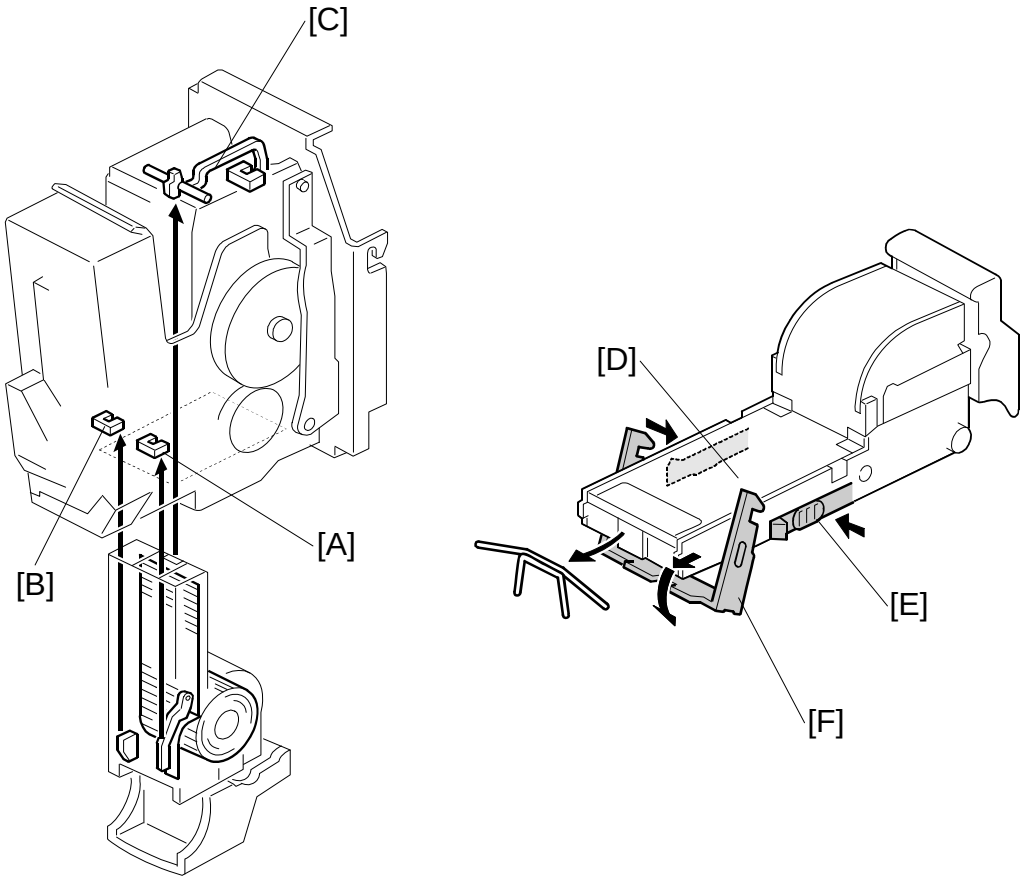
Once the staples have been installed, and the front door closed, the stapler unit returns to its home position. As the stapler unit is returning to the home position, the stapler return sensor [D] is activated, the return solenoid [E] turns on and it assists the guide roller [F] to return to its guide (this guide directs the stapler during rotation).

6.5 STAPLER



When the aligned copies are brought to the stapling position by the positioning roller and jogger fences, the staple hammer motor [A] starts stapling.

During stapling, the stapler trims off the excess length [B] of the staples by lowering the cutter [C]. This excess length depends on the number of copies in the set; there will be very little for a stack containing 100 sheets. The staple waste drops into the tray [D] in the stapler. When the stapler unit returns to its home position, the tray hits the shaft [E] and the tray opens. The staple waste drops into the staple waste hopper [F]. When the staple waste hopper is full, the actuator on its base activates the staple waste hopper sensor [G]. An SC737 (Full Finisher Staple Waste Hopper) is displayed.

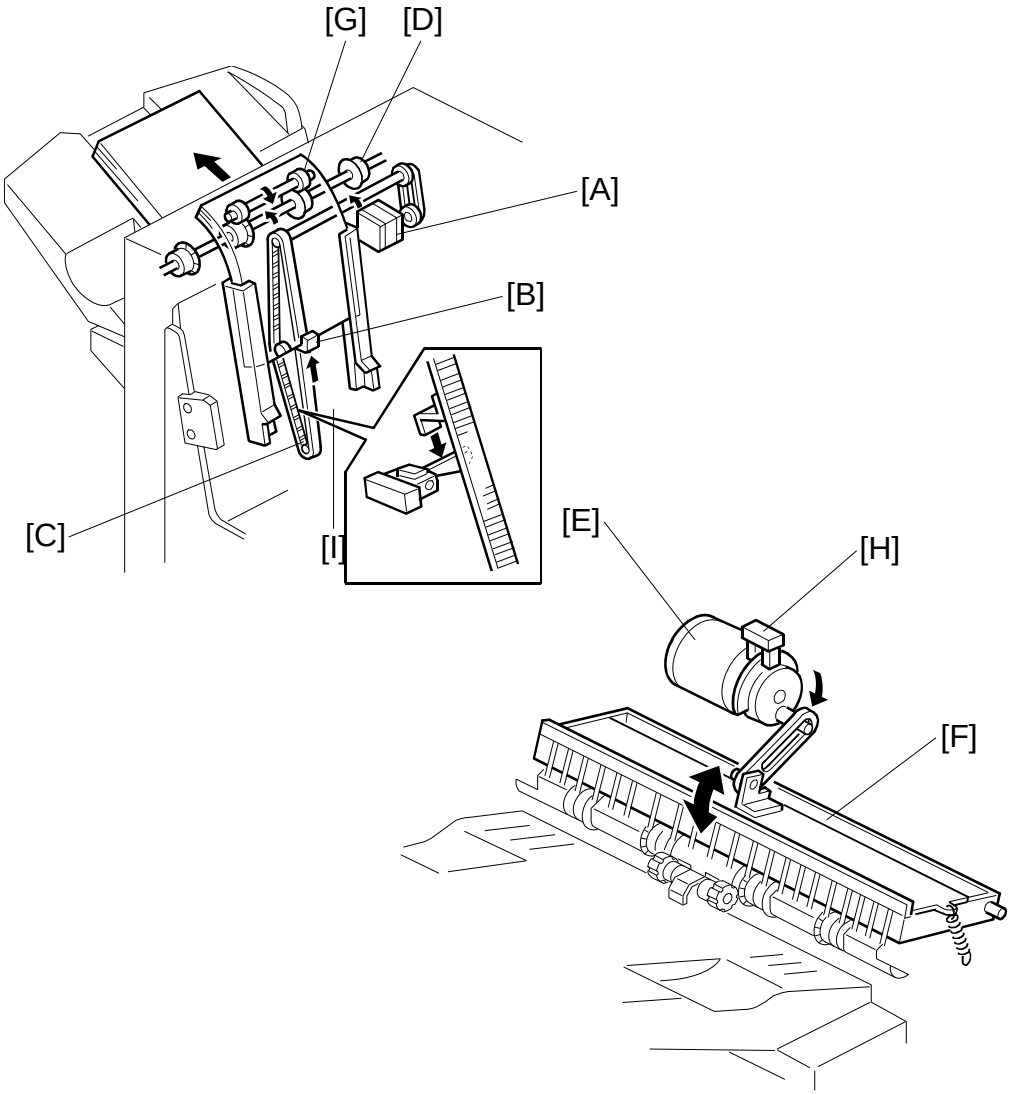


The stapler has a staple end sensor [A], cartridge set sensor [B] and staple hammer HP sensor [C].

When a staple end or no cartridge condition is detected, a message is displayed advising the operator to install a staple cartridge. If this condition is detected during a copy job, the indication will appear, and the copy job will stop.

The staple cartridge has a clinch area [D] where jammed staples collect. The operator can remove the jammed staples from the clinch area by pressing in the releases [E] on both sides, then lowering the bracket lever [F].

6.6 FEED-OUT

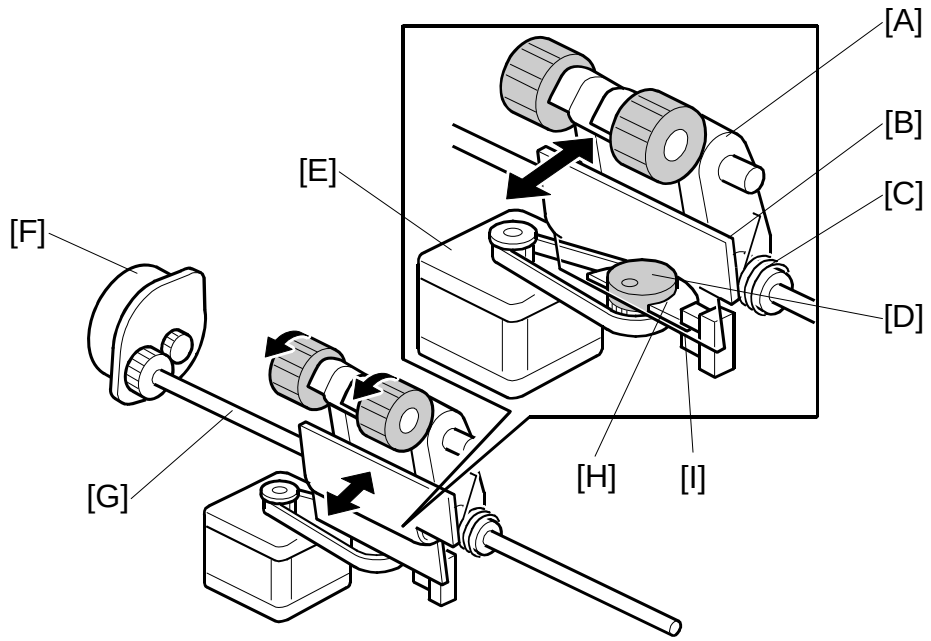


After the copies have been stapled, the stack feed-out motor [A] starts. The pawl [B] on the stack feed-out belt [C] transports the set of stapled copies up and feeds it to the shift tray exit roller [D]. When stapling starts, the exit guide motor [E] opens the upper exit guide [F], which includes the upper shift tray exit roller [G], in order to feed out the leading edge of the copy set smoothly. The exit guide motor turns on again a certain time after stapling is complete, and the upper exit guide plate is lowered. Then the shift tray exit roller takes over the stack feed-out.

The on-off timing of the exit guide motor is detected by the exit guide open sensor [H].

The stack-feed-out motor turns off when the pawl actuates the stack feed-out belt home position sensor [I].

6.7 PAPER EXIT STACKING



The stacking roller assembly [A] is fastened to a plate [B] on a shaft by a spring [C]. The cam [D], in contact with the bottom of the plate, is connected to the stacking roller drag motor [E] via a timing belt.

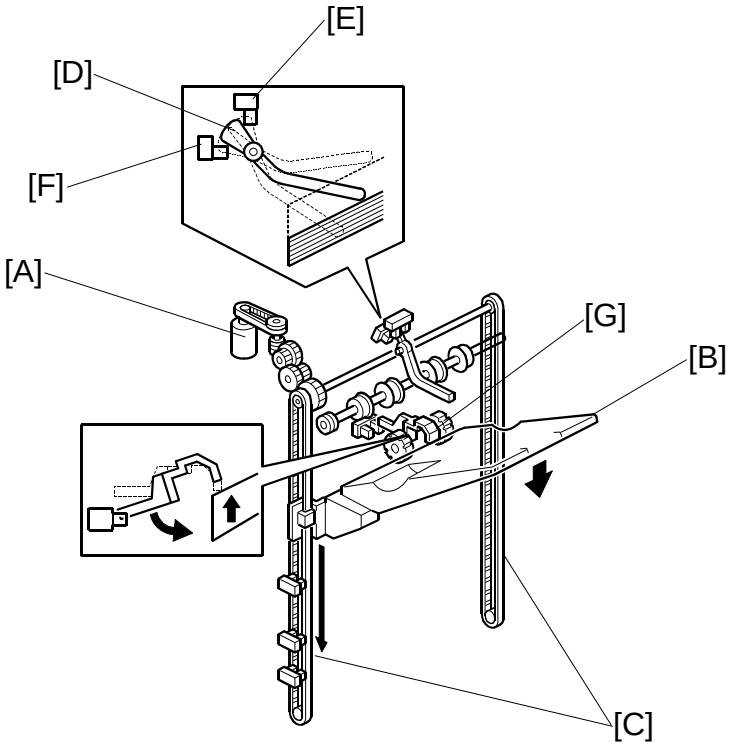
The stacking roller drag motor and timing belt rotate the cam against the bottom of the plate to move the rollers forward and back with each sheet ejected onto the shift tray.

The stacking roller motor [F] drives the shaft [G] that rotates the stacking rollers counter-clockwise as the rollers move back. The simultaneous rotation and backward movement of the roller assembly pulls each sheet back toward the copier to align the edges of the stack on the shift tray.

The actuator [H] is mounted on the cam and rotating with both rotating clockwise) and detects the roller assembly home position when the actuator leaves the gap of the return drive HP sensor [I] and signals the machine that the rollers are at the home position. The machine uses this information to control paper feed timing and confirm that the mechanism is operating correctly. The cam and actuator make one complete rotation for every sheet fed out of the machine onto the shift tray.

6.8 SHIFT TRAY

6.8.1 OVERVIEW



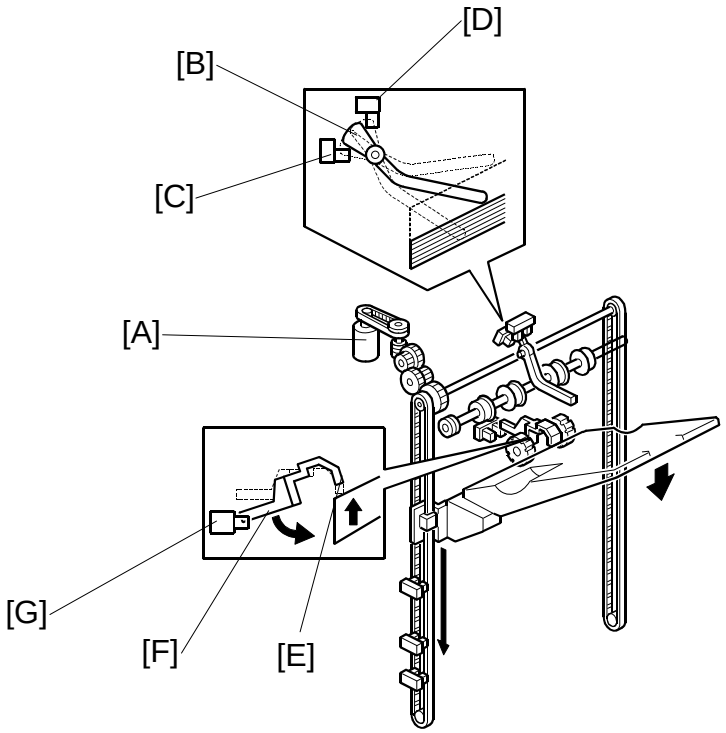
The shift tray lift motor [A] controls the vertical position of the shift tray [B] through gears and timing belts [C].

Stand-by Mode

After the main switch is turned on, or when the stack is removed from the tray, the end of the feeler on the tray falls and its actuator [D] rotates up into staple mode HP sensor 2 [E] (S7) and switches it on. This switches on the lift motor, which raises the tray until the tray pushes the actuator out of the sensor [E]. Then, the lift motor stops the shift tray; this is the home position (the actuator [D] is between the two sensors [E] and [F].

The shift tray upper limit switch (SW1) prevents the drive gear from being damaged if staple mode HP sensor 2 [E] fails. In case of a failure, when the shift tray pushes up the actuator [G] and positioning rollers, the switch will cut the power to the shift tray lift motor.

6.8.2 SHIFT TRAY UP/DOWN MOVEMENT



Sort/Stack Mode (Shift Mode)

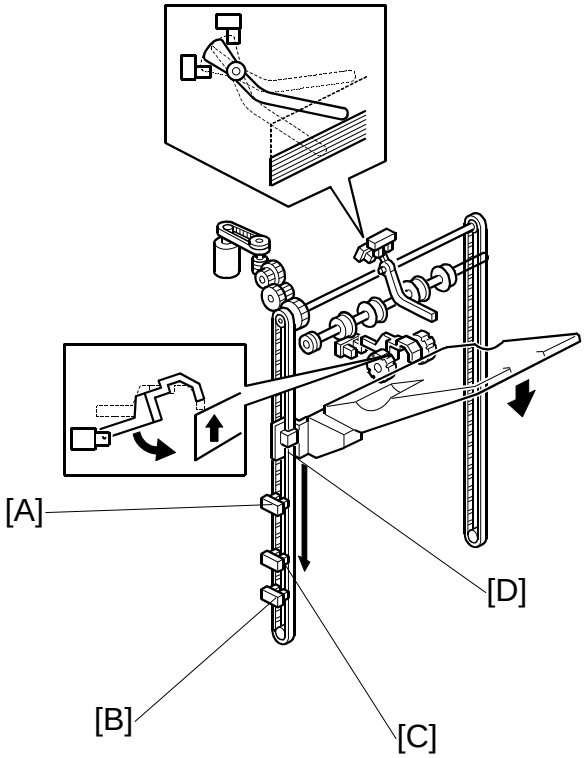
The shift tray moves to home position, which is when the actuator [F] has just exited the shift mode home position sensor [G] (S12). During feed-out, the tray is lowered automatically at prescribed intervals; sensor [D] (S7) is ignored. When the stack is removed from the tray, the end of the feeler [E] between the arms of the stacking roller falls, and its actuator [F] enters sensor [G] (S12) and switches it on. This switches on the lift motor [A], which raises the tray until the actuator leaves the sensor. Then, the lift motor stops the tray; this is the home position.

In sort/stack mode, if S12 fails when the tray is being lifted, the shift tray upper limit switch (SW1) prevents the drive gear from being damaged.

Staple Mode

The shift tray moves to home position, which is when the actuator [B] is between the staple mode home position sensors [C] and [D]. During feed-out, the shift tray is lowered automatically at prescribed intervals. When the stack is removed from the tray, the tray returns to the home position for stand-by mode. (☛ 6.8.1)

6.8.3 SHIFT TRAY LOWER LIMIT DETECTION



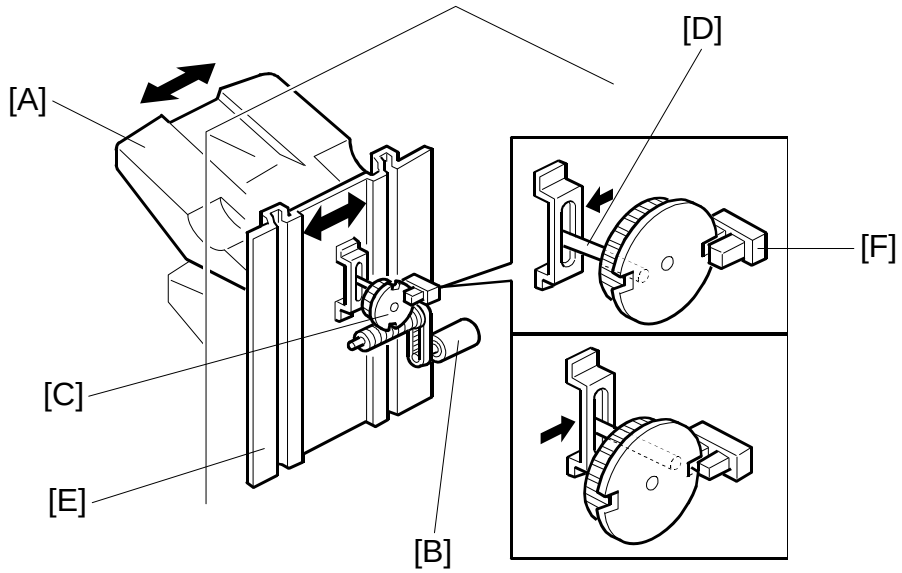
This machine has two shift tray lower limit sensors: shift lower limit sensor [A] (S9) for large paper (B4 and larger) and shift lower limit sensor [B] (S11) for small paper (smaller than B4).

NOTE: Sensor [C] (S10) is not used.

When the actuator [D] enters sensor [A] while using large paper (about 1500 sheets are on the tray), a message will be displayed and copying will stop.

When the actuator [D] enters sensor [B] while using small paper (about 3,000 sheets are on the tray), a message will be displayed and copying will stop.

6.9 SHIFT TRAY SIDE-TO-SIDE MOVEMENT

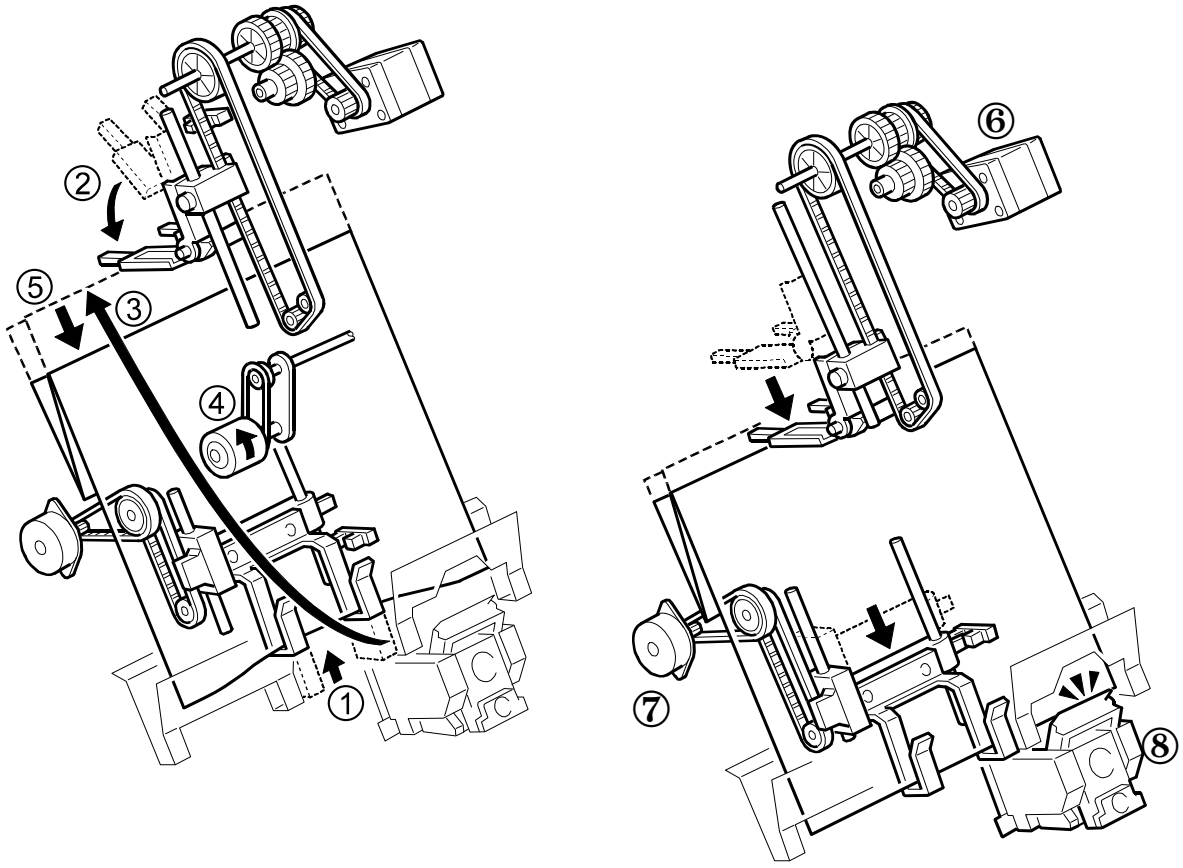


In sort/stack mode, the shift tray [A] moves from side to side to separate the sets of copies.

The horizontal position of the shift tray is controlled by the shift motor [B] and shift gear disk [C]. After one set of copies is made and delivered to the shift tray, the shift motor turns on, driving the shift gear disk and the shaft [D]. The end fence [E] is positioned by the shaft, creating the side-to-side movement.

When the shift gear disk has rotated 180 degrees (when the shift tray is fully shifted across), the cut-out in the shift gear disk turns on the shift tray half-turn sensor [F] and the shift motor stops. The next set of copies is then delivered. The motor turns on, repeating the same process and moving the tray back to the previous position.

6.10 STAPLING Z-FOLDED PAPER



Here is the operation sequence for jogging and stapling Z-folded sheets:

① The lower jogger fence lifts to receive the Z-folded sheets.

② The top fence moves down, to the horizontal position.

③ A sheet of paper goes into the stapler tray.

④ The positioning roller turns when each sheet is fed to the stapler tray.

⑤ Each sheet is fed down against the lower jogger fence to align the bottom edge.

⑥ After the set number of sheets come in, the jogger top-fence motor switches on and lowers the top fence against the top of the stack. This aligns the stack for stapling.

⑦ The bottom fence motor lowers the aligned stack to the stapling position.

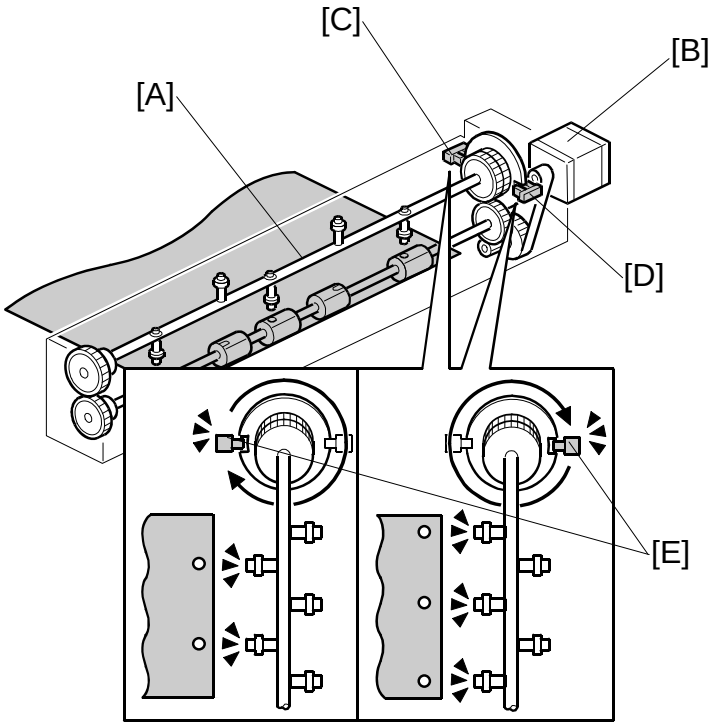
⑧ The stapler staples the stack.

6.11 JAM CONDITIONS

1. The entrance sensor does not turn on when the copier has fed paper 426 mm after the copier exit sensor turned off.
2. The entrance sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
3. The upper tray exit sensor does not turn on when the upper transport motor has fed paper 574 mm after the entrance sensor turned on.
4. The upper tray exit sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
5. In sort/stack mode, the shift tray exit sensor does not turn on when the upper transport motor has fed paper 733 mm after the entrance sensor turned on.
6. In sort/stack mode, the shift tray exit sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
7. In staple mode, the stapler tray entrance sensor does not turn on when the upper and lower transport motor have fed paper 835 mm after the entrance sensor turned on.
8. In staple mode, the stapler tray entrance sensor does not turn off when the upper transport motor has fed paper 1.5 times the paper's length after it turned on.
9. In staple mode, the stapler tray paper sensor does not turn off within 250 pulses of the stack feed-out motor after it started.
10. In staple mode, the shift tray exit sensor does not turn off within 1,260 ms after the stack feed-out motor started.

6.12 PUNCH UNIT B531 (OPTION)

6.12.1 PUNCH UNIT DRIVE



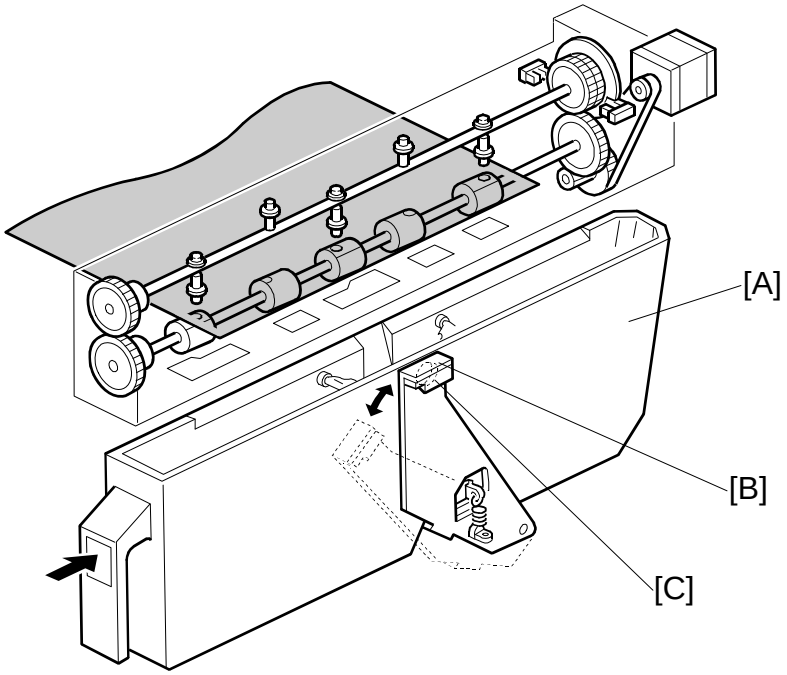
The punch unit makes 2 or 3 holes at the trailing edge of the paper. The number of holes depends on a selection made on the operation panel.

The cam [A] has 2 punches on one side and 3 punches on the other, and is turned by the punch motor [B]. The punch motor turns on immediately after the trailing edge of the paper passes the entrance sensor. The punches on the cam rotate downward and punch holes in the paper.

After punching a sheet of paper, the cam returns to home position and stops. Home position depends on whether 2 holes or 3 holes are being made, so there are two punch HP sensors. Punch HP sensor 1 [C] is used when 2-hole punching is selected, and punch HP sensor 2 [D] is used when 3-hole punching is selected. When the cut-out [E] enters the slot of the punch HP in use (sensor 1 or 2-hole punching or sensor 2 for 3/4-hole punching) the motor stops.

The knob (not shown) on the front end of the punch unit can be turned in either direction to clear paper jammed in the punch unit.

6.12.2 PUNCH WASTE COLLECTION



Punch waste is collected in the punch waste hopper [A] positioned under the punch unit.

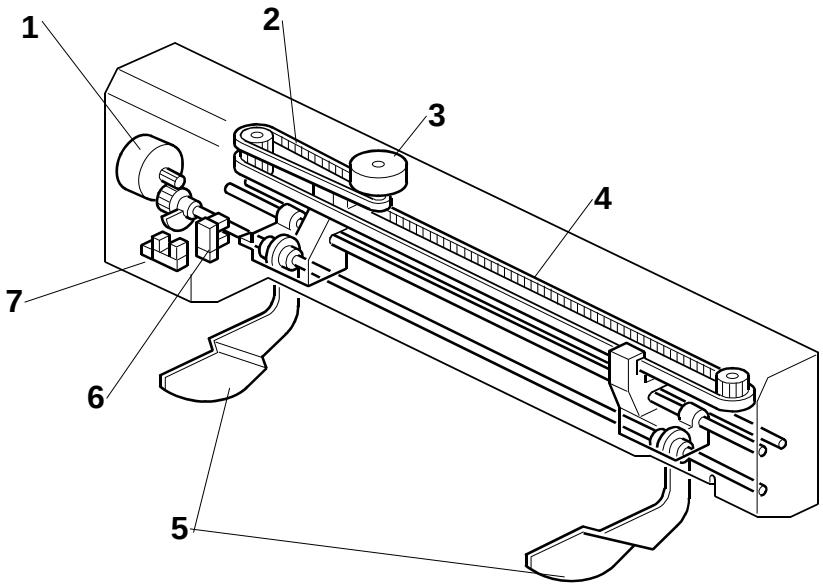
When the level of the punch waste in the hopper rises as far as the hole [B] in the hopper, the punch waste sensor [C] turns on, stops the job, and triggers a message on the operation to indicate that the hopper is full and must be removed and emptied.

The job resumes automatically after the hopper is emptied and returned to the finisher.

The punch waste hopper sensor also functions as the hopper set sensor. When the hopper is not in the finisher, or if it is not inserted completely, the spring loaded sensor arm rotates up and to the right with the punch waste sensor away from the hole in the hopper holder and a message is displayed. The message in this case is the same as the hopper full message.

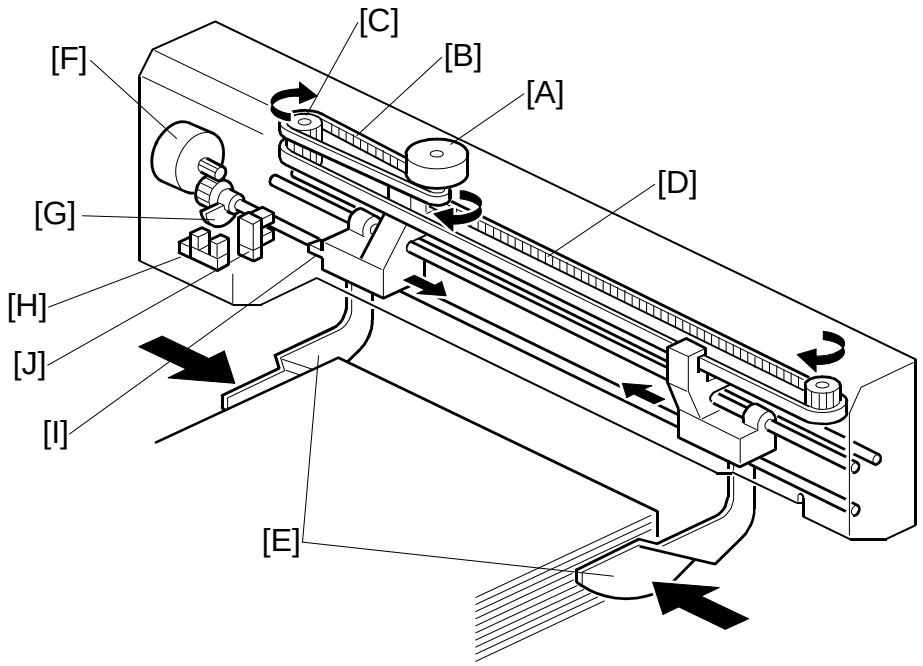
6.13 JOGGER UNIT B513 (OPTION)

6.13.1 JOGGER UNIT MECHANICAL LAYOUT



1. Shift Jogger Fence Lift Motor
2. Shift Jogger Motor Timing Belt
3. Shift Jogger Motor
4. Shift Jogger Fence Timing Belt
5. Shift Jogger Fences
6. Shift Jogger HP Sensor
7. Shift Jogger Lift HP Sensor

6.13.2 JOGGER UNIT DRIVE



At prescribed intervals, the jogger motor [A] switches on and drives the jogger timing belt [B], gear [C] and jogger fence timing belt [D] which drives the shift jogger fences [E] against the sides of the stack to align its edges.

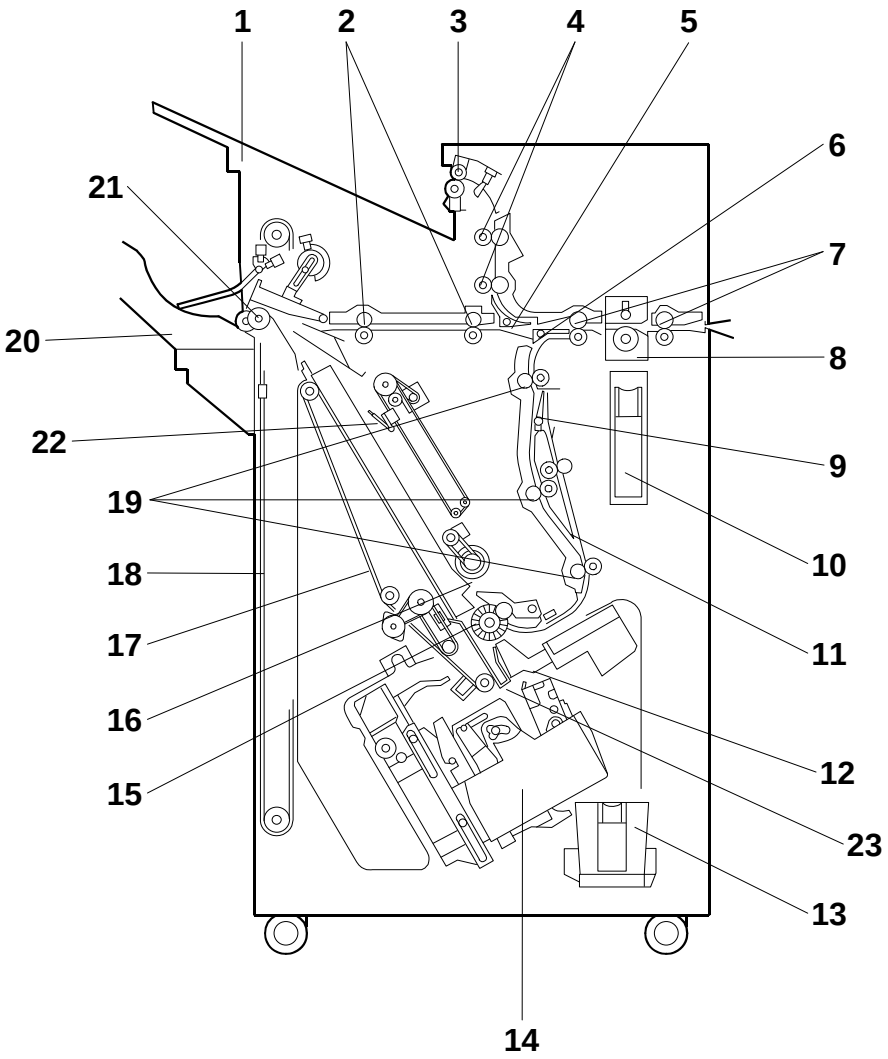
At the end of the job, the jogger fence lift motor [F] switches on and raises the fences until the actuator [G] leaves the slot of the shift jogger fence lift HP sensor [H] and shuts off the shift jogger fence lift motor.

At the same time, the jogger motor reverses and drives the fences away from the sides of the stack until the actuator [I] deactivates the shift jogger fence HP sensor [J] and switches off the jogger motor.

The jogger fences remain up in the standby position until the next job starts.

7. OVERALL MACHINE INFORMATION

7.1 MECHANICAL COMPONENT LAYOUT



1. Upper Tray
2. Middle Transport Rollers
3. Upper Tray Exit Roller
4. Upper Transport Rollers
5. Tray Junction Gate
6. Stapler Junction Gate
7. Entrance Rollers
8. Punch Unit
9. Pre-stack Junction Gate
10. Punch Waste Hopper
11. Pre-stack Tray
12. Stack Plate
13. Staple Waste Hopper
14. Stapler
15. Alignment Brush Roller
16. Positioning Roller
17. Stack Feed-out Belt
18. Shift Tray Drive Belt
19. Lower Transport Rollers
20. Shift Tray
21. Shift Tray Exit Roller
22. Jogger Top Fence
23. Jogger Bottm Fence

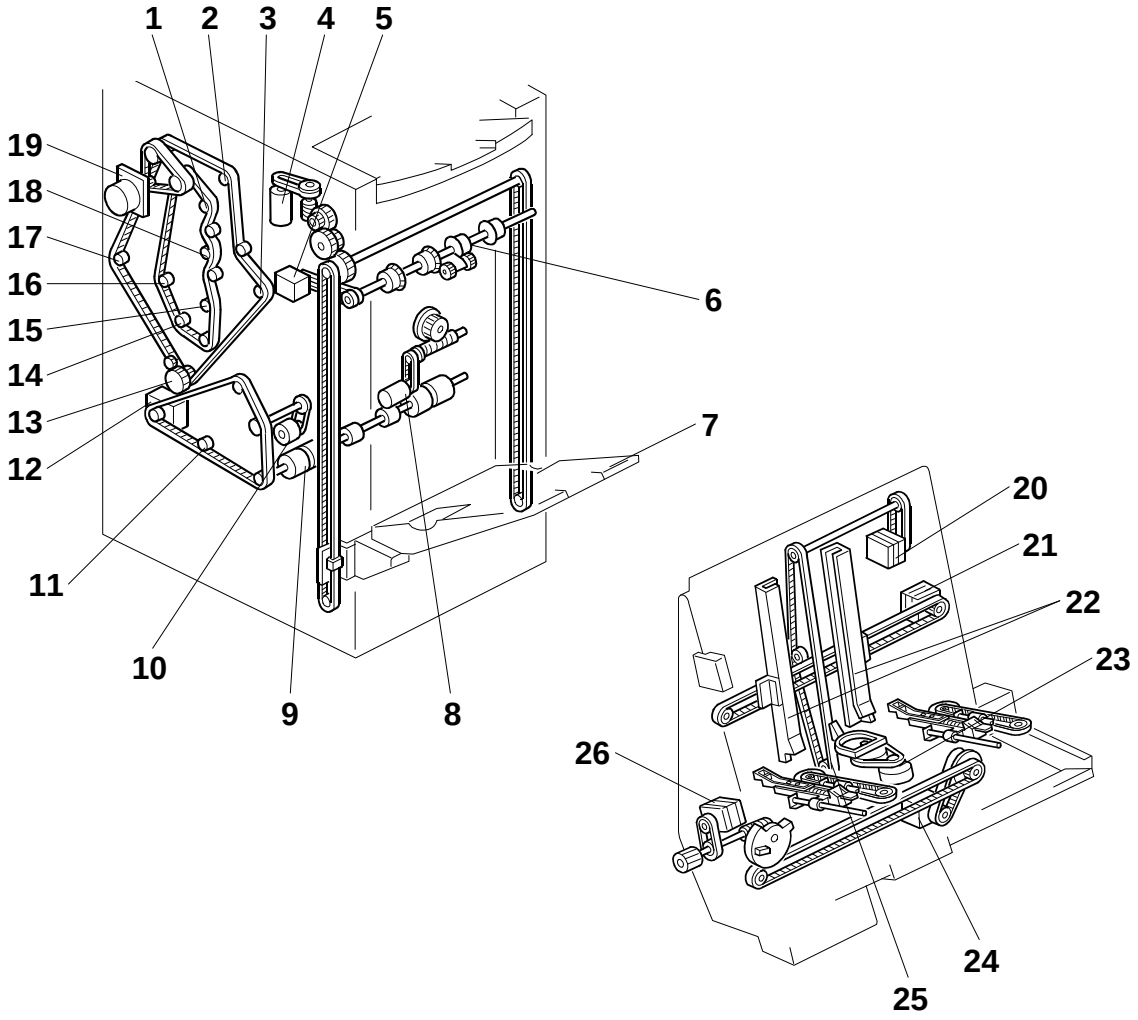
7.2 ELECTRICAL COMPONENT DESCRIPTION

Symbol	Name	Function
Motors		
M01	Shift Tray Exit	Drives the exit roller for the shift tray.
M02	Shift Tray Lift	Moves the shift tray up or down.
M03	Exit Guide	Opens and closes the upper exit guide.
M04	Lower Transport	Drives the lower transport rollers, the positioning roller and the alignment brush roller
M05	Shift	Moves the shift tray from side to side.
M06	Positioning Roller	Moves the positioning roller into contact with the paper.
M07	Stacking Roller Drag	Moves the stacking roller in and out.
M08	Stacking Roller	Rotates the stacking roller.
M09	Jogger	Moves the jogger fences.
M10	Stack Feed-Out Belt	Drives the stack feed-out belt.
M11	Stack Plate - Center	Presses down the center of the edge for stapling.
M12	Stapler	Moves the staple unit from side to side.
M13	Stack Plate – Front	Presses down the front corner of the edge for stapling.
M14	Stack Plate – Rear	Presses down the rear corner of the edge for stapling.
M15	Stapler Rotation	Rotates the stapler 45 degrees for oblique stapling.
M16	Staple Hammer	Drives the staple hammer.
M17	Punch	Drives the punch shaft and roller. Punch Unit B531 (option).
M18	Upper Transport	Drives the entrance rollers, the middle and upper transport rollers, and upper tray exit roller.
M19	Shift Jogger	Drives the shift jogger fences against the sides of the sheets to align the stack, then reverses to return them to the home position. Jogger Unit B513 (option).
M20	Shift Jogger Lift	Raises the shift jogger fences after aligning the stack, then reverses and lowers them when returning to the home position. Jogger Unit B513 (option).
M21	Jogger Top Fence	Moves the top jogger fence.
M22	Jogger Bottom Fence	Moves the bottom jogger fence.
BOARDS		
PCB	Main	Controls the finisher and communicates with the copier.
PCB	Stapler	Controls the stapler unit.
PCB	Punch	Passes signals between the punch unit and the finisher main board. Punch Unit B531 (option).
PCB	Jogger	Controls the shift/jogger unit B513 (option).

Symbol	Name	Function
SENSORS		
S01	Entrance	Detects the copy paper entering the finisher and checks for misfeeds.
S02	Upper Tray Exit	Checks for misfeeds at the upper tray.
S03	Upper Tray Limit	Detects when the paper stack height in the upper tray is at its upper limit.
S04	Shift Tray Exit	Checks for misfeeds at the shift tray exit.
S05	Exit Guide Open	Detects whether the guide plate is opened or not.
S06	Staple Mode HP 1	Detects the shift tray home position for standby mode and for staple mode.
S07	Staple Mode HP 2	Detects the shift tray home position for standby mode and for staple mode.
S09	Shift Lower Limit – Large Paper	Detects the lower limit for the shift tray when large paper sizes are being used
S10	Shift Tray Lower Limit 2	Not used.
S11	Shift Tray Lower Limit 3	Detects when the shift tray is at its lower limit.
S12	Shift Mode HP	Detects the shift tray home position in sort/stack mode.
S13	Stacking Roller HP	Detects when the stacking roller is at home position.
S14	Shift Tray Half-Turn	Detects whether the shift tray is at either the front or home HP.
S15	Pre-Stack Tray Paper	Determines when to turn off the pre-stack paper stopper solenoid.
S16	Stapler Tray Exit	Detects jams at the staple tray exit.
S17	Positioning Roller HP	Detects the home position of the positioning roller.
S18	Stack Feed-Out Belt HP	Detects the home position of the stack feed-out belt.
S19	Stapler Tray Paper	Detects the copy paper in the stapler tray.
S20	Jogger HP	Detects the home position of the shift jogger fences.
S21	Stack Plate - Center HP	Detects the home position of the center stack plate.
S22	Stack Plate – Front	Detects the home position of the front stack plate.
S23	Stack Plate – Rear	Detects the home position of the rear stack plate.
S24	Stapler HP	Detects the home position of the staple unit for side-to-side movement.
S25	Stapler Rotation HP	Detects the home position of the stapler unit for 45-degree rotation.
S26	Stapler Return	Detects the on timing of the stapler return solenoid.
S27	Staple Waste Hopper	Detects when the staple waste hopper is full.
S28	Punch Waste Hopper	Detects when the punch waste hopper is full and detects when the punch tray is set. Punch Unit B531 (option).
S29	Punch HP 1	Detects the cam home position for the 2-hole punch. Punch Unit B531 (option).
S30	Punch HP 2	Detects the cam home position for 3/4 punch. Punch Unit B531 (option).
S31	Shift Jogger HP	Detects the home position of the jogger unit arms during paper alignment. Jogger Unit B513 (option).

Symbol	Name	Function
SENSORS		
S32	Shift Jogger Lift HP	Detects the when both shift jogger fences are at the lowered position and ready to move against the sides of the stack. Jogger Unit B513 (option).
S33	Top Fence HP	Detects the top fence home position for Z-fold paper staple mode.
S34	Bottom Fence HP	Detects the bottom fence home position for Z-fold paper staple mode.
SOLENOIDS		
SOL1	(Upper) Tray Junction Gate	Drives the tray junction gate.
SOL2	Stapler Junction Gate	Drives the stapler junction gate.
SOL3	Pre-Stack Junction Gate	Drives the pre-stack junction gate.
SOL4	Pre-stack Paper Stopper	Drives the stopper pawl of the pre-stacking tray.
SOL5	Stapler Return	Positions the stapler correctly on its return from the staple supply point.
SWITCHES		
SW1	Shift Tray Upper Limit	Cuts the power to the shift tray lift motor when the shift tray position is at its upper limit.
SW2	Front Door Safety	Cuts the dc power when the front door is opened.
SW3	Emergency Stop	Switches the current job off and on to allow time for the operator to remove paper from the shift tray.

7.3 DRIVE LAYOUT



1. Upper Transport Roller 2
2. Upper Tray Exit Roller
3. Lower Transport Roller 2
4. Shift Tray Lift Motor
5. Shift Tray Exit Motor
6. Shift Tray Exit Roller
7. Shift Tray
8. Shift Motor
9. Staple Tray Exit Roller
10. Positioning Roller
11. Lower Transport Roller 3
12. Lower Transport Motor
13. Lower Transport Rollers 2
14. Lower Transport Roller 1
15. Transport Roller 1
16. Entrance Roller 2
17. Entrance Roller
18. Upper Transport Roller 1
19. Upper Transport Motor
20. Stack Feed-out Motor
21. Jogger Motor
22. Jogger Fence
23. Stack Plate Motor
24. Stapler Motor
25. Stack Feed-out Belt
26. Stapler Rotation Motor

9-BIN MAILBOX
CS390 (B762) / CS4000 (D616)

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

9-BIN MAILBOX B762/D616

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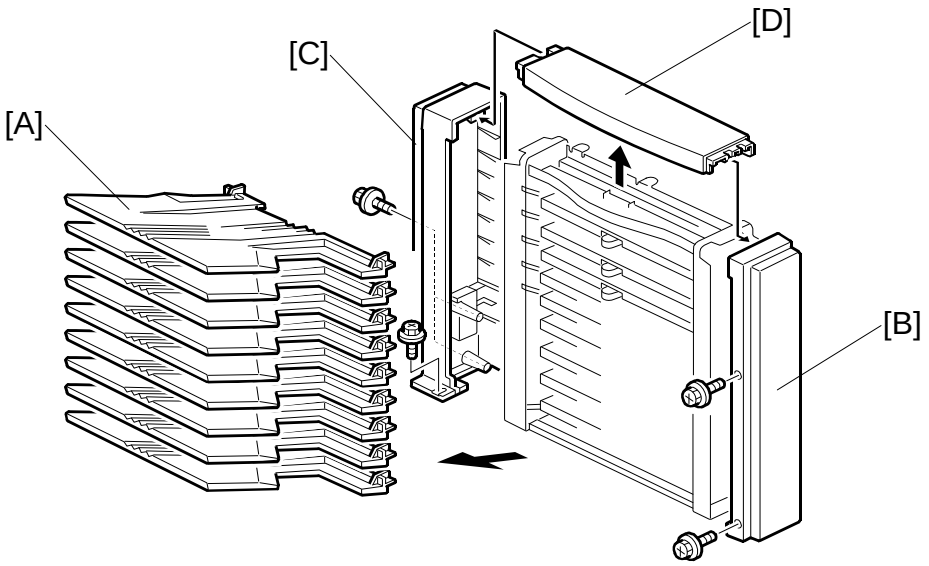
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1. REPLACEMENT AND ADJUSTMENT

⚠CAUTION

Switch the machine off and unplug the machine before starting and procedure in this section.

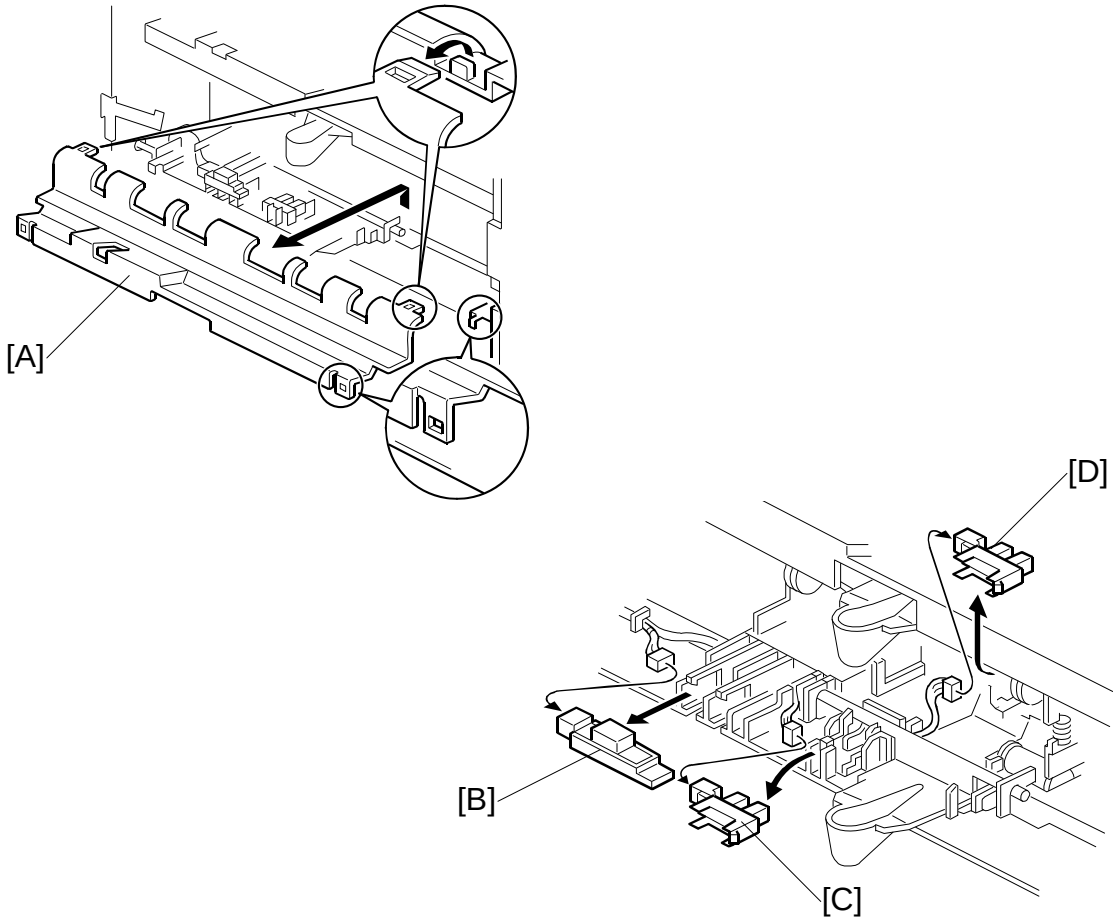
1.1 COVERS AND TRAYS



[A]: Trays
- Grip each tray by the front and lift out.

[B]: Front cover (🔩 x 2)
[C]: Rear cover (🔩 x 3)
[D]: Top cover

1.2 SENSORS



Remove the tray (☛ 1.1)

[A]: Bin cover

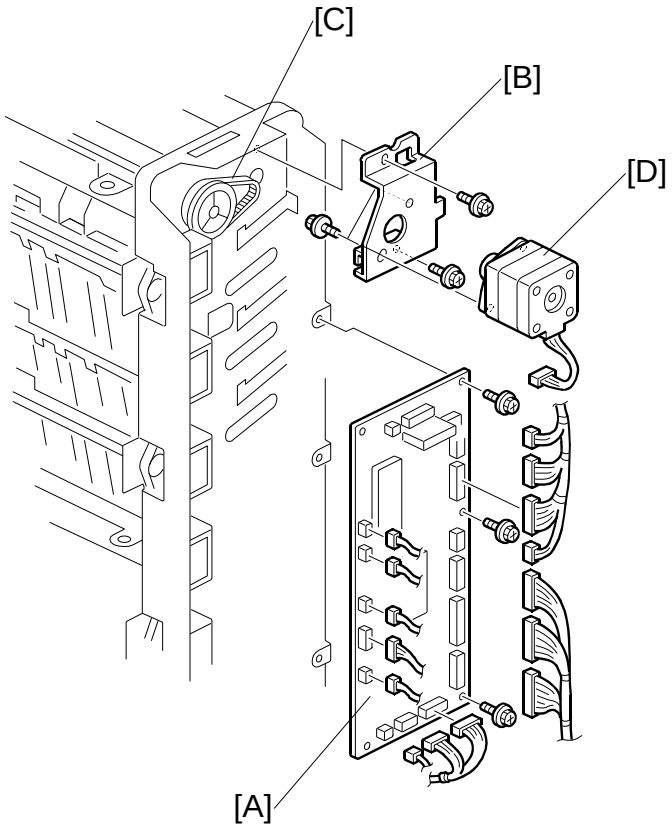
[B]: Tray sensor (✋ x 1)

[C]: Tray overflow sensor (✋ x 1)

[D]: Vertical transport sensor (✋ x 1)

- Raise the pawl, then grip the bottom of the sensor to remove.

1.3 MAIN MOTOR AND CONTROL BOARD



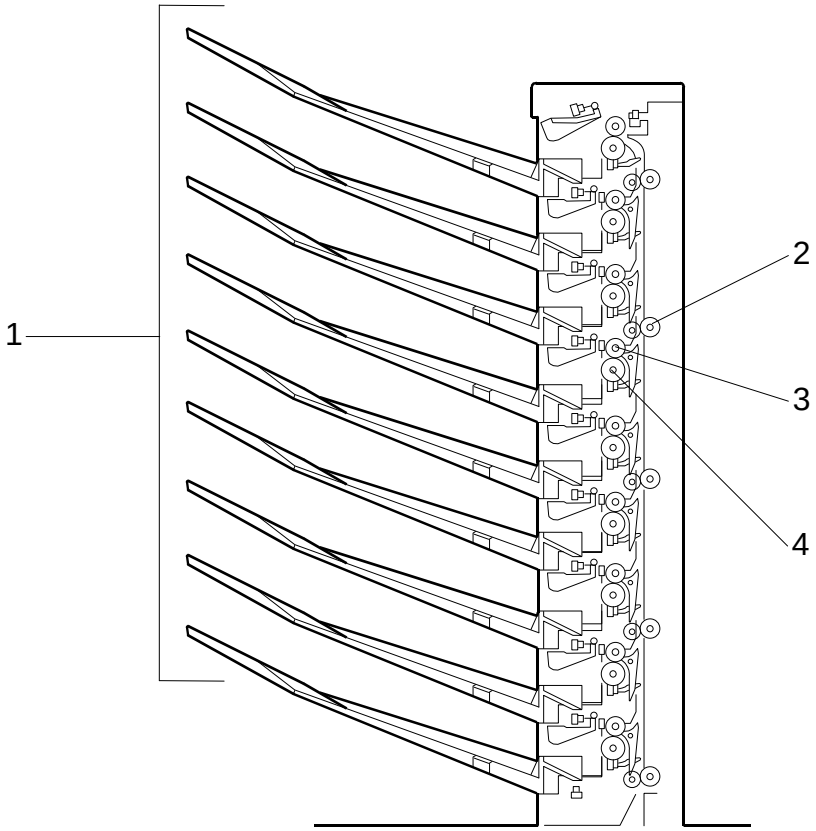
Rear cover (☛ 1.1)

[A]: Control board (🔩 x 3, 🖐 x 17)
[B]: Main motor bracket (main motor 🖐 x 1, 🔩 x 2)
[C]: Timing belt
[D]: Main motor (🔩 x 1)

2. DETAILS

2.1 OVERVIEW

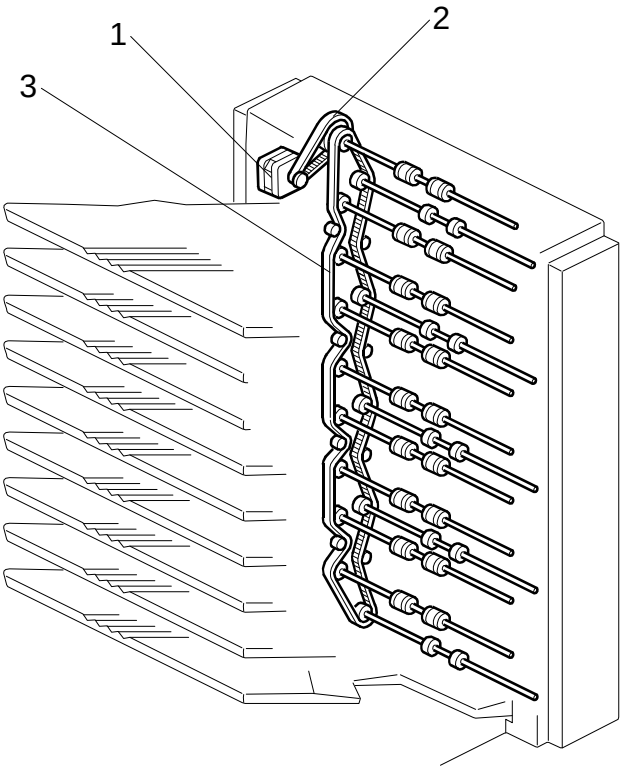
2.1.1 MAIN COMPONENT LAYOUT



1. Bins (x 9)
2. Vertical Transport Rollers (x 5)
3. Turn Gates (x 8)
4. Exit Rollers (x 9)

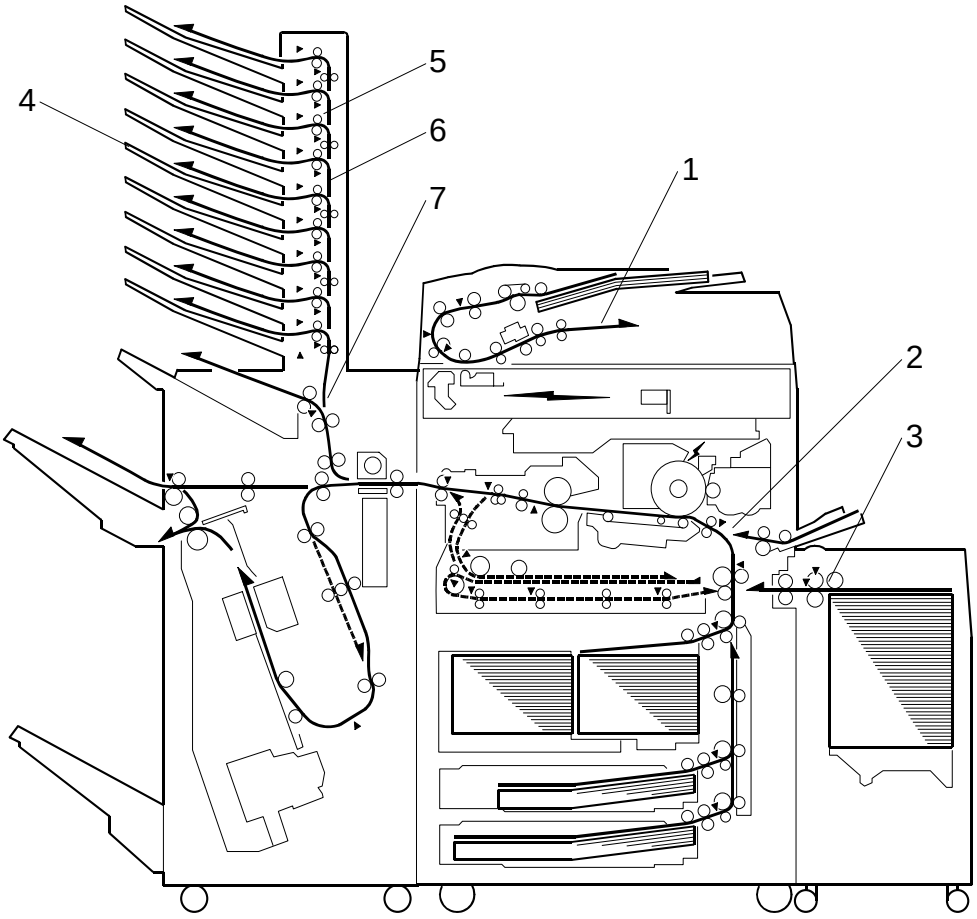
The trays are 1 to 9 (bottom to top). The numbers are clearly marked on the side of the unit. The top tray does not require a turn gate. When the top tray is selected for output, all turn gates remain closed, leaving only the top bin open.

2.1.2 DRIVE LAYOUT



1. Main Motor
2. Main Timing Belt
3. Timing Belt

2.1.3 PAPER PATH

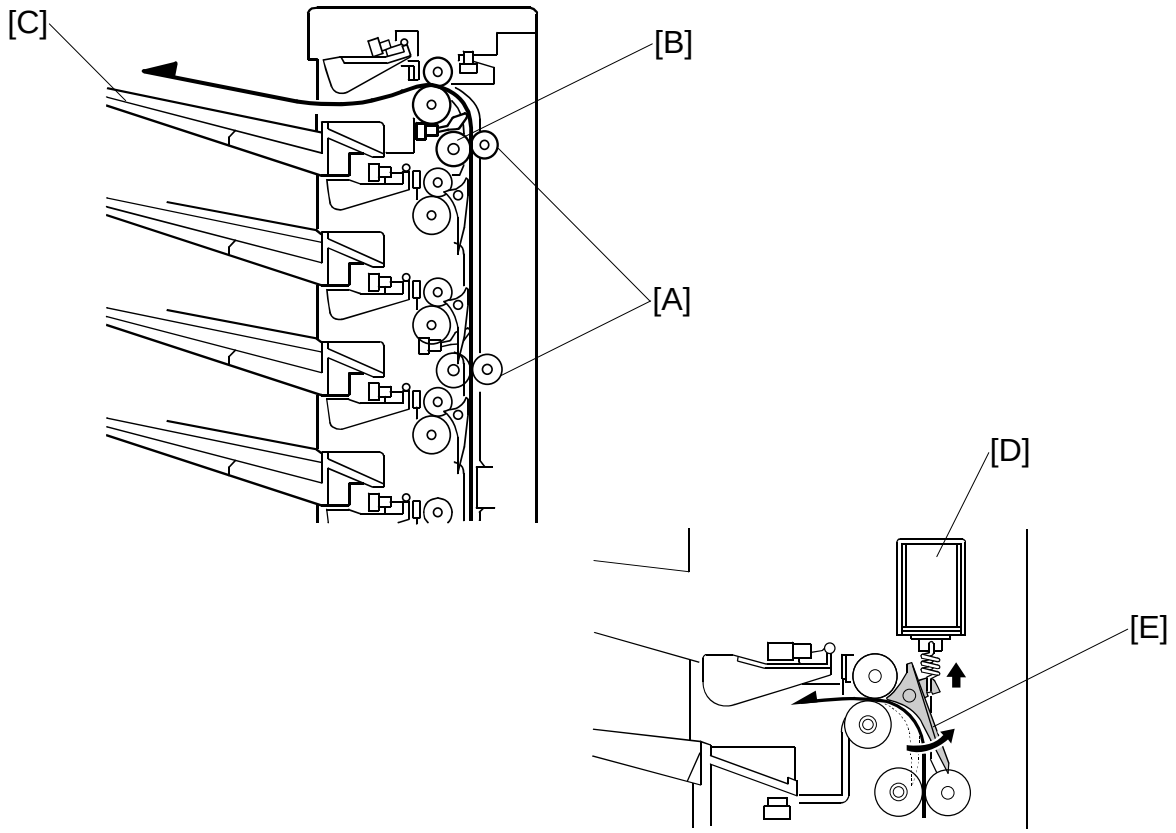


1. Original Paper Path
2. Vertical Transport Path
3. LCT Feed
4. Selected Trays
5. Turn Gates
6. Mailbox Paper Path
7. Junction Gate (paper goes either up to the mailbox or out to the finisher's proof tray)

The solenoid for the junction gate (7) is part of the mailbox.

2.2 BASIC OPERATION

2.2.1 PAPER PATH



The unit is mounted on top the finisher and connected to the finisher by a 14-pin connector. When the leading edge of the paper passes and activates the entrance sensor of the finisher, the mailbox main motor switches on and the mailbox vertical transport rollers [A] begin to turn. The exit roller [B] feeds the paper out to the selected tray [C].

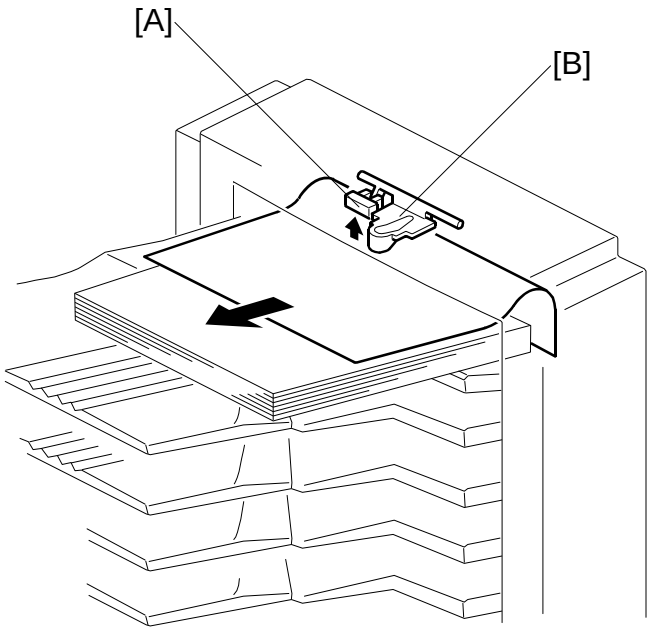
A solenoid [D] opens and closes the junction gate [E]. When a solenoid switches on, the gate opens and directs to the paper to the tray.

NOTE: When the top tray (bin 9) is selected, all solenoids are off and closed, allowing the paper to pass to the top tray (bin 9 does not require a solenoid).

When the last sheet is fed out, it switches off the vertical transport sensor, and both the mailbox main motor and the junction gate solenoid of the selected bin switch off. The mailbox normally feeds paper at 372 mm/s, about the same speed as the finisher. (The finisher speed is 370 mm/s.)

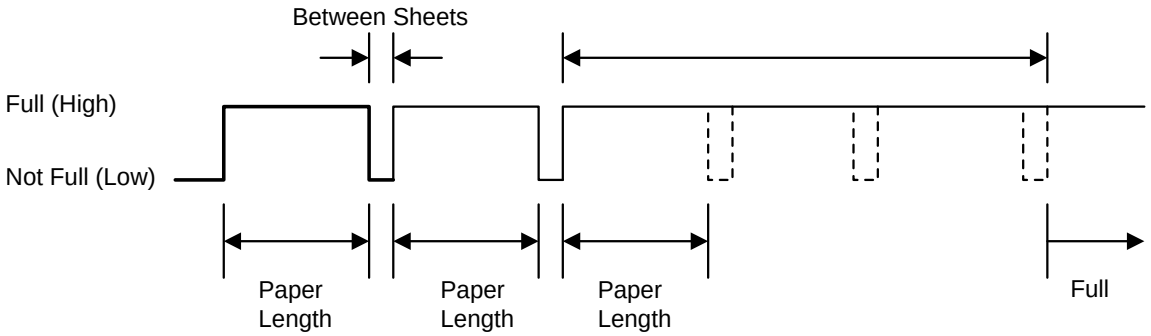
2.3 OVERFLOW DETECTION

2.3.1 OVERVIEW



An overflow sensor [A] and actuator [B] are above the exit of each paper tray. The actuator, mounted on a swivel arm, remains in contact with the top of the stack. The actuator rises as the stack becomes higher until it activates the sensor. Then, a tray full message appears on the operation panel and the job halts. If the paper is removed before the tray is full, the job continues.

2.3.2 DETECTION TIMING



When the mailbox exit sensor goes high for the prescribed time (T), the machine determines that the tray is full. The value of T is calculated, regardless of paper size, as follows:

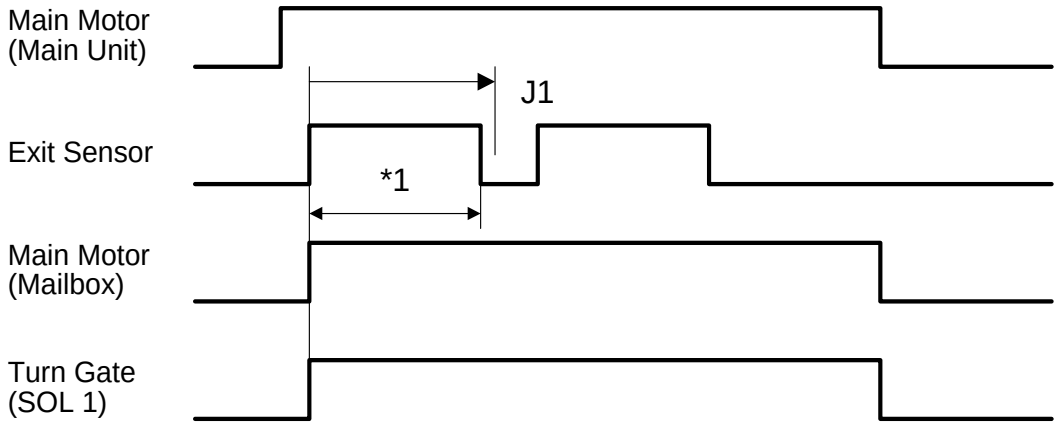
T (s) = (60/s x max. size ppm) x 3 s

After the tray full sensor switches on, if it remains on for the feeding of eight additional sheets, then this notifies the machine that the tray is full.

“T” is calculated as shown below. For example, for a minimum ppm of 12 prints (regardless of paper size), the value T is 15 s. Then, if the sensor detects paper for 15 s or more, the machine stops the copy job.

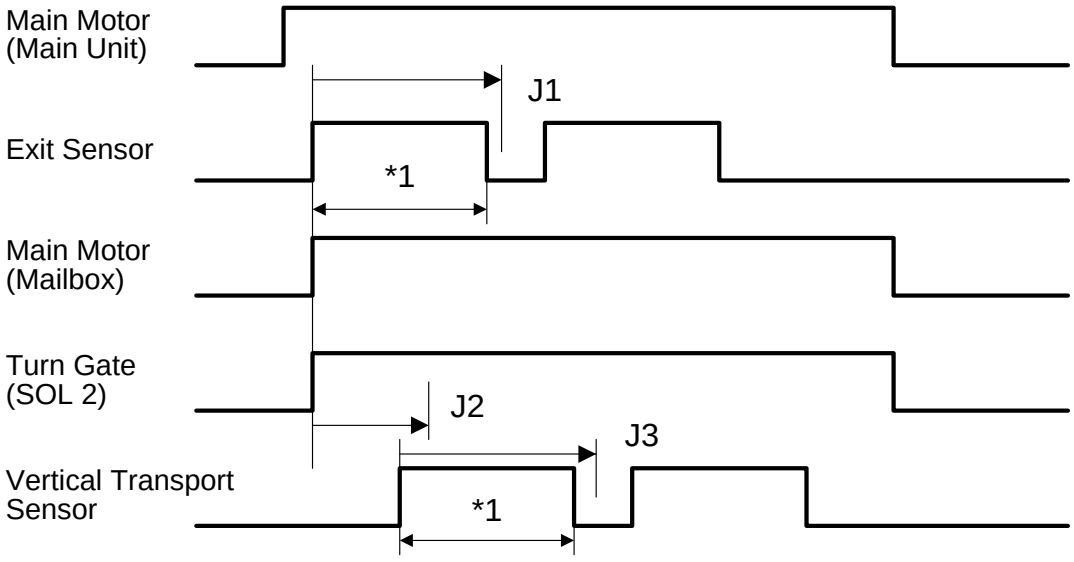
2.4 PAPER MISFEED DETECTION TIMING

2.4.1 A4 SIDEWAYS (LEF) → 1ST BIN TRAY



***1: Time required for A4 LEF**

2.4.2 A4 SIDEWAYS (LEF) → 2ND ~ 9TH BIN TRAY



***1: Time required for A4 Sideways (LEF)**
***2: Feed to 9th Tray: All SOLs OFF.**

J1 Timing: After the leading edge of the sheet activates the mailbox exit sensor, a misfeed is detected if the sensor does not switch off within:

X+0.5 s

Where X = The amount of time prescribed for the paper size to pass the sensor. (X = 1.74 s for A4 Sideways for example)

J2 Timing: After the mailbox paper exit sensor is activated, the machine determines that the paper has not yet fed and detects a misfeed if the vertical transport sensor does not activate within the time prescribed for the paper size (1.94 s for A4 paper, for example)

J3 Timing: After the vertical transport sensor is activated, a misfeed is detected if the vertical transport sensor does not turn off within:

X+0.52 s

Where X = The amount of time prescribed for the paper size to pass the sensor. (X = 2.26 s for A4 Sideways for example)

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REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

BOOKLET FINISHER & FINISHER B804/B805/D373/D374/D611

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Read This First

Safety and Symbols

Replacement Procedure Safety

⚠CAUTION

- Turn off the main power switch and unplug the machine before beginning any of the replacement procedures in this manual.

Symbols Used in this Manual

This manual uses the following symbols.

☛: See or Refer to

: Screws

: Connector

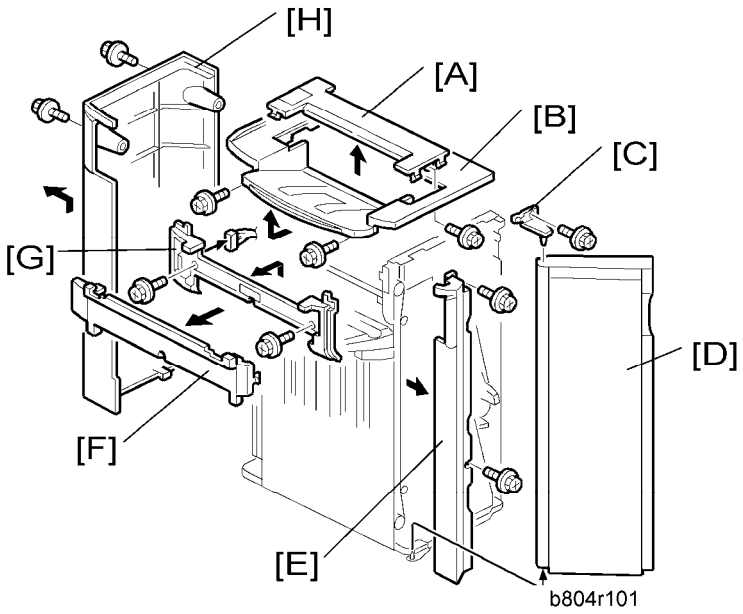
: Clip ring

: E-ring

1. REPLACEMENT AND ADJUSTMENT

1.1 COVERS

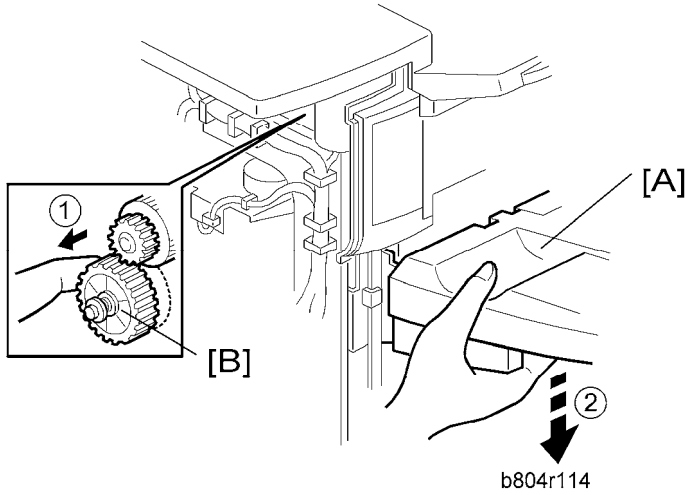
1.1.1 EXTERIOR COVERS



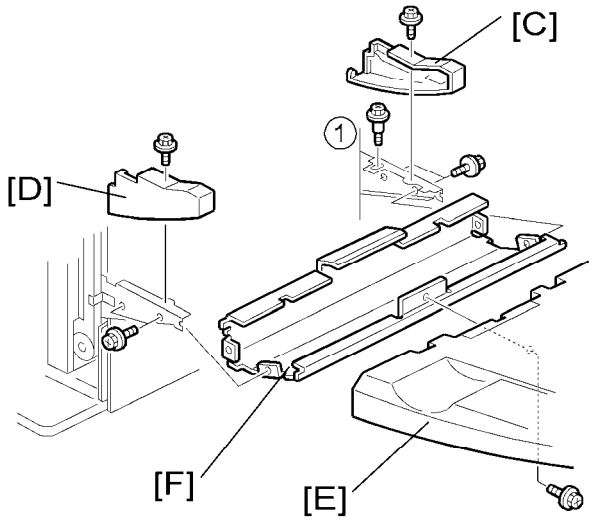
1. Open the front door [D].
2. Small upper cover [A] (x1)
3. Upper cover [B] (x2)
4. Front door bracket [C] (x1)
5. Front door [D]
6. Front left side cover [E] (x2)
7. Cover [F]
8. Paper exit cover [G] (x2)
9. Rear cover [H] (x2)

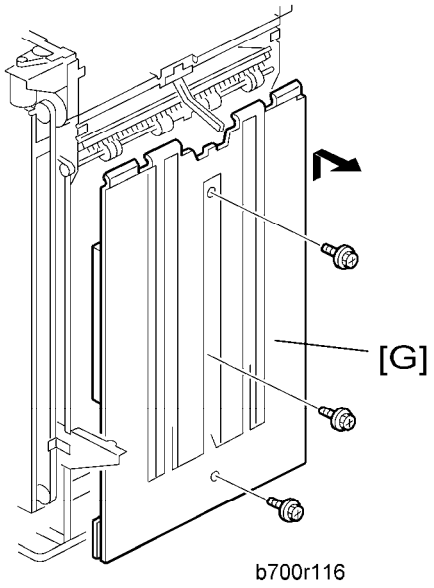
1.1.2 UPPER TRAY, END FENCE

1. Remove the rear cover. (* "Exterior Covers")



1. Support the tray [A] with your right hand.
2. Pull gear [B] toward you ① to release.
3. Slowly lower the tray ② until it stops.

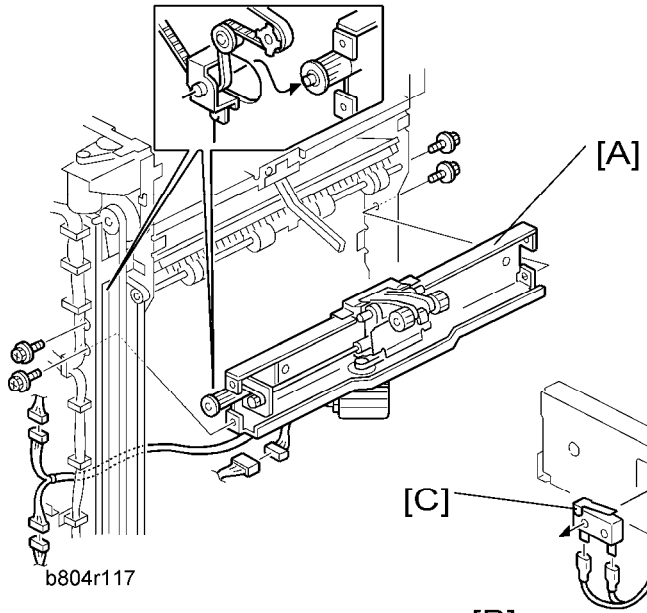


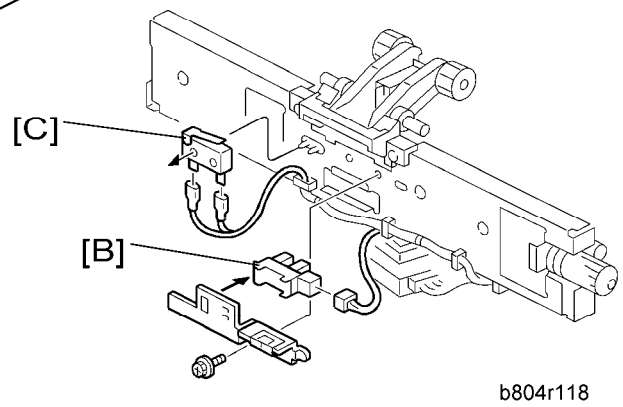


4. Front side cover [C] (x1)
5. Rear side cover [D] (x1)
6. Upper tray [E] (x1)
7. Tray bracket [F] (x4, x1 shoulder screw ①)
8. End Fence [G](x3)

1.2 MAIN UNIT

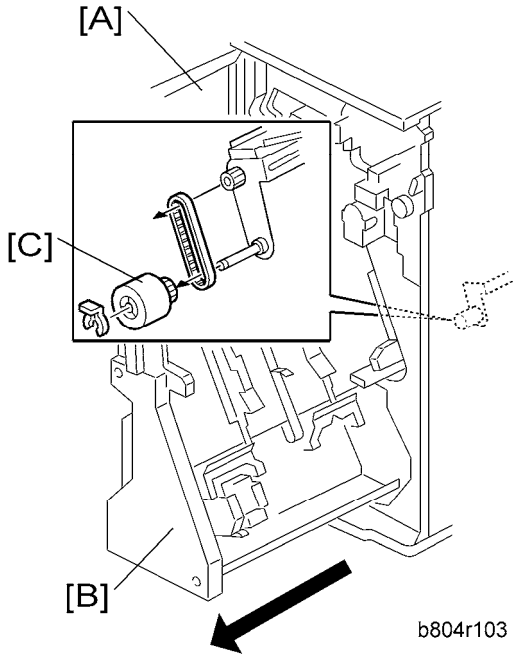
1.2.1 UPPER TRAY LIMIT SENSOR, LIMIT SWITCH





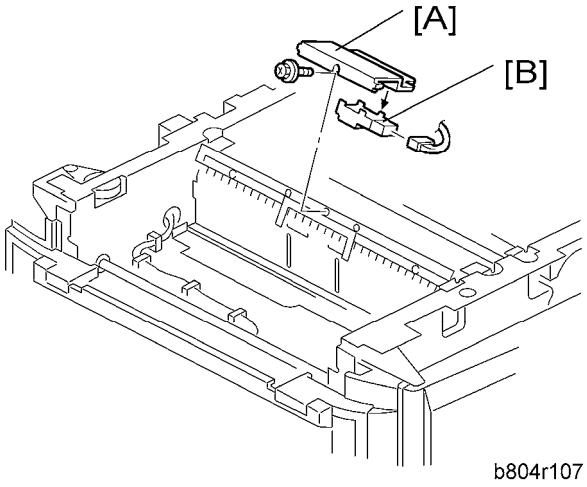
1. Front door, front left side cover, rear cover, upper cover (☛ "Exterior Cover")
2. End fence (☛1.1.2 "Upper Tray, End Fence")
3. Upper tray exit mechanism [A] (x4, x3)
4. Upper tray limit sensor [B] (x1, x1)
5. Upper tray limit switch [C] (x2)

1.2.2 POSITIONING ROLLER



1. Open the front door [A].
2. Pull out the stapling unit [B].
3. Positioning roller [C] (⌇ x1, timing belt x1)

1.2.3 PROOF TRAY EXIT SENSOR

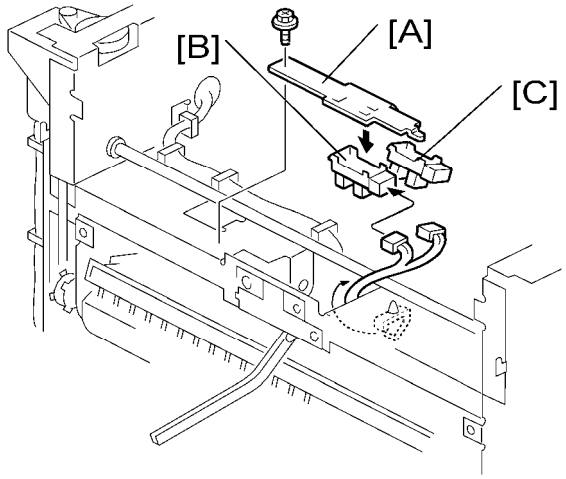


1. Small upper cover (☛1.1.1 "Exterior Cover")
2. Proof tray exit sensor bracket [A] (☞ x1)

Main Unit

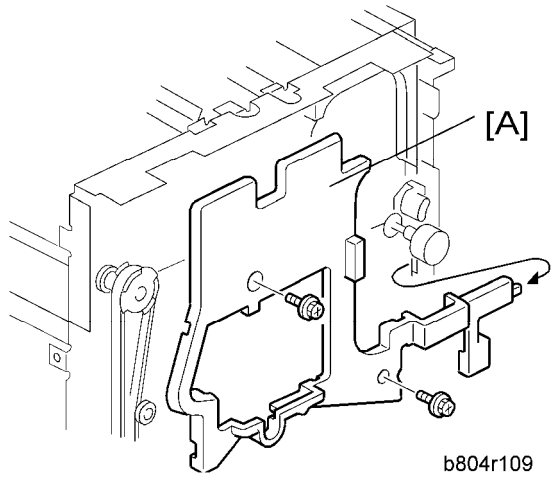
3. Proof tray exit sensor [B] (☜ x1)

1.2.4 UPPER TRAY HEIGHT SENSORS 1, 2

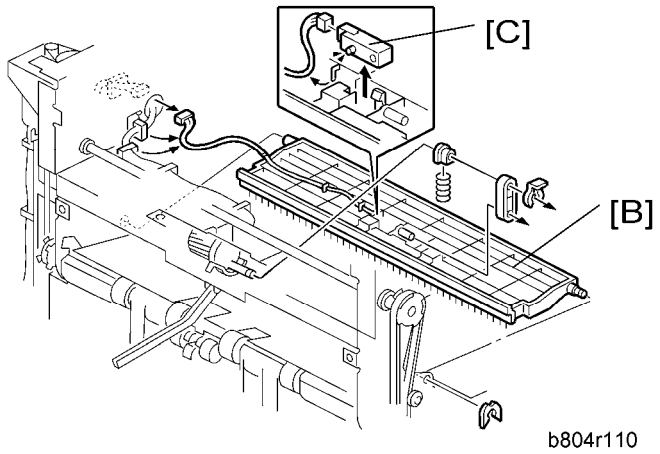


1. Small upper cover, upper cover (☛1.1.1 "Exterior Cover")
2. Upper tray paper height sensor bracket [A] (☞ x1)
3. Upper tray paper height sensor [B] – staple mode (S08) (☜ x1)
4. Upper tray paper height sensor [C] – non-staple mode (S09) (☜ x1)

1.2.5 EXIT GUIDE PLATE, UPPER TRAY EXIT SENSOR

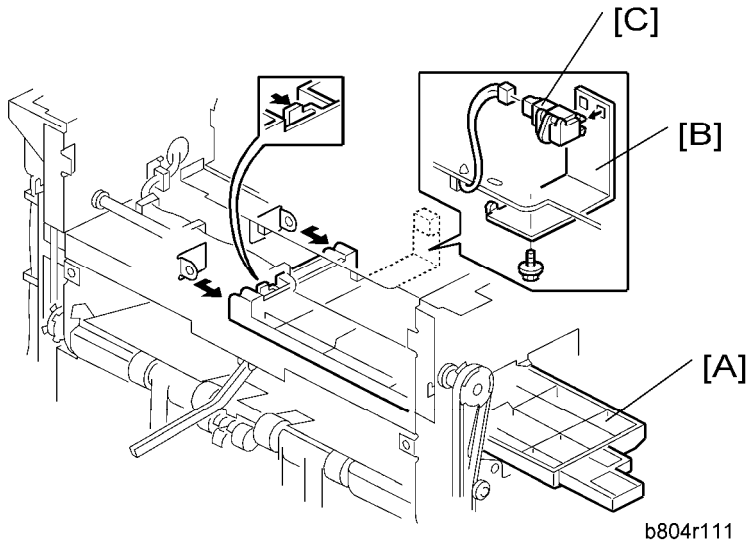


1. Rear cover, Upper covers, Front door, Cover, Paper exit cover (☛1.1.1 "Exterior Cover")
2. Inner cover [A] (☞ x2)



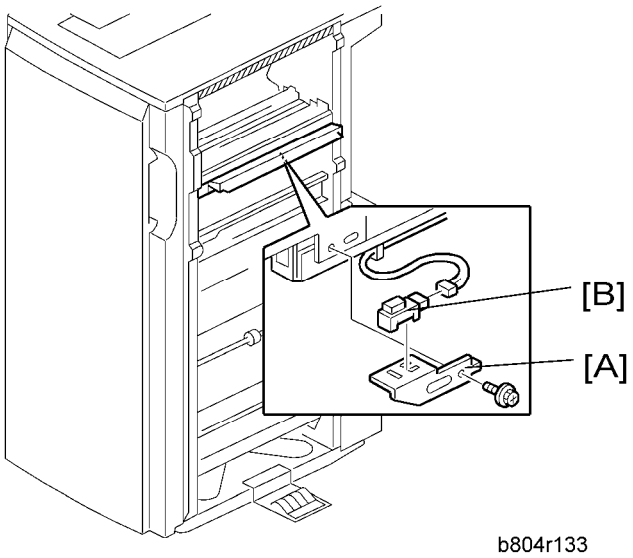
3. Exit guide plate [B] (x1, Link and spring, x1, x1)
4. Upper tray exit sensor [C] (S6) (x1)

1.2.6 PROOF TRAY FULL SENSOR



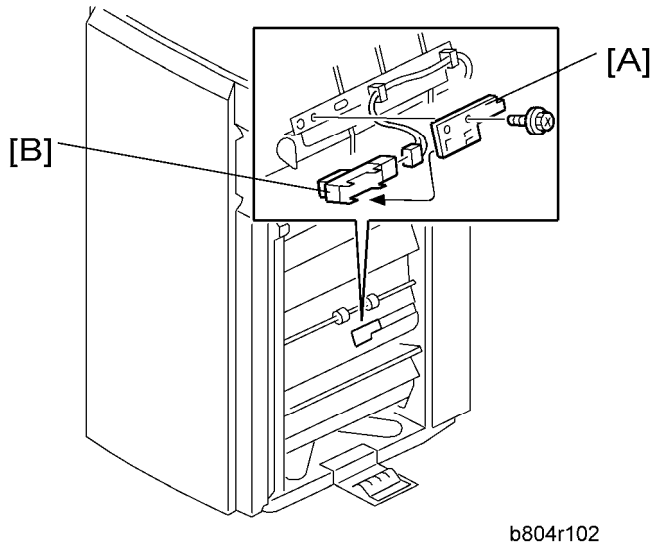
1. Exit guide plate. (1.2.5 "Exit Guide Plate, Upper Tray Exit Sensor")
2. Guide plate [A] (hook x 2)
3. Sensor bracket [B] (x1)
4. Proof tray full sensor [C] (S11) (x1)

1.2.7 FINISHER ENTRANCE SENSOR



1. Disconnect the finisher if it is connected to the copier.
2. Sensor bracket [A] (x1)
3. Finisher entrance sensor [B] (S1) (x1)

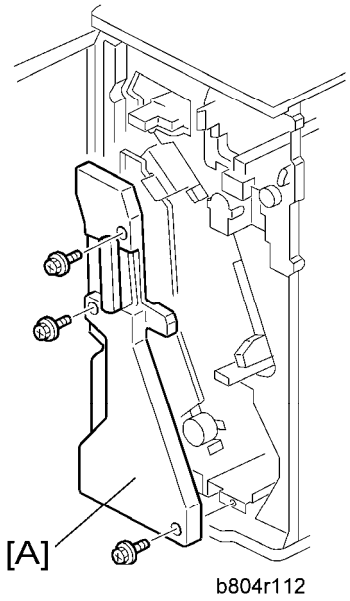
1.2.8 PRE-STACK TRAY EXIT SENSOR



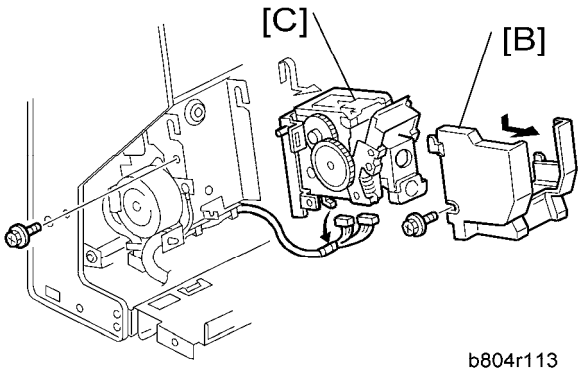
1. Disconnect the finisher if it is connected to the copier.
2. Sensor bracket [A]
3. Pre-stack tray exit sensor [B] (S2)

1.3 STAPLER UNIT

1.3.1 CORNER STAPLER



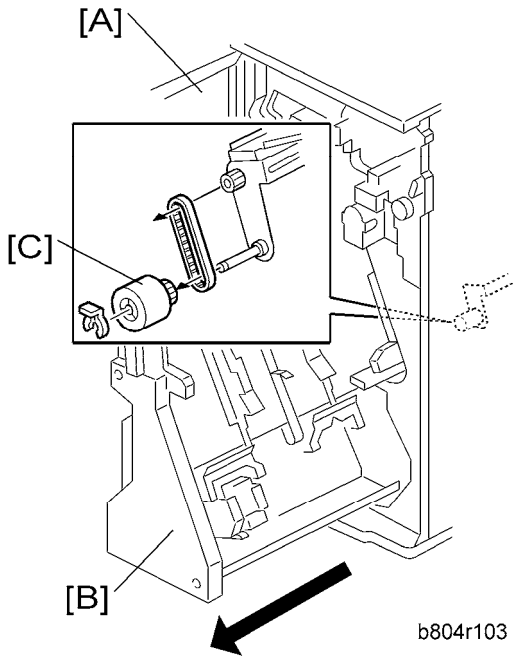
b804r112



b804r113

1. Open the front door.
2. Pull out the stapler unit.
3. Inner cover [A] (x3)
4. Stapler unit holder [B] (x1)
5. Corner stapler [C] (M20) (x1)

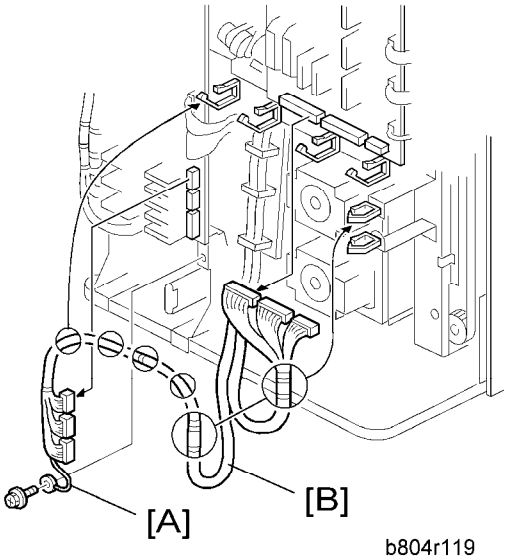
1.3.2 POSITIONING ROLLER



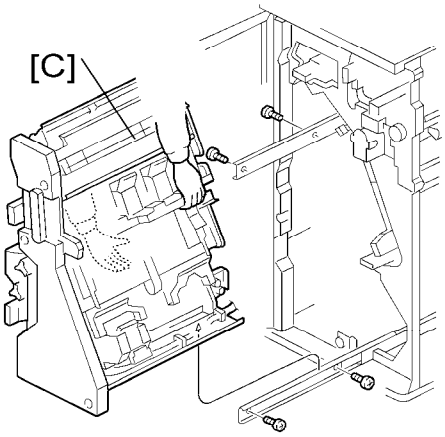
1. Open the front door [A].
2. Pull out the stapling unit [B].
3. Positioning roller [C] (x1, timing belt x1)

1.4 FOLD UNIT

1.4.1 FOLD UNIT



b804r119



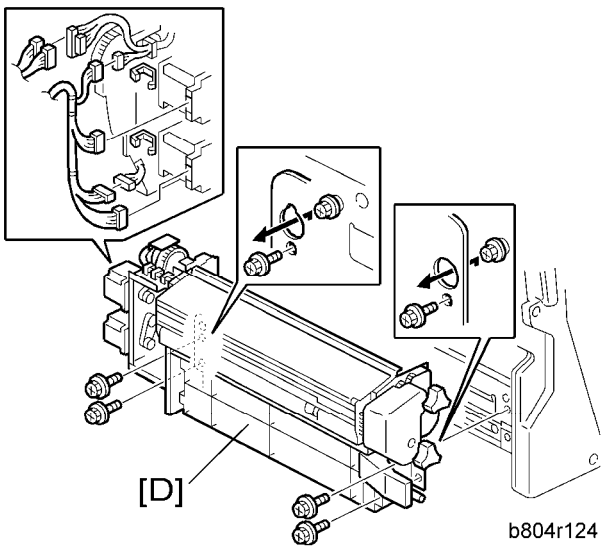
b804r801

1. Remove the back cover (☛1.1.1 "Exterior Covers").
2. Open the front door.

⚠CAUTION

- The stapler unit is heavy.

3. Ground cable [A] (🔩 x1)
4. Harness [B] (🔩 x6, 🔩 x6)
5. Stapler unit [C] (🔩 x4)



b804r124

Fold Unit

Important

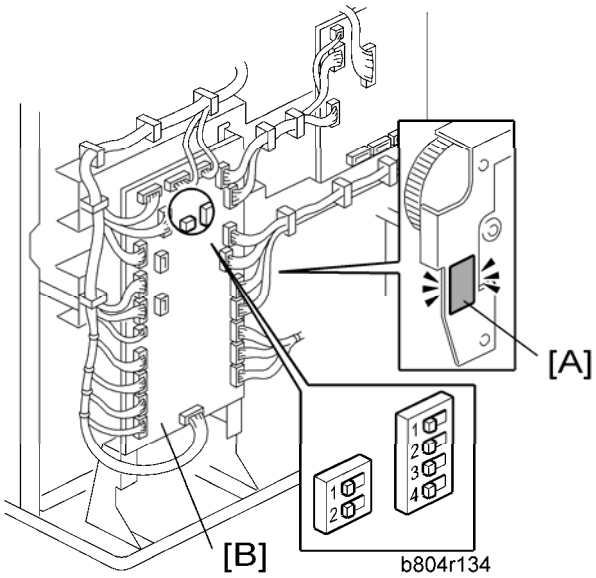
- Support the fold unit with your hand to prevent it from falling.

CAUTION

- The fold unit is heavy.

6. Folding unit [D] (x4, x2, x6)

If you have replaced the folding unit:

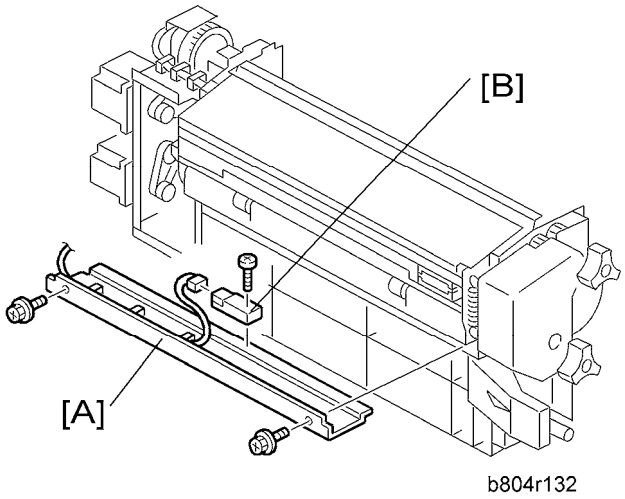


1. Read the DIP SW settings on the decal [A] attached to the back of the new folding unit.
2. Check the DIP SW settings on the main board [B] of the finisher.
3. If these settings are different, change these settings to match the settings printed on the decal attached to the folding unit.

Note

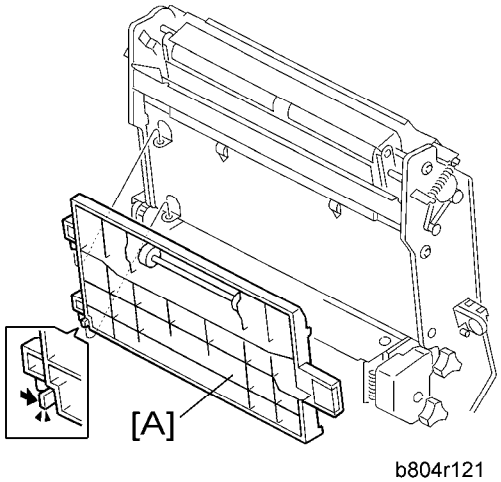
- Set DIP switches 1 to 4 (the switch set on the right). Do not touch the other DIP switches.

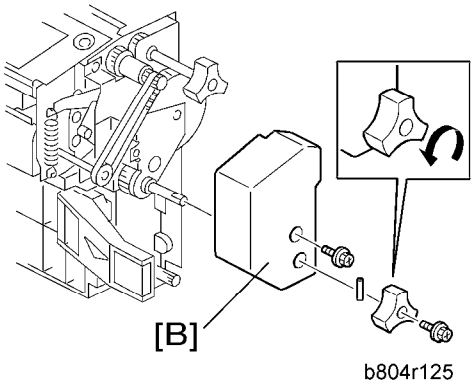
1.4.2 FOLD UNIT ENTRANCE SENSOR



1. Pull out the stapler unit (☛1.3.2 "Positioning Roller").
2. Fold unit entrance sensor bracket [A] (☞ x2)
3. Fold unit entrance sensor [B] (S26) (☞ x1, ☞ x1)

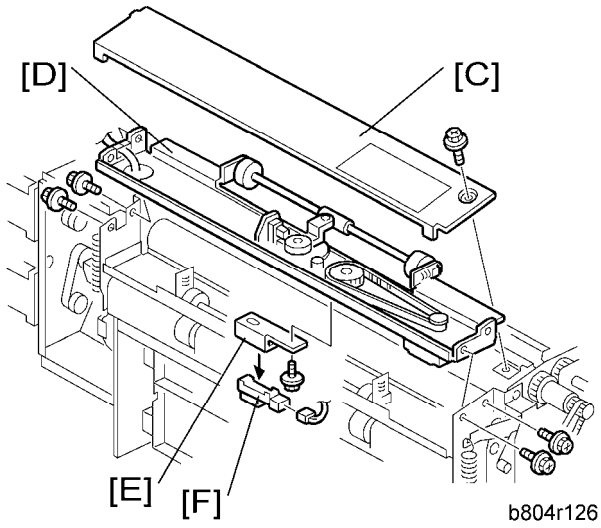
1.4.3 FOLD UNIT EXIT SENSOR





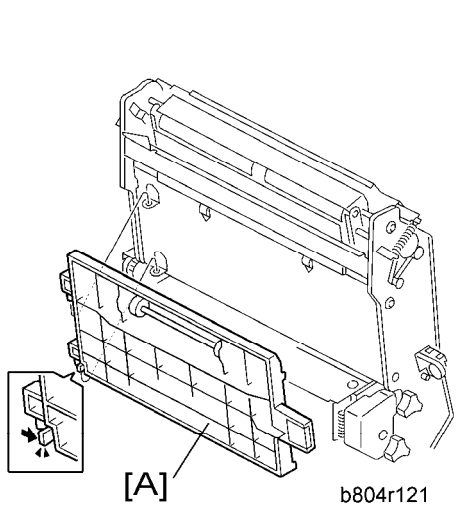
1. Open the front door.
2. Pull out the stapler unit (☛1.3.2 "Positioning Roller").
3. Fold unit vertical guide plate [A]
4. Fold unit inner cover [B] (☞ x2, Spring pin x1)

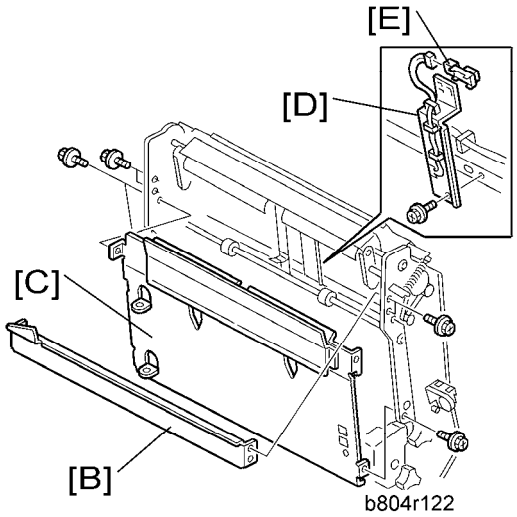
Fold Unit



5. Fold unit upper cover [C] (x1)
6. Paper clamp mechanism [D] (x4)
7. Fold unit exit sensor bracket [E] (x1)
8. Fold unit exit sensor [F] (S31) (x1)

1.4.4 STACK PRESENT SENSOR





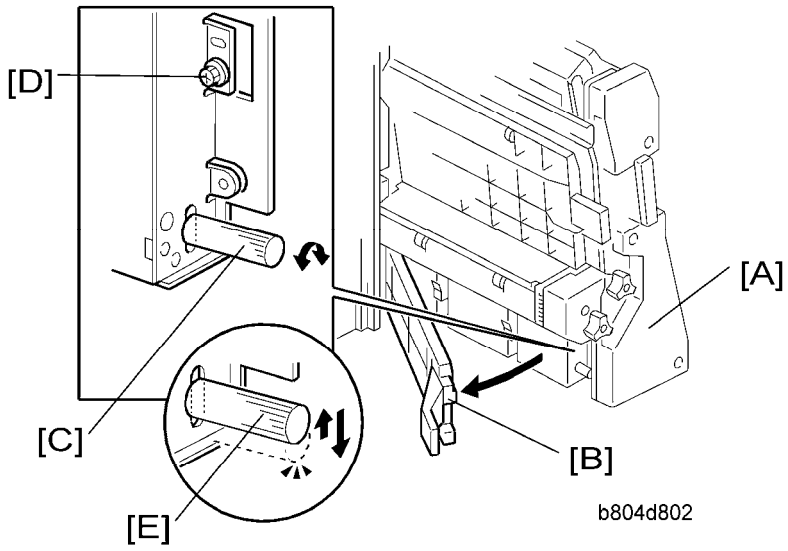
Important

- If you intend to correct the horizontal and vertical skew for the fold unit at the same time, do those adjustments first, then replace the sensor. (1.4.5 "Folding Horizontal Skew Adjustment" or "Fold Vertical Skew Adjustment")

1. Remove the stapler unit (1.4.1 "Fold Unit")

2. Guide plate [A].
3. Stay [B] (x4)
4. Left plate [C] (x4)
5. Sensor bracket [D] (x1)
6. Stack present sensor [E] (S32) (x1)

1.4.5 FOLDING HORIZONTAL SKEW ADJUSTMENT (FOR B804 ONLY)



Important

- The fold unit is adjusted for optimum performance before the finisher is shipped from the factory. Do this adjustment only if the edges of folded booklets are not even.

1. Switch the copier on and enter the SP mode.
2. Europe, Asia: Use **SP6-134-001** (this is for A3 paper). North America: Use **SP6-134-005** (this is for DLT paper).

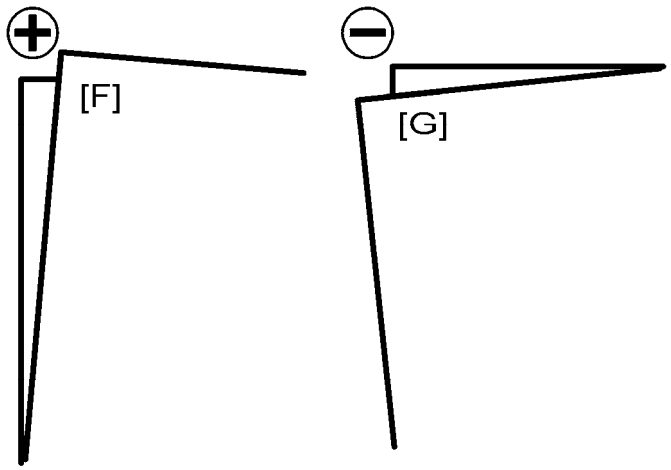
Note

- If the original setting of SP6-134-001 or -005 is not "0", then you must do the vertical skew adjustment (1.4.6 "Fold Vertical Skew Adjustment") after you finish this horizontal skew procedure.

3. Use the 10-key pad to input "-2" (mm) for the SP value. (Press ●/× to enter the minus sign.)
4. Press [#] then exit the SP mode.

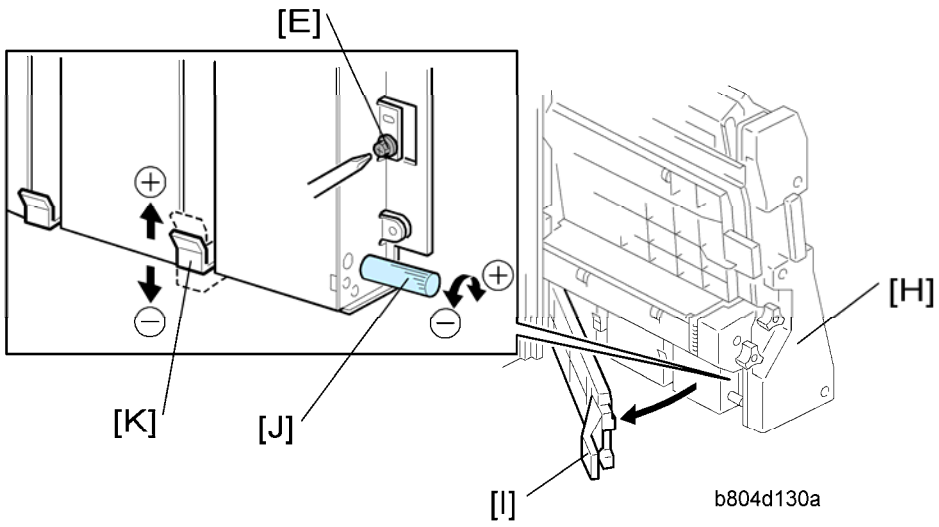
Fold Unit

5. Open the front door and pull the stapler unit [A] out of the finisher.
6. Open the guide plate [B].
7. Loosen the adjustment screw [C] and then tighten until it stops. (Do not over tighten.)
8. Remove the lock screw [D].
9. Raise the tip [E] of the adjustment screw very slightly and allow it to descend under its own weight.



b804r901

10. Push the stapler unit into the finisher and close the front door.
11. Do a folding test.
    - Switch the copier on.
    - Put one page of A3 or DLT paper in the ARDF.
    - On the copier operation panel, select booklet stapling.
    - Press [Start]. One sheet is folded.
12. Remove the sheet from the lower tray.
13. Hold the folded sheet with the creased side pointing down and face-up (the same way that it came out of the finisher).
14. Referring to the diagram, determine if the skew is + [F] or - [G].



15. Open the front door of the finisher and pull the stapler unit [H] out.
16. Open the guide plate [I].
17. Turn the adjustment screw [J] to correct the amount of skew you measured from the test sheet.
    - For + skew [F], turn the adjustment screw (clockwise).
    - For – skew [G], turn the adjustment screw to the left (counter-clockwise).
    - Every click in the +/– direction adjusts the fold position by 0.1 mm by moving the bottom fence [K].
18. Raise the tip of the adjustment screw [J] and allow it to lower under its own weight.
19. Attach and tighten the lock screw [L].
20. Push the stapler unit into the machine, close the front door, then turn the copier on.
21. Europe, Asia: Do **SP6-134-001** (this is for A3 paper). North America: **Do SP6-134-005** (this is for DLT paper).
22. Reset it to "0".
23. Do the test again.
24. If the result is satisfactory, this completes the adjustment. -or- If some skew remains, repeat this adjustment.

Note

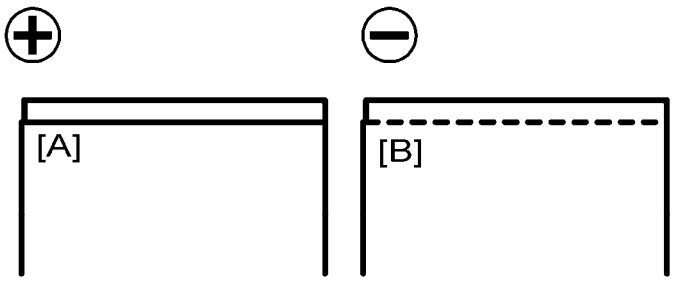
- After doing this adjustment, adjust for vertical skew, if necessary. (☛1.4.6 "Fold Vertical Skew Adjustment")

1.4.6 FOLD VERTICAL SKEW ADJUSTMENT (FOR B804 ONLY)

Important

- The fold unit is adjusted for optimum performance before the finisher is shipped from the factory. Do this adjustment only if the edges of folded booklets are not even.

1. Switch the copier on.
2. Do a folding test.
   - Switch the copier on.
   - Put one page of A3 or DLT paper in the ARDF.
   - On the copier operation panel, select booklet stapling.
   - Press [Start]. One sheet is folded.
3. Hold the folded sheet with the creased side pointing down, and face-up (the same way that it came out of the finisher).

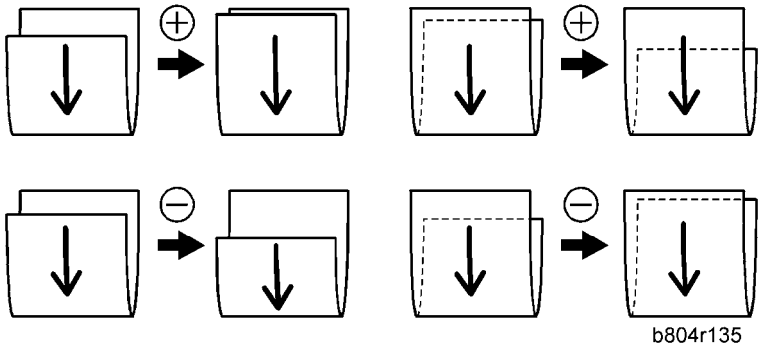


4. Referring to the diagram, determine if the skew is positive [A] or negative [B].
5. Measure the amount of skew.
6. Enter the SP mode
   - Europe, Asia: Use **SP6-134-001** (this is for A3 paper).
   - North America: Use **SP6-134-005** (this is for DLT paper).
7. Enter one-half the measured amount of skew. Example: If the measure amount of skew is -1.2 mm, enter -0.6 mm

   Note

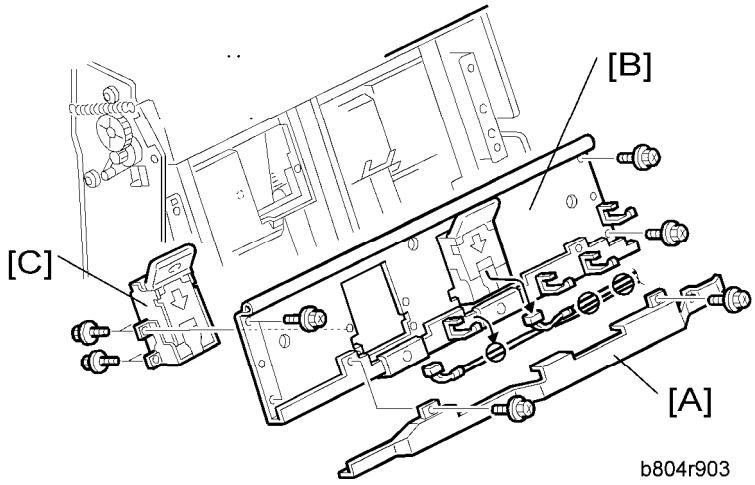
   - The range for measurement is –3.0 mm to +3.0 mm in 0.2 mm steps for every notch adjustment.
8. Exit the SP mode and do the test again (steps 2 to 5).
9. Repeat this procedure until the skew is corrected.

   The illustration below shows the effects of +/- adjustment with SP6113. (The vertical arrows show the direction of paper feed.)


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1.5 BOOKLET STAPLER UNIT

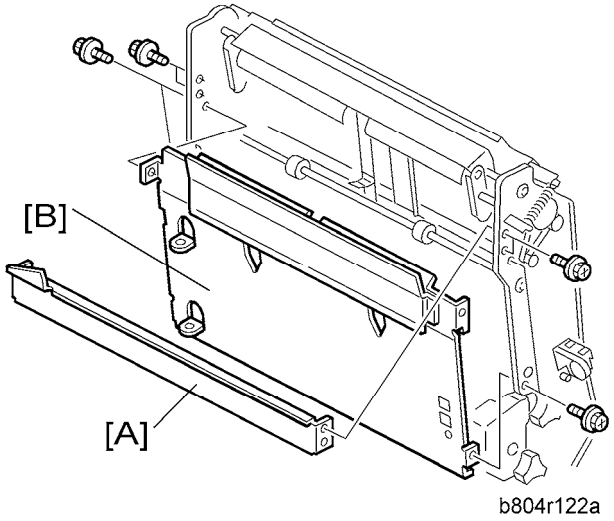
1.5.1 BOOKLET STAPLER



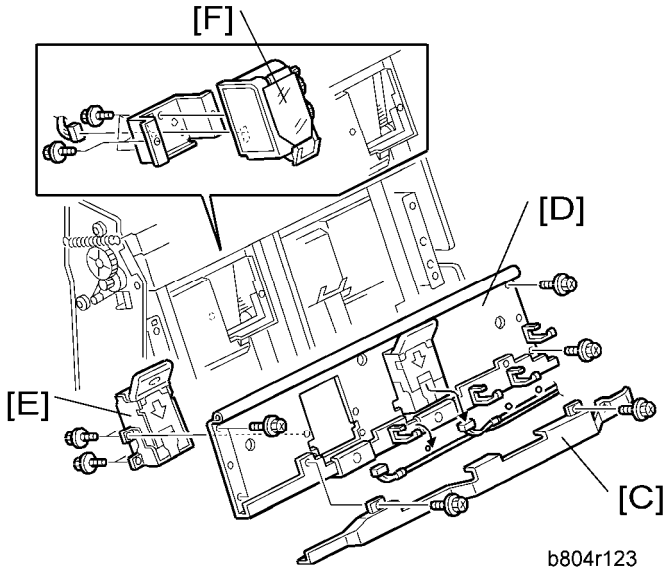
1. Open the front door.
2. Pull out the stapler unit (☛1.2.2 "Positioning Roller").
3. Harness cover [A] (x2)
4. Booklet stapler support stay [B] (x4, x2, x4)
5. Stapler [C] (x4)

1.5.2 BOOKLET STAPLER MOTOR

1. Open the front door.
2. Remove the stapler unit. (☛1.4.1 "Fold Unit")



3. Stay [A] (x4).
4. Left plate [B] (x4)



5. Harness cover [C] (x2)
6. Booklet stapler support stay [D] (x4, x2, x4)
7. Booklet stapler [E] (x4)
8. Booklet stapler motor [F] (x2, x1)

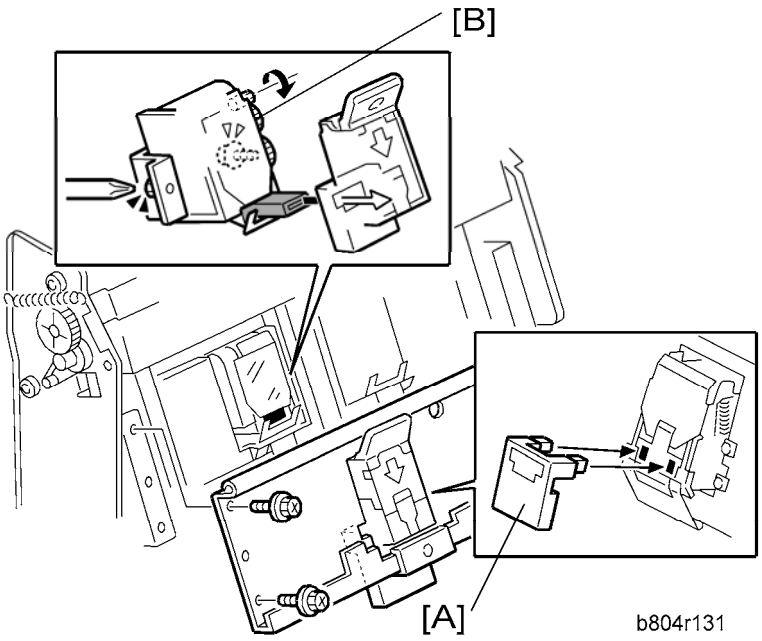
To Reattach the Booklet Stapler Motor

1. Reattach the booklet stapler motor.

Important

- Do not tighten the screws.

Booklet Stapler Unit



2. Attach the special tool [A] and reattach the booklet stapler stay.

Note

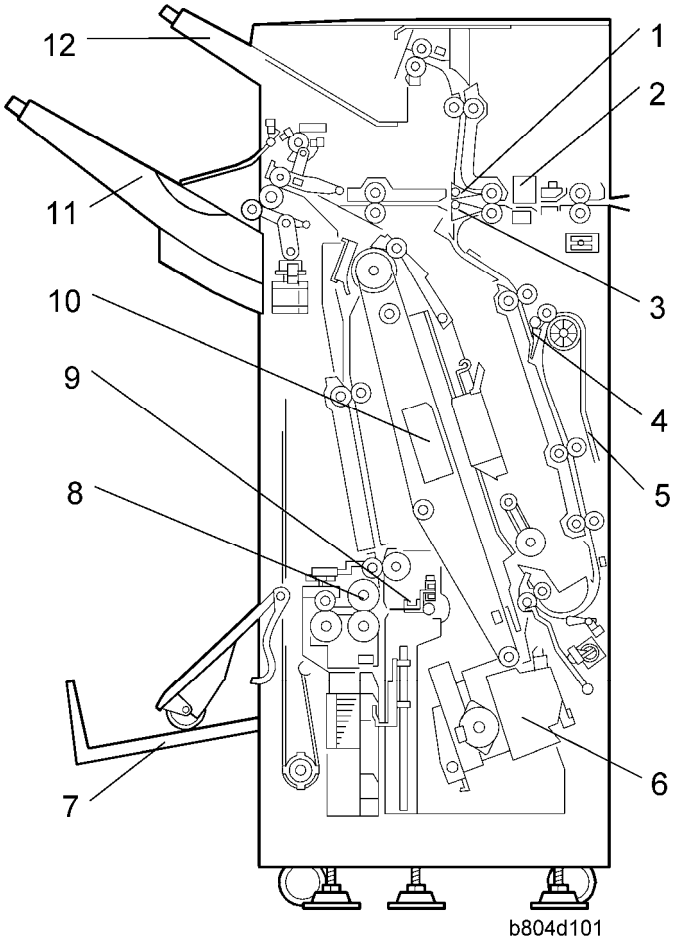
- This tool is included with the stapler spare part.

3. Turn the gear [B] with your finger until it stops.
4. Tighten the screws to attach to the booklet stapler motor.
5. Remove the stay again and remove the special tool.
6. Reattach the booklet stapler stay.
7. Push the stapler unit into the machine.

2. DETAILED SECTION DESCRIPTIONS

2.1 COMPONENT LAYOUT

2.1.1 GENERAL LAYOUT



1. Proof Tray Junction Gate	7. Lower Tray (Booklet)*1
2. Punch Unit	8. Folder Rollers*1
3. Stapler Junction Gate	9. Folder Plate*1
4. Pre-Stack Junction Gate	10. Booklet Stapler*1
5. Pre-Stack Tray	11. Upper Tray (Shift)
6. Corner Stapler (M20)	12. Proof Tray

Component Layout

*[1]: B804 Only

Paper direction

The operation of the proof tray and stapler junction gates direct the flow of the paper once it enters the finisher:

Proof Junction Gate	Stapler Junction Gate	Paper Feeds
Closed	Closed	Paper feeds straight through
Open	Closed	Paper feeds to the proof tray
Closed	**Open**	Paper feds to the staple tray

Proof tray

Copies are sent to the proof tray (12) when neither sorting nor stapling are selected for the job.

Upper tray

The upper tray (11) receives copies that are sorted and shifted and also receives copies that have been corner stapled. Corner stapling is provided on both the B804 and the B805.

Pre-stack tray

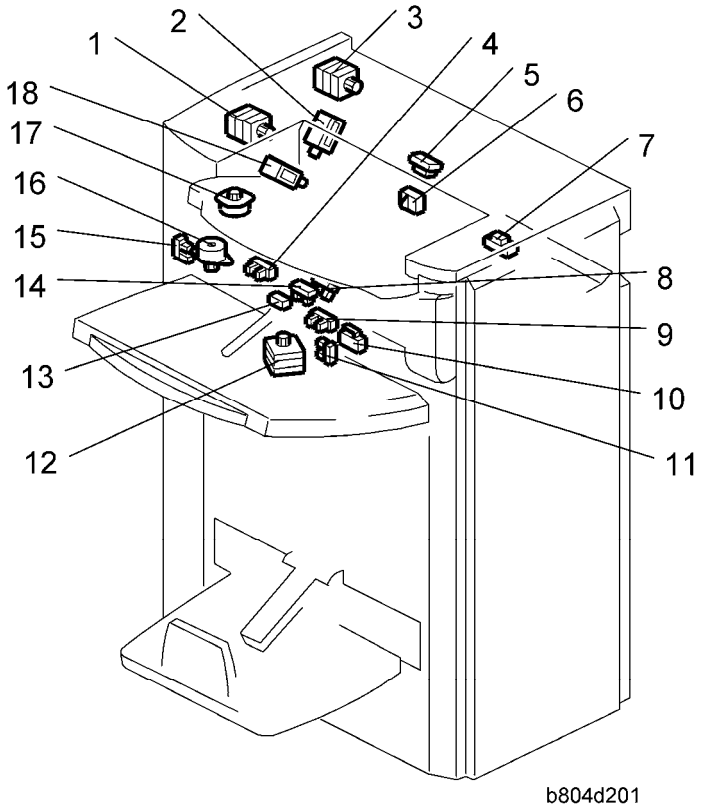
The pre-stack tray (5) has a switchback mechanism to increase the productivity of stapling. (☛2.3 "Pre-Stacking) Pre-stacking is done for corner stapling in the B804/B805 and for booklet stapling in the B804.

Lower tray

The lower tray (7) receives copies that have been center folded and stapled (booklet stapling). Booklet stapling is not provided on the B805.

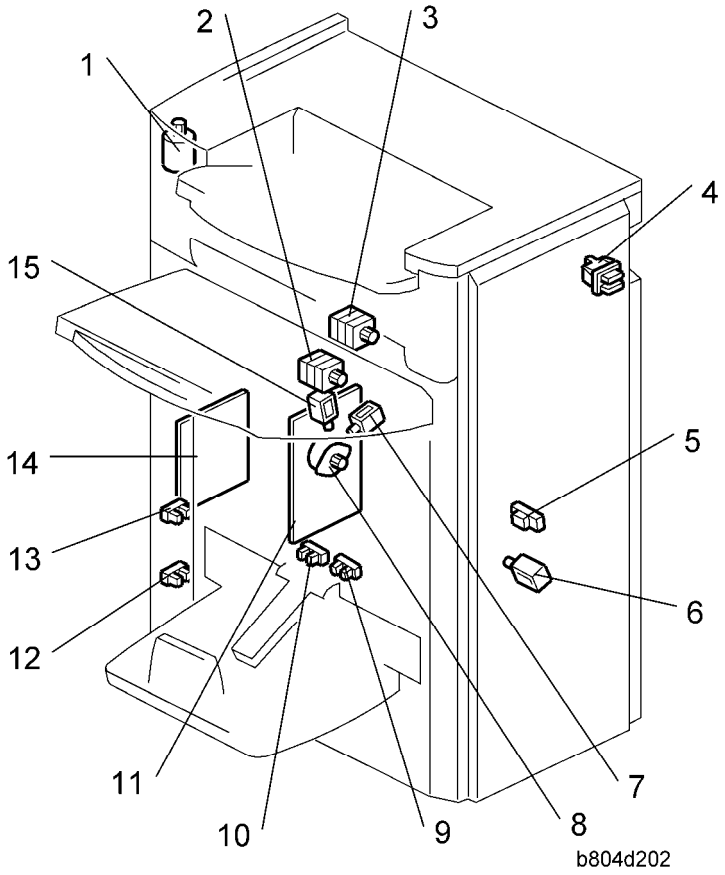
2.1.2 ELECTRICAL COMPONENTS

Upper Area B804/B805



1. Upper/Proof Exit Motor (M4) 2. Stapling Tray Junction Gate Solenoid (SOL2) 3. Upper Transport Motor (M2) 4. Exit Guide Plate HP Sensor (S7) 5. Proof Tray Exit Sensor (S10) 6. Proof Tray Full Sensor (S11) 7. Finisher Entrance Sensor (S1) 8. Upper Tray Paper Height Sensor (S9) (Non-Staple Mode) 9. Upper Tray Limit Sensor (S12)	10. Upper Tray Limit Switch (SW2) 11. Stacking Roller HP Sensor (S13) 12. Stacking Sponge Roller Motor (M10) 13. Upper Tray Exit Sensor (S6) 14. Upper Tray Paper Height Sensor (S8) (Staple Mode) 15. Shift Roller HP Sensor (S5) 16. Shift Roller Motor (M18) 17. Exit Guide Plate Motor (M19) 18. Proof Junction Gate Solenoid (SOL1)

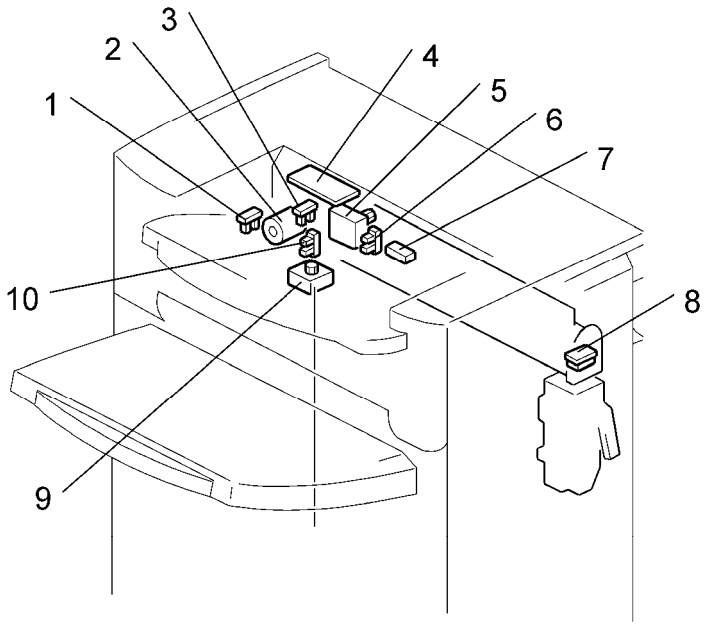
Lower Area B804/B805



1. Upper Tray Lift Motor (M21) 2. Lower Transport Motor (M3) 3. Entrance Motor (M1) 4. Front Door Safety Switch (SW1) 5. Pre-Stack Tray Exit Sensor (S2) 6. Stapling Edge Pressure Plate Solenoid (SOL4) 7. Positioning Roller Solenoid (SOL3)	8. Positioning Roller Motor (M14) 9. Lower Tray Full Sensor – Front (S34)*1 10. Lower Tray Full Sensor – Rear (S33)*1 11. Main Board (PCB1) 12. Upper Tray Full Sensor – (S20) *2 13. Upper Tray Full Sensor – (S19) 14. Booklet Stapler Board (PCB2)*1 15. Booklet Pressure Roller Solenoid – (SOL5) *1

*1: B804 Only, *2: B805 Only

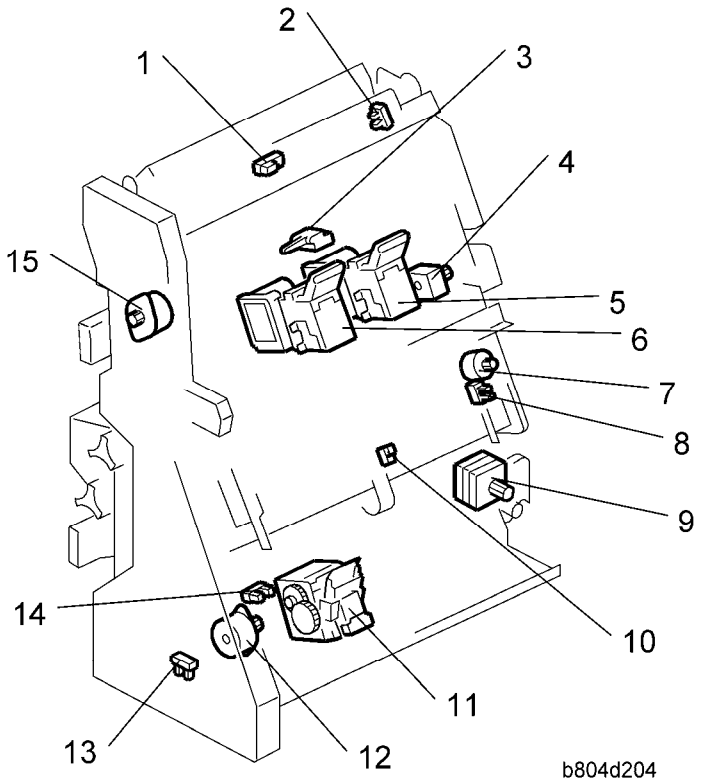
Punch Unit B702



b804d203a

1. Punch Encoder Sensor (S24) 2. Punch Drive Motor (M24) 3. Punch HP Sensor (S24) 4. Punch Unit Board (PCB3) 5. Paper Position Sensor Slide Motor (M7)	6. Paper Position Slide HP Sensor (S22) 7. Paper Position Sensor (S3) 8. Punch Hopper Full Sensor (S4) 9. Punch Movement Motor (M9) 10. Punch Movement HP Sensor (S21)

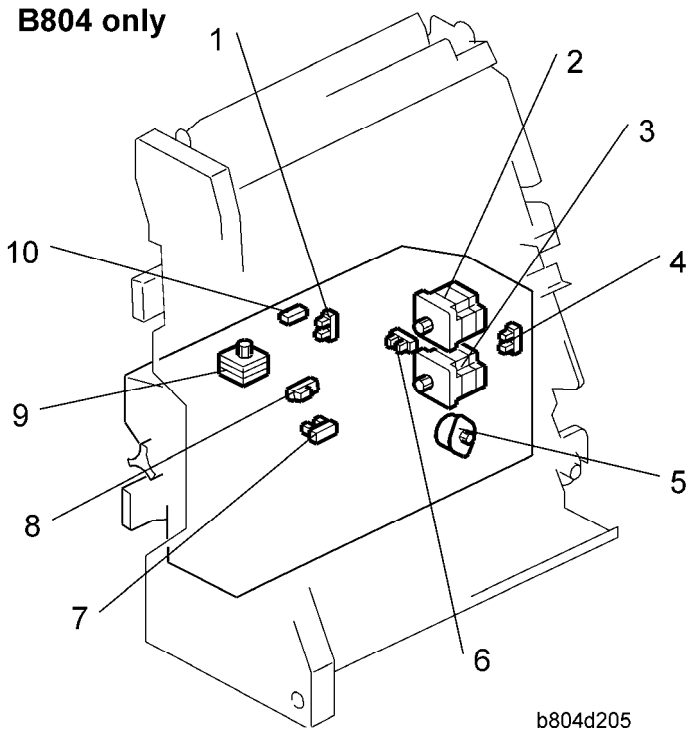
Stacker/Stapler - B804/B805



1. Stack Present Sensor (S32)*[1]	7. Jogger Fence Motor (M15)
2. Stack Junction Gate HP Sensor (S27)*[1]	8. Jogger Fence HP Sensor (S15)
3. Stack Feed Out Belt HP Sensor (S16)	9. Corner Stapler Movement Motor (M6)
4. Feed Out Belt Motor (M5)	10. Stapling Tray Paper Sensor (S14)
5. Booklet Stapler EH185R – Rear (M23)*[1]	11. Corner Stapler EH530 (M20)
6. Booklet Stapler EH185R – Front (M22)*[1]	12. Corner Stapler Rotation Motor (M13)
	13. Corner Stapler HP Sensor (S17)
	14. Stapler Rotation HP Sensor (S18)
	15. Stack Junction Gate Motor (M17) *[1]

*[1]: B804 Only

B804 Fold unit



1. Clamp Roller HP Sensor (S25)	6. Fold Cam HP Sensor (S30)
2. Fold Roller Motor (M12)	7. Fold Bottom Fence HP Sensor (S28)
3. Fold Plate Motor (M11)	8. Fold Unit Entrance Sensor (S26)
4. Fold Plate HP Sensor (S29)	9. Clamp Roller Retraction Motor (M8)
5. Fold Unit Bottom Fence Lift Motor (M16)	10. Fold Unit Exit Sensor (S31)

2.1.3 SUMMARY OF ELECTRICAL COMPONENTS

Here is a general summary of all the electrical components of the B804/B805 finishers.

Note

- In the table below a number that appears in bold text (**M8**, etc.) denotes a component that is on the 2000/3000 Sheet Finisher B804 only.

Component Layout

No.	Component	Function
Boards (PCB)		
PCB1	Main Board	The main board that controls the finisher
PCB2	Booklet Stapler Board	A separate board that controls booklet finishing.
PCB3	Punch Unit Board	The board that controls the punch unit.
Motors		
M1	Finisher Entrance Motor	Drives 1) the finisher entrance rollers, 2) and the punch waste transport belt of the punch unit.
M2	Upper Transport Motor	Drives the paper feed rollers that feed paper 1) to the proof tray, 2) straight-through to the upper tray, 3) the pre-stack tray entrance roller.
M3	Lower Transport Motor	Drives paper feed rollers forward and reverse in the pre-stack tray for the switchback, and drives the other rollers in the lower transport area.
M4	Upper/Proof Tray Exit Motor	Drives 1) proof tray exit rollers, 2) extension and retraction of the stacking sponge roller, 3) upper tray exit rollers.
M5	Feed Out Belt Motor	Drives the feed out belt that moves the stapled stacks out of the stapling tray after stapling.
M6	Corner Stapler Movement Motor	Moves the corner stapler horizontally on a steel rod to position the stapler at the stapling position at 1) the front, 2) the rear (straight stapling), 3) the rear (diagonal stapling), or 4) the front and rear for double stapling.
M7	Paper Position Sensor Slide Motor	Drives the movement of the paper position slide that holds the paper position sensor (S3) that detects the position of the paper.
M8	Clamp Roller Retraction Motor	Drives a large cam that alternately clamps and unclamps the clamp retraction roller, the idle roller of the clamp roller pair. When these rollers are clamped, they

No.	Component	Function
		are part of the paper feed path and feed the stack toward the bottom fence of the fold unit. When the idle roller is retracted, the stacks falls a very short distance (3 mm) onto the fold unit bottom fence below. These rollers remain unclamped while the bottom fence positions the stack for folding and while the stack is folded by the fold rollers.
M9	Punch Movement Motor	Drives the front/back movement of the punch unit to position it correctly for stapling the paper below.
M10	Stacking Sponge Roller Motor	Rotates the stacking roller that drags each sheet back against the end fence to jog the bottom of each sheet after feed out to the upper tray.
M11	Fold Plate Motor	Drives the fold plate that pushes the center of the stack into the nip of the fold rollers to start the fold.
M12	Fold Roller Motor	Rotates forward and drives the fold rollers that fold the stack and feed it out of the fold unit, reverses to feed the fold once more into the fold unit, and then rotates forward again to feed the fold out of the fold unit.
M13	Corner Stapler Rotation Motor	Swivels the corner stapler and positions it so the staple fires at an oblique angle at the rear corner of the paper stack.
M14	Positioning Roller Motor	Drives the positioning roller in the stapling tray.
M15	Jogger Fence Motor	Drives the jogger fences in the stapling tray to jog both sides of the stack before stapling.
M16	Fold Unit Bottom Fence Lift Motor	Raises the bottom fence and stops when the center of the vertical stack is opposite the edge of the horizontal fold blade. The distance for raising the blade is prescribed as one-half the size of the paper selected for the job. For large paper, (A3, B4) the bottom fence first

Component Layout

No.	Component	Function
		lowers the stack 10 mm below the fold position, and then raises it to the fold position.
M17	Stack Junction Gate Motor	Drives the large cam that operates the stack junction gate at the top of the stapling tray. When this gate is open, it directs the ascending stack to the upper tray if it has been corner stapled, or if it is closed the gate turns the booklet stapled stack down so it falls onto the bottom fence of the folding unit.
M18	Shift Roller Motor	Drives the shift roller that operates in shift mode to stagger document sets as they feed out to the upper tray (making them easier to separate).
M19	Exit Guide Plate Motor	Drives the mechanism that raises and lowers the exit guide plate.
M20	Corner Stapler EH530	This is the roving corner stapler, mounted on a steel rail that staples 1) at the front, 2) at the rear (straight staple), 3) at the rear (diagonal staple), and 4) font and rear (two staples).
M21	Upper Tray Lift Motor	Raises and lowers the upper tray during feed out to keep the tray at the optimum height until it is full.
M22	Booklet Stapler EH185R: Front	Booklet stapler. Staples paper stacks in the center before they are folded.
M23	Booklet Stapler EH185R: Rear	Booklet stapler. Staples paper stacks in the center before they are folded.
M24	Punch Drive Motor	Fires the punches that punch the holes in the paper.
Sensors		
S1	Finisher Entrance Sensor	Provides two functions: (1) Detects paper entering the finisher from the copier, and (2) Signals a jam if it detects paper at the entrance when the copier is switched on.

No.	Component	Function
S2	Pre-stack Tray Exit Sensor	Detects 1) paper fed from the pre-stack tray to the stapling tray, and detects 2) paper in the pre-stack when the copier is switched on. (This sensor performs no timing function. The entire flow of paper through the pre-stacking mechanism is controlled by motor pulse counts.)
S3	Paper Position Sensor	The photosensor that detects the edge of the paper and sends this information to the punch unit board where it is used to position the punch for punching the holes in the paper.
S4	Punch Hopper Full Sensor	1) A photosensor that detects and signals that the punch hopper is filled with punch waste and needs emptying, and 2) confirms the presence of the punch hopper and signals an error if it is missing or not installed completely.
S5	Shift Roller HP Sensor	Located near the shift roller motor, controls the front-to-back movement of the shift roller as shifts paper during straight-through feed.
S6	Upper Tray Exit Sensor	A flat, photo sensor located inside the guide plate, detects the leading edge and trailing edge of the paper as it feeds out to the upper tray during straight-through jobs (with and without stapling). When paper is fed to the upper tray, at the paper output slot this sensor signals an error when it detects (1) paper has failed to leave the paper exit (lag error), (2) detects paper has failed to arrive at the paper exit (late error), (3) detects paper is in the exit slot when the machine is turned on.
S7	Exit Guide Plate HP Sensor	Controls the vertical movement of the control exit guide . The guide plate is in the home position when the guide plate is down and the actuator interrupts the sensor gap.

Component Layout

No.	Component	Function
S8	Upper Tray Paper Height Sensor (Staple Mode)	This is the upper sensor of the upper/lower paper height sensor pair that controls the lift of the upper tray. This sensor detects the paper height of the stack in the upper tray when the copier is operating in the staple mode.
S9	Upper Tray Paper Height Sensor (Non-Staple Mode)	This is the lower sensor of the upper/lower paper height sensor pair that controls the lift of the upper tray. When the machine is switched on, the upper tray rises until the actuator on the tray triggers this sensor to switch off the upper tray lift motor.
S10	Proof Tray Exit Sensor	This sensor detects and times the feeding of paper to the proof tray. It also detects whether paper is present at the proof tray exit when the copier is switched on.
S11	Proof Tray Full Sensor	The top of the stack in the proof tray increases until it nudges the feeler of this sensor. The sensor then signals that the proof tray is full and the job halts until some paper is removed from the proof tray.
S12	Upper Tray Limit Sensor	This sensor controls the position of the upper tray 1) during straight-through feed out, 2) during shift feed out, 3) when the machine is turned on. The machine obeys the signal of whichever sensor is actuated first. An actuator attached to an arm triggers this sensor. The tip of the same arm depresses the upper tray limit switch. If the sensor fails, the tip of the arm will activate the upper tray limit microswitch (SW2) and stop the lift of the upper tray. **Note**: When the machine is turned on, the upper tray position is controlled by either this sensor or the upper tray paper height sensor (S9).
S13	Stacking Roller HP Sensor	Controls the forward and back motion of the stacking roller (a sponge roller) located at the output slot of the upper tray. The sponge roller drags each ejected sheet

No.	Component	Function
		back against the end fence of the upper tray to keep the bottom of the stack aligned.
S14	Stapling Tray Paper Sensor	A photo sensor that detects whether paper is in the stapling tray. When this sensor detects paper, the bottom fence motor raises or lowers the bottom fence to position the selected paper size for booklet stapling.
S15	Jogger Fence HP Sensor	Detects the home position of the jogger fences. When the actuator on the jogger fence interrupts this sensor, the jogger fence is in its home position and the jogger fence motor (M15) stops.
S16	Stack Feed-Out Belt HP Sensor	Controls the position of the stack feed-out pawl on the stack feed-out belt. Once the actuator on the feed belt nudges the feeler of this sensor near the top of the stapling unit, the feed out belt motor (M5) remains on for the time prescribed to position the pawl at the home position to catch the next stack.
S17	Corner Stapler HP Sensor	Located at the front the stapling tray and mounted above the steel rod where the corner stapler travels, this sensor detects the home position of the corner stapler. The corner stapler is in its home position when the actuator on the corner stapler unit interrupts this sensor.
S18	Stapler Rotation HP Sensor	Controls the angle of the position of the corner stapler during oblique stapling.
S19	Upper Tray Full Sensor (B804/B805)	**B804**: When the actuator on the side of the upper fence enters the gap of this sensor, the sensor signals that the upper tray is at its lowest position (full) and stops the job. **B805**: One of two upper tray full sensors. This is the higher tray full sensor for A3 and other heavy paper. The other upper tray full sensor (20) is for lighter paper.

Component Layout

No.	Component	Function
S20	Upper Tray Full Sensor (B805 only)	**B804**: This sensor is not used on the booklet finisher. There is only one upper tray full sensor (S18). **B805**: One of two upper tray full sensors. This is the lower tray full sensor for A4 and smaller paper. The other upper tray full sensor (19) is for larger paper.
S21	Punch Unit HP Sensor	Switches off the punch movement motor when the punch unit returns to its home position. Pulse counts determine where the punch unit pauses for punching and reversing.
S22	Paper Position Side HP Sensor	Controls the movement of the paper position detection unit. Switches on when the horizontal detection unit is at the home position (HP is the reference point).
S23	Punch HP Sensor	Detects the home position of the punch unit and controls the vertical movement of the punches when they fire.
S24	Punch Encoder Sensor	When the punch mode is selected for the job (2-hole, 3-hole, etc.), the machine controls the operation of the punch drive (M24) motor which drives a small encoder shaped like a notched wheel. This wheel is rotated forward and reverse precisely to select which punches are moved up and down during the punch stroke.
S25	Clamp Roller HP Sensor	Controls the movement of the clamp retraction roller (the idle roller of the clamp roller pair).
S26	Fold Unit Entrance Sensor	Detects 1) the leading edge of the stack during booklet stapling, and 2) also used to signal an alarm if a paper is detected at the entrance of the fold unit when the copier is turned on.
S27	Stack Junction Gate HP Sensor	Controls the opening and closing of the stack junction gate. Switches on when the stack junction gate is open and at the home position.

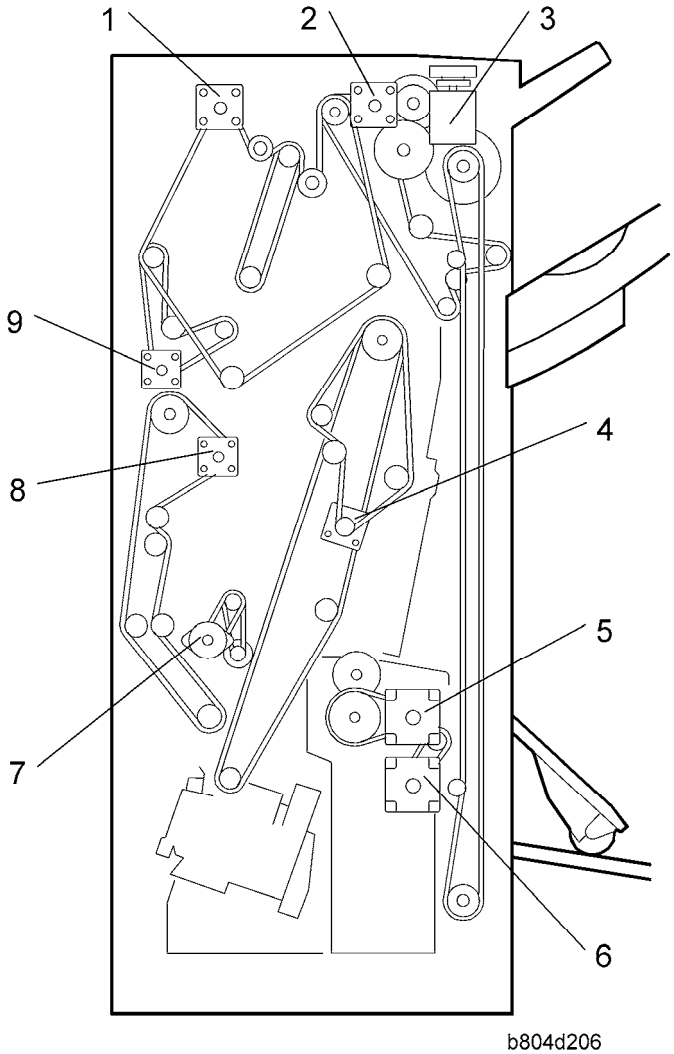
No.	Component	Function
S28	Fold Bottom Fence HP Sensor	Controls the movement of the bottom fence in the folding unit using pulse counts based on the size of the paper selected for the job to position the stack correctly for feeding.
S29	Fold Plate HP Sensor	Along with the fold plate cam HP sensor (S30) this sensor controls the movement of the fold plate . The fold plate has arrived at the home position when the edge of the plate enters the gap of this sensor.
S30	Fold Plate Cam HP Sensor	Along with the fold plate HP sensor (S29), this sensor controls the movement of the fold plate. The actuator mounted on the end of the roller that drives the folder plate forward and back makes three full rotations, i.e. the actuator passes the sensor gap twice and stops on the 3rd rotation and reverses. This accounts for the left and right movement of fold plate.
S31	Fold Unit Exit Sensor	1) Detects the folded edge of the stack as it feeds out from the nip of the fold rollers, stops the rollers, and reverses them so the fold feeds back into the nip, 2) when the folded booklet finally emerges from the nip of the fold rollers, detects the leading and trailing edge of the booklet to make sure that it feeds out correctly.
S32	Stack Present Sensor	This sensor determines whether there is paper at the turn junction gate when the machine is turned on. If a stack is present, this triggers a jam alert. (This sensor performs no dynamic function such as pulse counting, etc. It only detects whether paper is at the top of the folding unit when power its turned on.)
S33	Lower Tray Full Sensor - Rear	This rear sensor is the lower sensor of the lower tray full sensor pair. Two actuators are attached to the actuator arm that touches the top of stapled and folded booklets as they feed out. The on/off combinations of the two

Component Layout

No.	Component	Function
		sensors are used to detect when the tray is full and stop the job. (The lower tray is stationary. At tray full, the job halts until booklets are removed from the lower tray.)
S34	Lower Tray Full Sensor - Front	This front sensor is the higher sensor of the lower tray full sensor pair. Two actuators are attached to the actuator arm that touches the top of stapled and folded booklets as they feed out. The on/off combinations of the two sensors are used to detect when the tray is full and stop the job. (The lower tray is stationary. At tray full, the job halts until booklets are removed from the lower tray.)
Solenoids		
SOL1	Proof Junction Gate Solenoid	Opens and closes the proof tray junction gate. When the solenoid switches on, it opens the gate and paper is diverted to the proof tray. When this gate is closed, the paper goes straight to the upper tray. I
SOL2	Stapling Tray Junction Gate Solenoid	Directs paper to the stapling tray. When this solenoid is on, paper feeds straight through. When this solenoid is off, paper feeds to the stapler tray below.
SOL3	Positioning Roller Solenoid	Engages the stapler transport motor and the positioning roller of the stapling tray. The positioning roller pushes each sheet down against the bottom fence to align the bottom the stack for stapling. (The jogger fences align the sides.)
SOL4	Stapling Edge Pressure Plate Solenoid	Operates the pressure plate of the stapling unit. The pressure plate presses down the edge of stack in the stapling tray so it is tight for stapling.
SOL5	Booklet Pressure Roller Solenoid	When the paper stack in the stapling tray feeds to the folding unit, this solenoid turns on and operates the roller that pushes on the surface of the stack to flatten it.

No.	Component	Function
Switches		
SW1	Front Door Safety Switch	The safety switch cuts the dc power when the front door is opened.
SW2	Upper Tray Limit SW	A micro-switch cuts the power to the upper tray lift motor when the upper tray reaches its upper limit. This switch duplicates the function of the upper tray limit sensor (S12) and stops the upper tray if S12 fails.

2.1.4 DRIVE LAYOUT



Component Layout

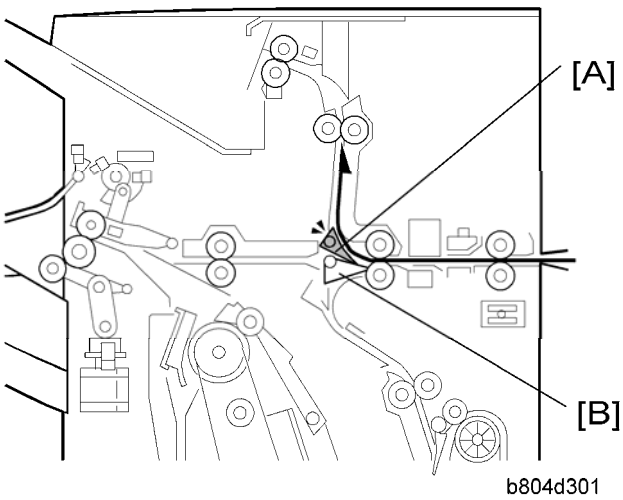
1. Upper Transport Motor (M2) 2. Upper/Proof Exit Motor (M4) 3. Upper Tray Lift Motor (M21) 4. Feed-Out Belt Motor (M5) 5. Fold Roller Motor*[1] (M12)	6. Folder Plate Motor*[1] (M11) 7. Positioning Roller Motor (M14) 8. Lower Transport Motor (M3) 9. Entrance Motor (M1)

*[1]: B804 Only

2.2 JUNCTION GATES

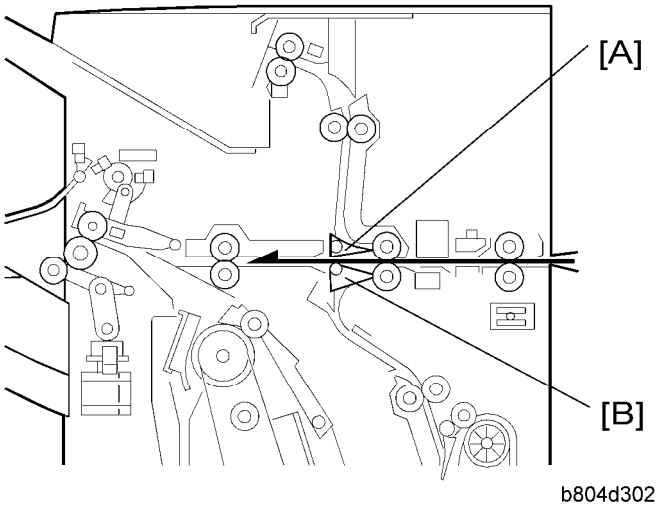
The positions of the proof tray and staple tray junction gates determine the direction of paper feed after paper enters the finisher.

2.2.1 PROOF MODE



Proof tray junction gate [A] opens. Staple tray junction gate [B] remains closed.
The proof tray junction gate directs paper to the proof tray above.

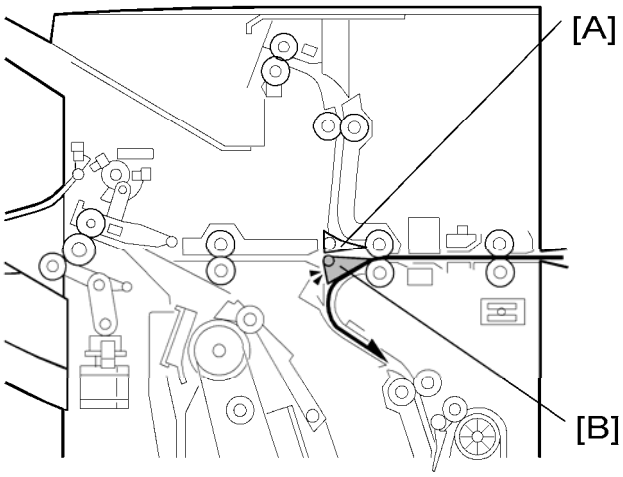
2.2.2 SHIFT MODE



Proof tray junction gate [A] remains closed. Staple tray junction gate [B] remains closed.
With both junction gates closed, the paper goes to the upper tray.

Junction Gates

2.2.3 STAPLE MODE

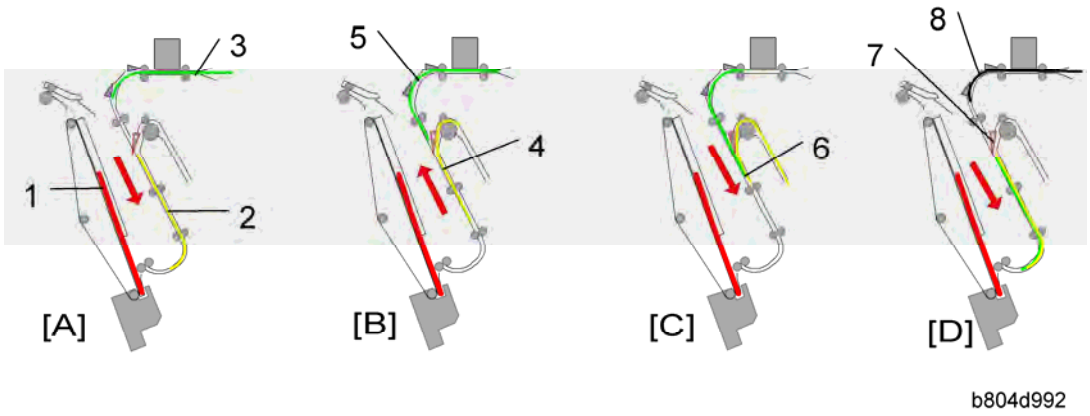


b804d303

Proof tray junction gate [A] remains closed. Staple tray junction gate [B] opens

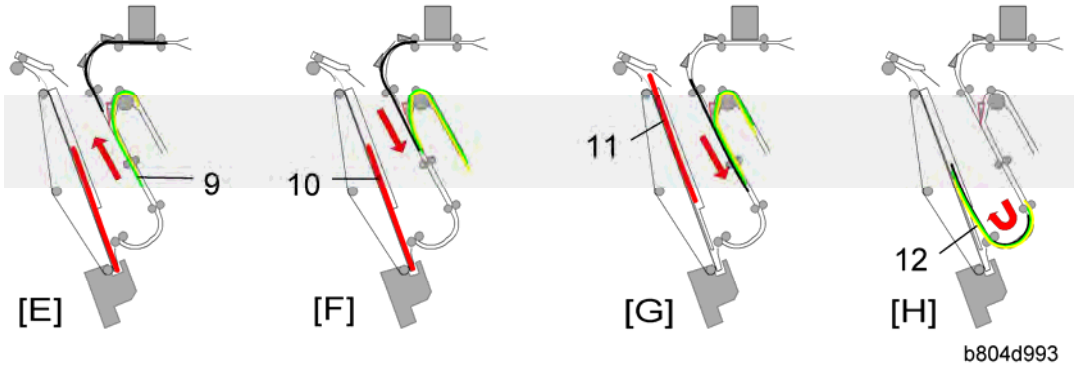
The staple tray junction gate directs the paper to the staple tray below for jogging and stapling.

2.3 PRE-STACKING



This example describes what happens to Set 2 during the feed and stapling cycle of sets that contain three pages.

- [A]: While the Set 1 is being stapled in the staple tray [1], the 1st sheet of Set 2 [2] feeds to the pre-stack tray, and the 2nd sheet of Set 2 [3] enters the finisher.
- [B]: The pre-stack junction gate opens and the 1st sheet of Set 2 [4] switches back to the top of the pre-stack tray as the 2nd sheet of Set 2 [5] starts to descend.
- [C]: As the 2nd sheet of Set 2 continues to descend, the 1st sheet of Set 2 is fed from the pre-stack tray. At this time the leading edges [6] of both sheets are even.
- [D]: The trailing edges of the 1st and 2nd sheets of Set 2 pass the junction gate [7] as the 3rd sheet of Set 2 [8] enters the finisher.



- [E]: The 1st and 2nd sheets of Set 2 [9] switch back together into the top of the pre-stack and wait for the 3rd of Set 2 sheet to arrive.
- [F]: The stapling of Set 1 in the staple tray [10] is completed.
- [G]: Set 1 [11] exits the staple tray.
- [H]: The three sheets of Set 2 [12] feed together into the stapler tray for stapling.

Pre-stacking is only done for A4, B5, and LT paper.

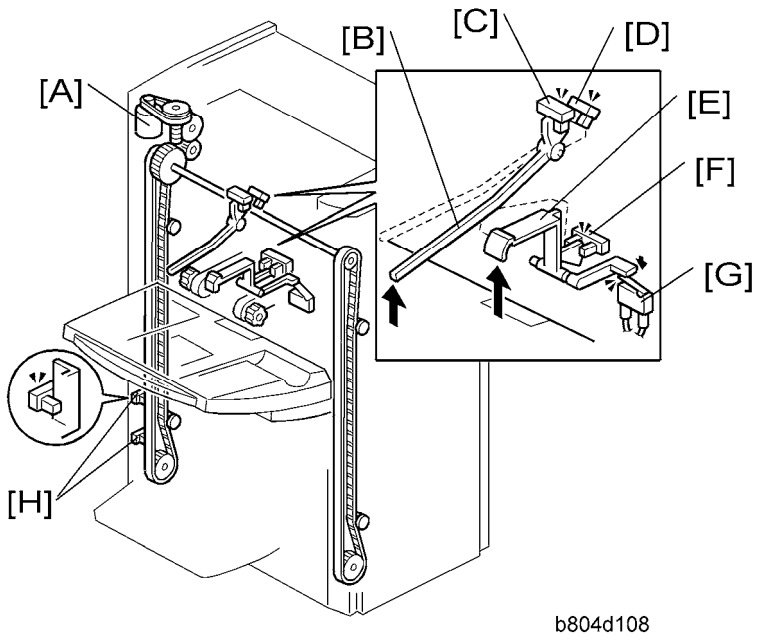
Pre-Stacking

In one-staple mode, one sheet goes to the pre-stacking tray. Then two sheets go to the stapler tray at the same time.

In two-staple mode and booklet mode, three sheets go to the pre-stacking tray. Then four sheets go to the stapler tray at the same time.

2.4 TRAY MOVEMENT MECHANISM

2.4.1 UPPER TRAY



[A]: Upper Tray Lift Motor
[B]: Upper Feeler
[C]: Upper Tray Paper Height Sensor 1 (Staple Mode)
[D]: Upper Tray Paper Height Sensor 2 (Non-Staple Mode)
[E]: Lower Feeler
[F]: Upper Tray Limit Sensor
[G]: Upper Tray Limit Switch
[H]: Upper Tray Full Sensors

Important

- The B804 (shown above) has only one upper tray full sensor (the higher sensor at [H]).
- The B805 has two upper tray full sensors (the upper and lower sensor at [H]). On the B805 the upper sensor detects tray full for heavier paper (A3, DLT, B4, LG, 12 x 18”), and the lower sensor detects tray full for lighter paper (A4, LT, etc.).
- The tray full capacity is 2,000 sheets (B804) for A4, LT and 3,000 sheets (B805) for

Tray Movement Mechanism

A4, LT.

Five sensors and one switch control the operation of the upper tray lift motor [A].

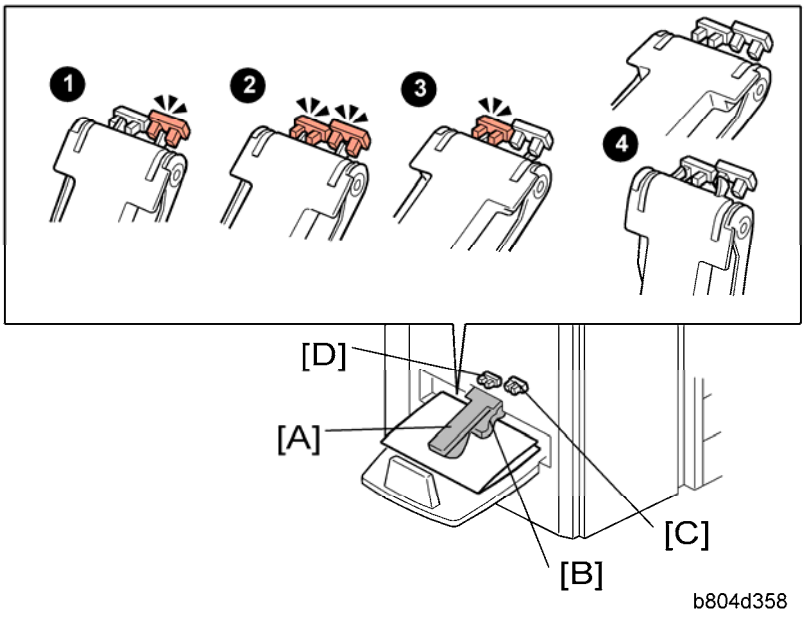
Upper Tray Raising and Lowering

Operation Mode	Sensors, Switch				Action
	[C]	[D]	[F]	[G]	
Standby (Non-Staple Mode)	OFF	OFF			Stops the lift motor at the standby position when the actuator of the upper feeler deactivates sensor [C] (when it is between sensors [C] and [D]). **Note:** Sensor [F] and switch [G] are used as backup if sensor [C] fails or if the upper tray is not attached.
Straight Through			ON		**Non-staple mode operation:** During operation, tray lift is controlled only by sensor [F]. When the actuator leaves sensor [F], the tray lowers until the actuator reactivates sensor [F].
Shift			ON		
Standby (Staple Mode)	ON				**Standby:** The upper tray stops and waits for the paper output when the actuator activates sensor [C]. [D] is not used for staple mode **Staple Mode Operation:** ▪ The upper tray lowers the prescribed distance immediately after the stack exits. ▪ The upper tray rises until the actuator activates sensor [C] and stops the tray lift motor (and the tray) to wait for the next set. ▪ Sensor [F] and switch [G] are used as backup if sensor [C] fails.

Tray Full

B804	When the actuator on the tray activates the upper tray full sensor [H] the tray lift motor [A] switches off. Operation resumes after some copies are removed from the tray. Upper Tray Capacity: 2,000 sheets (A4, LT)
B805	The operation of the upper tray full sensor is the same as the B804. Capacity: 1,500 sheets for A3, B4 or other large paper. An additional upper tray full sensor (below sensor [H]) allows more sheets to stack on the upper tray. Capacity: 3,000 sheets (A4, LT)

2.4.2 LOWER TRAY (B804 ONLY)



The lower tray sensor actuator arm [A] rests on the top of the stack of stapled booklets as they are output to the lower tray. A flap depressor [B] keeps the open ends of the booklets down.

The front lower tray full sensor (S34) [C] and rear lower tray full sensor (S33) [D] detect when the lower tray is full of booklets.

Important

- The front lower tray full sensor is mounted higher than the rear lower tray full sensor.
- The lower tray is stationary. When it becomes full, the stapling and folding job stops until booklets are removed from the tray.

Tray Movement Mechanism

- If the lower tray is not installed (this is detected if the front and rear sensors remain OFF), the machine will not operate in the booklet staple and fold mode. When booklet mode is selected, the tray full message appears on the operation panel.

The combinations of the two actuators and two sensors as the actuator arm rises determines the number of booklets that the lower tray can hold before the job stops.
The tray full detection depends on the size of the paper and the number of sheets in one stapled and folded booklet.
In the table below, the conditions (❶ Ready ❷ Full 1, ❸ Full 2 ❹ Full 3: See the illustration on the previous page) refer to the states of the sensors described on the previous page.

Condition	Front Sensor	Rear Sensor
Ready	ON	OFF
Full 1	ON	ON
Full 2	OFF	ON
Full 3 (or lower tray not installed)	OFF	OFF

In the tables below:

- "Sht" denotes "sheets in a stack".
- "Cnt" denotes "Count" (see below for an explanation).

After a booklet is feed out, the fold roller motor stops the exit roller. The machine then monitors the tray full sensors every 100 ms. The machine checks for a certain condition, based on the size of the paper and the number of sheets in the booklet.
An example is shown below. Tell the operators that the number of sheets that the lower tray can hold will vary greatly.

Lower Tray Full Condition Table

A3 (DLT)

	1 Sht	2 Sht	3 Sht	4 Sht	5 Sht	6 Sht	7 Sth	8 Sht	9 Sht	…
Full 1	3 Cnt	—	—	—	—	—	—	—	—	…
Full 2	—	5 Cnt	15 Cnt	—	—	—	—	—	—	…
Full 3	—	—	—	7 Cnt	13 Cnt	4 Cnt	2 Cnt	2 Cnt	2 Cnt	…

A4 (LT)

	1 Sht	2 Sht	3 Sht	4 Sht	5 Sht	6 Sht	7 Sth	8 Sht	9 Sht	…
Full1	16 Cnt	—	—	—	—	—	—	—	—	…
Full 2	—	10 Cnt	10 Cnt	15 Cnt	20 Cnt	15 Cnt	10 Cnt	8 Cnt	8 Cnt	…
Full 3	—	—	—							…

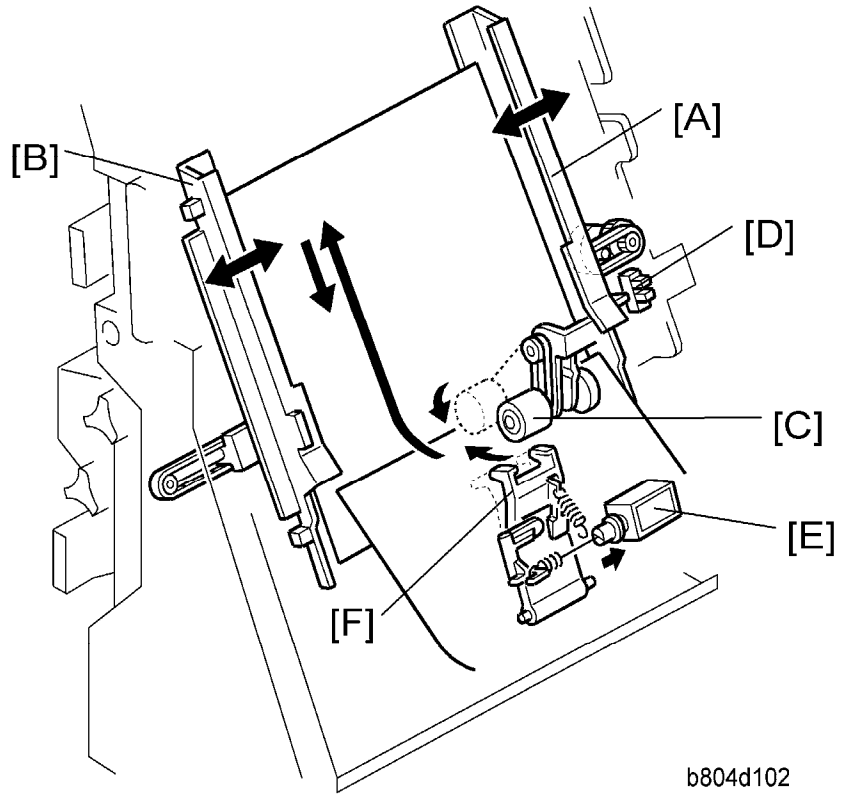
Examples:

After the copier makes a booklet with 1 sheet of A3/DLT paper, the machine checks every 100 ms for the ‘Full 1’ condition. If the Full 1 condition occurs 3 times, the machine detects that the tray is full.

After the copier makes a booklet with 5 sheets of A4/LT paper, the machine checks every 100 ms for the ‘Full 2’ condition. If the Full 2 condition occurs 20 times, the machine detects that the tray is full.

2.5 CORNER STAPLING

2.5.1 STACKING AND JOGGING



[A]: Jogger Fence Motor (M15)
[B]: Jogger Fences
[C]: Positioning Roller
[D]: Jogger Fence HP Sensor (S15)
[E]: Stapling Edge Pressure Plate Solenoid (SOL4)
[F]: Pressure Plate

At the beginning of the job, the jogger fence motor (M15) [A] switches on and moves the jogger fences [B] to the standby position (7.5 mm from the sides of the selected paper size). When each sheet passes the pre-stack tray exit sensor (S2) and enters the stapling tray:

- The jogger fence motor switches on and moves the jogger fences to within 5.5 mm of the sides of the selected paper size.
- The positioning roller solenoid (SOL3) switches on for the time prescribed for the paper

size. This pushes the positioning roller [C] onto the sheet and pushes it down onto bottom fence. This aligns the edge of the stack.

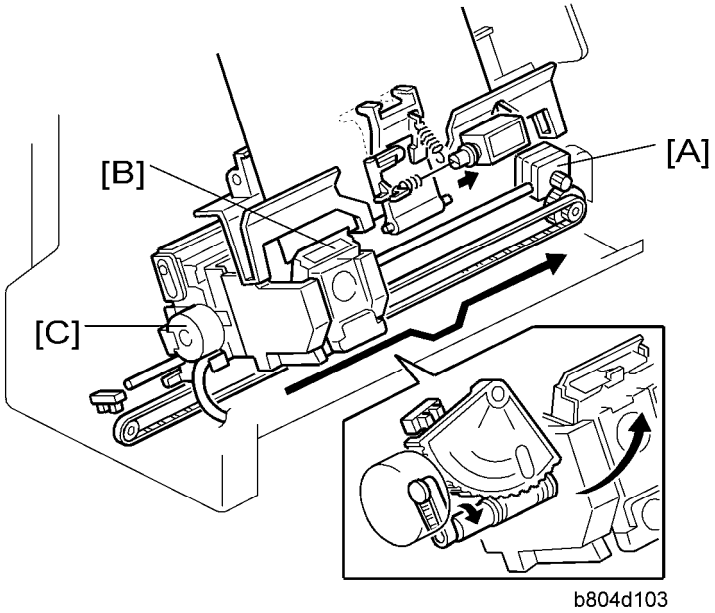
Next, the jogger fence motor:

- Switches on again and moves the jogger fences to within 2.6 mm of the sides of the stack to align the sides of the stack.
- Reverses and moves the fences to the standby position (7.5 mm away for the sides) and waits for the next sheet.
- The jogger fence HP sensor [D] switches off the jogger motor at the end of the job.

After the last sheet feeds:

- The stapling edge pressure plate solenoid [E] (SOL4) switches on and pushes the pressure plate [F] onto the stack to press down the edge for stapling.
- The corner stapler staples the stack.

2.5.2 STAPLER MOVEMENT



[A]: Stapler Movement Motor
[B]: Stapler
[C]: Stapler Rotation Motor

Corner Stapling

The stapler performs horizontal and rotational movement in each of the four staple modes:

- Front 1 staple
- Rear 1 staple
- Rear diagonal staple
- Rear/Front 2 staples

The stapler movement motor [A] drives a timing belt that moves stapler [B] left and right on its stainless steel rail.

The stapler rotation motor [C] rotates the stapler into position for diagonal stapling at the rear.

- The stapler movement motor switches on and moves the stapler the standby stapling position. (This is the stapling position for the paper size selected for the job.)
- The stapler movement motor switches off and the stapler waits for the signal to fire (or swivel and for diagonal stapling).

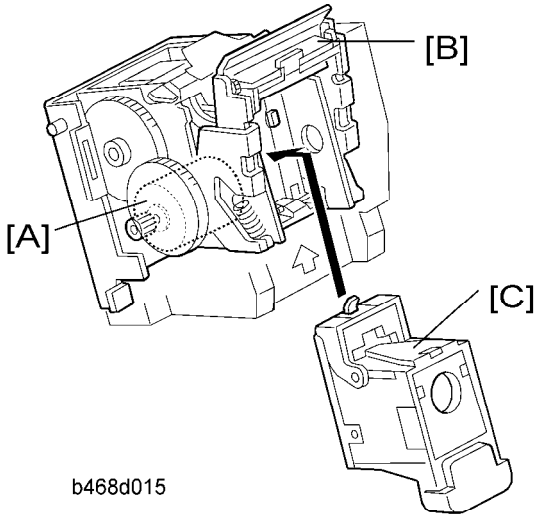
If the stack is to be stapled at two positions:

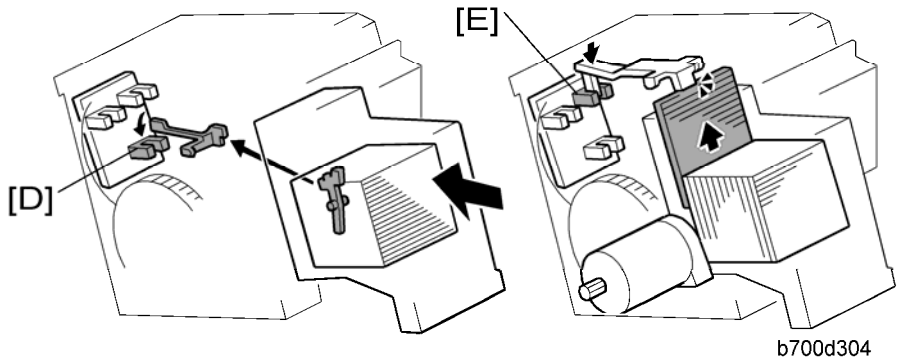
- The stapler movement motor moves the stapler to the front position and staples the front.
- The stapler movement motor moves the stapler to the rear and the stapler staples the rear.

If the stack is stapled at the rear with a diagonal staple, the staple moves to the rear. When it is time for stapling, the rotation motor rotates the stapler to the correct angle and holds the stapler in that position while the stapler fires.

The stapling positions can be fine adjusted with **SP6-133-001**.

2.5.3 CORNER STAPLING





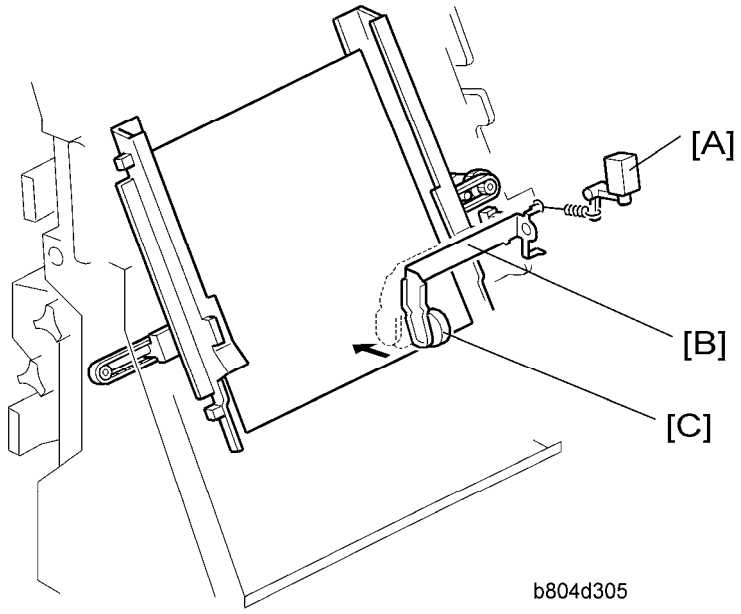
Staple firing is driven by the stapler motor [A] inside the stapler unit. The stapler hammer [B] fires the stapler [C].

The cartridge set sensor [D] detects the cartridge at the correct position.

The staple end sensor [E] detects the staple end condition.

2.6 BOOKLET STAPLING (B804 ONLY)

2.6.1 BOOKLET PRESSURE MECHANISM



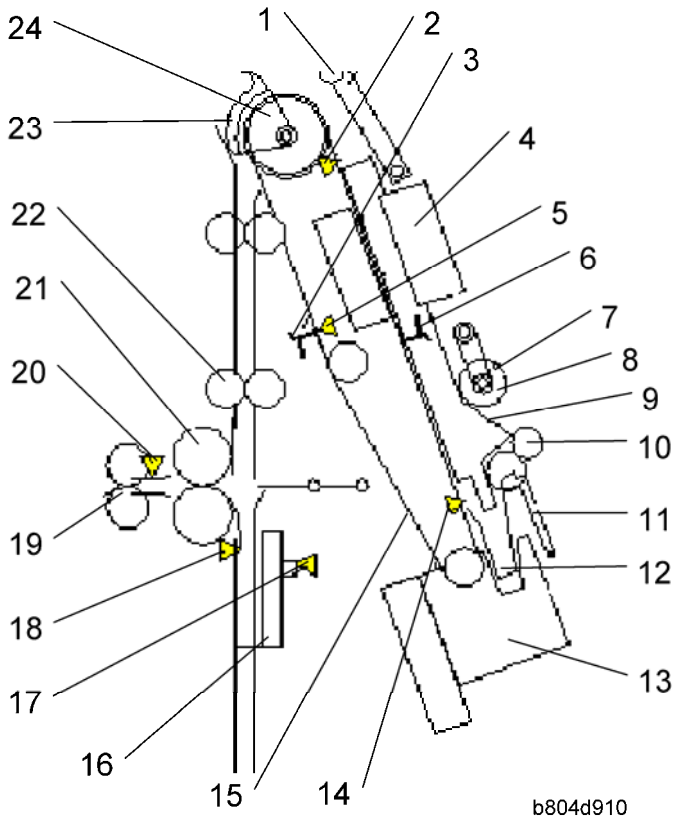
[A]: Booklet Pressure Roller Solenoid (SOL5)
[B]: Booklet Pressure Roller Arm
[C]: Booklet Pressure Roller

As soon as the edges are aligned by the positioning roller and the jogger fences, the stack feed out belt moves.

In booklet mode, immediately after the edges are aligned by the positioning roller and jogger fences, the booklet pressure solenoid switches on and the booklet pressure roller presses down on the stack until booklet stapling is finished. This prevents the stack from shifting during stapling.

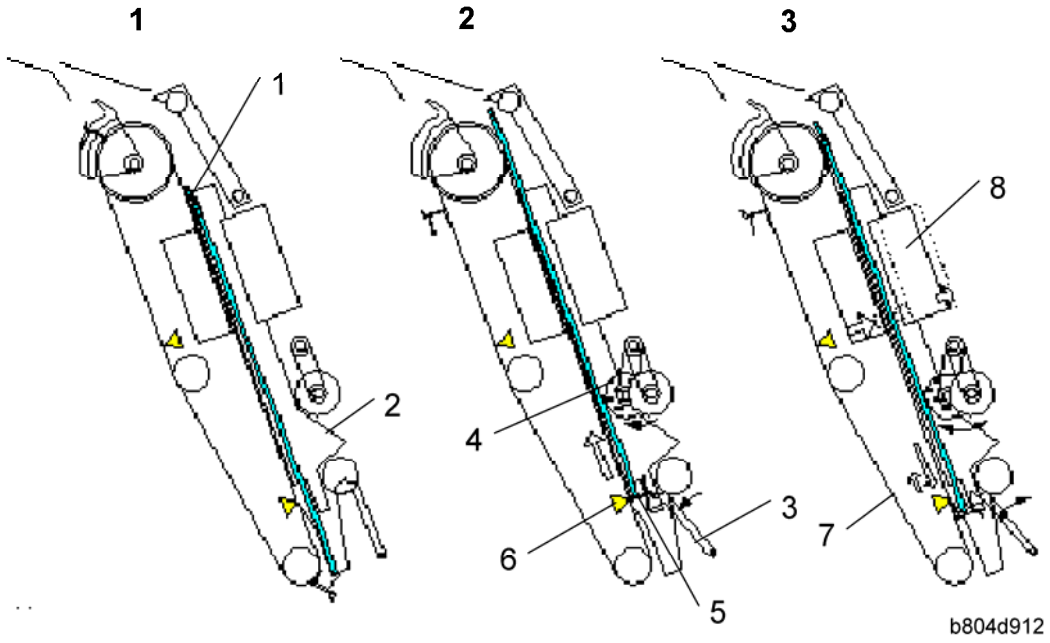
2.6.2 BOOKLET STAPLING AND FOLDING

Overview



1. Leading Edge Pressure Roller	13. Corner Stapler (M20)
2. Stack Present Sensor (S32)	14. Stapling Tray Paper Sensor (S14)
3. Feed Out Belt Pawl 1	15. Feed Out Belt
4. Booklet Staplers x2 (M22, M23)	16. Fold Unit Bottom Fence
5. Stack Feed Out Belt HP Sensor (S16)	17. Fold Bottom Fence HP Sensor (S28)
6. Feed Out Belt Pawl 2	18. Fold Unit Entrance Sensor (S26)
7. Positioning Roller	19. Fold Unit Exit Rollers x2
8. Booklet Pressure Roller (Rear)	20. Fold Unit Exit Sensor (S31)
9. Jogger Fences x2	21. Fold Rollers x2
10. Pre-Stack Exit Roller	22. Clamp Rollers x2
11. Pressure Plate	23. Stack Junction Gate
12. Stapling Tray Bottom Fence	24. Stack Transport Roller

Booklet Stapling (B804 Only)



1:

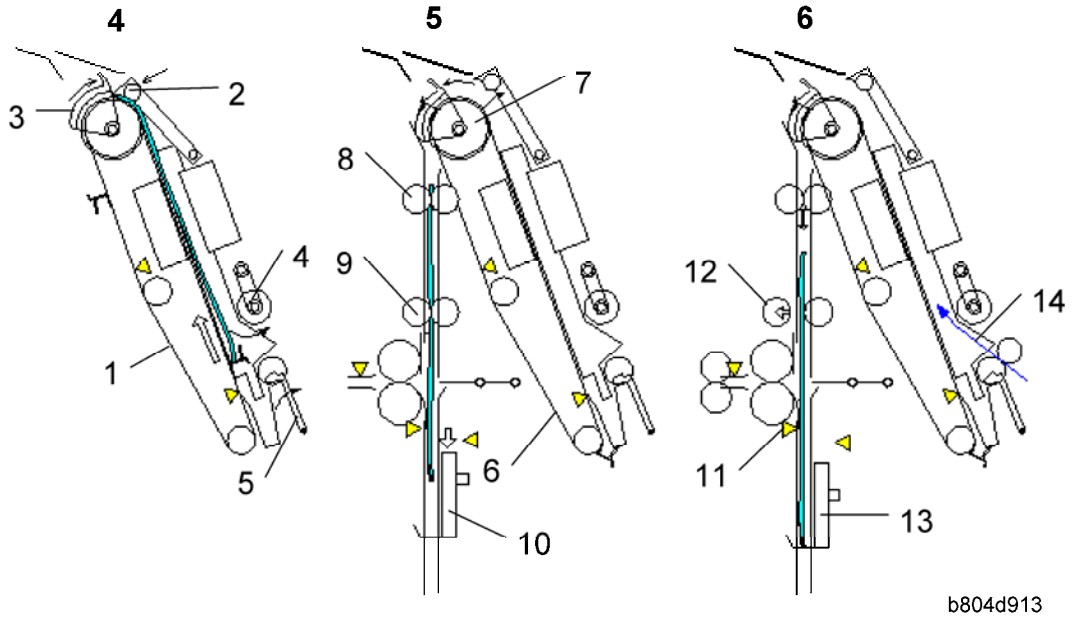
The last sheet of the stack [1] enters the stapling tray. The jogger fences [2] jog the last sheet into position (based on the width of the selected paper size) and then retract and stop 1 mm away from the sides of the stack.

2:

The pressure plate [3] and booklet pressure roller [4] press down on the sheet. The stack feed out belt switches on and the pawl [5] on the feed out belt catches the bottom of the stack and raises it. The stapling tray sensor [6] detects the trailing edge of the paper stack.

3:

The feed out belt [7] raises the stack to the prescribed stapling position and stops. The jogger fences move to the sides of the stack and the booklet staplers [8] staple the stack.



4:

The jogger fences remain 1 mm away from the sides of the stack. The feed out belt [1] raises the stack until the top of the stack is 10 mm past the leading edge pressure roller [2] and stops. The leading edge pressure roller descends and applies pressure to the top of the stack. The stack junction gate [3] (normally open) closes. The pressure roller [4] and pressure plate [5] retract.

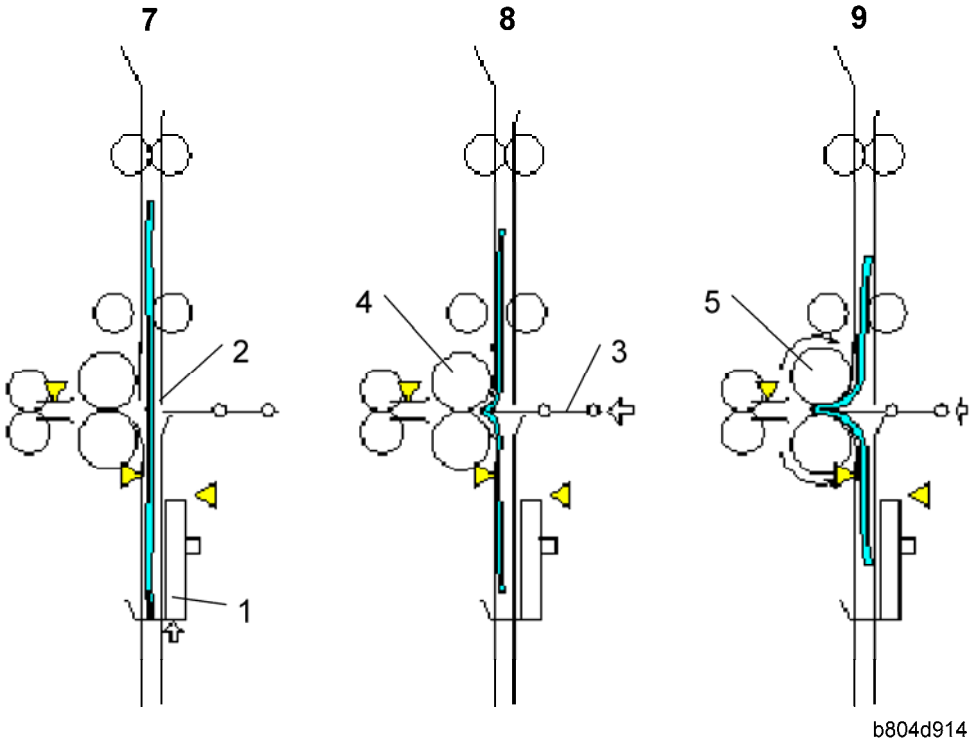
5:

The feed out belt [6], transport rollers [7], [8], and clamp rollers [9] rotate and feed the stack past the closed stack junction, over the top and down toward the bottom fence [10]. At the same time, the fold unit bottom fence descends from its home position and stops 10 mm below the fold position.

6:

The rollers feed the leading edge of the stack to within 3 mm of the stack stopper of the bottom fence [13]. The fold unit entrance sensor [11] detects the stack and opens the clamp rollers [12]. The stack drops 3 mm onto the fold unit bottom fence [13]. At this time, the first sheet [14] of the next stack feeds to the stapling tray.

Booklet Stapling (B804 Only)



7:

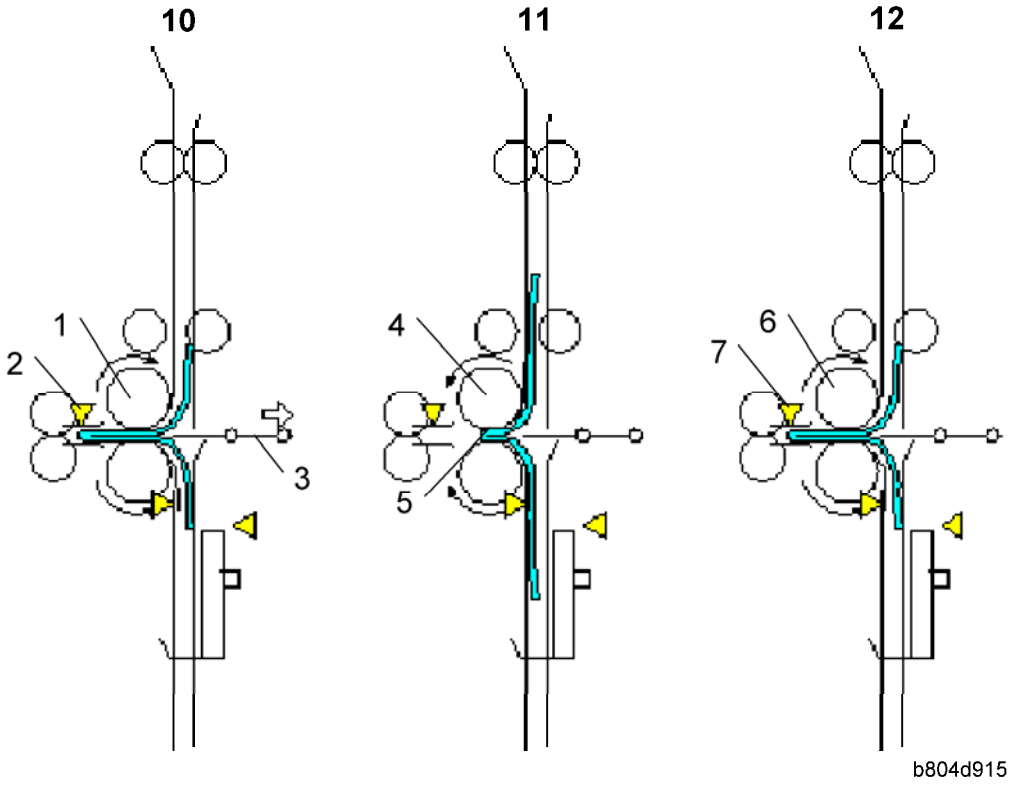
The bottom fence [1] raises the stack to the prescribed fold position [2].

8:

The fold plate [3] moves to the left and advances 1/3 its maximum horizontal stroke and exerts 20 kg (44 lb.) of pressure at the fold rollers [4].

9:

With the fold plate pushing the stack into nip of the fold rollers [5], the fold rollers begin to rotate and fold the stack as it feeds out.



10:

When the fold rollers [1] feed the stack 10 mm past the nip, the fold plate retracts until it no longer touches the stack. The fold unit exit sensor [2] detects the folded edge of the stack and stops the fold rollers.

11:

The rotation of the fold rollers [4] reverses and feeds the folded edge back until only 3 mm of the fold [5] remains at the nip.

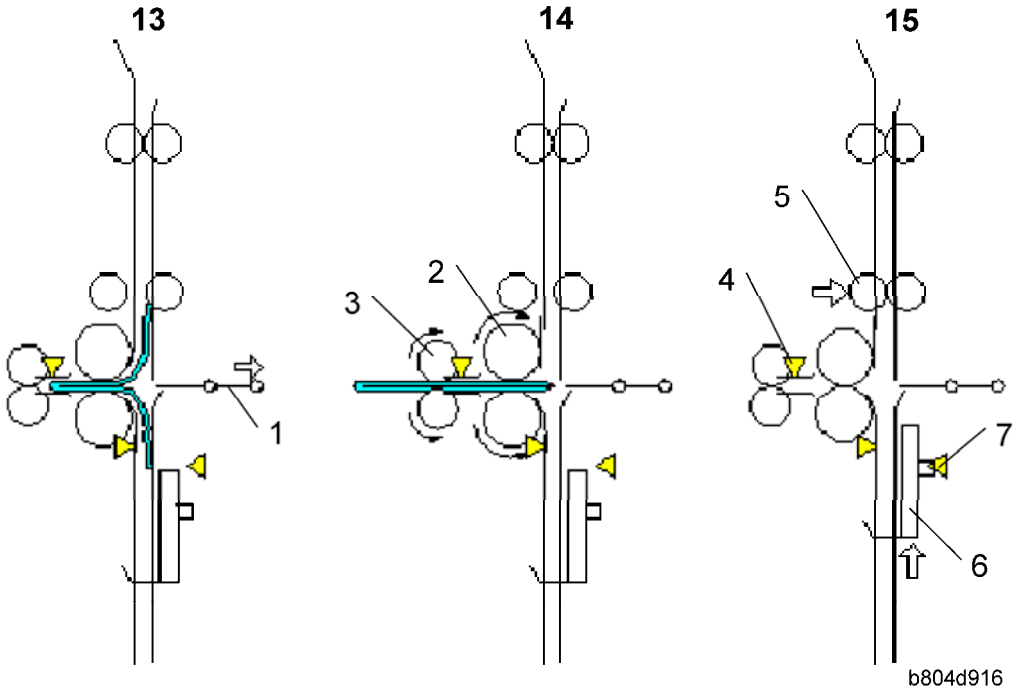
12:

The fold rollers [6] rotate forward once again feed out. The fold unit exit sensor [7] once again detects the edge of the fold.

Note

- You can do **SP6-136-001** to increase the sharpness of the fold. The number of forward and reverse feeds can be set in the range of 2 to 30. The machine repeats Steps 11 and 12. For more, please refer to Section "Service Tables".

Booklet Stapling (B804 Only)



13:

With the feed of the stack halted, the fold plate [1] retracts. The fold plate HP sensor (not shown) detects the fold plate and stops it at its home position.

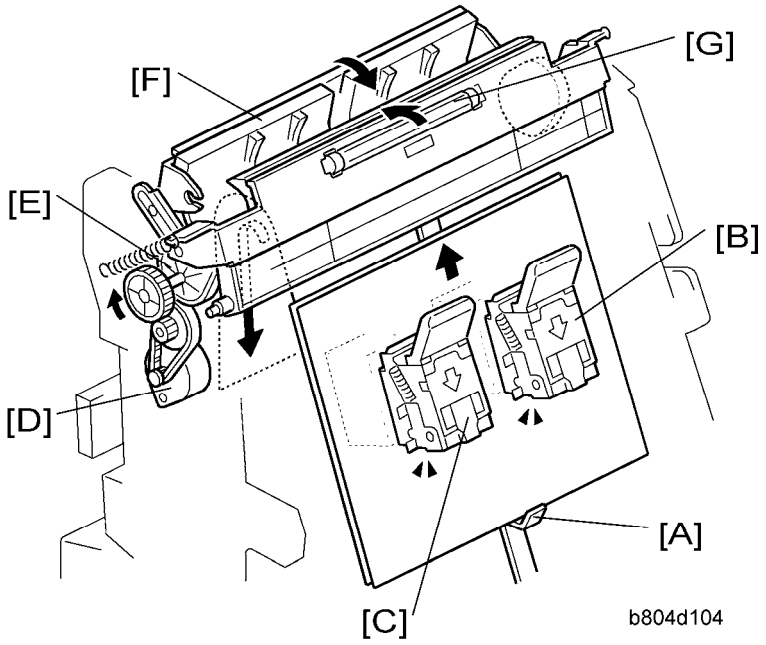
14:

The fold rollers [2] and fold unit exit rollers [3] begin to rotate together and feed out the folded booklet to the lower tray.

15:

Once the trailing edge of the stack passes the fold unit exit sensor [4], the clamp rollers [5] close to be ready to feed the next stack. The fold unit bottom fence [6] descends. The bottom fence HP sensor [7] stops the bottom fence when it detects the actuator on the bottom fence.

2.6.3 BOOKLET STAPLING AND FOLDING MECHANISMS



Booklet Stapler

[A]: Feed Out Belt Pawl. Raises the stack to stapling position.

[B]: Booklet Stapler EH185R – Rear

[C]: Booklet Stapler EH185R – Front

Stack Junction Gate

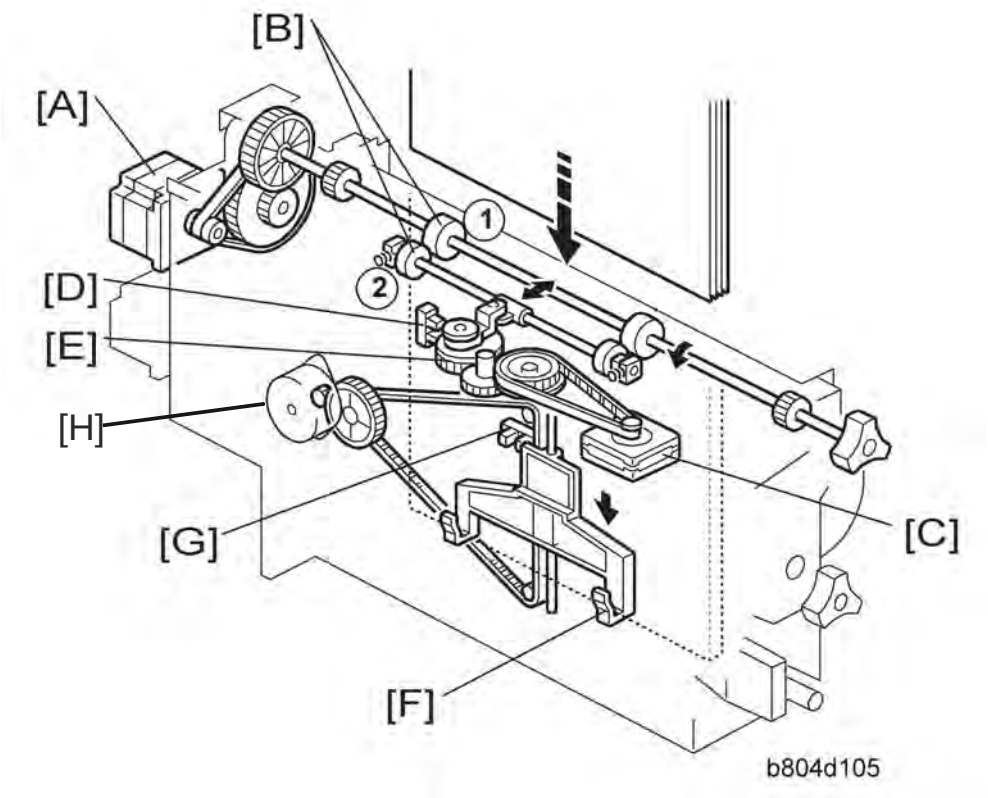
[D]: Stack Junction Gate Motor. Drives a timing belt and stack junction gate cam.

[E]: Stack Junction Gate Cam. Opens and closes the stack junction gate.

[F]: Stack Junction Gate. The stack junction gate motor and stack junction gate cam close the stack junction gate. The feed out belt pawl raises the stapled stack and sends it over the top and down to the fold unit.

[G]: Leading Edge Pressure Roller. Presses down on the leading edge of the stack after booklet stapling.

Booklet Stapling (B804 Only)



Clamp Roller

[A]: Fold Roller Motor. Drives the stationary clamp drive roller ① as well as the fold rollers (see next page).

[B]: Clamp Rollers.

① Clamp Roller – Drive. Rotated by the fold roller motor, this stationary roller feeds the stack down with the retracting roller closed.

② Clamp Roller – Retracting. Opened and closed by the retraction motor [C].

[C]: Clamp Roller Retraction Motor. Operates the clamp roller cam that retracts the retracting clamp roller. The clamp rollers feed the stack to within 3 mm of the bottom fence when closed and then open to drop the stack onto the bottom fence.

[D]: Clamp Roller HP Sensor. Controls the rotation of the clamp roller retraction motor and cam that open and close the retracting clamp roller.

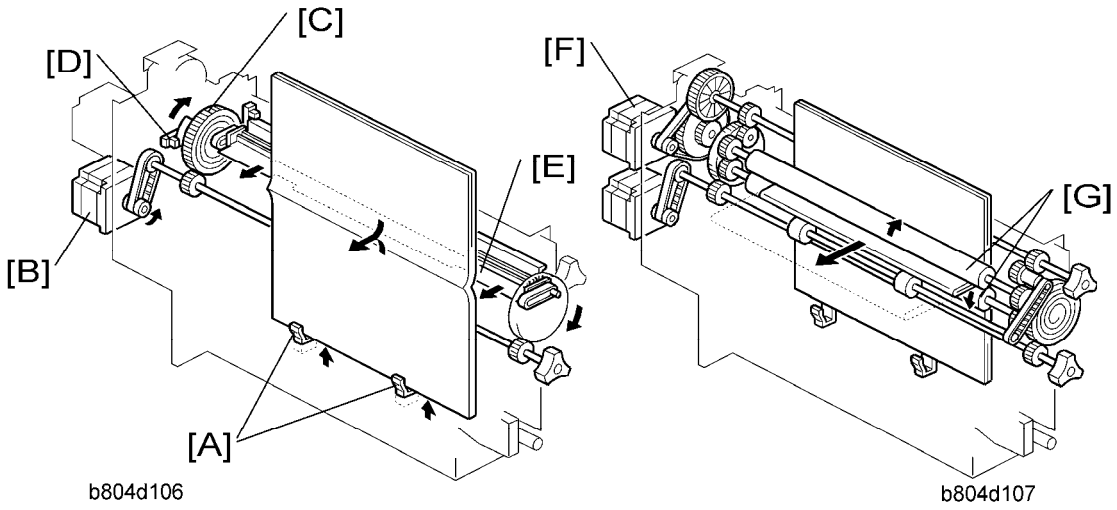
[E]: Clamp Roller Cam. Forces open the spring loaded retracting clamp roller.

Bottom Fence

[F]: Bottom Fence. Raises the booklet stapled stack to the fold position.

[G]: Bottom Fence HP Sensor. Detects the actuator on the bottom fence and stops it at the home position after folding.

[H]: Bottom Fence Lift Motor. Raises the bottom fence and stapled stack to the fold position prescribed for the paper size.



Fold Plate

[A]: Bottom Fence Stack Stoppers. Catches the stack after it is released by the clamp rollers.

[B]: Fold Plate Motor. Drives the timing belt and gears that move the fold plate.

[C]: Fold Plate Cam. Controls the movement of the fold plate to the left (into the nip of the fold rollers) and right (toward the fold plate home position).

[D]: Fold Plate HP Sensor. Controls operation of the fold plate motor.

[E]: Fold Plate. Moves left and pushes the stack into the nip of the fold rollers and then moves right to retract.

Fold Rollers

[F]: Fold Roller Motor. Drives forward to feed out the stack at the fold and then reverses to feed the fold in to sharpen the crease, and then drives forward again to feed out the folded stack. This reverse/forward cycle is done once.

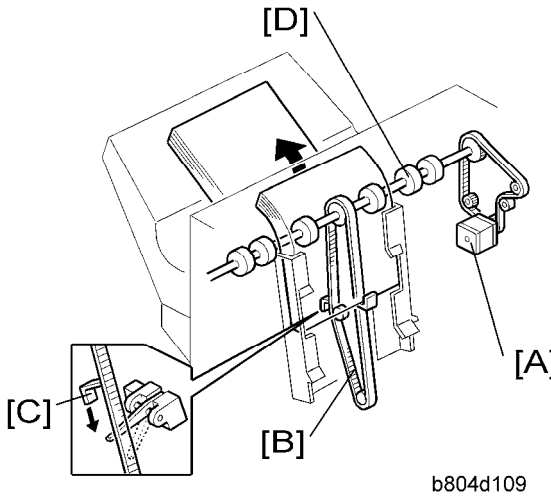
Note

- This cycle can be repeated by changing the setting of SP6114.

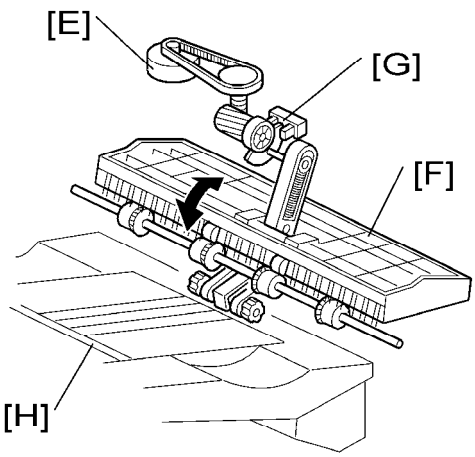
[G]: Fold Rollers. Driven by the fold roller motor, this roller pair feeds out the stack at its fold, reverses to feed in the stack to, and then feeds forward again (assisted by the fold unit exit rollers – not shown) to feed out the stack to the lower tray.

2.7 UPPER TRAY OUTPUT

2.7.1 FEED OUT



b804d109



b804d107

[A]: Feed Out Belt Motor
[B]: Stack Feed-Out Belt
[C]: Pawl
[D]: Exit Rollers
[E]: Exit Guide Plate Motor
[F]: Exit Guide Plate
[G]: Exit Guide Plate HP Sensor
[H]: Upper Tray

After the stack is stapled, the feed out belt motor [A] switches on and drives the feed out belt [B].

The pawl [C] attached to the feed out belt catches on the stack and lifts the stack toward the feed out slot.

The exit guide plate [F] remains open as the stack emerges at a prescribed distance away from the exit roller.

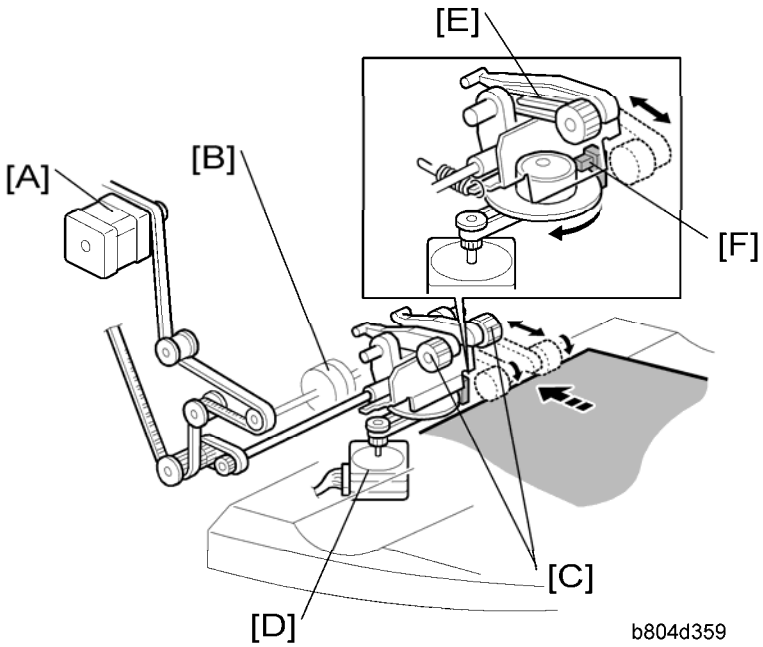
Next, the exit guide plate closes and the exit roller feeds the stack out.

The opening and closing of the exit guide plate is controlled by the rising and falling of a link driven by a rotating cam attached to the shaft of the exit guide plate motor [E].

The feed out belt motor stops 300 ms to prevent the stapled stack from rising too high. Next, the feed out belt motor switches on again, then the pawl actuates its home position sensor and switches off the motor.

There are two output pawls on the feed out belt to improve the productivity of the feed out operation.

2.7.2 FEED OUT STACKING



Upper/proof exit motor [A] drives feed roller [B] and stacking sponge roller [C].

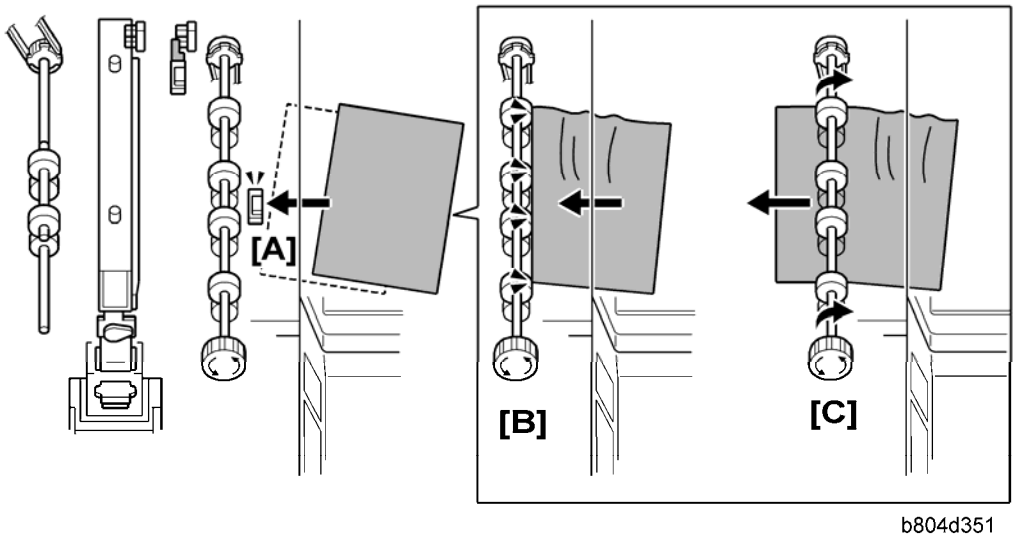
Stacking sponge roller motor [D] moves the sponge roller forward and back with link [E].

The position of the stacking sponge roller [C] is controlled by the stacking sponge roller motor which is switched on and off by the stacking roller HP sensor [F].

2.8 PUNCH UNIT B702 (FOR B804/B805)

2.8.1 OVERVIEW OF OPERATION

Skew Correction before Punching



This punch unit corrects for paper skew and then positions the punch unit to punch holes at the correct position. Each sheet is punched one at a time.

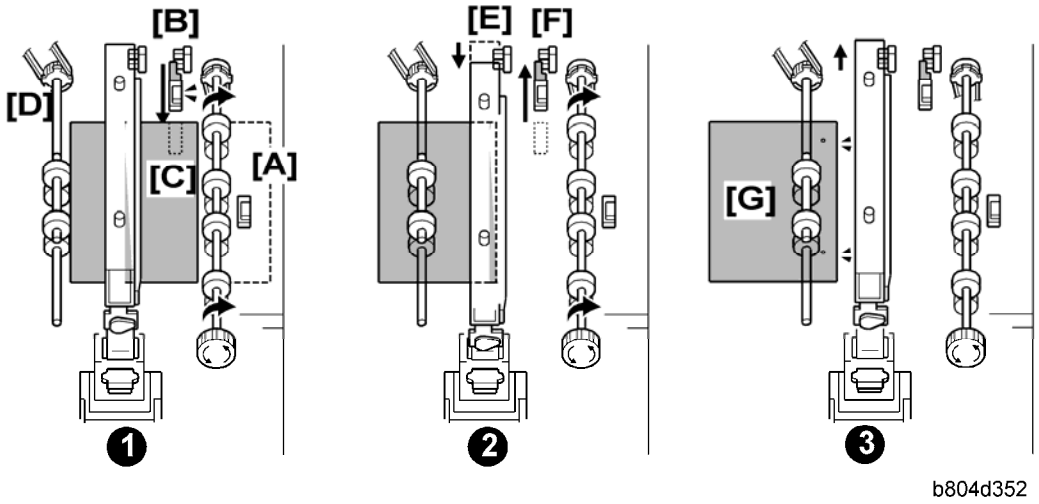
Paper feeds out of the copier. The finisher entrance sensor [A] detects the leading edge of the sheet.

The finisher entrance roller [B] stops rotating briefly while the copier exit rollers continue to rotate. This buckles the paper against the finisher entrance roller to correct skew. The finisher entrance roller [C] starts to rotate again and feeds the sheet into the finisher.

These SP codes adjust the skew operation in the punch unit:

- **SP6130**. This SP corrects the punch hole alignment. To do this, it corrects the skew of each sheet by adjusting the amount of time the finisher entrance roller remains off while the exit roller of the machine remains on. For more, see Section "Service Tables".
- **SP6131**. This SP determines whether the finisher entrance roller stops to correct skew when paper enters the finisher. You can use this SP to disable the skew correction. For more, see Section "Service Tables".

Punch Unit Position Correction



These operations (skew correction before punching, and punch unit position correction) increase the accuracy of the punch alignment.

❶:

The trailing edge of the sheet passes the finisher entrance sensor [A].

The paper position slide unit [B] moves the paper position sensor [C] forward to the edge of the paper.

The paper position sensor detects the position of the paper edge and sends this information to the punch unit board. The machine uses the detected position of the paper edge to calculate the correct position for punching.

The upper transport motor switches on and rotates the feed rollers [D] the prescribed distance to position the paper under the punch unit.

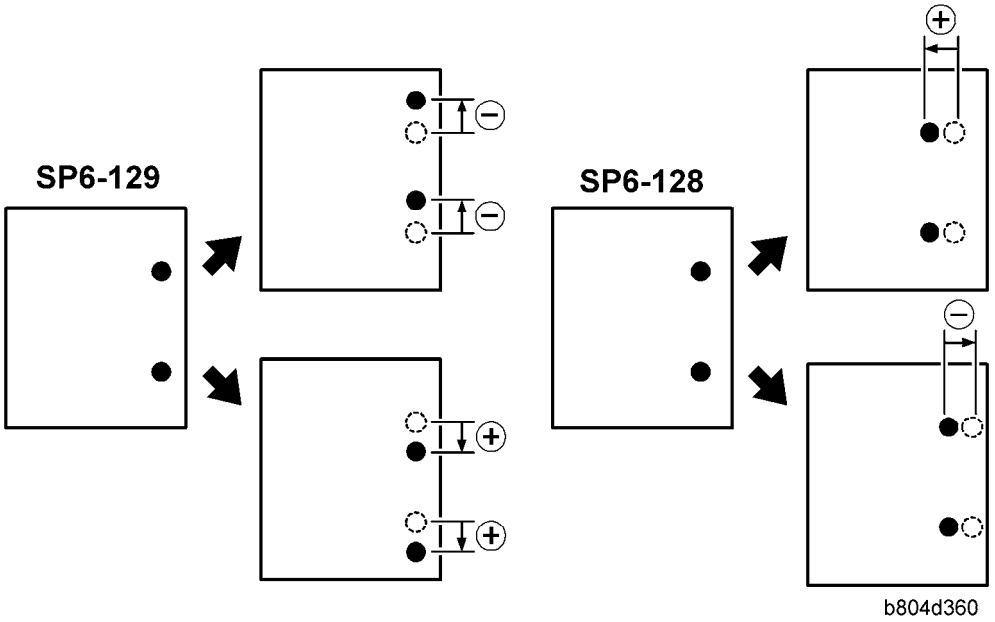
❷:

Using the result of the position calculation, the punch unit control board moves the punch unit [E] to the adjusted punch position.

The paper position slide unit and its paper sensor, move back to the paper position slide home position sensor [F], and the punch unit fires the punches to make the holes.

❸:

The feed rollers [G] feed the punched paper out of the punch unit and into the paper path.



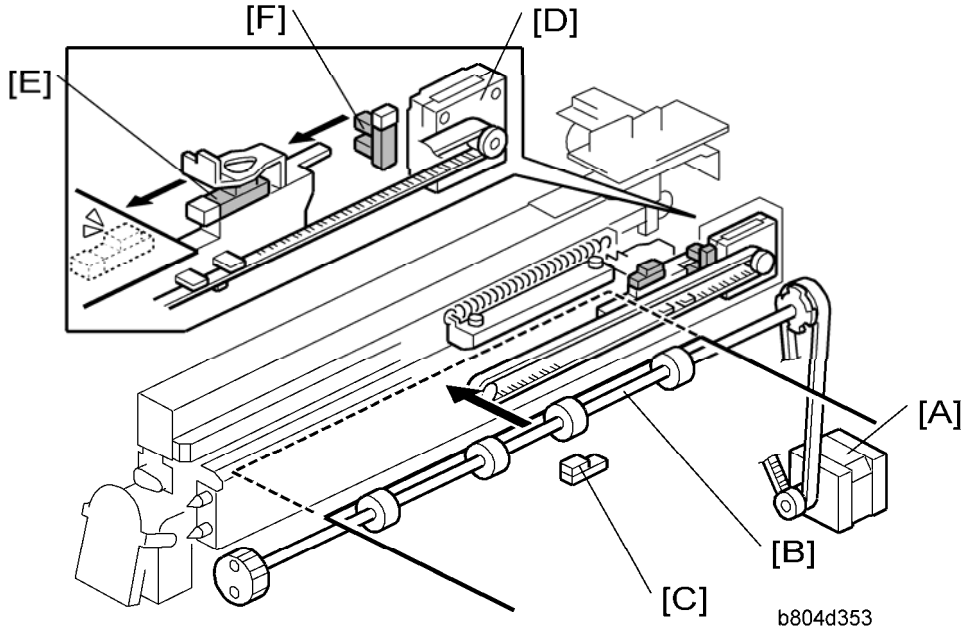
These SP codes adjust the punch hole alignment:

- **SP6-128** Adjusts the punch positions in the direction of paper feed.
- **SP6-129** Adjusts the punch position perpendicular to the direction of feed.

For more, see Section "Service Tables".

2.8.2 PUNCH MECHANISMS

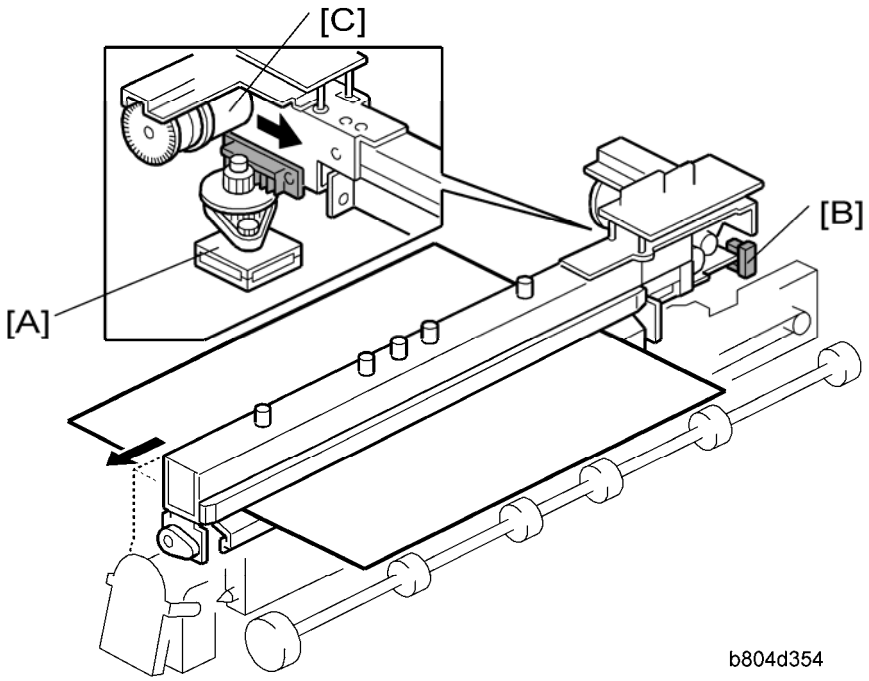
Paper Position Detection



[A]: Finisher Entrance Motor (M1)
[B]: Finisher Entrance Roller
[C]: Finisher Entrance Sensor (S1)
[D]: Paper Position Sensor Slide Motor (M7)
[E]: Paper Position Sensor (S27)
[F]: Paper Position Sensor Slide HP Sensor (S22)

The finisher entrance motor (M1) [A] drives the finisher entrance rollers [B] that feed paper from the copier into the finisher. The finisher entrance sensor (S1) [C] detects paper when it enters the finisher, and detects paper jams.
The paper position slide sensor motor (M7) [D] extends and retracts the paper position slide that holds the paper position sensor (S27) [E]. The paper position sensor detects the position of the paper edge. The detected position of the paper is used to calculate and position the punch unit for punching.
The paper position slide HP sensor (S22) [F] detects the paper position slide when it retracts and stops the paper position slide motor so the slide stops at its home position.

Punch Unit Movement

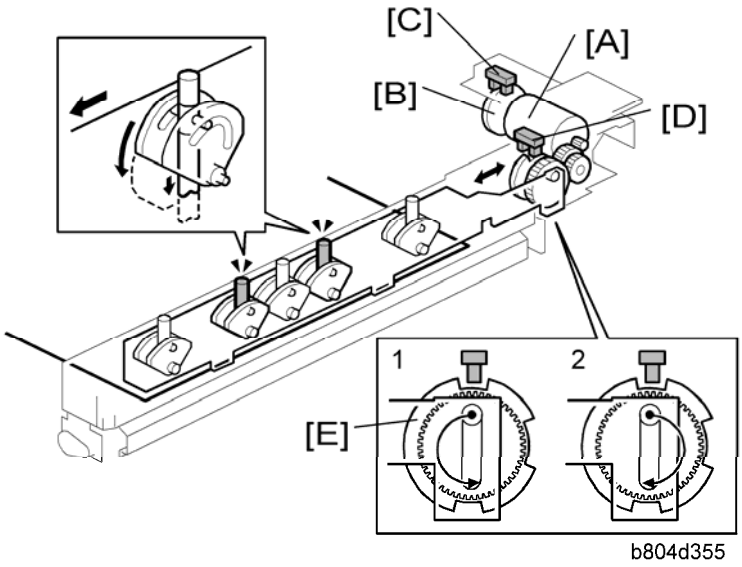


Punch Unit B702 (For B804/B805)

[A]: Punch Movement Motor (M9)
[B]: Punch Movement HP Sensor (S21)
[C]: Punch Drive Motor (M24)

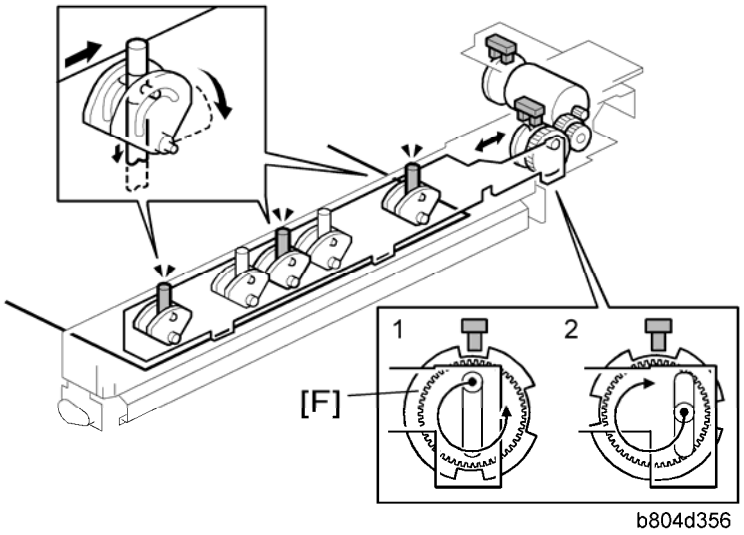
The punch movement motor (M9) [A] extends and retracts the punch unit to position it at the correct position for punching.
The punch movement HP sensor (S21) [B] detects the position when it retracts, switches off the punch position movement motor, and stops the punch unit at its home position.
The punch drive motor (M24) [C] fires the punches that punch holes in the paper below.

Punch Selection and Firing



[A]: Punch Drive Motor (M24)
[B]: Punch Encoder Wheel
[C]: Punch Encoder Sensor (S24)
[D]: Punch HP Sensor (S23)

The punch drive motor (M24) [A] turns the small, notched encoder wheel [B] through the gap in the punch encoder sensor [C] (S24). The sensor output is used to control the punch timing.



The timing for 2-hole punching [E] is different from 3-hole punching [F].

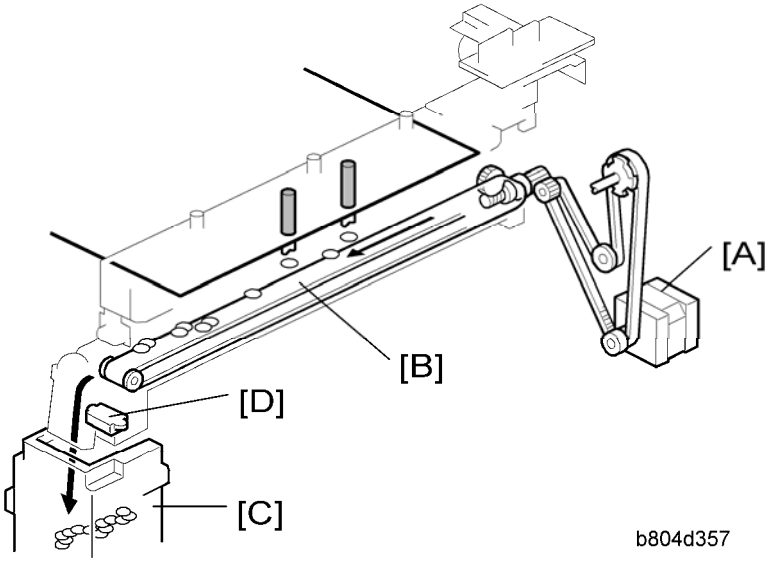
When the punch unit is at the punching position, the punch motor turns until the encoder detects the starting position for 2-hole or 3-hole punching.

- This is the '1' position in the diagrams (the top diagram is for 2-hole punching, and the bottom diagram is for 3-hole punching).

Then, the punch drive motor turns counter-clockwise to the '2' position. This movement punches the holes in the paper.

Then, the punch drive motor turns clockwise to the '1' position, to be ready for the next sheet of paper.

2.8.3 PUNCH HOPPER MECHANISM



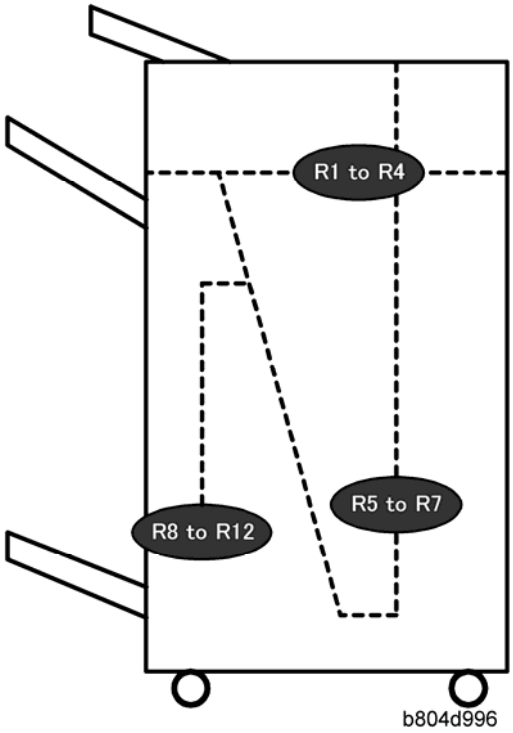
Punch Unit B702 (For B804/B805)

[A]: Finisher Entrance Motor (M1)
[B]: Punch Waste Belt
[C]: Punch Waste Hopper
[D]: Punch Hopper Full Sensor (S4)

The finisher entrance motor (M1) [A] drives the timing belt and gears that rotate the punch waste belt [B].
The punchouts fall from the punch unit onto the belt. The belt moves the punchouts to the front and dumps them in the punch waste hopper [C].
The punch hopper full sensor [D]:

- Signals that the hopper is full when it detects the top of the stack of punchouts that have collected in the hopper.
- It also detects when the punch hopper is set properly.

2.9 FINISHER JAM DETECTION



Display	Mode	Jam	What It Means
R1 to R3	Proof Shift Staple	Finisher entrance sensor late	After main machine exit sensor goes OFF, finisher entrance sensor does not go ON even after enough time to feed 450 mm.
		Finisher entrance sensor lag	After finisher entrance sensor goes ON, it does not go OFF after enough time to feed a sheet 1.5 times its length has elapsed.
R3	Proof	Proof exit sensor late	After finisher entrance sensor goes ON, proof exit sensor does not go ON even after enough time to feed 450 mm.
		Proof exit sensor lag	After finisher entrance sensor goes OFF, proof exit sensor does not go OFF even after enough time to feed 450 mm.

Finisher Jam Detection

Display	Mode	Jam	What It Means
R4	Shift	Upper tray exit sensor late	After finisher entrance sensor goes ON, upper tray exit sensor does not go ON even after enough time to feed 485 mm.
		Upper tray exit sensor lag	After finisher entrance sensor goes OFF, upper tray exit sensor does not go OFF even after enough time to feed 650 mm.
R5 to R7	Staple	Pre-stack tray exit sensor lag	After finisher entrance sensor goes ON, pre-stack tray exit sensor does not go ON even after enough time to feed 650 mm.
		Pre-stack tray exit sensor late	After finisher entrance sensor goes ON, pre-stack tray exit sensor does not go OFF even after enough time to feed 1650 mm.
R8 to R12	Booklet Staple (B700 Only)	Fold unit entrance sensor late (S26)	The fold unit entrance sensor goes not go ON after enough time has elapsed to feed 1.5 times the length of the stack after the leading edge of the stack reaches the stack present sensor (S32).
		Fold unit exit sensor late (S31)	The fold unit exit sensor does not go ON after enough time has elapsed for the stack to feed 1.5 times its length from the fold position.
		Fold unit exit sensor lag (S31)	After the fold unit exit sensor goes ON, it does not go OFF after enough time has elapsed to feed 442.9 mm.

MULTI-FOLDING UNIT
FD5000 (D454) / FD4000 (D615)

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

MULTI-FOLDING UNIT D454/D615

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Read This First

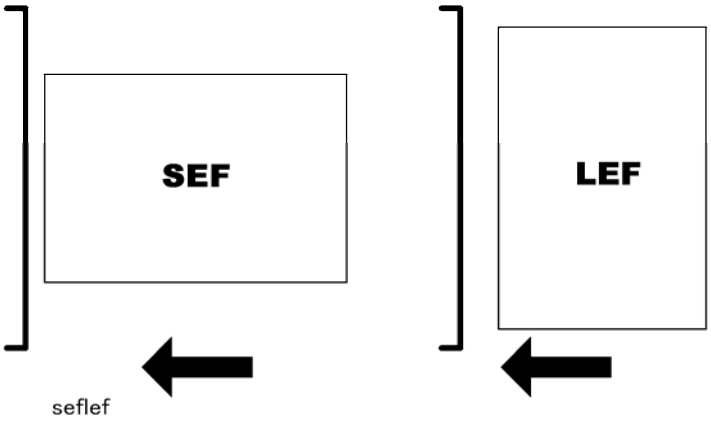
Safety, Conventions, Trademarks

Conventions

Common Terms

This is a list of symbols and abbreviations used in this manual.

Symbol	What it means
CT	Core Tech Manual
	Screw
	Connector
	E-ring
	C-ring
	Harness clamp
FFC	Flexible Film Cable
JG	Junction Gate
LE	Leading Edge of paper
LEF	Long Edge Feed
SEF	Short Edge Feed
TE	Trailing Edge of paper
S31E	The "Emitter" sensor of a sensor pair
S31R	The "Receptor" sensor of a sensor pair



The notations "SEF" and "LEF" describe the direction of paper feed, with the arrows indicating paper feed direction.

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 finisher or other property.

Important

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

Note

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

General Safety Instructions

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

Safety Information

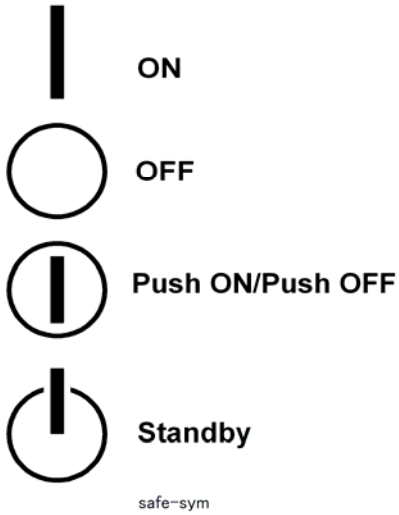
Always obey the following safety precautions when using this product.

Safety During Operation

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

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.



Responsibilities of the Customer Engineer

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the “CE Safety Guide”.
- Use only consumable supplies and replacement parts designed for use of the machine.

Before Installation, Maintenance

Power

⚠WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

⚠CAUTION

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

⚠CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

⚠CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

⚠WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

⚠CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.
- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
- Wash your hands thoroughly after cleaning parts with an organic cleaner to contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use “My Ace” Silicone Oil Remover (or dry rags) to soak up spills. For more details, please refer to Technical Bulletin “Silicone Oil Removal” (A024-50).

Ozone Filters

⚠CAUTION

- Always replace ozone filters as soon as their service life expires (as described in the service manual).
- An excessive amount of ozone can build up around machines that use ozone filters if they are not replaced at the prescribed time. Excessive ozone could cause personnel working around the machine to feel unwell.

Power Plug and Power Cord

⚠WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.

- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

⚠CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.

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.

Safety Instructions for this Machine

1. The installation must be done by trained service technicians.
2. This machine weighs 316 kg. (695 lb.). At least four persons are required to remove the machine from its pallet and position it for installation.
3. To prevent fire hazards never use flammable solvents around the machine.
4. Never place any object on the machine.
5. If anything falls into the machine, turn off the main power switch on the right side of the machine, then disconnect the power cord from the power source.
6. Locate the machine on a sturdy flat surface where it will not be exposed to excessive vibration.
7. To avoid fire hazard, confirm that the ventilation ports are not blocked, so air can flow freely.
8. Gas generated by the molten glue can irritate the eyes, throat, and nose. The machine should always be used in a well ventilated room.
9. To avoid the dangers of fire and electrical shock, make sure that the machine is never exposed to:
    - Excessive high temperatures and/or humidity
    - Dust
    - Water
    - Direct sunlight
    - Open flame
    - Corrosive gases

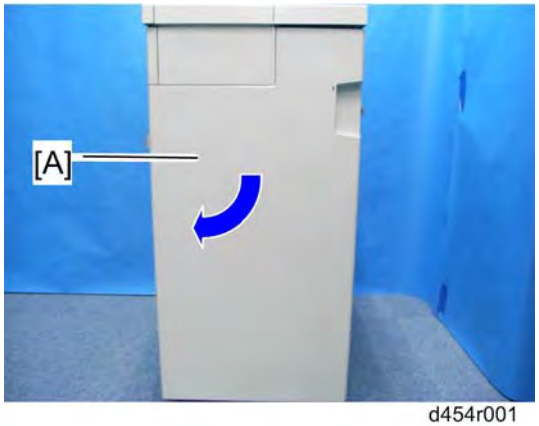
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1. REPLACEMENT AND ADJUSTMENT

1.1 EXTERIOR AND INNER COVERS

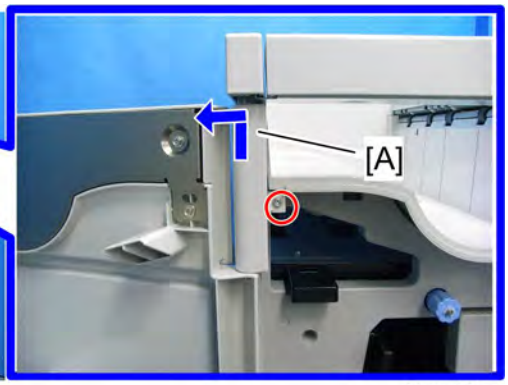
1.1.1 FRONT DOOR UPPER COVER



d454r001

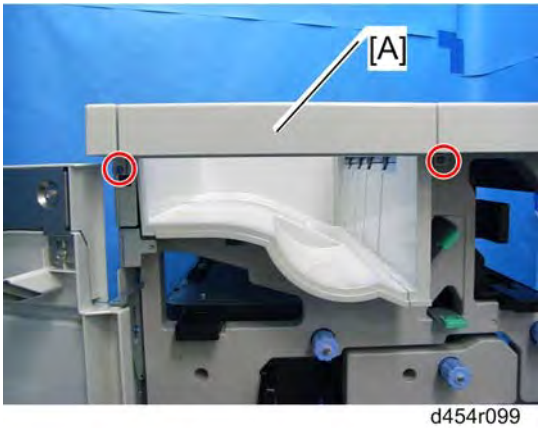
1. Open the front door [A].


d454r002



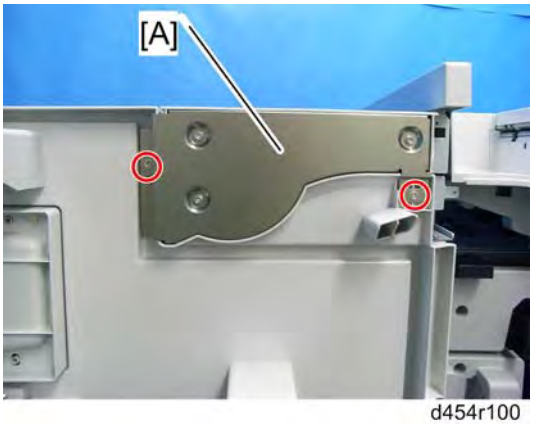
d454r098

2. Hinge cover [A] (x 1)



d454r099

3. Cross-piece [A] (x 2)



d454r100

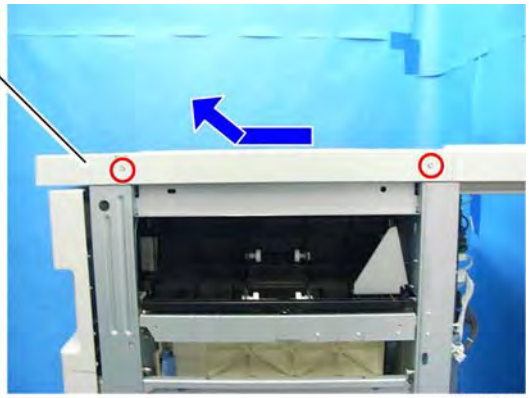
4. Front door upper cover [A] (x 2)

1.1.2 TOP COVER

1. Open the front door.
2. Hinge cover (☛ p.1 "Front Door Upper Cover")
3. Cross-piece (☛ p.1 "Front Door Upper Cover")



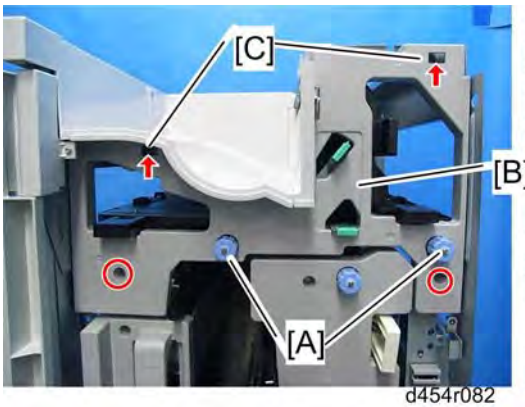
d454r021


d454r020

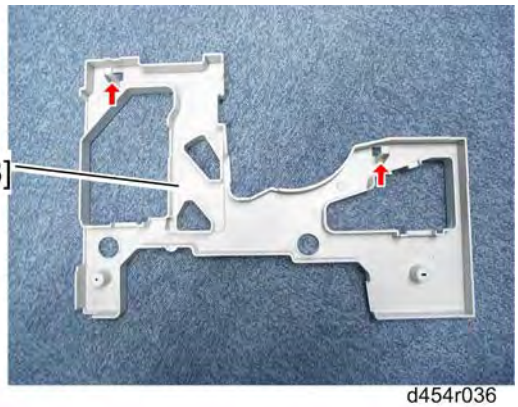
4. Top cover [A] (x 2)

1.1.3 INNER UPPER COVER

1. Top cover (☛ p.2)



d454r082

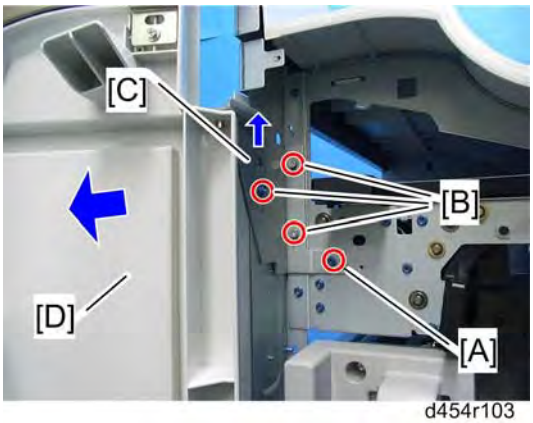


d454r036

2. Remove the knobs [A] (x 1 each).
3. Inner upper cover [B] (x 2)
   - Release the hooks [C] to remove the inner upper cover.

1.1.4 FRONT DOOR

1. Top cover (☛ p.2)
2. Inner upper cover (☛ p.3)

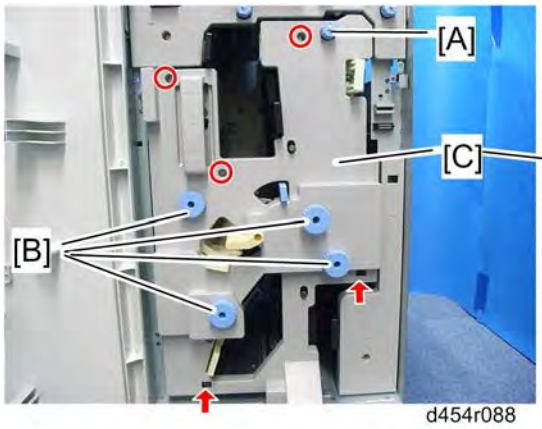


d454r103

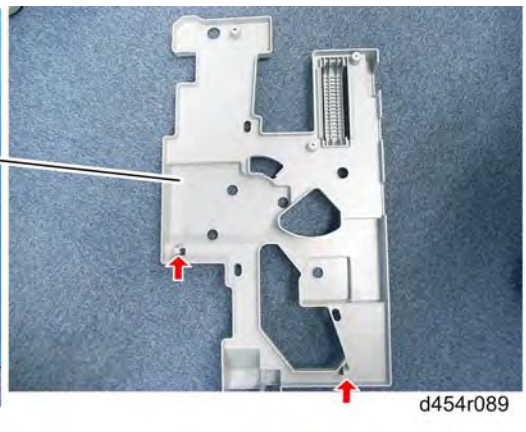
3. Remove the screw [A].
4. Loosen three screws [B].
5. Lift up the hinge bracket [C].
6. Front door [D]

1.1.5 FOLDING UNIT COVER

1. Open the front cover.



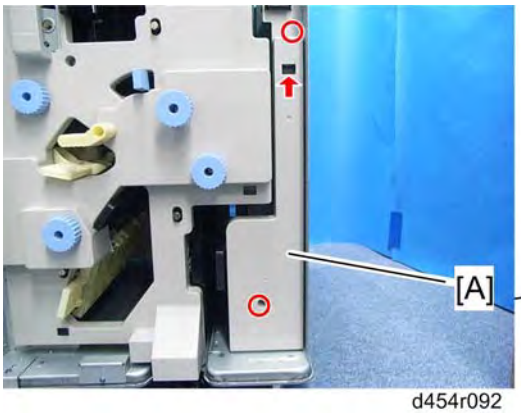
d454r088


d454r089

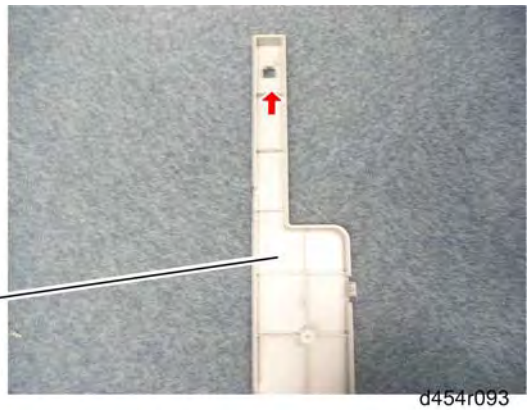
2. Remove the knob [A] (x 1).
3. Remove four knobs [B] (x 1 each).
4. Folding unit cover [C] (x 3, hook x 2)

1.1.6 INNER LOWER COVER

1. Open the front cover.

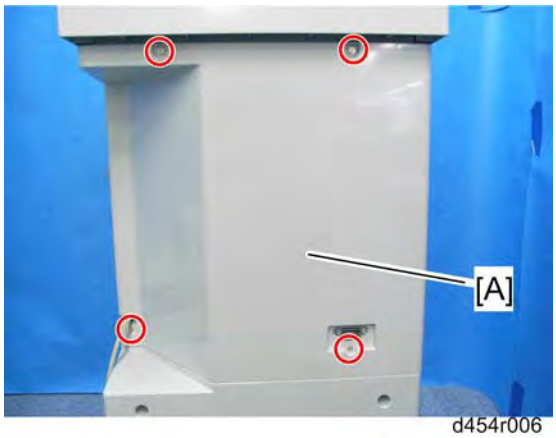


d454r092


d454r093

2. Inner lower cover [A] (x 1, hook)

1.1.7 REAR UPPER COVER



1. Rear upper cover [A] (x 4)

1.1.8 REAR LOWER COVER

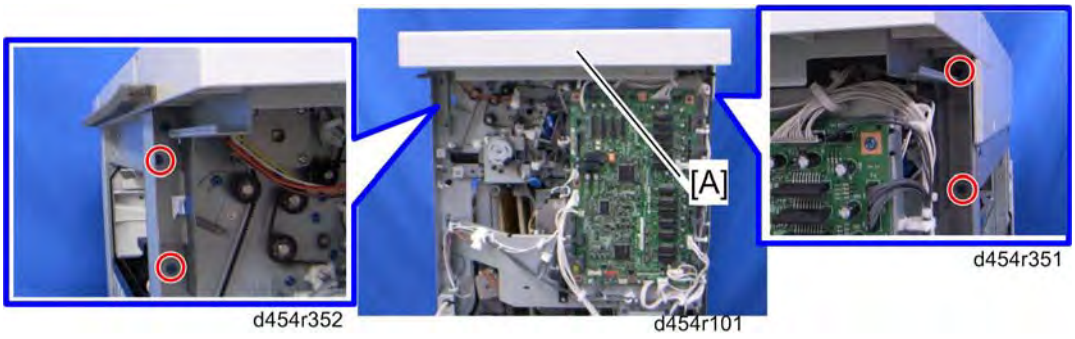
1. Rear upper cover (☛ p.5)



2. Rear lower cover [A] (x 3)

1.1.9 TOP REAR COVER

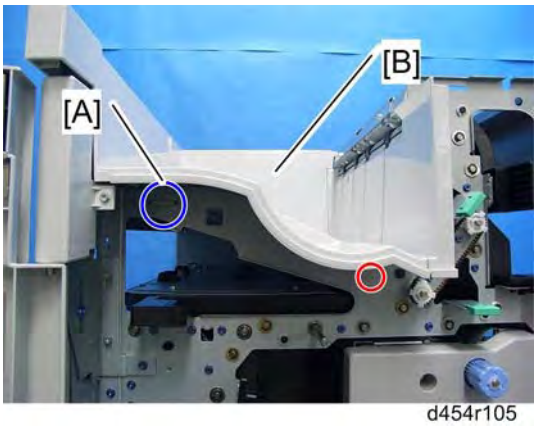
1. Rear upper cover (☛ p.5)



2. Top rear cover [A] (🔩 x 4)

1.1.10 TOP TRAY

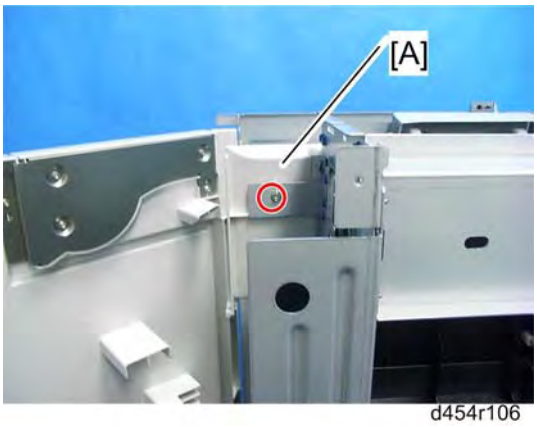
1. Top rear cover (☛ p.6)
2. Inner upper cover (☛ p.3)



3. Release the hook [A], and remove the top tray [B] (🔩 x 1).

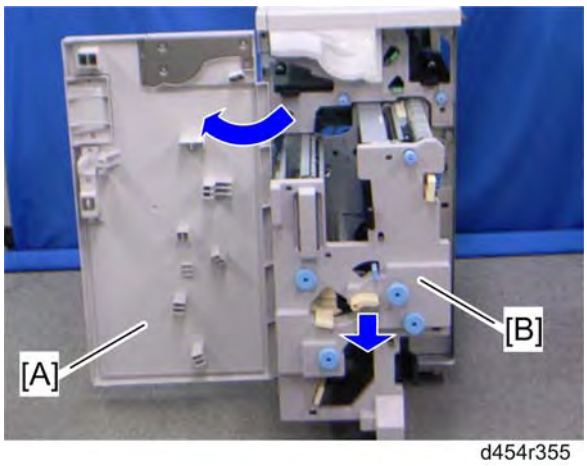
1.1.11 TOP TRAY RIGHT COVER

1. Top tray (☛ p.6)



2. Top tray right cover [A] (x 1)

1.1.12 PULLING OUT THE FOLDING UNIT DRAWER

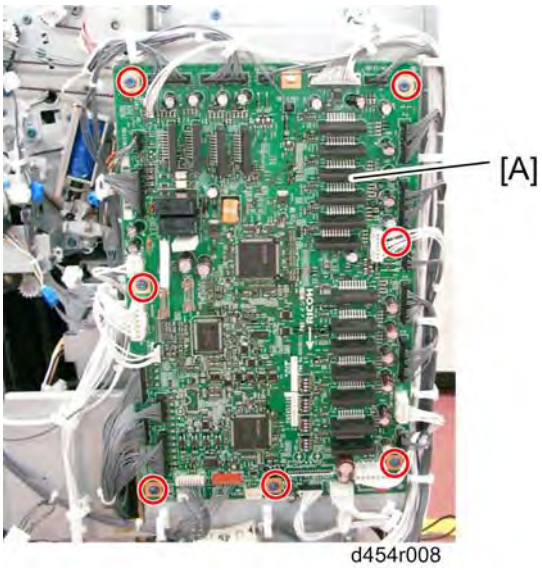


1. Open the front door [A]
2. Pull out the folding unit drawer [B].

1.2 ELECTRICAL COMPONENTS: REAR SIDE

1.2.1 MAIN BOARD

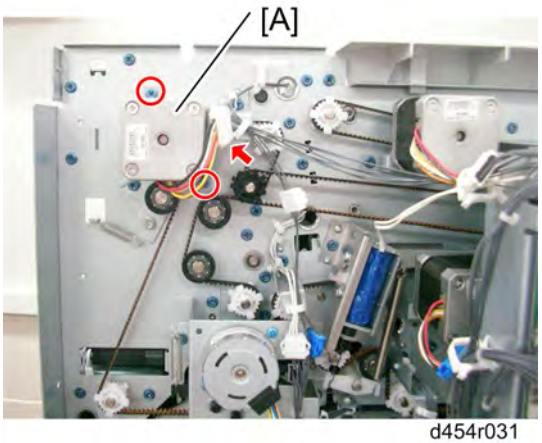
1. Rear upper cover (☛ p.5)



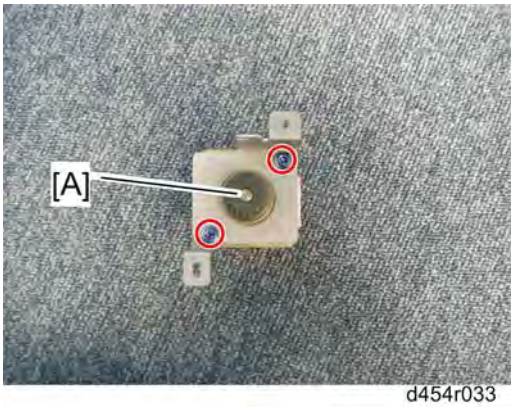
2. Main board [A] (x all, x 7)

1.2.2 HORIZONTAL TRANSPORT MOTOR

1. Rear upper cover (☛ p.5)
2. Top rear cover (☛ p.6)



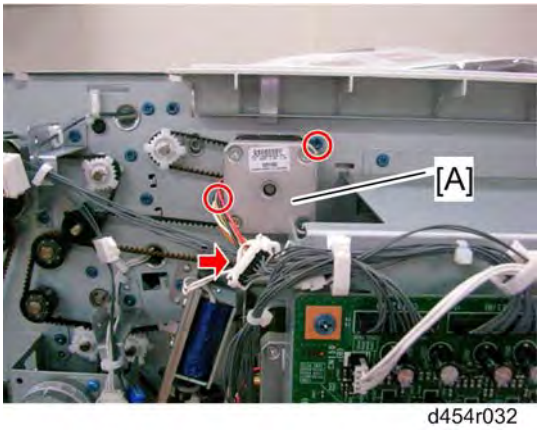
3. Horizontal transport motor bracket [A] (x 1, x 2)



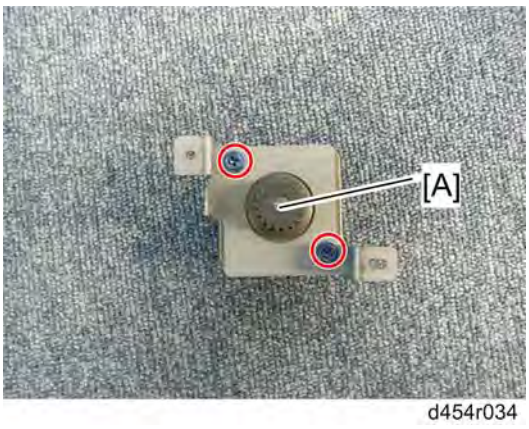
4. Horizontal transport motor [A] (x 2)

1.2.3 TOP TRAY EXIT MOTOR

1. Rear upper cover (p.5)
2. Top rear cover (p.6)



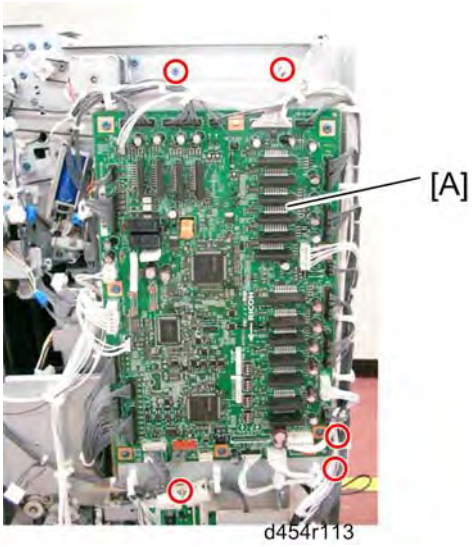
3. Top tray exit motor bracket [A] (x 1, x 1, x 2)



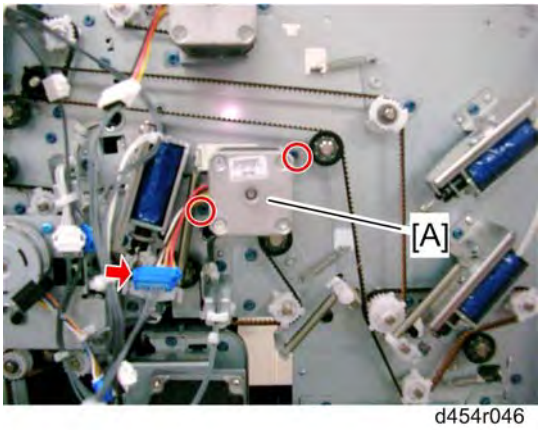
4. Top tray exit motor [A] (x 2)

1.2.4 TOP TRAY TRANSPORT MOTOR

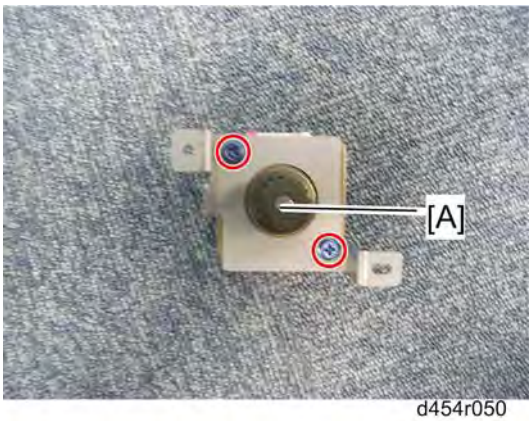
1. Rear upper cover (☛ p.5)
2. Top rear cover (☛ p.6)



3. Main board bracket [A] (x all, x 5, ground cable x 1)



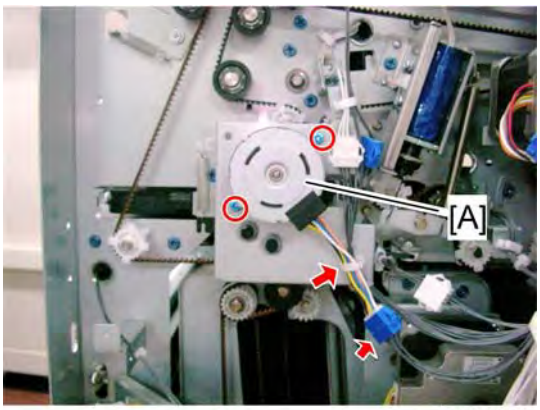
4. Top tray transport motor bracket [A] (x 1, x 2)



5. Top tray transport motor [A] (x 2)

1.2.5 ENTRANCE JG (JUNCTION GATE) MOTOR

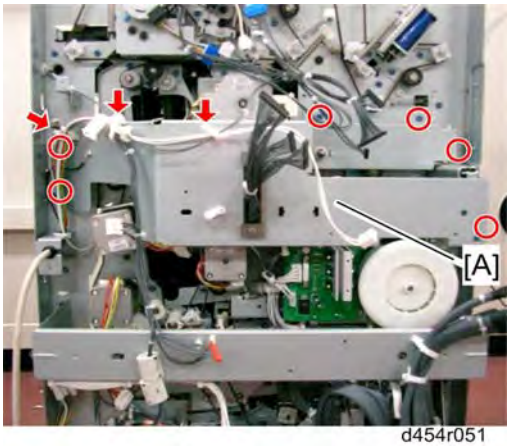
1. Rear upper cover (p.5)



2. Entrance JG motor [A] (x 1, x 1, x 2)

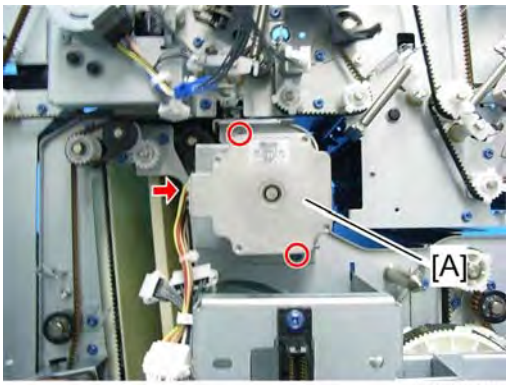
1.2.6 DYNAMIC ROLLER LIFT MOTOR

1. Rear upper cover (☛ p.5)
2. Top rear cover (☛ p.6)
3. Main board bracket (☛ p.10 "Top Tray Transport Motor")



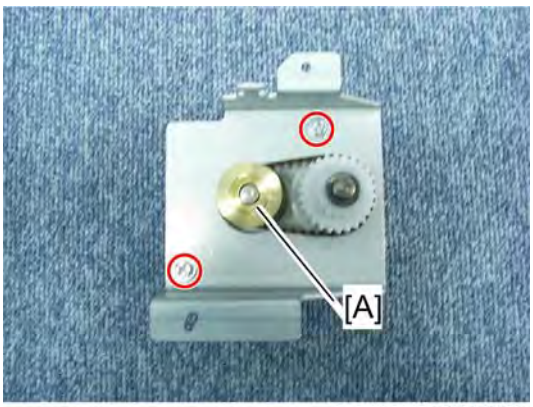
d454r051

4. Rear upper stay [A] (x 3, x 6)



d454r052

5. Dynamic roller lift motor bracket [A] (x 1, x 2)

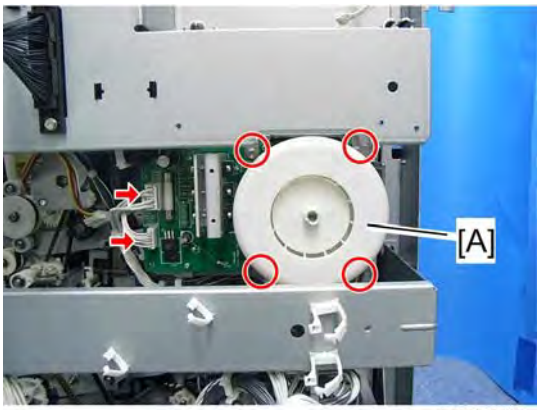


d454r055

6. Dynamic roller lift motor [A] (x 2)

1.2.7 CREASE MOTOR

1. Rear upper cover (☛ p.5)
2. Rear lower cover (☛ p.5)
3. Top rear cover (☛ p.6)
4. Main board bracket (☛ p.10 "Top Tray Transport Motor")

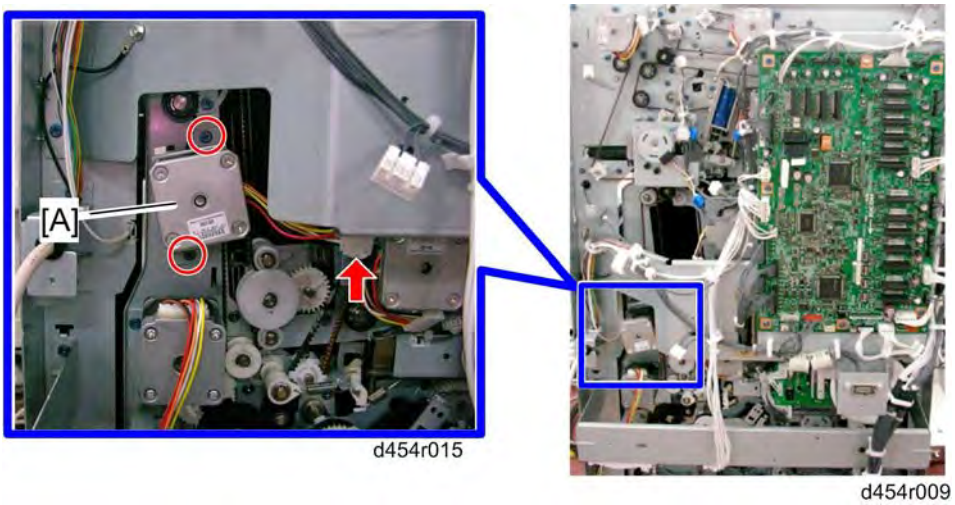


d454r049

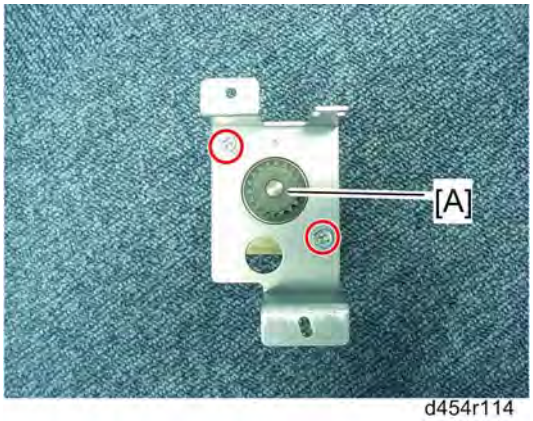
5. Crease motor [A] (x 2, x 4)

1.2.8 DYNAMIC ROLLER TRANSPORT MOTOR

1. Rear upper cover (☛ p.5)



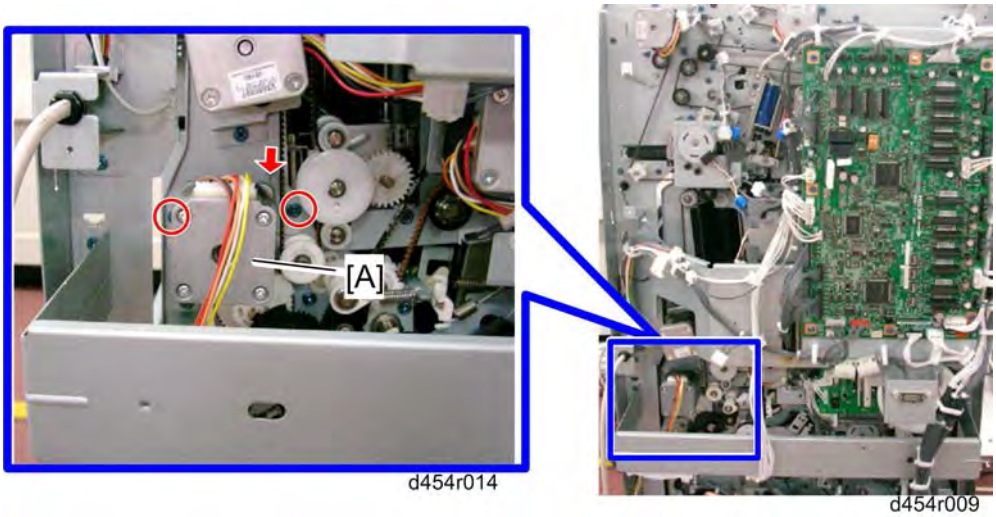
2. Dynamic roller transport motor bracket [A](🔧 x 1, 🔩 x 2)



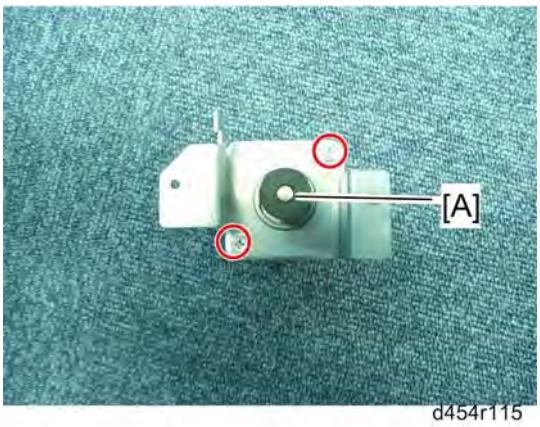
3. Dynamic roller transport motor (🔩 x 2)

1.2.9 REGISTRATION ROLLER RELEASE MOTOR

1. Rear upper cover (☛ p.5)
2. Rear lower cover (☛ p.5)



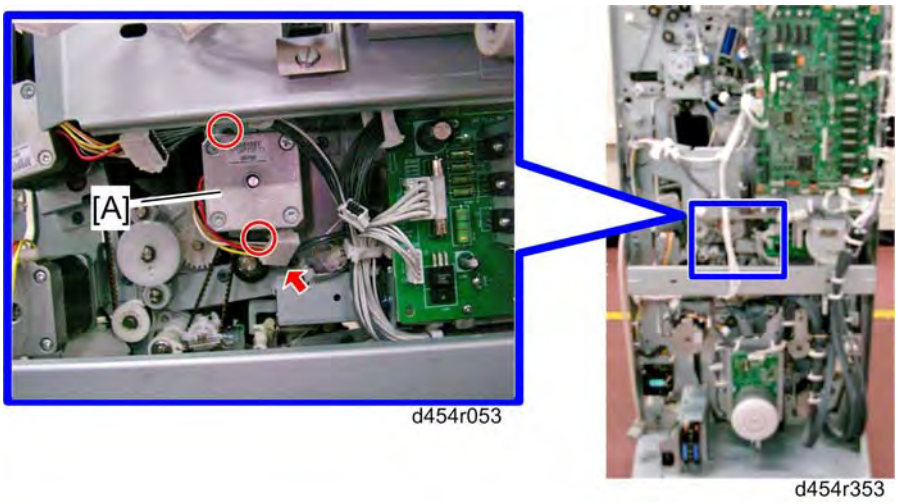
3. Registration roller release motor bracket [A] (x 1, x 2)



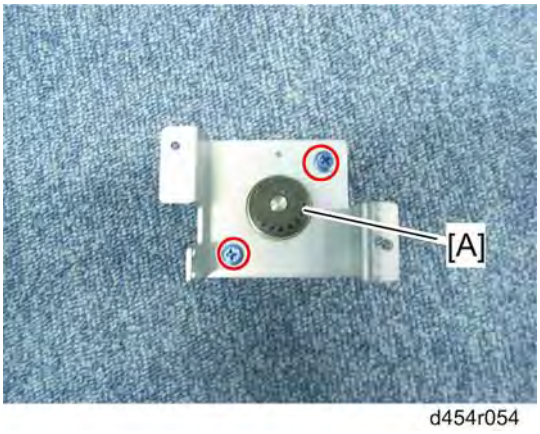
4. Registration roller release motor [A] (x 2)

1.2.10 REGISTRATION ROLLER TRANSPORT MOTOR

1. Rear upper cover (☛ p.5)
2. Rear lower cover (☛ p.5)



3. Registration roller transport motor bracket [A] (x 1, x 2)

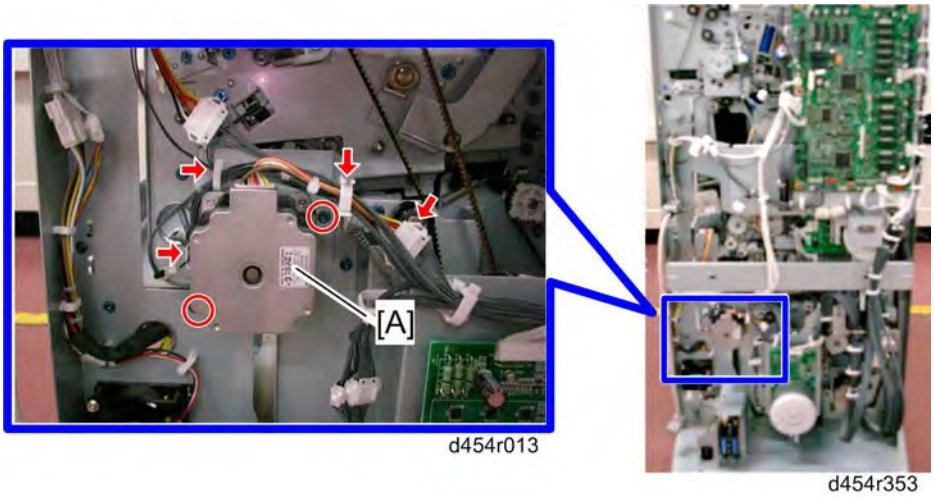


4. Registration roller transport motor [A] (x 2)

1.3 ELECTRICAL COMPONENTS: 1ST STOPPER

1.3.1 FOLD PLATE MOTOR

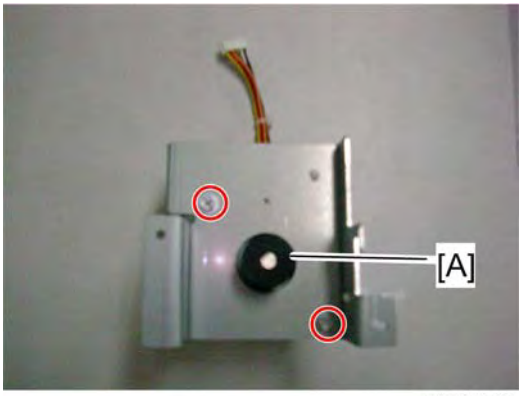
1. Rear upper cover (☛ p.5)
2. Rear lower cover (☛ p.5)



d454r013

d454r353

3. Fold plate motor bracket [A] (x 3, x 1, x 2)

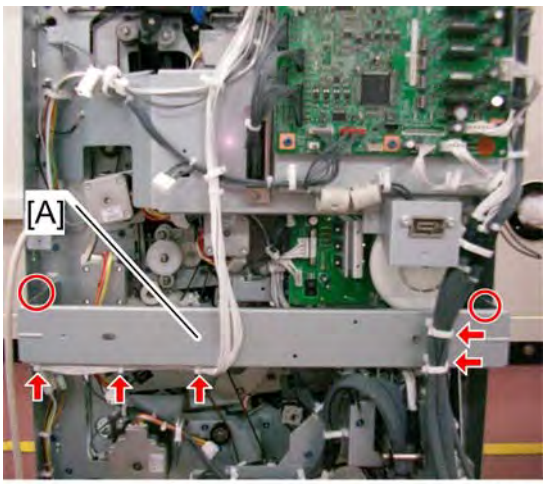


d454r018

4. Fold plate motor [A] (x 2)

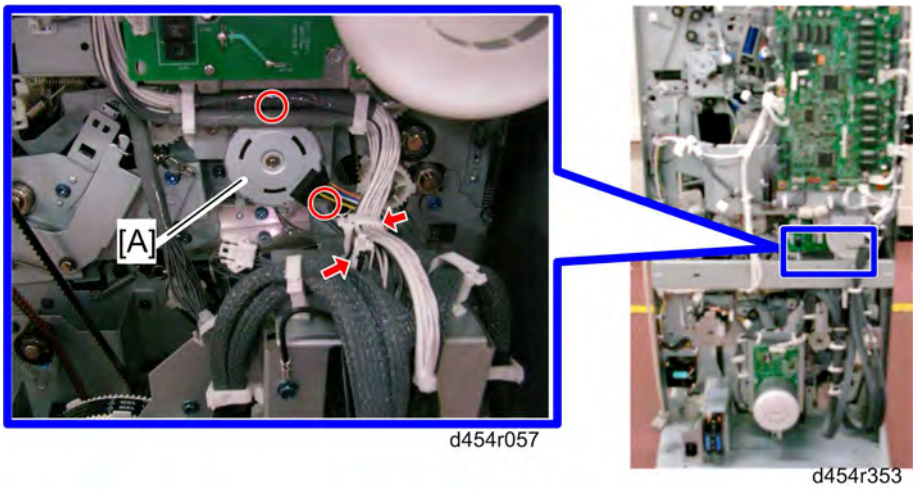
1.3.2 DIRECT-SEND JG MOTOR

1. Rear upper cover (☛ p.5)
2. Rear lower cover (☛ p.5)



d454r354

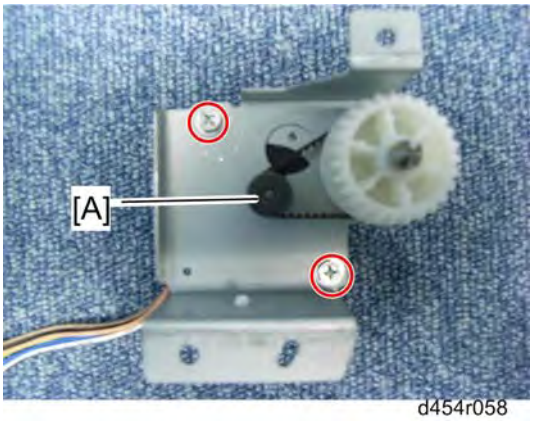
3. Rear lower stay [A] (x 5, x 2)



d454r057

d454r353

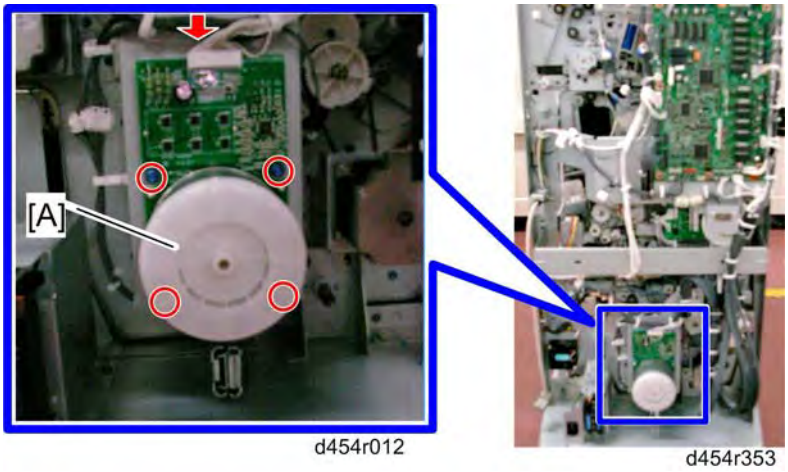
4. Direct-Send JG motor bracket [A] (x 1, x 1, x 2)



5. Direct-Send JG motor [A] (x 2)

1.3.3 1ST FOLD MOTOR

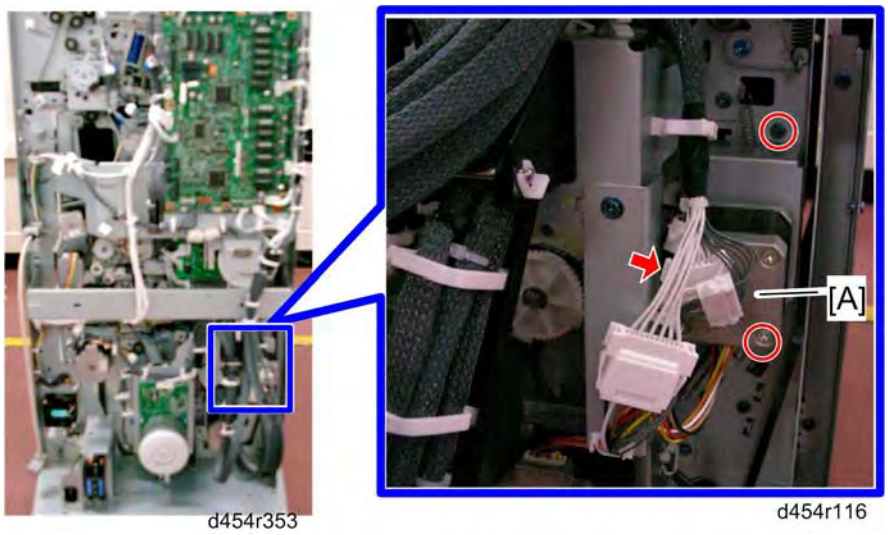
1. Rear upper cover (☛ p.5)
2. Rear lower cover (☛ p.5)



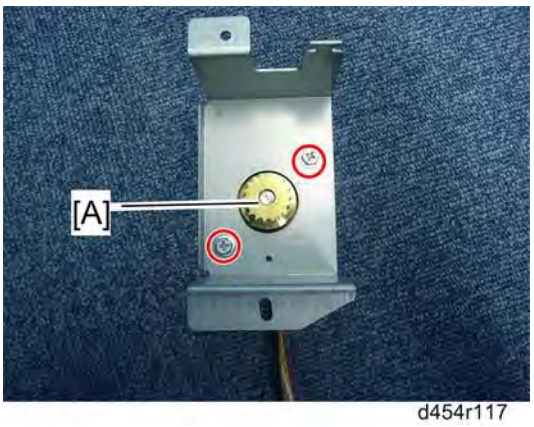
3. 1st fold motor [A] (x 1, x 4)

1.3.4 FM6 PAWL MOTOR

1. Rear upper cover (☛ p.5)
2. Rear lower cover (☛ p.5)



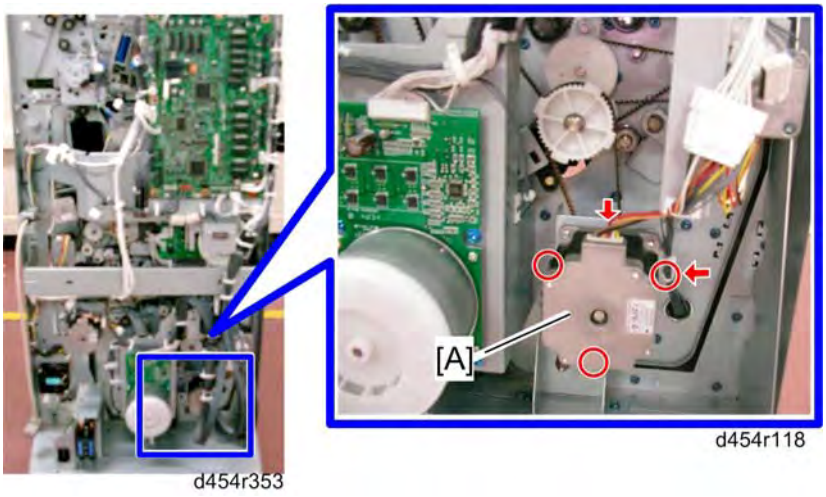
3. FM6 pawl motor bracket [A] (x 1, x 1, x 2)



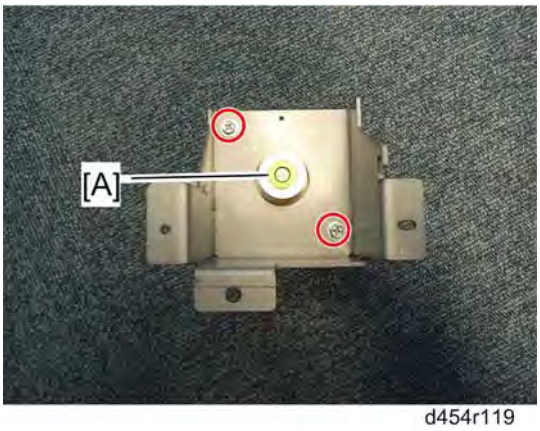
4. FM6 pawl motor [A] (x 2)

1.3.5 2ND FOLD MOTOR

1. Rear upper cover (☛ p.5)
2. Rear lower cover (☛ p.5)



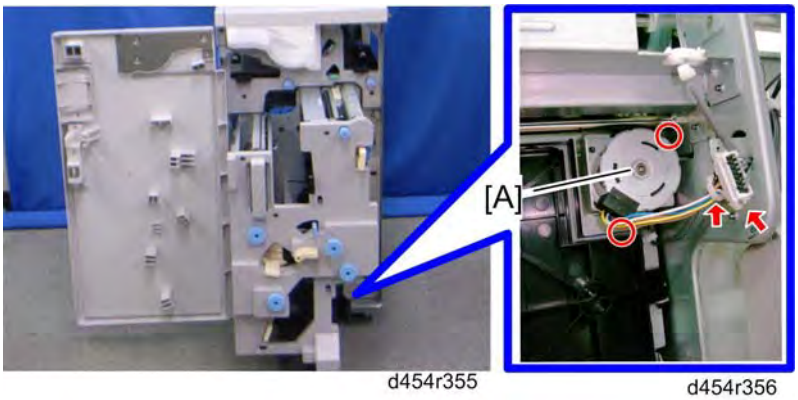
3. 2nd fold motor bracket [A] (x 1, x 1, x 3)



4. 2nd fold motor [A] (x 2)

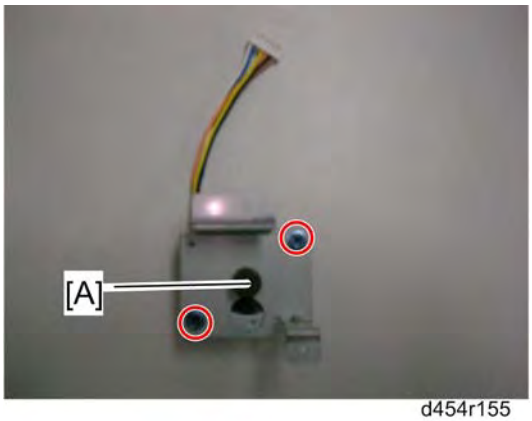
1.3.6 JOGGER FENCE MOTOR

1. Pull out the folding unit drawer (☛ p.7).



d454r355 d454r356

2. Jogger fence motor bracket [A] (x 1, x 1, x 2)



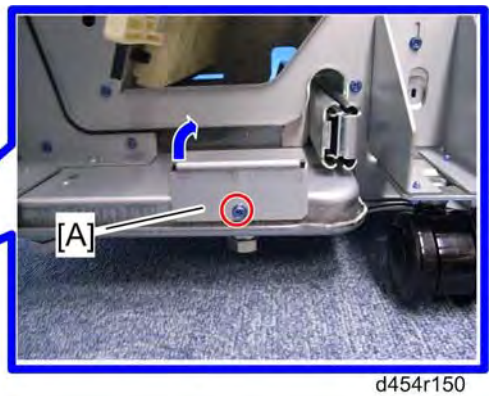
d454r155

3. Jogger fence motor [A] (x 2)

1.3.7 1ST STOPPER UNIT

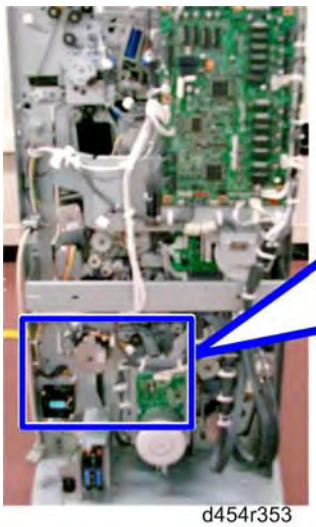
1. Folding unit cover (☛ p.4)
2. Rear upper cover (☛ p.5)
3. Rear lower cover (☛ p.5)

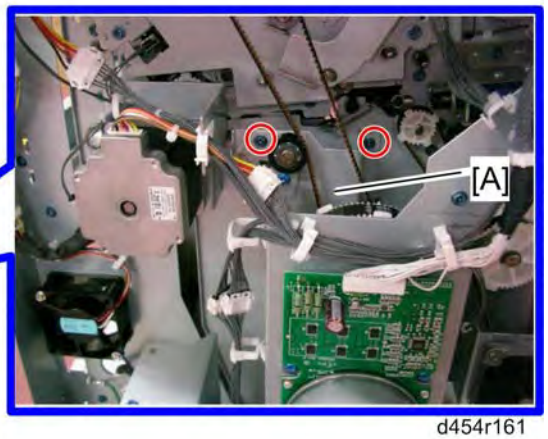

d454r002



d454r150

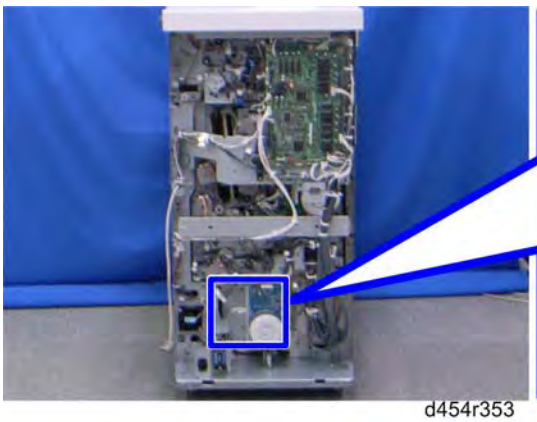
4. Drawer stopper [A] (x 1)

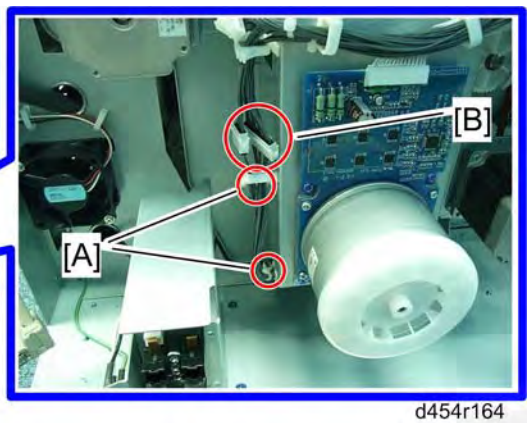

d454r353



d454r161

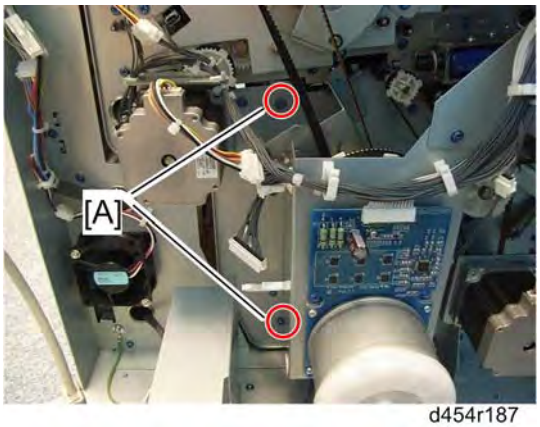
5. Belt tension bracket [A] (x 2)


d454r353



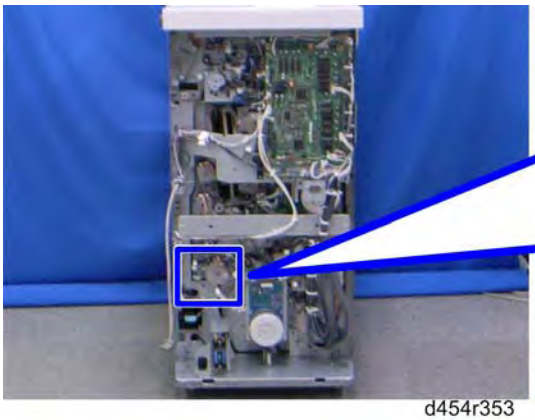
d454r164

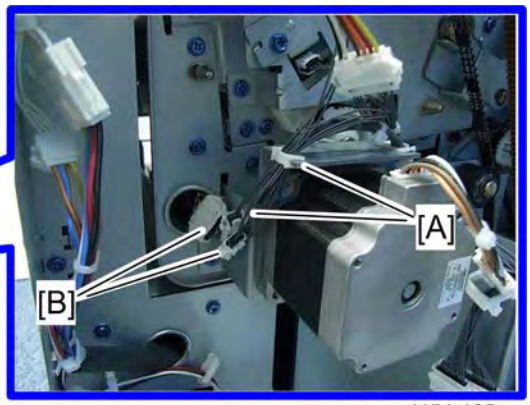
6. Release two clamps [A].
7. Disconnect two connectors [B].



d454r187

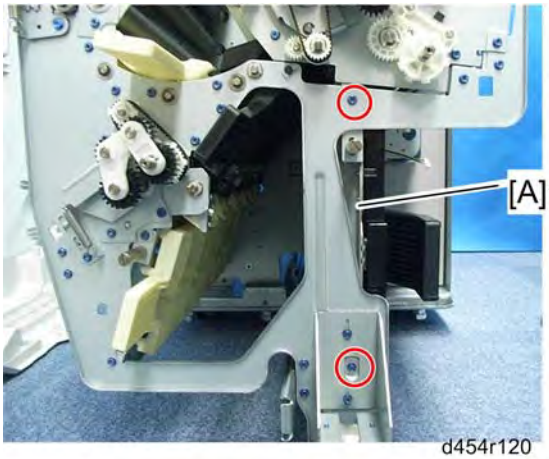
8. Remove two screws [A].


d454r353



d454r165

9. Release two clamps [A].
10. Disconnect two connectors [B].
11. Pull out the folding unit drawer (☛ p.7).


d454r120



d454r143

12. Hold the 1st stopper unit [A], and then remove it (x 2).

Important

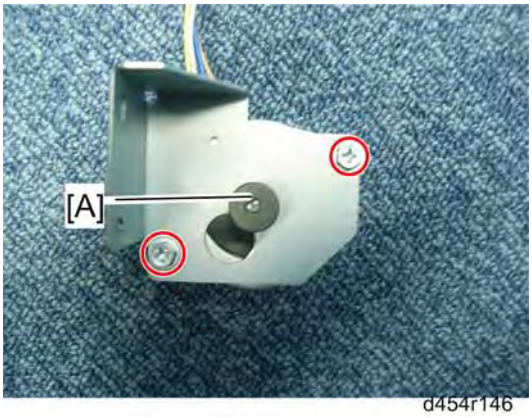
- The 1st stopper unit cannot hang the folding unit drawer without the two screws. If you remove the 1st stopper unit without any support, the 1st stopper unit can fall and be broken.

1.3.8 POSITIONING ROLLER MOTOR

1. 1st stopper unit (☛ p.23)



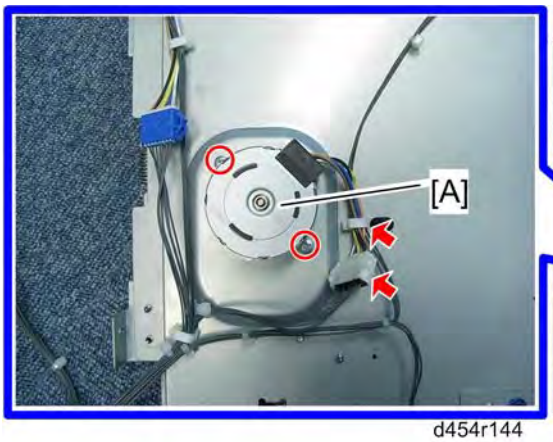
2. Positioning roller motor bracket [A] (x 1, x 1, x 2)



3. Positioning roller motor [A] (x 2)

1.3.9 1ST STOPPER MOTOR

1. 1st stopper unit (☛ p.23)



d454r144

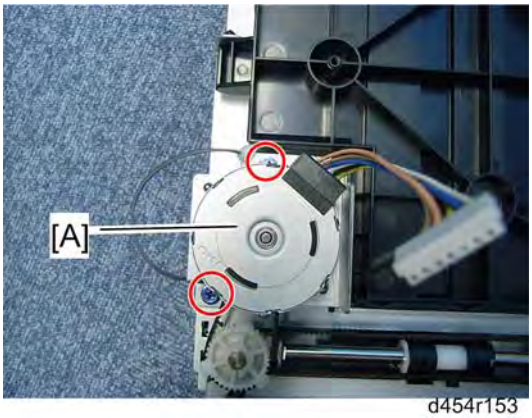


d454r143

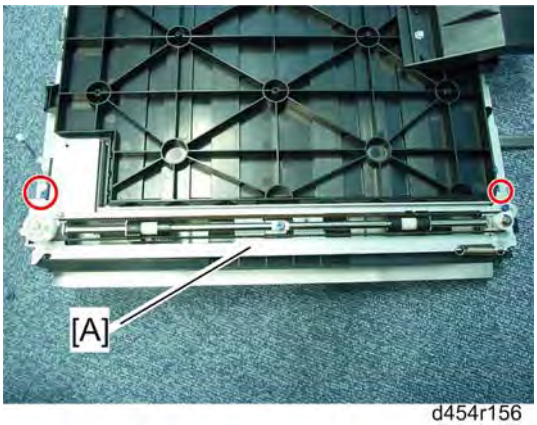
2. 1st stopper motor [A] (x 1, x 1, x 2)

1.3.10 JOGGER FENCE HP SENSOR

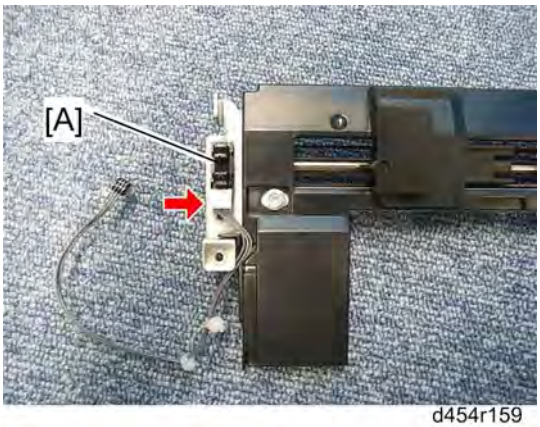
1. 1st stopper unit (☛ p.23)



2. Jogger fence motor bracket [A] (x 2)



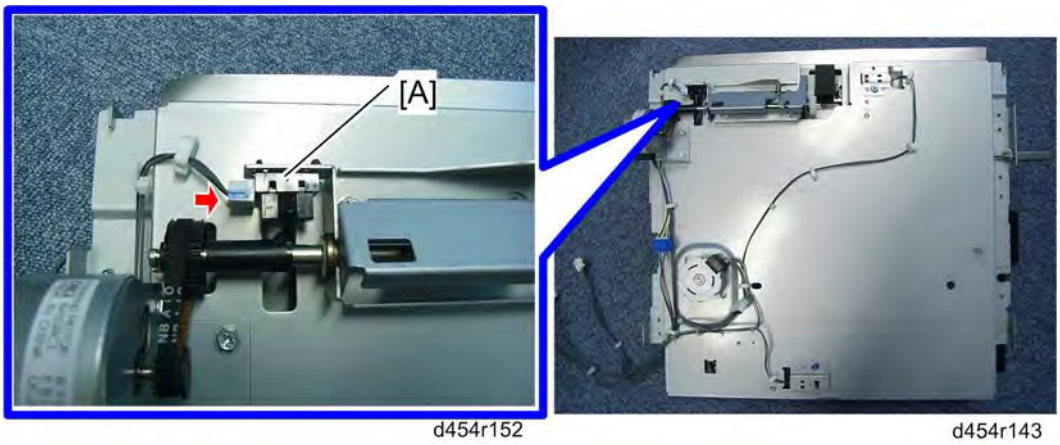
3. Jogger fence timing belt bracket [A] (x 2)



4. Jogger fence HP sensor [A] (hooks, x 1)

1.3.11 POSITIONING ROLLER HP SENSOR

1. 1st stopper unit (☛p.23)



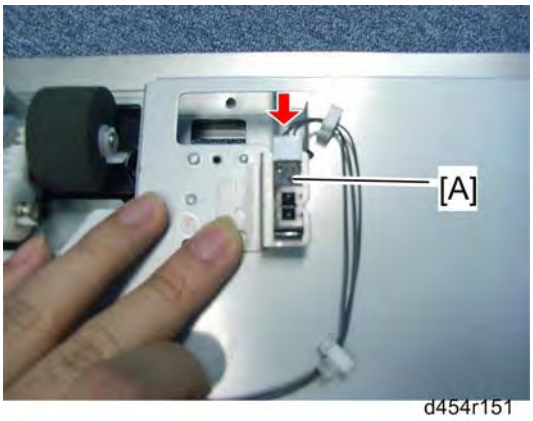
2. Positioning Roller HP sensor [A] (hooks, x 1)

1.3.12 1ST STOPPER PAPER SENSOR

1. 1st stopper unit (☛ p.23)



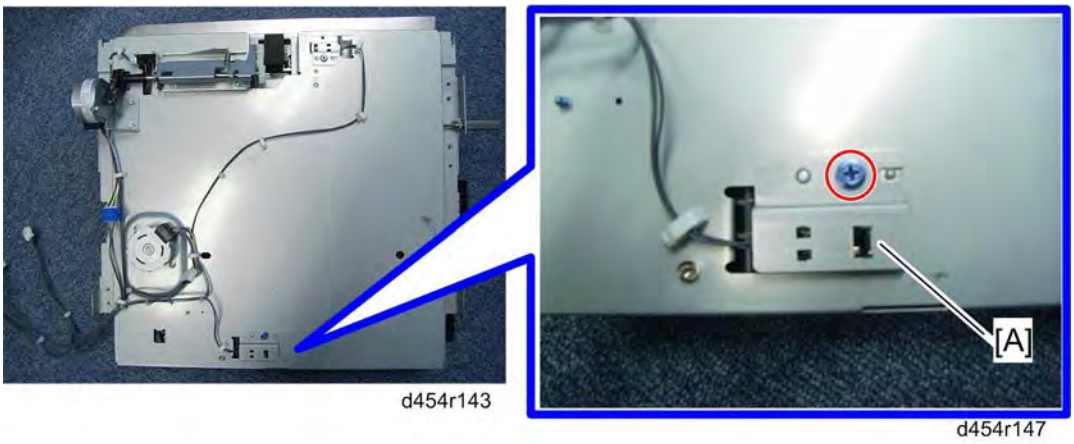
2. 1st stopper paper sensor bracket [A] (x 1)



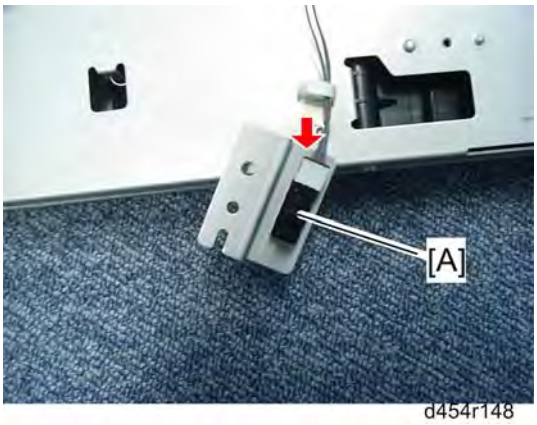
3. 1st stopper paper sensor [A] (hooks)

1.3.13 1ST STOPPER HP SENSOR

1. 1st stopper unit (☛ p.23)



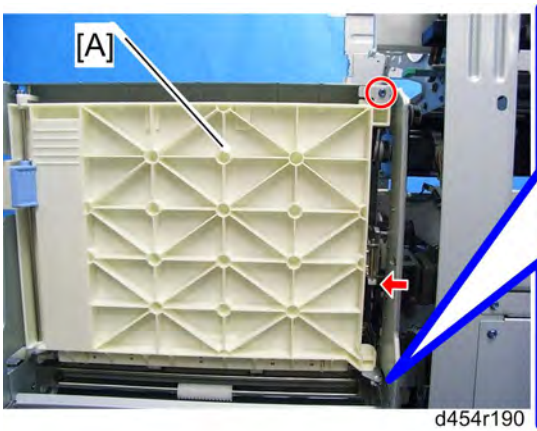
2. 1st stopper HP sensor bracket [A] (x 1)



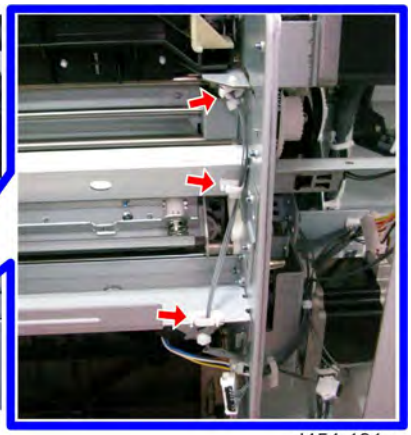
3. 1st stopper HP sensor [A] (hooks)

1.3.14 REGISTRATION SENSOR

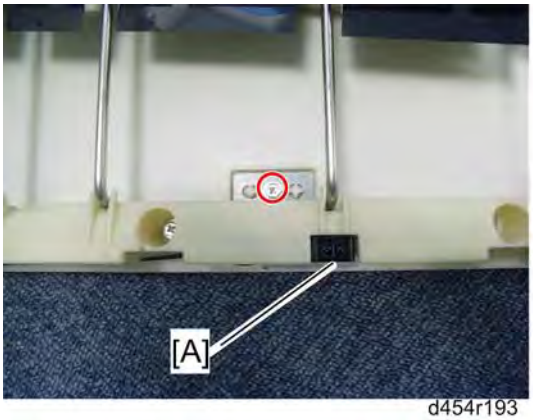
1. Pull out the folding unit drawer (☛ Pull Out the Folding Unit Drawer)



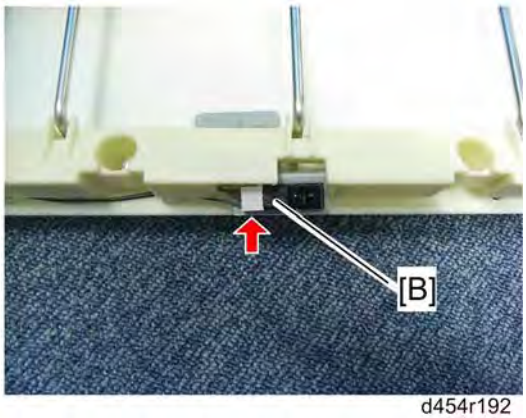
d454r190


d454r191a

2. Jam removal door [A] (x 3, x 1, x 1)



d454r193



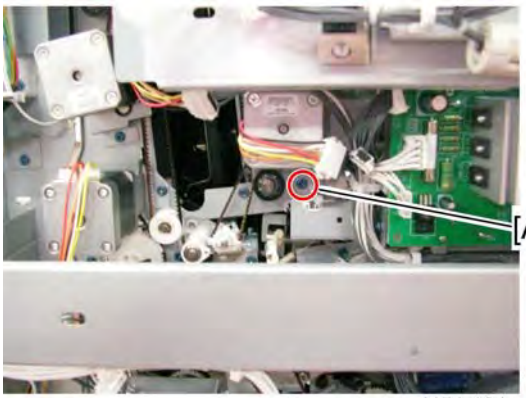
d454r192

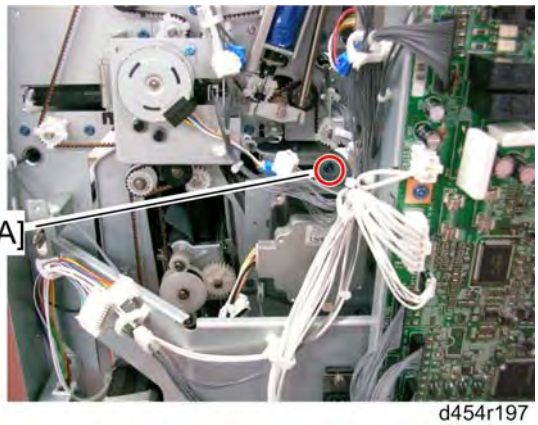
3. Registration sensor bracket [A] (x 1)
4. Registration sensor [B] (hooks, x 1)

1.4 ELECTRICAL COMPONENTS: 2ND STOPPER

1.4.1 2ND STOPPER UNIT

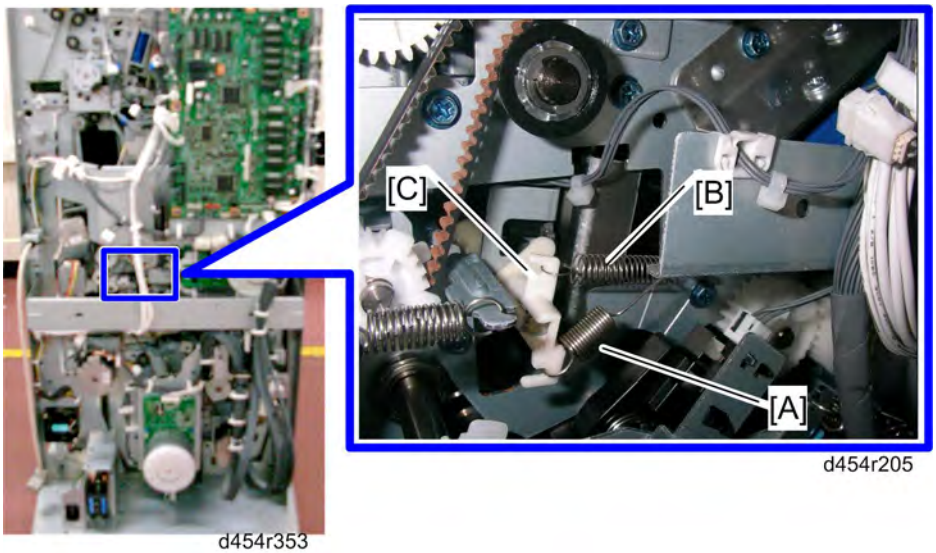
1. 1st stopper unit (☛ p.23)
2. Jam removal door (☛ p.30 "Registration Sensor")


d454r194



d454r197

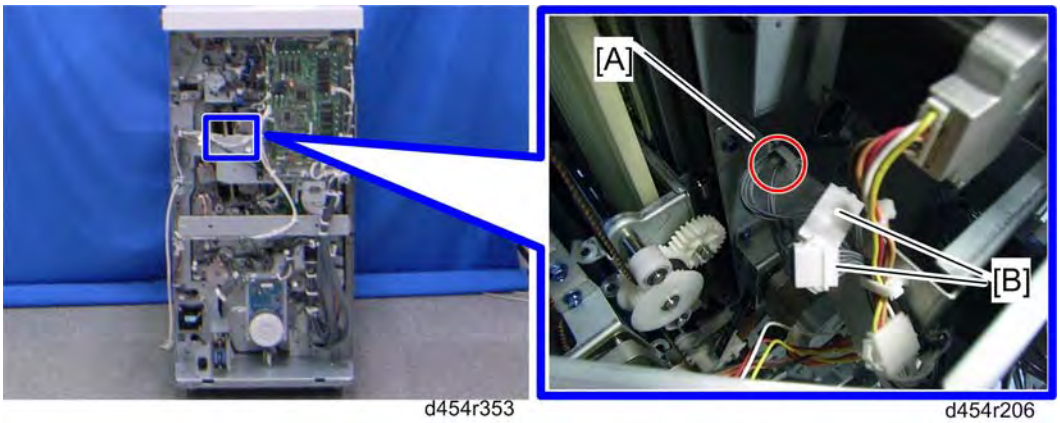
3. Remove two screws [A] at the rear side of the folding unit drawer.



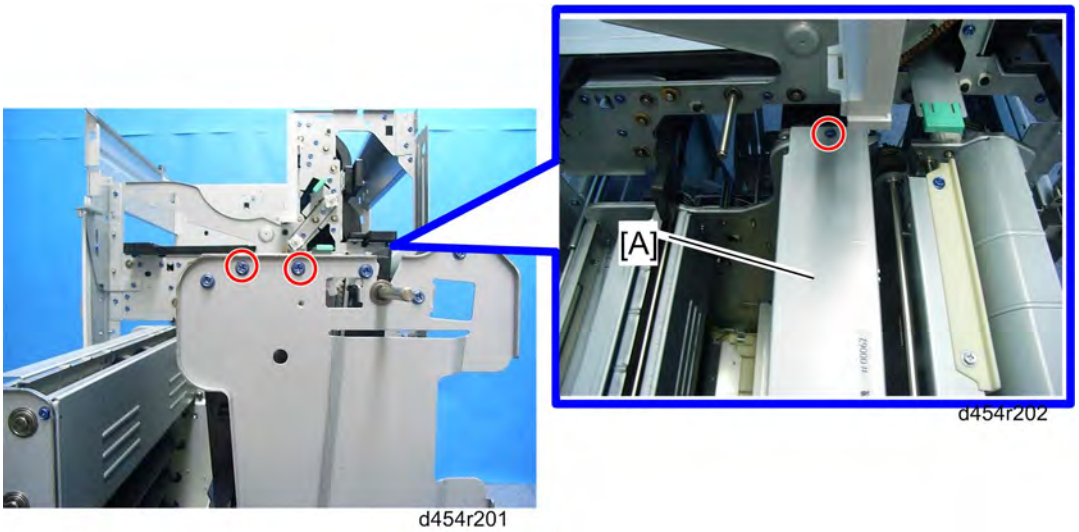
d454r205

d454r353

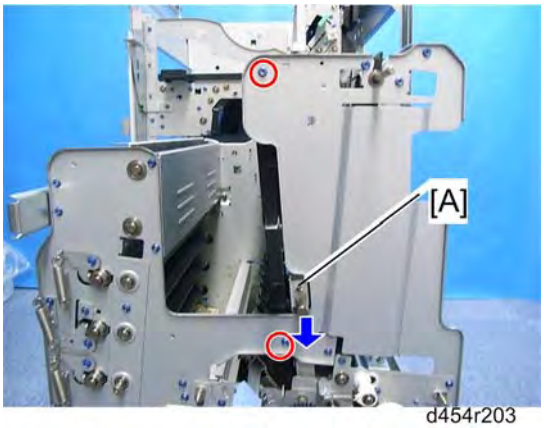
4. Remove the spring [A] for the solenoid spring [B] for the guide plate.
5. Remove the arm [C] for the guide plate.



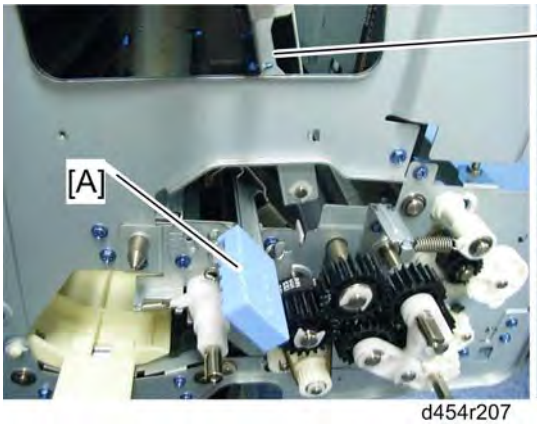
6. Release the clamp [A] and disconnect two connectors [B].
7. Pull out the folding unit drawer.



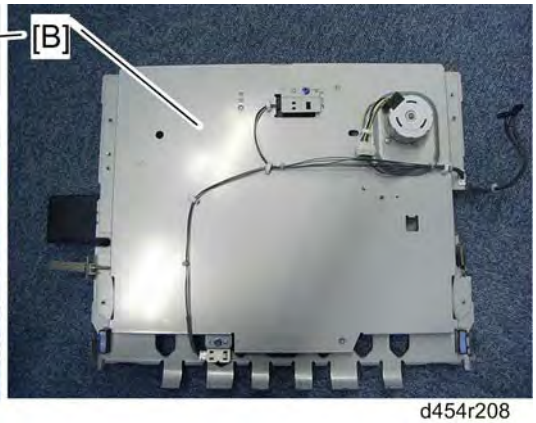
8. Top stay [A] (x 3)



9. Move down the 2nd stopper unit [A] a little bit (x 2).



d454r207



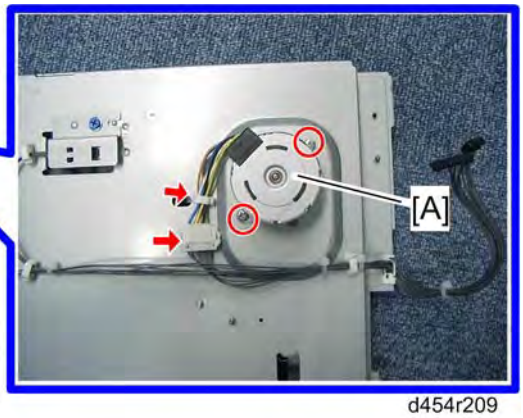
d454r208

10. Open the jam removal door [A], and then remove the 2nd stopper unit [B].

1.4.2 2ND STOPPER MOTOR

1. 2nd stopper unit (☛ p.31)


d454r207



d454r209

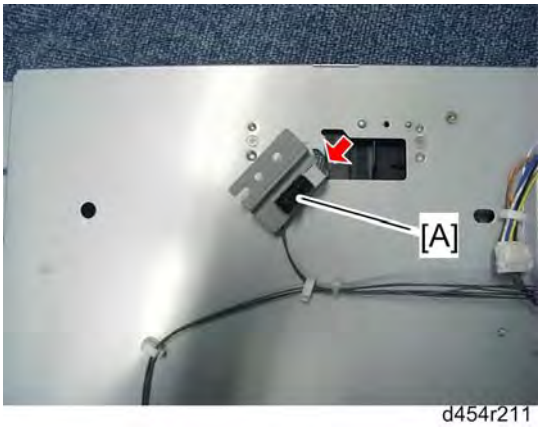
2. 2nd stopper motor [A] (x 1, x 1, x 2)

1.4.3 2ND STOPPER HP SENSOR

1. 2nd stopper unit (☛ p.31)



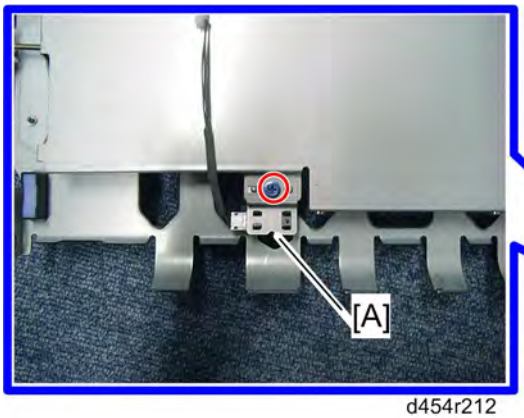
2. 2nd stopper HP sensor bracket [A] (x 1)



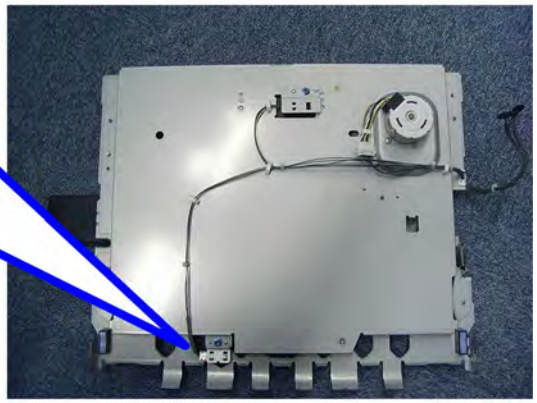
3. 2nd stopper HP sensor [A] (hooks, x 1)

1.4.4 2ND STOPPER PAPER SENSOR

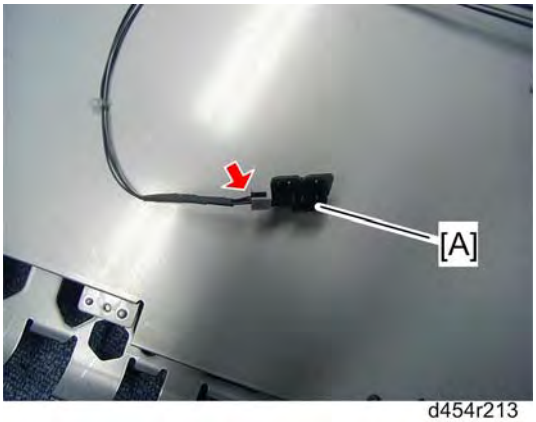
1. 2nd stopper unit (☛ p.31)



d454r212


d454r207

2. 2nd stopper paper sensor bracket [A] (x 1)

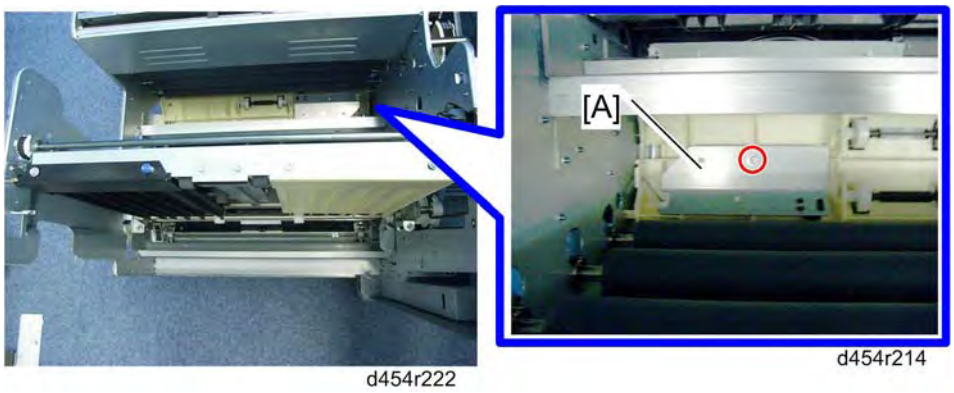


d454r213

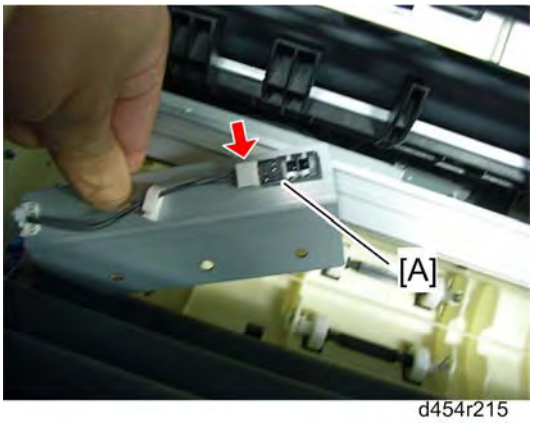
3. 2nd stopper paper sensor [A] (x 1)

1.4.5 BYPASS EXIT PAPER SENSOR

1. Pull out the folding unit drawer.
2. 2nd stopper unit (☛ p.31)



3. Bypass exit paper sensor bracket [A] (x 1)



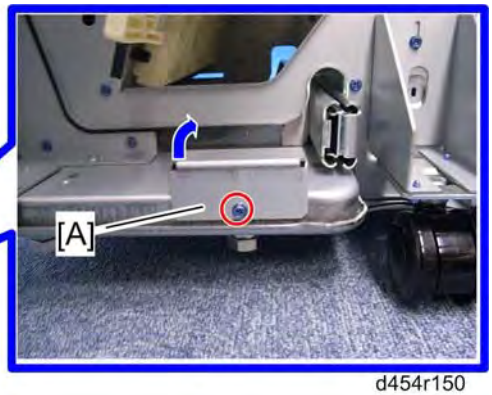
4. Bypass exit paper sensor [A] (x 1)

1.5 ELECTRICAL COMPONENTS: 3RD STOPPER

1.5.1 3RD STOPPER UNIT

1. Folding unit cover (☛ p.4)
2. Rear upper cover (☛ p.5)
3. Rear lower cover (☛ p.5)

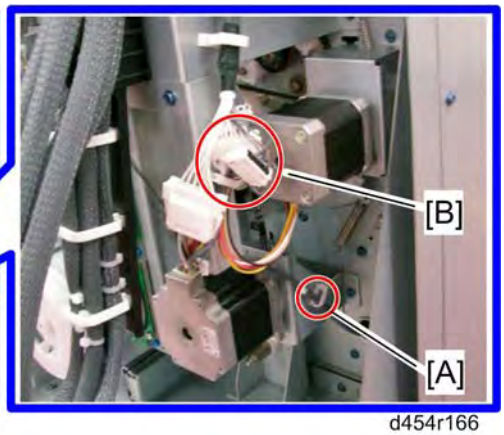

d454r002



d454r150

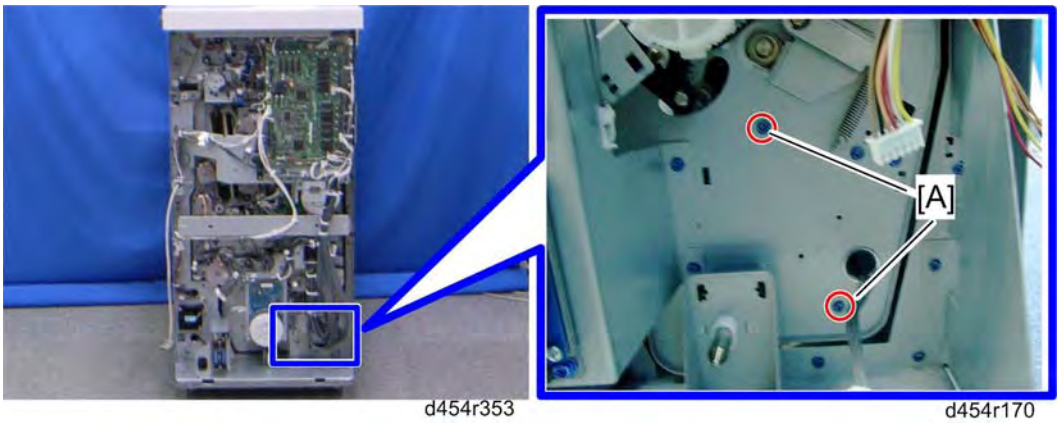
4. Drawer stopper [A] (x 1)


d454r353

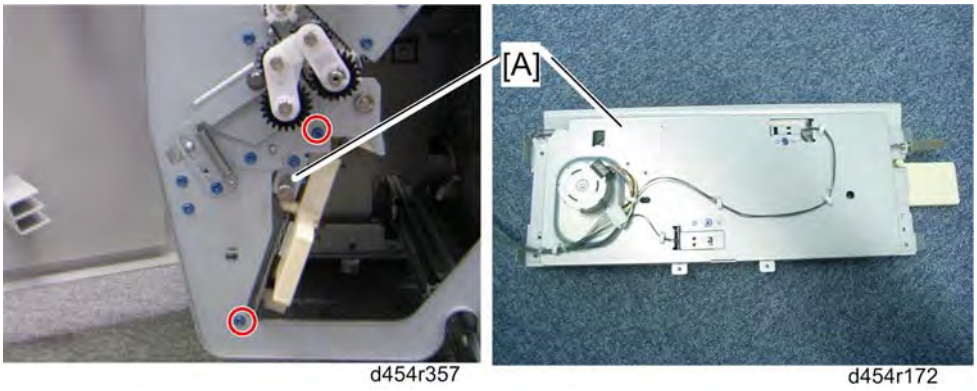


d454r166

5. Release the clamp [A].
6. Disconnect two connectors [B].
7. 2nd fold motor bracket (☛ p.21 "2nd Fold Motor")



8. Remove two screws [A].



9. Hold the 3rd stopper unit [A], and then remove it (x 2).

Important

- The 3rd stopper unit cannot hang the folding unit drawer without the two screws. If you remove the 1st stopper unit without any support, the 3rd stopper unit can fall and be broken.

1.5.2 3RD STOPPER MOTOR

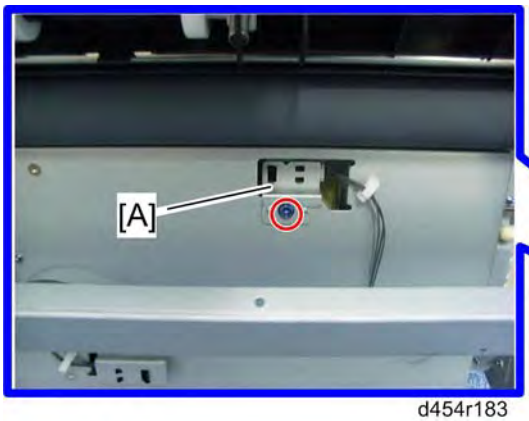
1. 3rd stopper unit (☛ p.37)



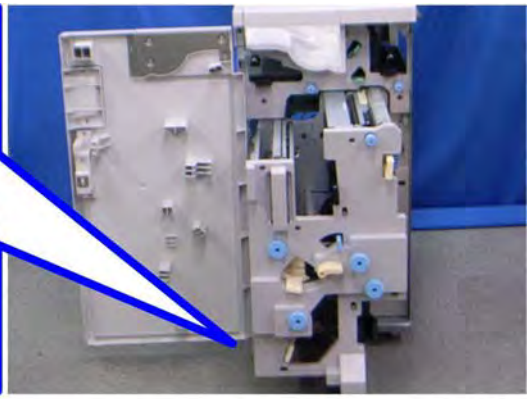
2. 3rd stopper motor [A] (x 1, x 1, x 2)

1.5.3 3RD STOPPER PAPER SENSOR

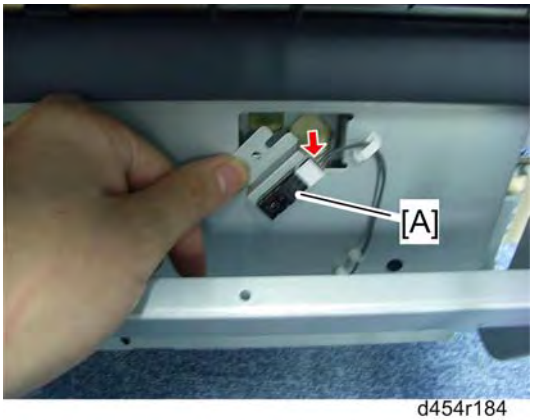
1. Pull out the folding unit drawer.



d454r183


d454r355

2. 3rd stopper paper sensor bracket [A] (x 1)

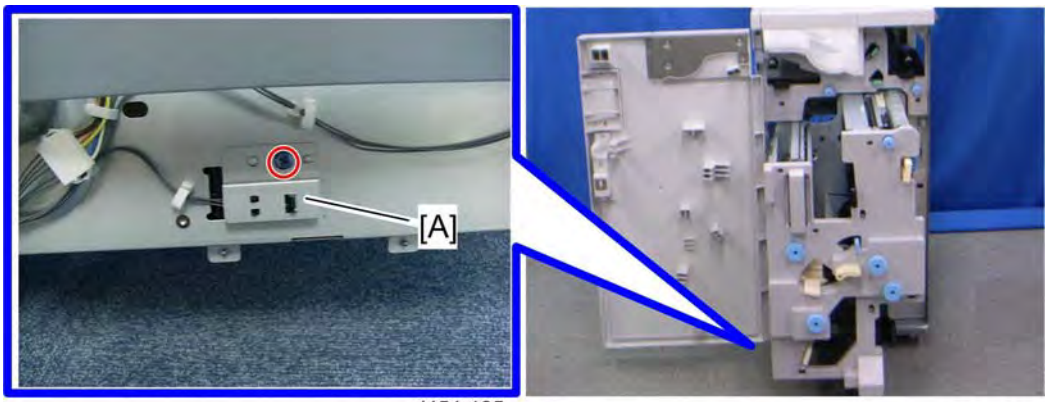


d454r184

3. 3rd stopper paper sensor [A] (x 1)

1.5.4 3RD STOPPER HP SENSOR

1. Pull out the folding unit drawer.



d454r185 d454r355

2. 3rd stopper HP sensor bracket [A] (x 1)

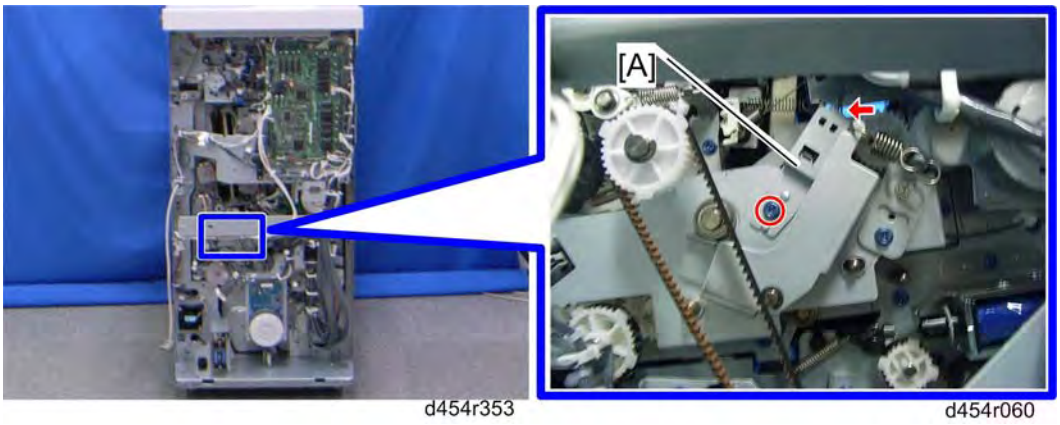


d454r186

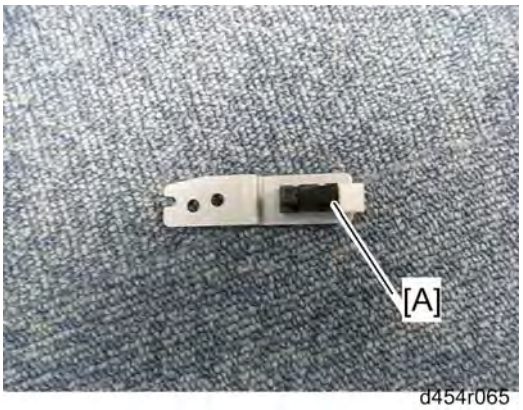
3. 3rd stopper HP sensor [A] (x 1)

1.5.5 DIRECT-SEND JG (JUNCTION GATE) HP SENSOR

1. Rear upper cover (☛ p.5)
2. Rear lower cover (☛ p.5)



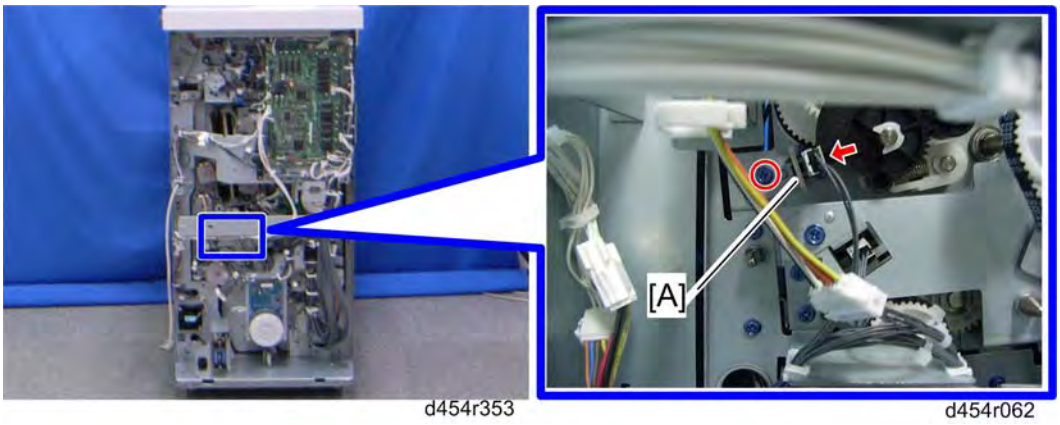
3. Direct-Send JG HP sensor bracket [A] (x 1, x 1)



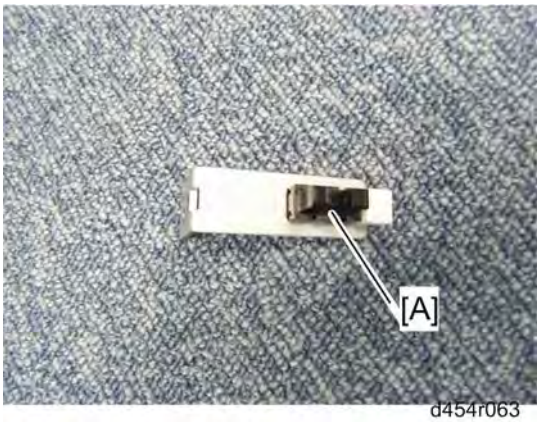
4. Direct-Send JG HP sensor [A] (hooks)

1.5.6 REGISTRATION ROLLER HP SENSOR

1. Rear upper cover (☛ p.5)
2. Rear lower cover (☛ p.5)



3. Registration roller HP sensor bracket [A] (x 1, x 1)

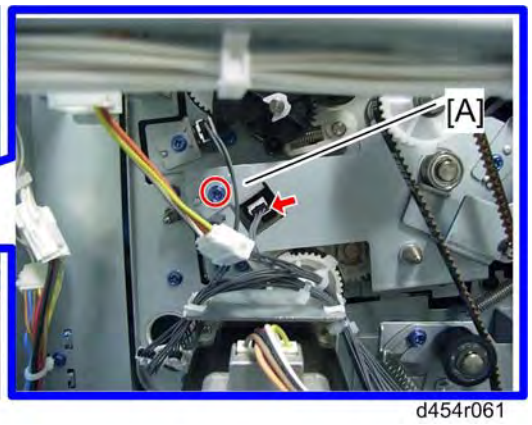


4. Registration roller HP sensor [A] (hooks)

1.5.7 FOLD PLATE HP SENSOR

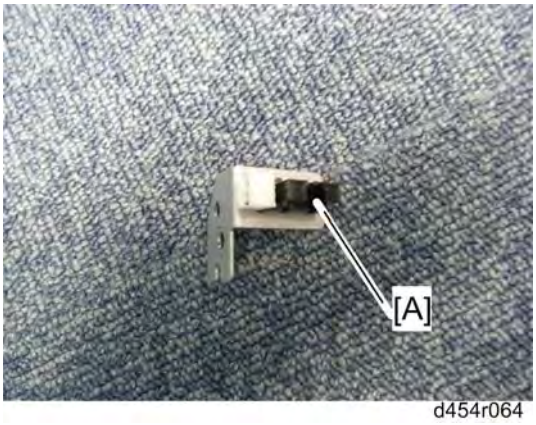
1. Rear upper cover (☛ p.5)
2. Rear lower cover (☛ p.5)


d454r353



d454r061

3. Fold plate HP sensor bracket [A] (x 1, x 1)

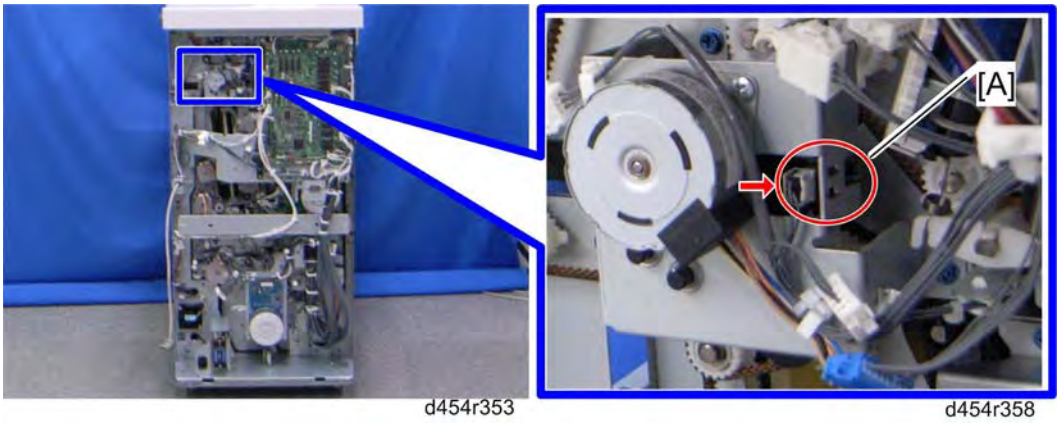


d454r064

4. Fold plate HP sensor [A] (hooks)

1.5.8 ENTRANCE JG (JUNCTION GATE) HP SENSOR

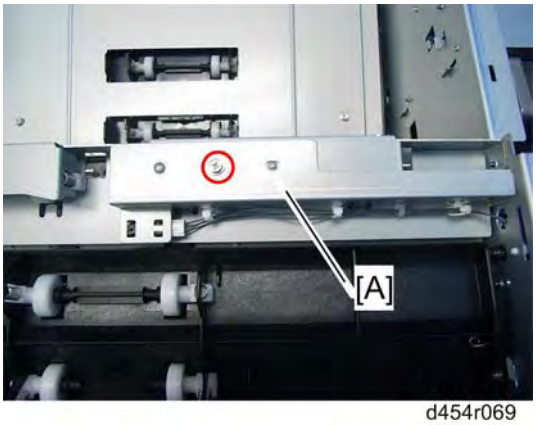
1. Rear upper cover (☛ p.5)



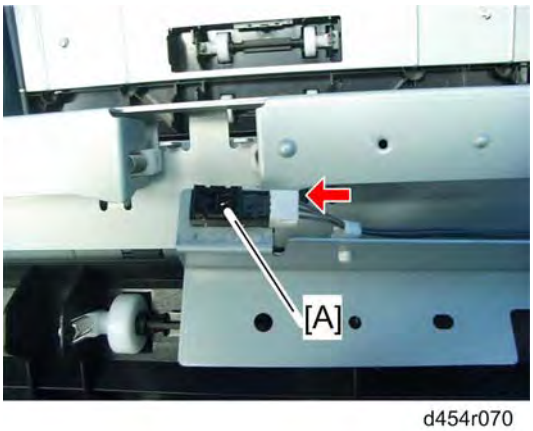
2. Entrance JG HP sensor [A] (hooks, x 1)

1.5.9 TOP TRAY EXIT SENSOR

1. Top cover (☛ p.2)

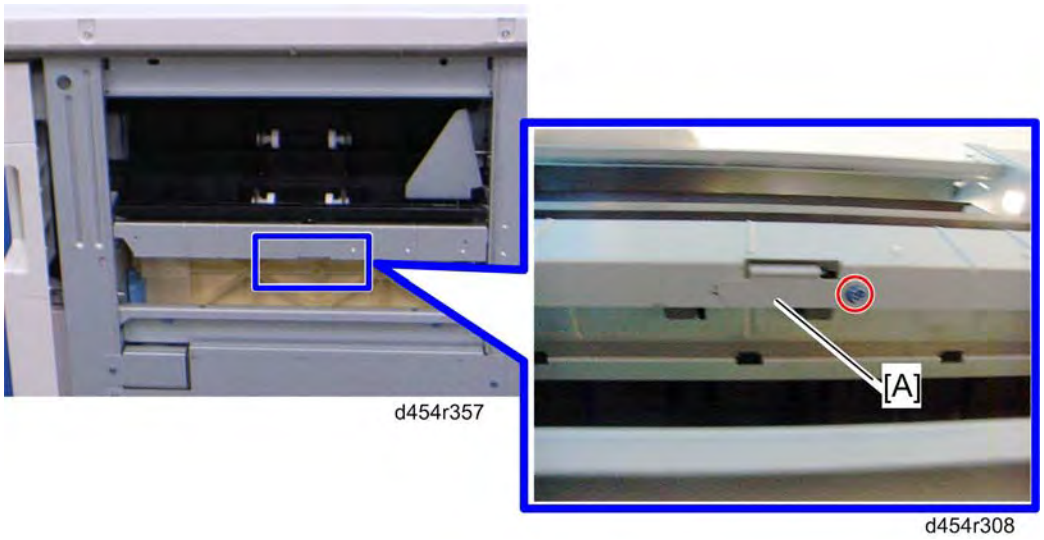


2. Top tray exit sensor bracket [A] (x 1)

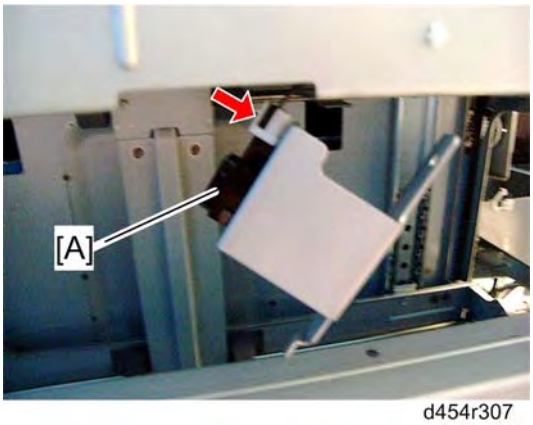


3. Top tray exit sensor [A] (x 1)

1.5.10 ENTRANCE SENSOR



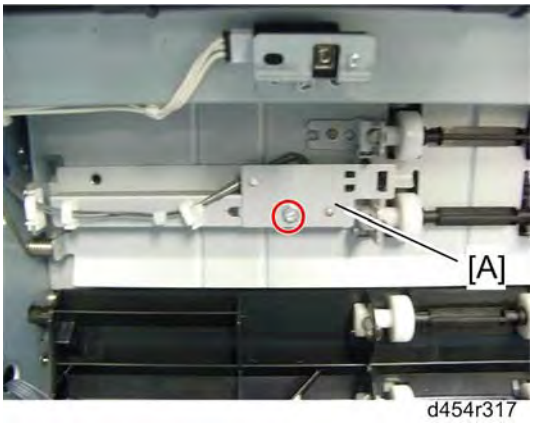
1. Entrance sensor bracket [A] (x 1)



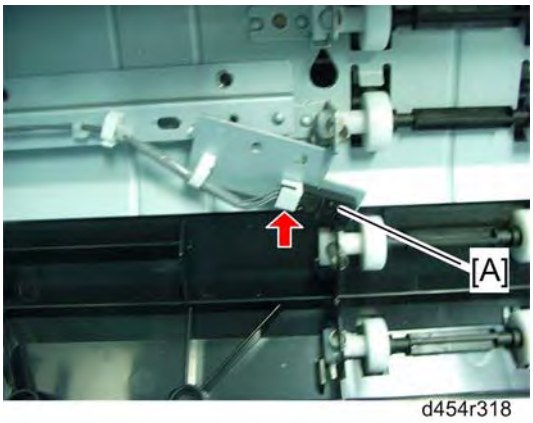
2. Entrance sensor [A] (hooks, x 1)

1.5.11 TOP TRAY EXIT SENSOR

1. Top tray right cover (☛ p.7)



2. Top tray exit sensor bracket [A] (x 1)

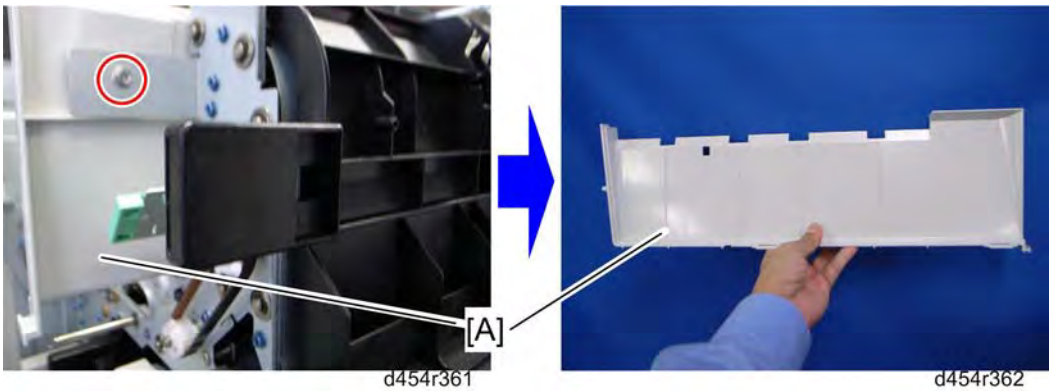


3. Top tray exit sensor [A] (hooks, x 1)

1.6 ELECTRICAL COMPONENTS: MAIN 1

1.6.1 TOP TRAY FULL SENSOR (E)

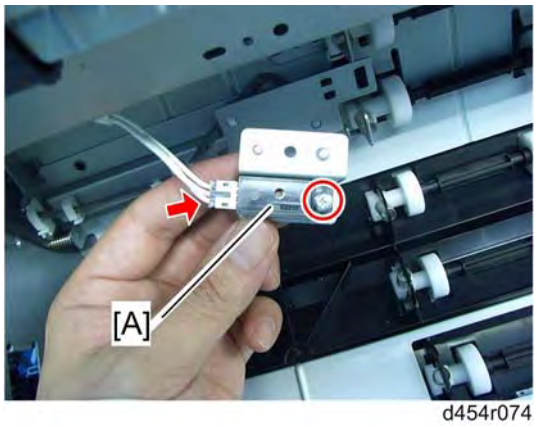
1. Top tray (☛ p.6)



2. Paper exit cover [A] (x 1)



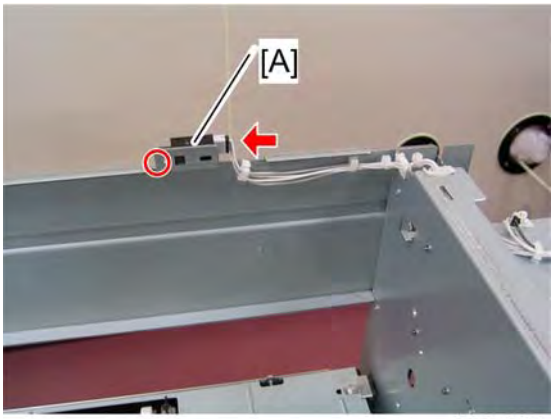
3. Top tray full sensor (E) bracket (x 1)



4. Top tray full sensor (E) [A] (x 1, x 1)

1.6.2 TOP TRAY FULL SENSOR (R)

1. Top tray (☛ p.6)

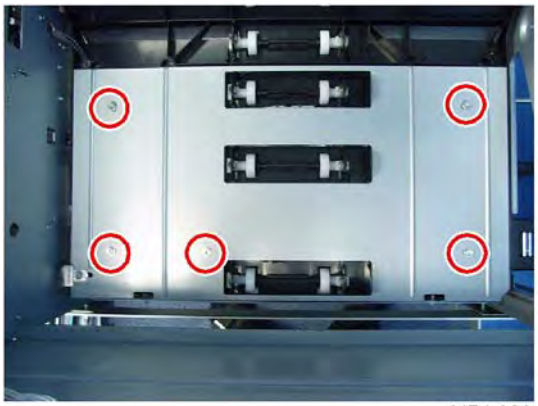


d454r067

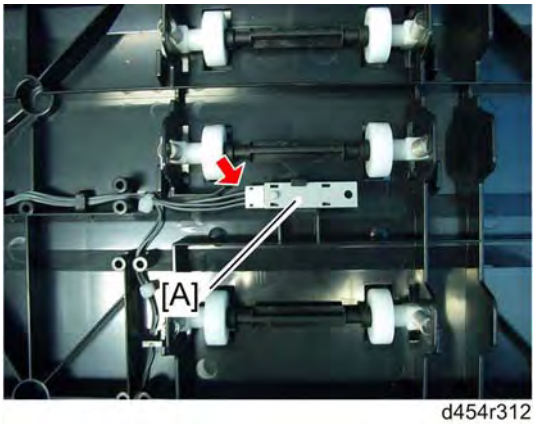
2. Top tray full sensor (R) [A] (🔩 x 1,✋ x 1)

1.6.3 VERTICAL PATH PAPER SENSOR

1. Top tray (☛ p.6)


d454r309

2. Remove the bracket (🔩 x 5)



d454r312

3. Vertical path paper sensor [A] (✋ x 1, hooks)

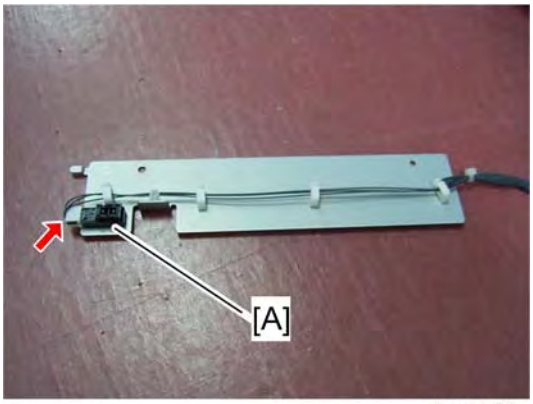
1.6.4 HORIZONTAL PATH PAPER SENSOR

1. Top tray (☛ p.6)



d454r371

2. Remove the bracket (☞ x 2)

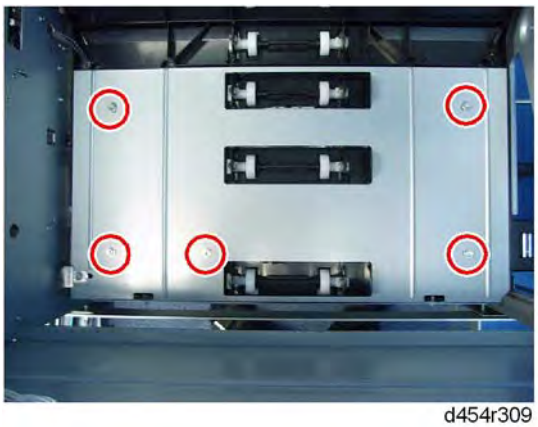


d454r372

3. Horizontal path paper sensor [A] (✌ x 1)

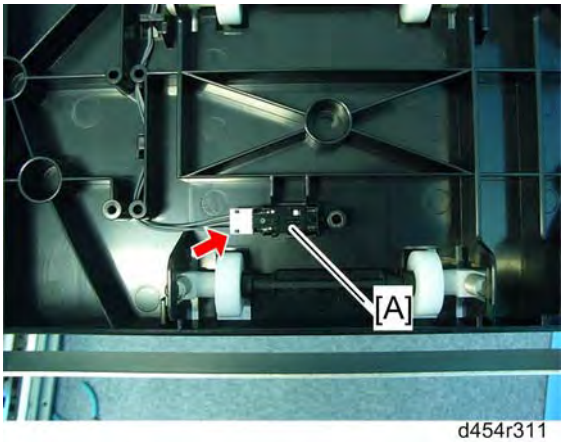
1.6.5 HORIZONTAL PATH EXIT SENSOR

1. Top tray (☛ p.6)



d454r309

2. Remove the bracket (🔩 x 5)

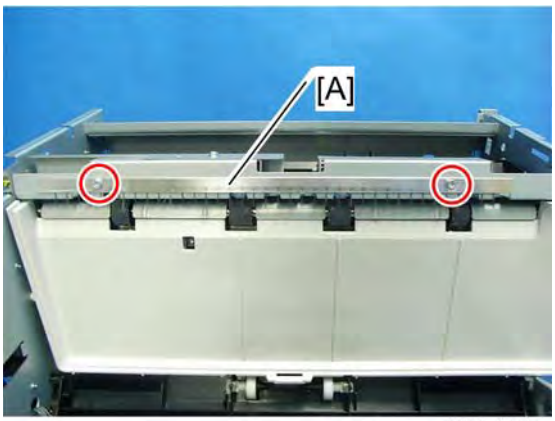


d454r311

3. Horizontal path exit sensor (☞ [A] x 1)

1.6.6 DISCHARGE BRUSH 1

1. Top cover (☛ p.2)

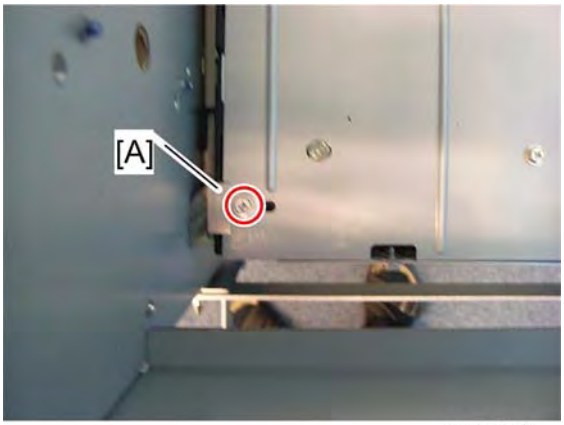


d454r314

2. Discharge brush 1 [A] (🔩 x 2)

1.6.7 DISCHARGE BRUSH 2

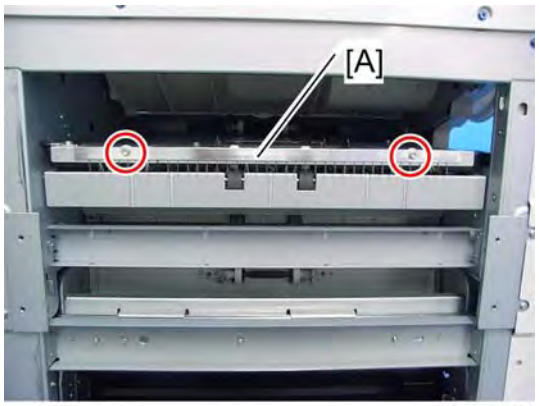
1. Top tray (☛ p.6)



d454r313

2. Discharge brush 2 [A] (🔩 x 1)

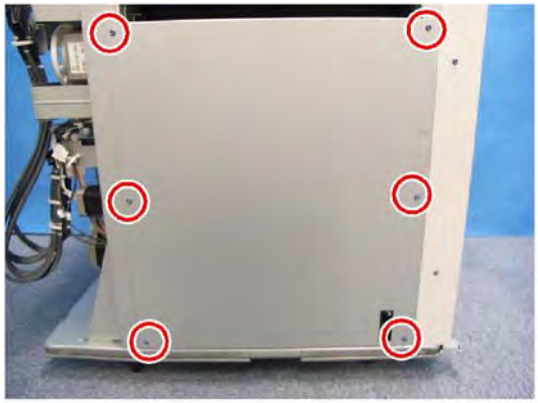
1.6.8 DISCHARGE BRUSH 3



d454r350

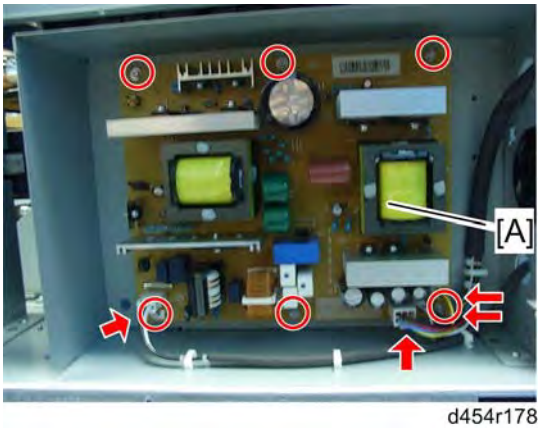
1. Discharge brush 3 [A] (x 2)

1.6.9 PSU



d454r349

1. Left lower bracket (x 6)

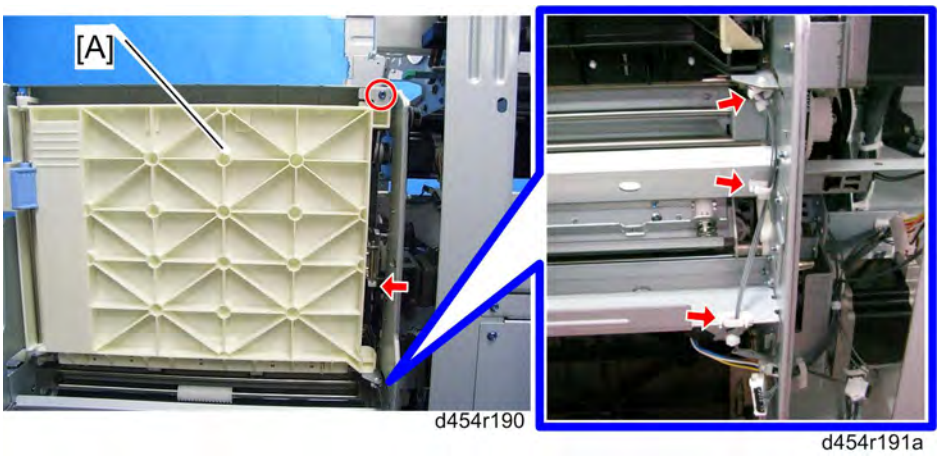


d454r178

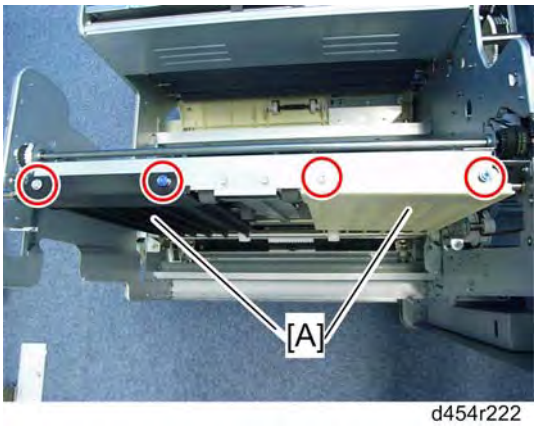
2. PSU [A] (x 6, x 4)

1.6.10 FIRST FOLD UNIT

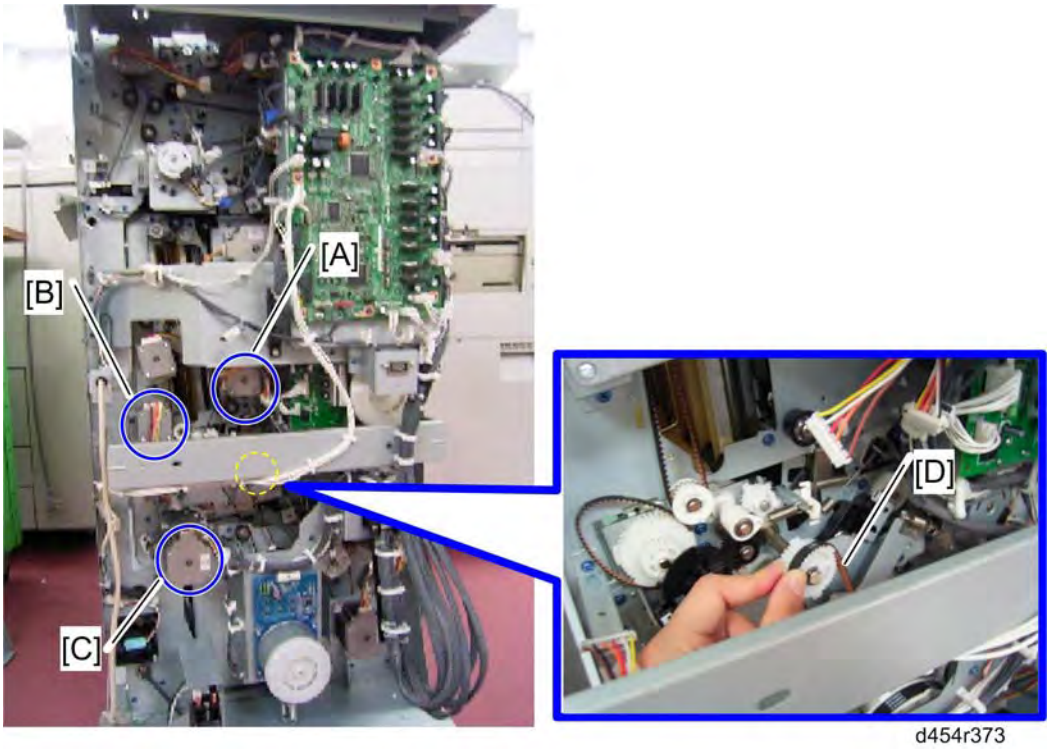
1. 1st stopper unit (☛ p.23)



2. Jam removal door [A] (x 1, x 3, x 1)

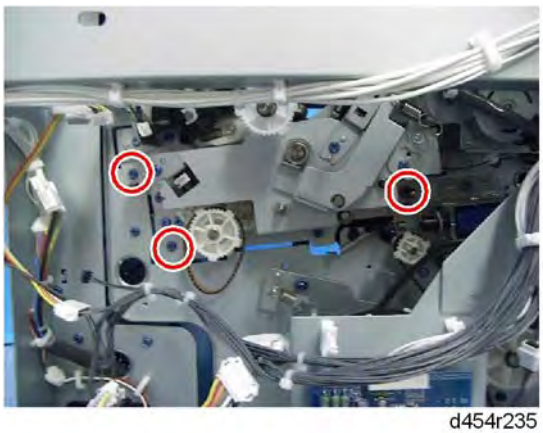


3. Remove two guide plates [A] (each x 2)

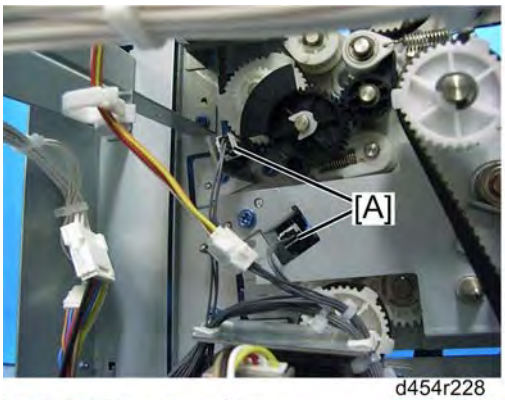


d454r373

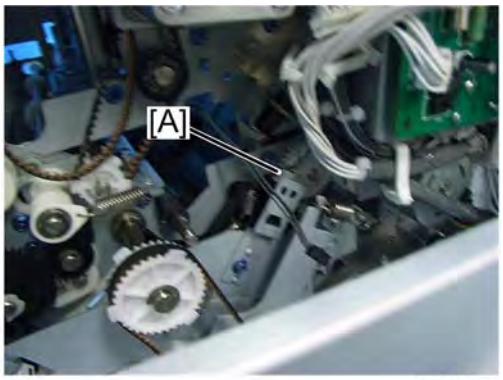
4. Registration roller transport motor bracket [A] (☛ p.16 "Registration Roller Transport Motor")
5. Registration roller release motor bracket [B] (☛ p.15 "Registration Roller Release Motor")
6. Fold plate motor bracket [C] (☛ p.17 "Fold Plate Motor")
7. Timing belt of the 1st plate motor [D]


d454r235

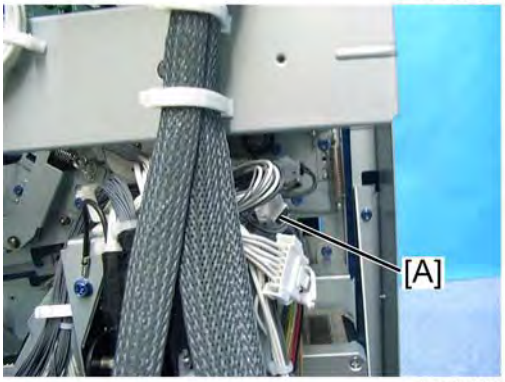
8. Remove three screws on the rear side.



d454r228

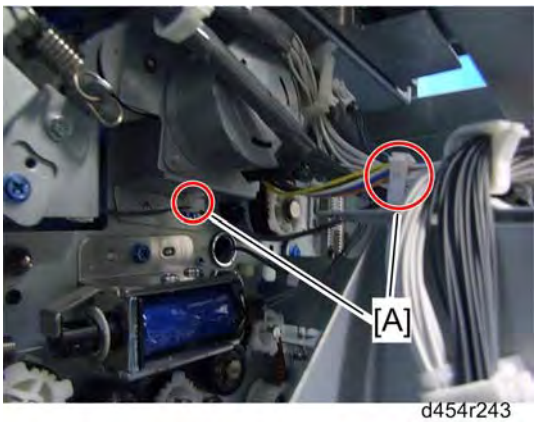


d454r227



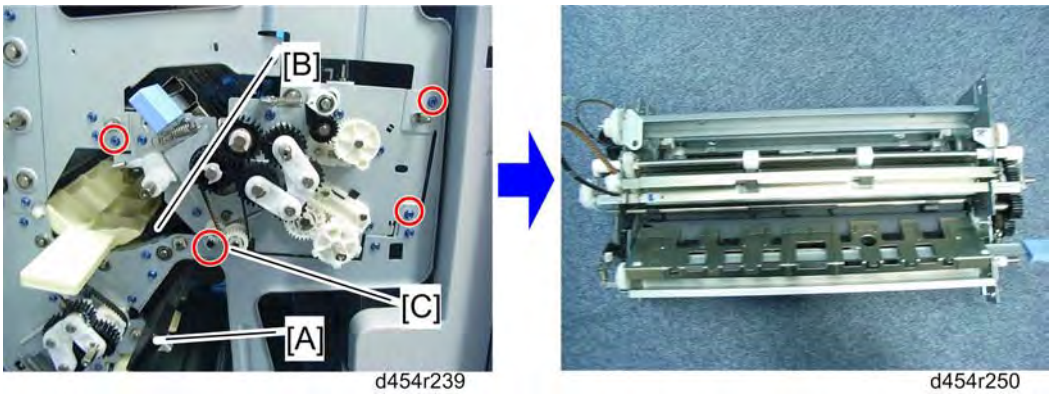
d454r246

9. Disconnect four harnesses [A] on the rear side.



d454r243

10. Release two clamps [A].



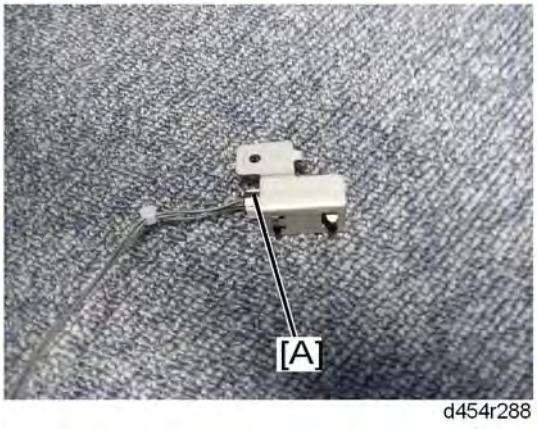
11. Lower guide plate [A], keep the upper guide plate [B] up a little and remove the first fold unit (x 3, snap fit [C] x 1)

1.6.11 DYNAMIC ROLLER HP SENSOR

1. First fold unit (p.53)



2. Dynamic roller HP sensor bracket (x 1)

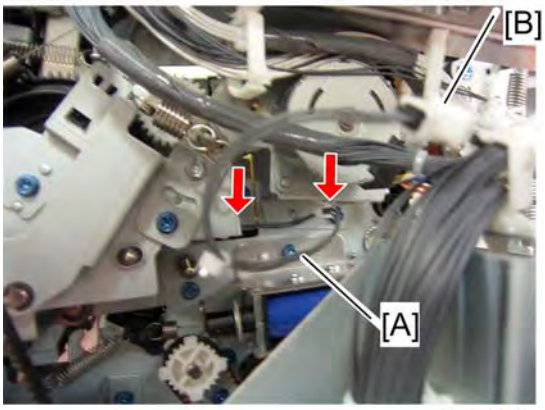


3. Dynamic roller HP sensor [A] (x 1)

1.7 ELECTRICAL COMPONENTS: MAIN 2

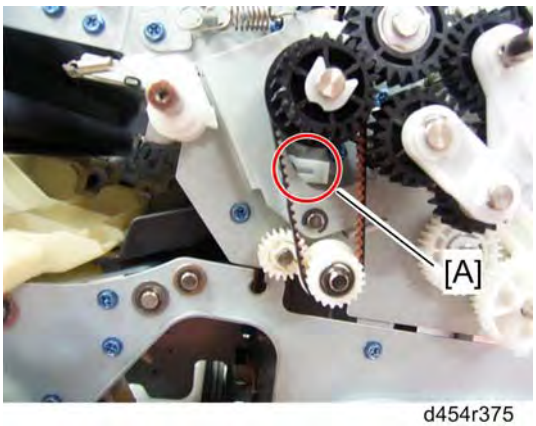
1.7.1 BYPASS ENTRANCE PAPER SENSOR

1. Folding unit cover (☛ p.4)
2. Rear upper cover (☛ p.5)
3. Rear lower cover (☛ p.5)



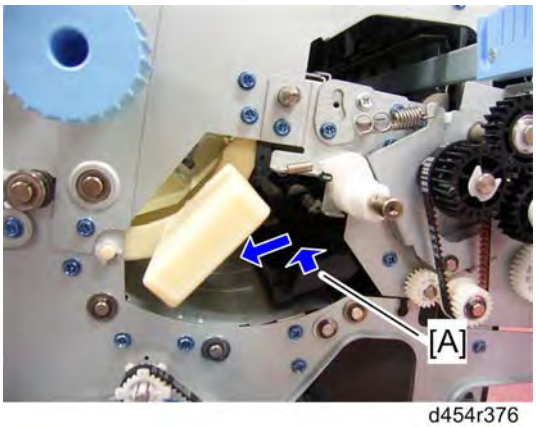
d454r374

4. Disconnect the bypass entrance paper sensor harness [A] from the connector [B] (🖘 x 2).



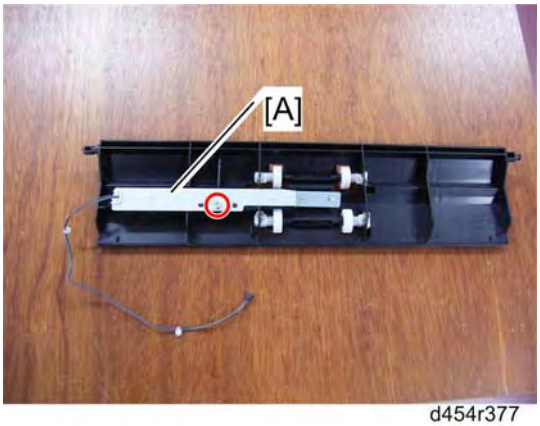
d454r375

5. Remove the clip [A] for the bypass entrance guide plate.



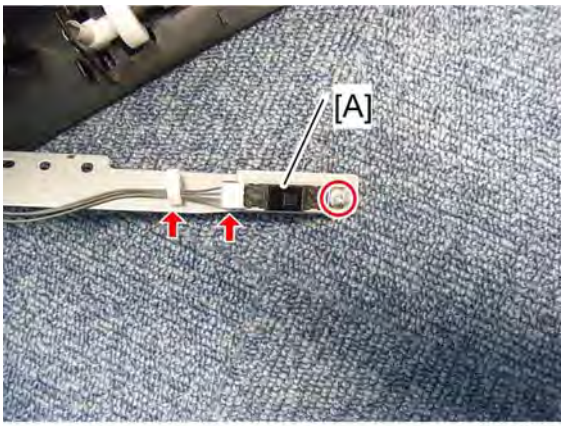
d454r376

6. Push the bypass entrance guide plate [A] to the rear, then slide it to the left, and remove it.



d454r377

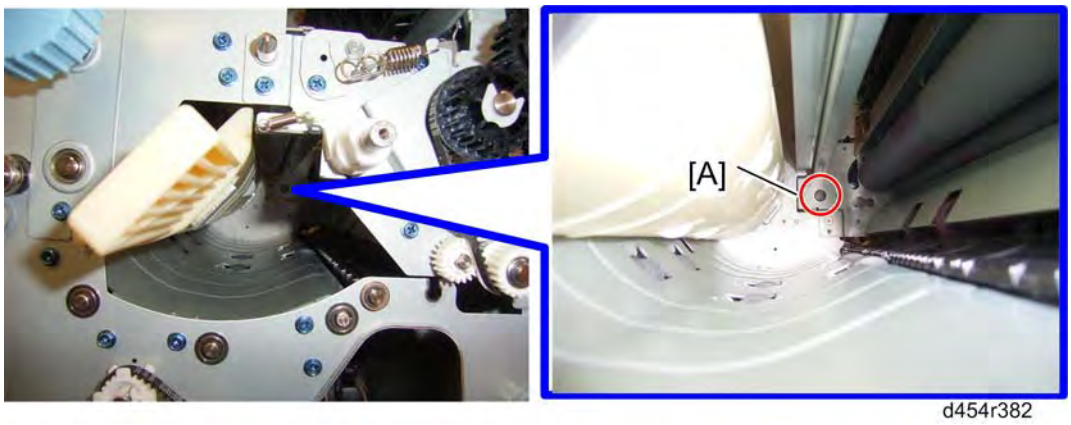
7. Bypass entrance paper sensor bracket [A] (x 1)



d454r286

8. Bypass entrance paper sensor [A] (x 1, x 1, x 1)

Reinstalling the bypass entrance paper sensor

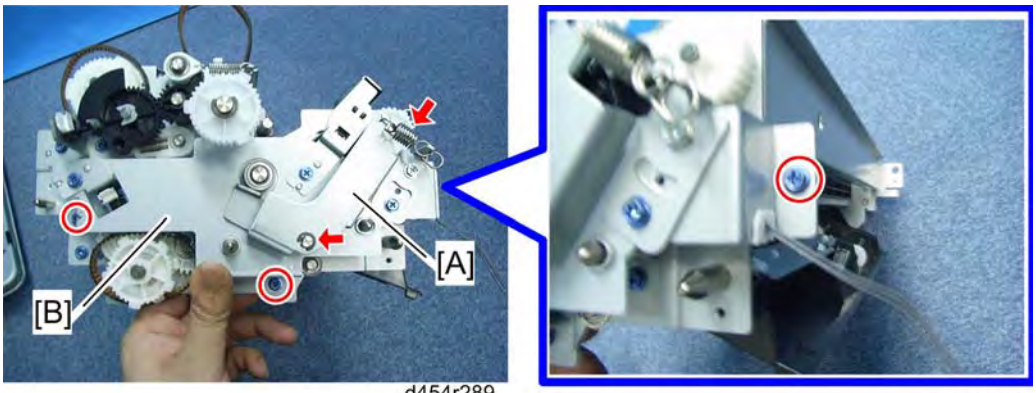


d454r382

Put the harness of the bypass entrance paper sensor through the hole [A] in the rear frame of the drawer.

1.7.2 FIRST/ SECOND/ THIRD FOLD ROLLER

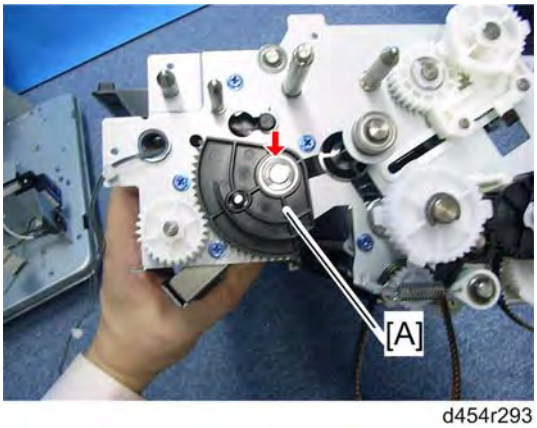
1. First fold unit (☛ p.53)



d454r289

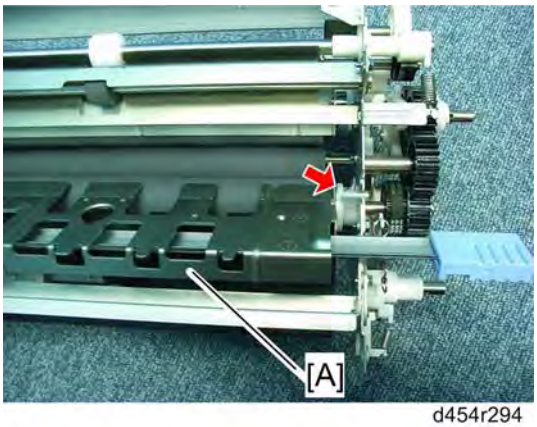
d454r291

2. Tension bracket [A] (spring x 1, ℂ x 1)
3. Rear bracket [B] (🔩 x 3)



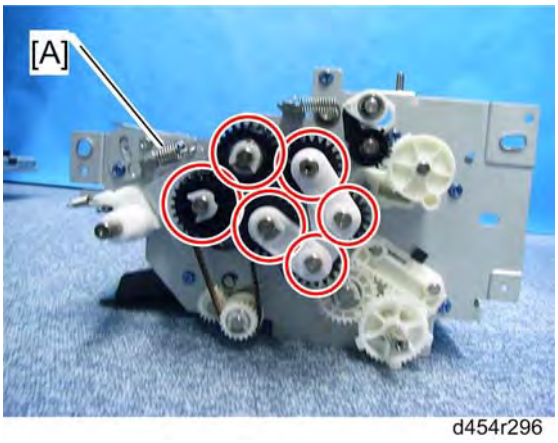
d454r293

4. Remove the gear [A] (ℂ x 1)



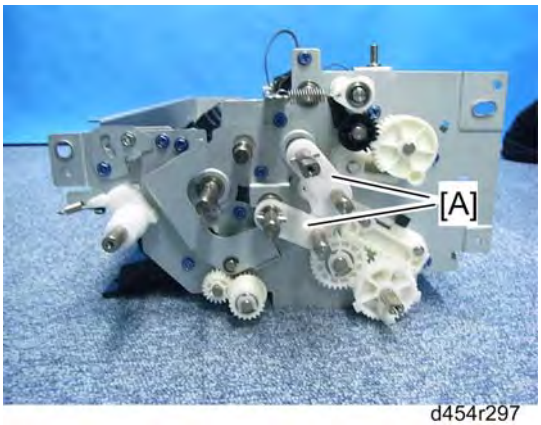
d454r294

5. Guide plate [A] (x 1)



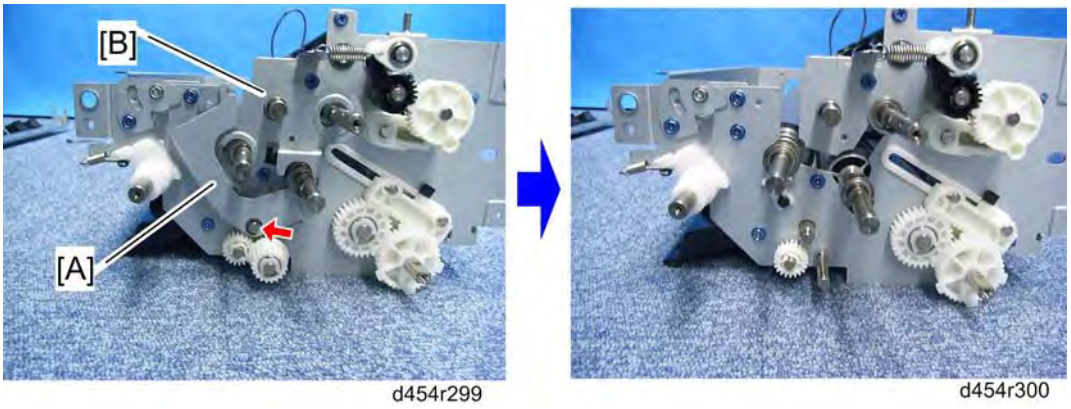
d454r296

6. Remove the spring [A] at the front side.
7. Remove six gears (clip x 1 each)



d454r297

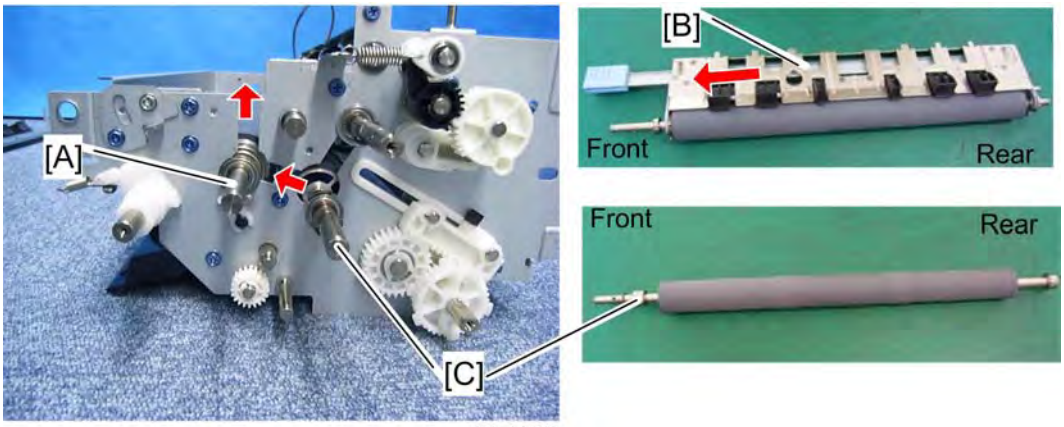
8. Remove the links [A] (clip x 1 each).



d454r299

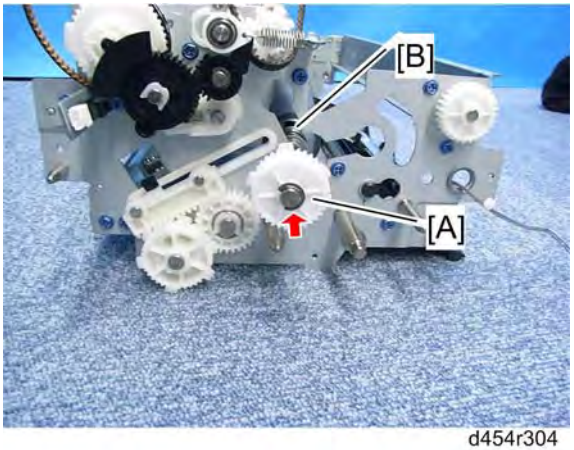
d454r300

9. Tension bracket [A] (ℂ x 1)
10. Remove the front bracket [B] (𝒻 x 2).



d454r300

11. Third fold roller with the guide plate [A]
12. Remove the guide plate [B].
13. Second fold roller [C].

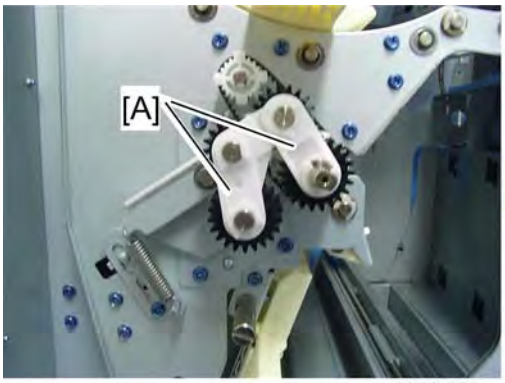


d454r304

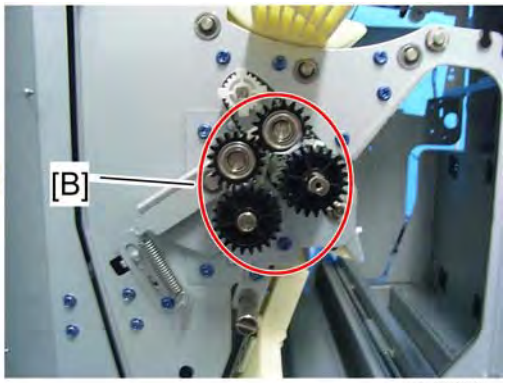
14. Remove the gear [A] (ℂ x 1), and then the first fold roller [B].

1.7.3 FOURTH / FIFTH FOLD ROLLER

1. Rear upper cover (☛ p.5)
2. Rear lower cover (☛ p.5)
3. Drawer stopper (☛ p.37 "3rd Stopper Unit")

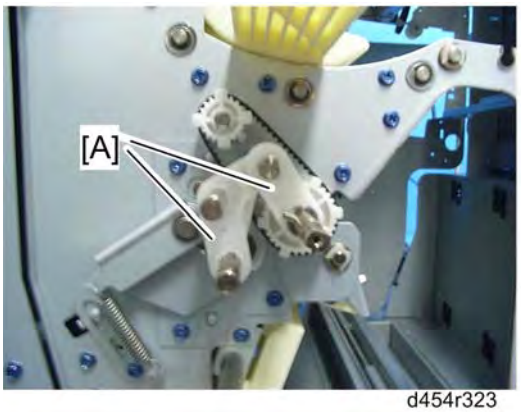


d454r321

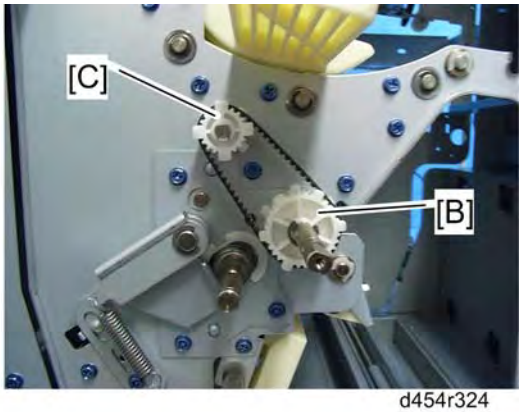


d454r322

4. Remove the links [A] on the front side (clip x 2 each).
5. Remove four gears [B].

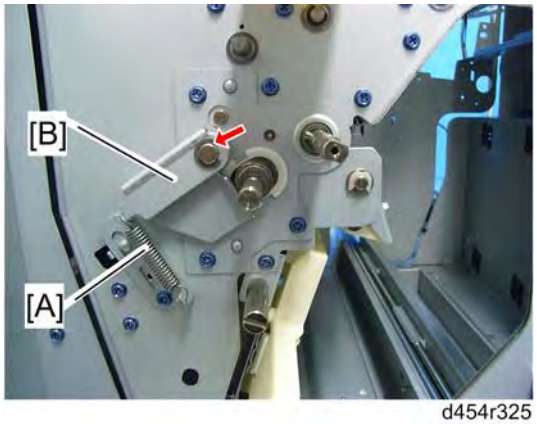


d454r323



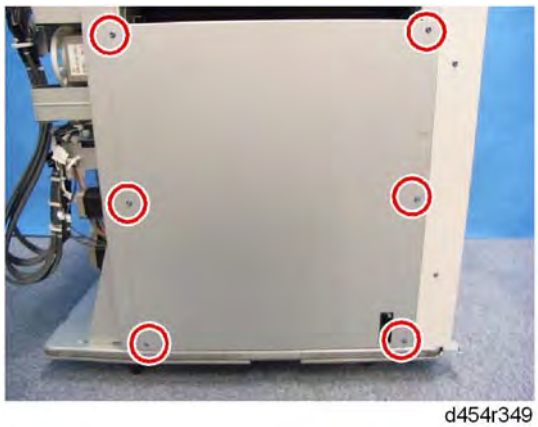
d454r324

6. Remove the links [A] (pin x 1 each)
7. Remove the gear [B] (ℂ x 1), and the gear [C] (timing belt x 1).

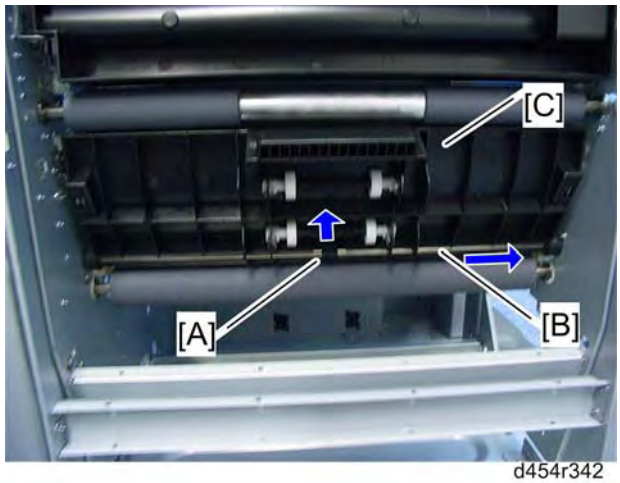


d454r325

8. Remove the spring [A] and the tension bracket [B] (ℂ x 1).

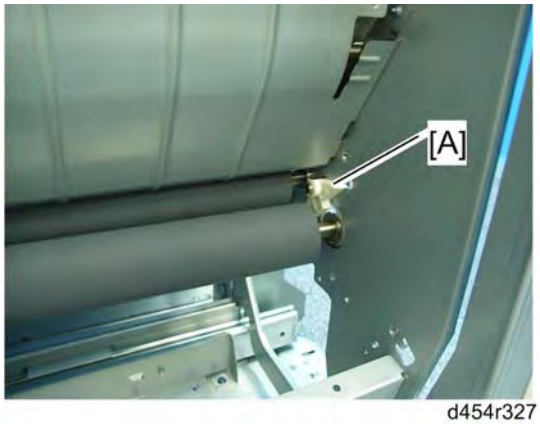

d454r349

9. Left lower bracket (🔩 x 6)

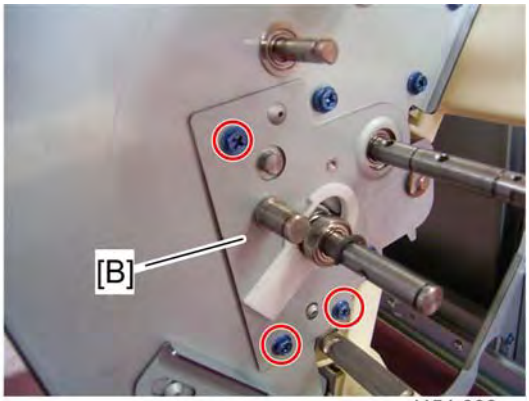


d454r342

10. Lift up the hook [A] to release the guide plate shaft [B].
11. Move the guide plate shaft [B] to the front side (arrow direction), and then remove the guide plate [C].

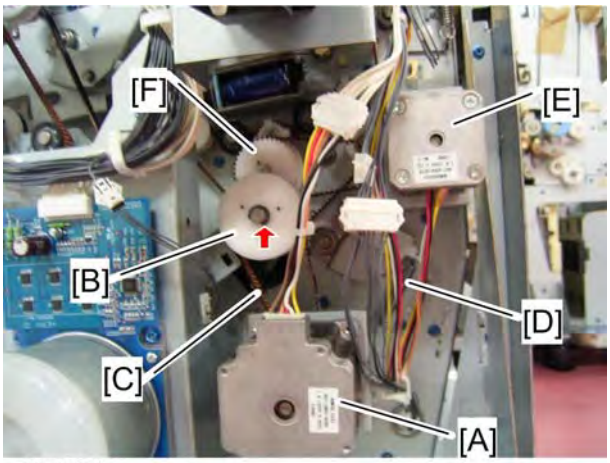


d454r327



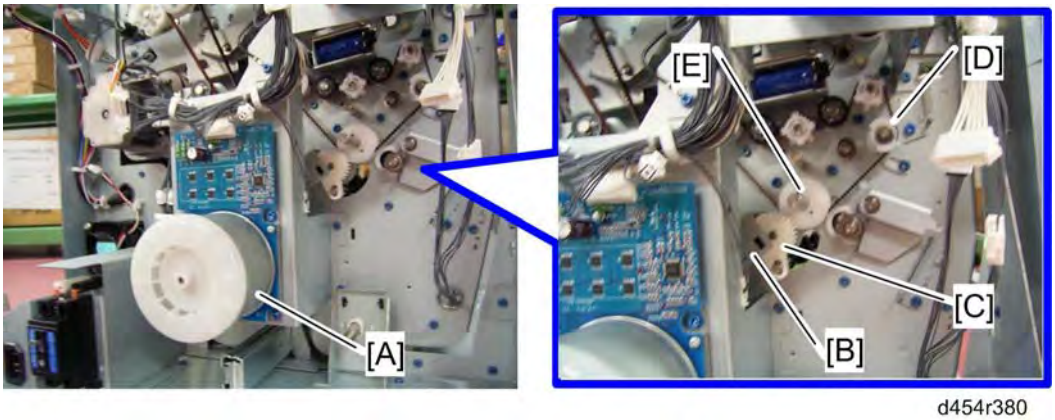
d454r339

12. Remove the cam [A] on the front side.
13. Fold roller fixing front plate [B] (☞ x 3)



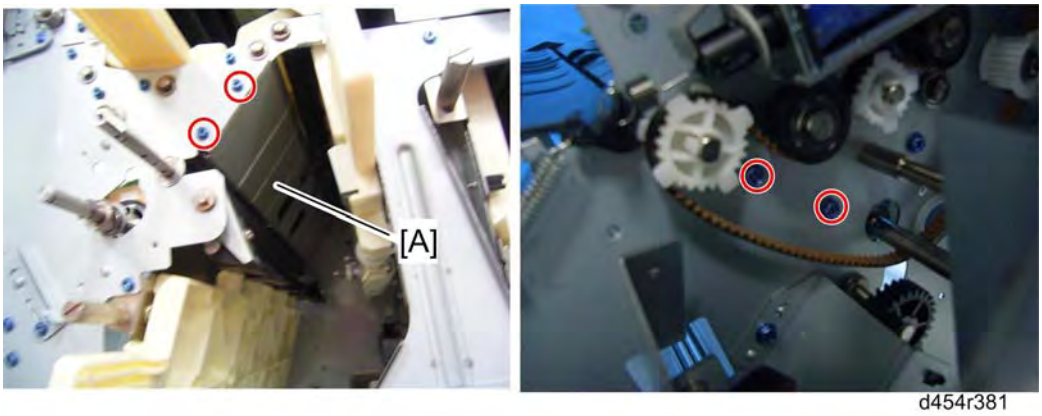
d454r341

14. 2nd fold motor [A] (☛ p.21)
15. 2nd fold pulley gear [B] (ℂ x 1) and idle gear
16. Timing belt [C]
17. Spring [D]
18. FM6 pawl motor [E] (☛ p.20)
19. Pulley gear [F]

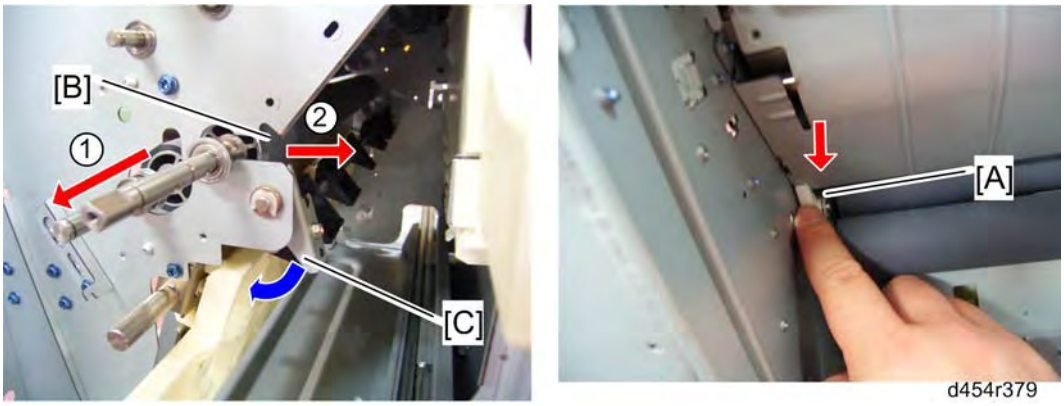


d454r380

20. 1st fold motor [A] (☛ p.19)
21. FM6 pawl HP sensor bracket [B]
22. FM6 pawl cam gear [C]
23. Release the tension bracket [D], and then remove the transmission pulley gear [E] (pin x 1)



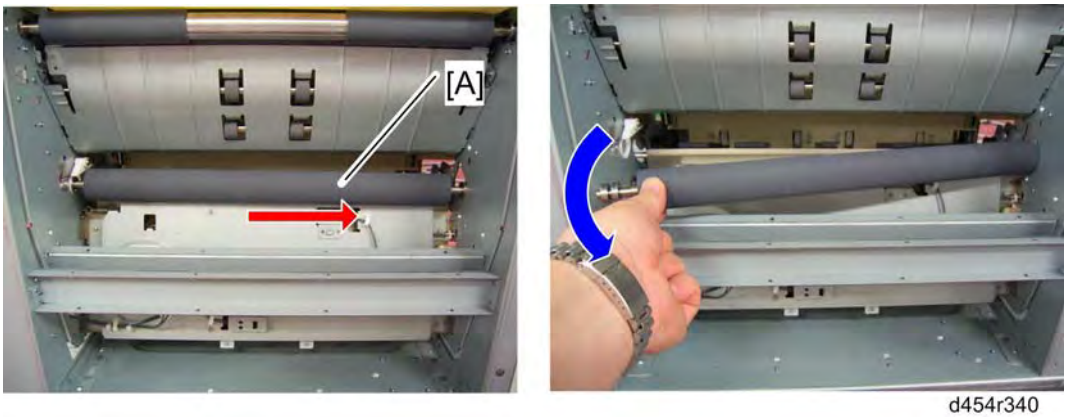
24. Remove the entrance guide plate [A] at the 2nd fold unit (🔩 x 4).



25. Hold the fourth fold roller cam [A] at the rear of the drawer unit.
26. Pull the fourth fold roller [B] to the front side ①.
27. Keep the FM6 pawl [C] open, and then remove the fourth fold roller ②.

Note

- Hold the holder [A] when pulling the fourth fold roller [B] in the ① direction.



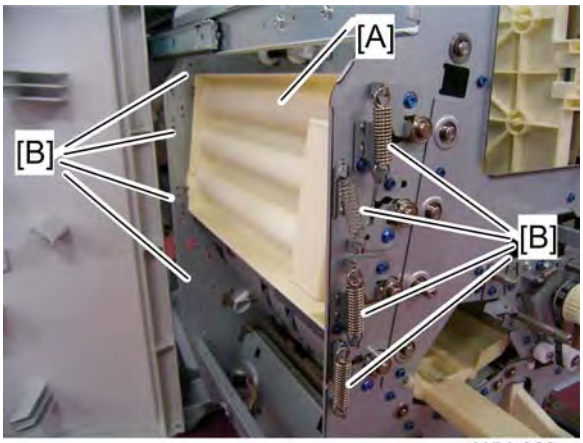
d454r340

28. Remove the fifth fold roller [A].

1.7.4 CREASE ROLLERS

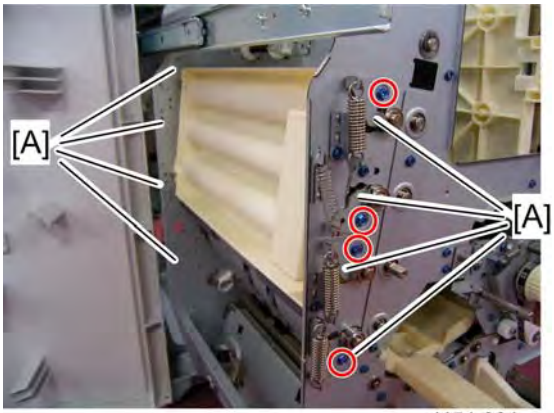
Crease Rollers: Idle Rollers

1. Folding Unit Cover (☛ p.4)
2. Drawer stopper (☛ p.37 "3rd Stopper Unit")
3. Pull out the folding unit drawer fully (☛ p.7).



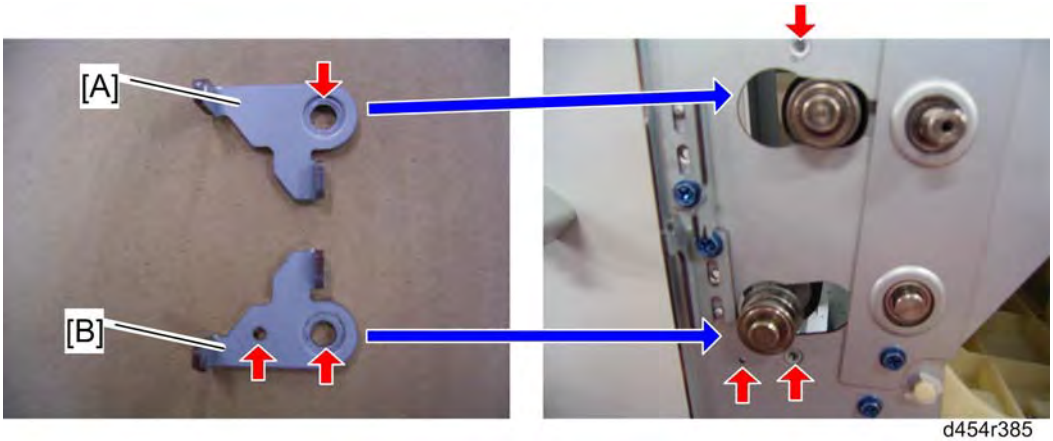
d454r383

4. Crease jam removal door [A]
5. Tension springs [B] (front: 4, rear: 4)
   - The lowest spring should be a black one when reinstalling the springs.



d454r384

6. Tension brackets [A] (🔩 x 1 each/ front: 4, rear: 4)



d454r385

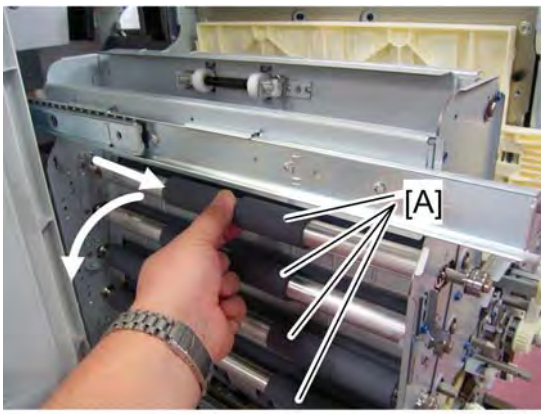
There are two types of tension brackets at the crease roller area. The difference between these brackets is the number of screw holes ([A]: one hole, [B]: two holes).

- Attach a bracket [A] with one hole to the crease roller frame with one hole.
- Attach a bracket [B] with two holes to the crease roller frame with two holes.



d454r386

7. Magnet attachment bracket [A] (🔩 x 1)

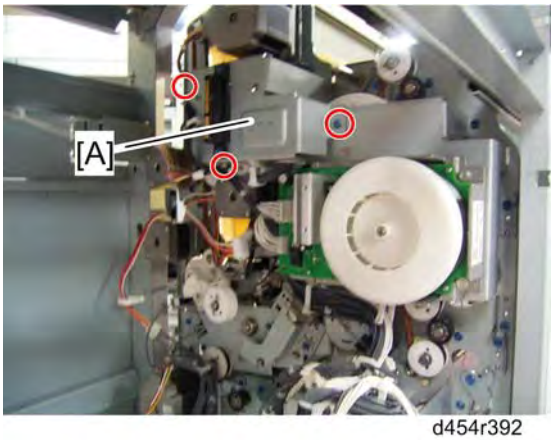


d454r387

8. Crease rollers: idle rollers [A]

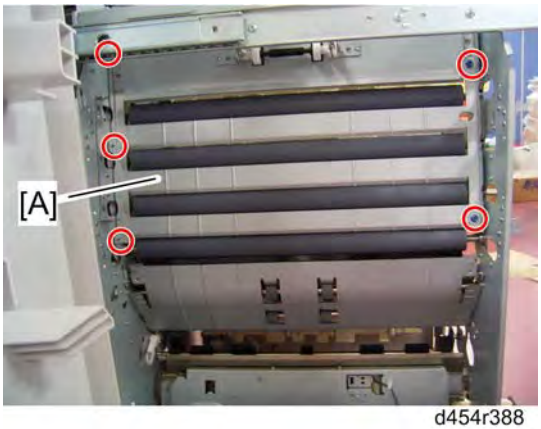
Crease Rollers: Drive Rollers

1. Crease Rollers: Idle Rollers (described above)
2. Rear upper cover (☛ p.5)
3. Rear lower cover (☛ p.5)
4. Main board bracket (☛ p.10 "Top Tray Transport Motor")
5. Rear upper stay (☛ p.12 "Dynamic Roller Lift Motor")



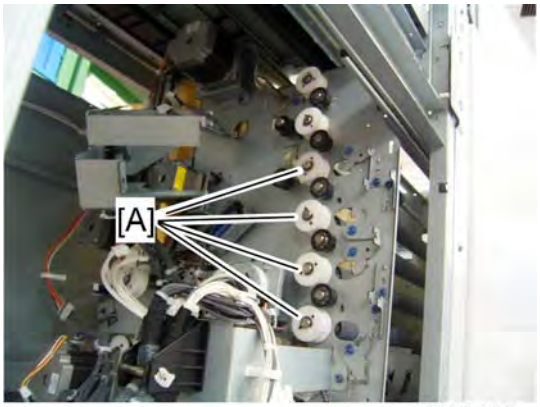
d454r392

6. Drawer connector bracket [A] (🔩 x 3)
7. Crease motor (☛ p.13)



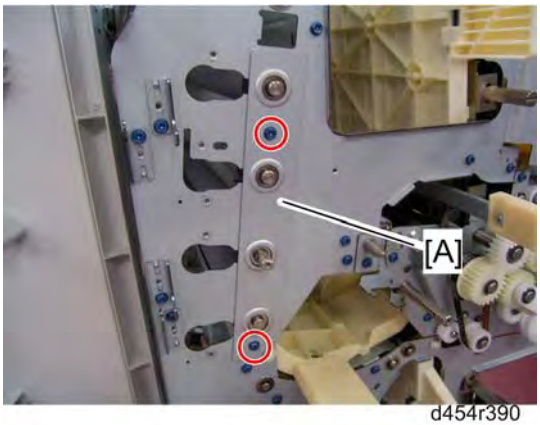
d454r388

8. Crease path guide plate [A] (🔩 x 5)



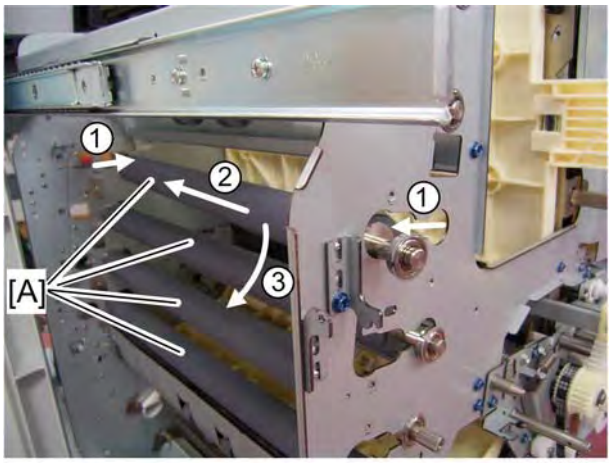
d454r389

9. Crease roller pulley gears [A] (ℂ x 1 each)



d454r390

10. Crease roller fixing plate [A] (🔩 x 2)



d454r391

11. Crease rollers: drive rollers [A]

1.8 FOLD ADJUSTMENTS

1.8.1 FINE FOLD ADJUSTMENT

Before You Begin

The fold positions can be adjusted in the User Tools (Operators, Skilled Operators) and the engine SP mode.

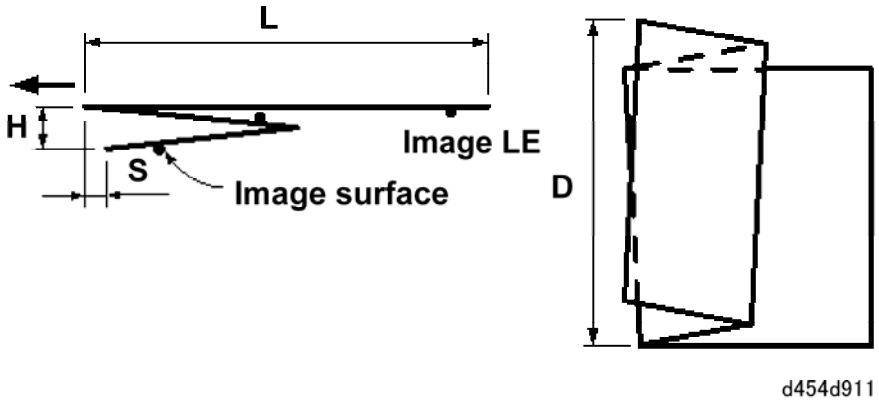
Mode	Fold	User Tools*[1]	SP
FM1	1st	0501 Adjust Z-fold Position 1	6750
	2nd	0502 Adjust Z-fold Position 2	6751
FM2	1st	0503 Adjust Half Fold Position	6752
FM3	1st	0504 Adjust Letter Fold-out Position 1	6753
	2nd	0505 Adjust Letter Fold-out Position 2	6754
FM4	1st	0506 Adjust Letter Fold-in Position 1	6755
	2nd	0507 Adjust Letter Fold-in Position 2	6756
FM5	1st	0508 Adjust Double Parallel Fold Position 1	6757
	2nd	0509 Adjust Double Parallel Fold Position 2	6758
FM6	1st	0510 Adjust Gate Fold Position 1	6759
	2nd	0511 Adjust Gate Fold Position 2	6760
	3rd	0512 Adjust Gate Fold Position 3	6761

*[1]: These numbers are the same for Operators and Skilled Operators.

FM1 Z-Folding

User Tool Adjustment (Operator, Skilled Operator)

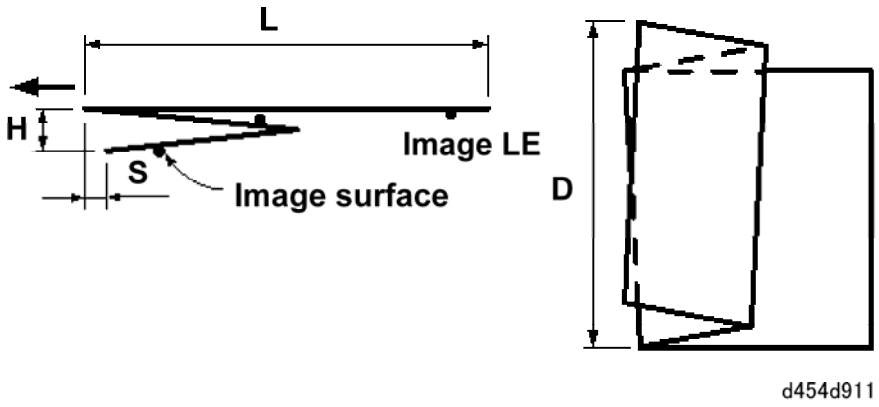
The following standard adjustment of "S" can be done by the operator or skilled operator in the User Tools mode. Only "S" can be adjusted by the operator, as shown in the table below.



Size	Setting	Default	Range
A3 SEF	S	2 mm	2 to 25 mm
B4 SEF	S	2 mm	2 to 17 mm
A4 SEF	S	2 mm	2 to 17 mm
DLT	S	2 mm	2 to 20 mm
LG	S	2 mm	2 to 17 mm
LT SEF	S	2 mm	2 to 17 mm
Other	S	2 mm	2 to 17 mm
Pitch Adj.	**1 mm**		

Engine SP Adjustment

The following fine adjustment of "S" and "L" can be done by the customer engineer in the SP mode. "L" can be adjusted only for the paper sizes listed in the table below.

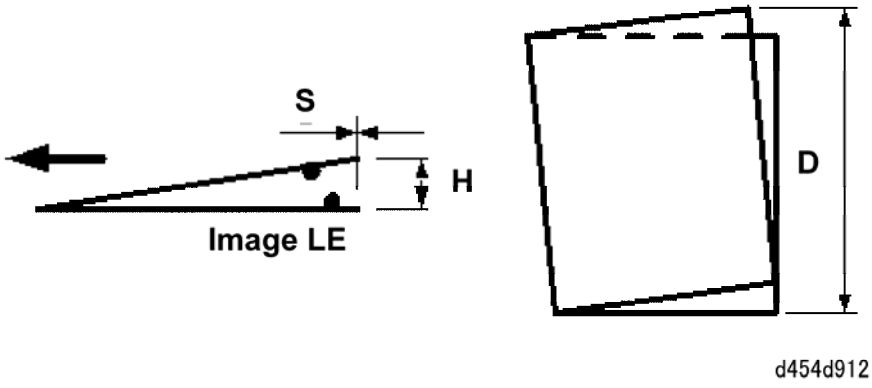


Size	Setting	Default	Range	Setting	Default	Range
A3 SEF	S	0 mm	±4 mm	L	0 mm	±4 mm
B4 SEF	S	0 mm	±4 mm	L	0 mm	±4 mm
A4 SEF	S	0 mm	±4 mm	L	0 mm	±4 mm
DLT	S	0 mm	±4 mm	L	0 mm	±4 mm
LG	S	0 mm	±4 mm	L	0 mm	±4 mm
LT SEF	S	0 mm	±4 mm	L	0 mm	±4 mm
12"x18"	S	0 mm	±4 mm	L	0 mm	±4 mm
8-Kai	S	0 mm	±4 mm	L	0 mm	±4 mm
Other	S	0 mm	±4 mm	L	0 mm	±4 mm
Pitch Adj.	**0.2 mm**					

FM2 Half Fold

User Tool Adjustment (Operator, Skilled Operator)

The following standard adjustment of "S" can be done by the operator or skilled operator in the User Tools mode. Only "S" can be adjusted by the operator, as shown in the table below.



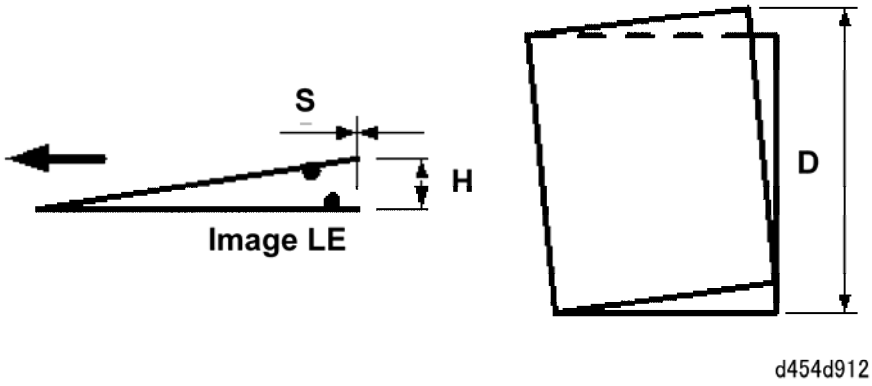
Size	Setting	Default	Range
A3 SEF	S	0 mm	±10 mm
B4 SEF	S	0 mm	±10 mm
A4 SEF	S	0 mm	±10 mm
DLT	S	0 mm	±10 mm
LG	S	0 mm	±10 mm
LT SEF	S	0 mm	±10 mm
Other	S	0 mm	±10 mm
Pitch Adj.	**±1 mm**		

Notes

- No folding adjustment can be done for 13"x19.2", 13"x19", 12.6"x19.2"

Engine SP Adjustment

The following fine adjustment of "S" can be done by the customer engineer in the SP mode.



Size	Setting	Default	Range
13"x19.2"	S	0 mm	±4 mm
13"x19"	S	0 mm	±4 mm
12.6"x19.2"	S	0 mm	±4 mm
12.6"x18.5"	S	0 mm	±4 mm
13"x18"	S	0 mm	±4 mm
SR A3 (320x450 mm)	S	0 mm	±4 mm
SR A4 (225x320 mm)	S	0 mm	±4 mm
226x310 mm	S	0 mm	±4 mm
310x432 mm	S	0 mm	±4 mm
A3 SEF	S	0 mm	±4 mm
B4 SEF	S	0 mm	±4 mm
A4 SEF	S	0 mm	±4 mm
B5 SEF	S	0 mm	±4 mm
DLT	S	0 mm	±4 mm
LG	S	0 mm	±4 mm

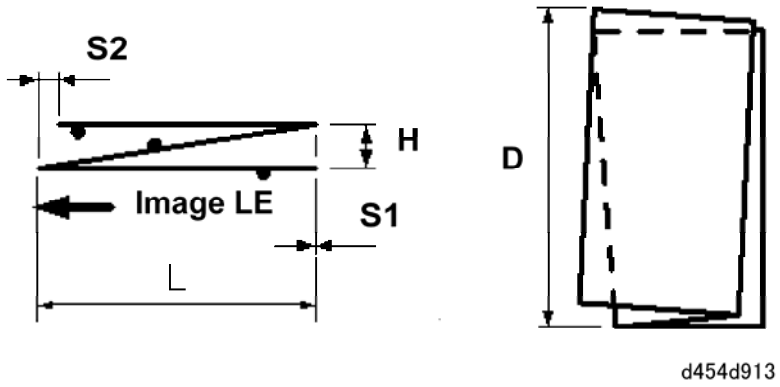
Replacement and Adjustment

Size	Setting	Default	Range
LT SEF	S	0 mm	±4 mm
12"x18"	S	0 mm	±4 mm
8-Kai	S	0 mm	±4 mm
Other	S	0 mm	±4 mm
Pitch Adj.	0.2 mm		

FM3 Letter Fold-out

User Tool Adjustment (Operator, Skilled Operator)

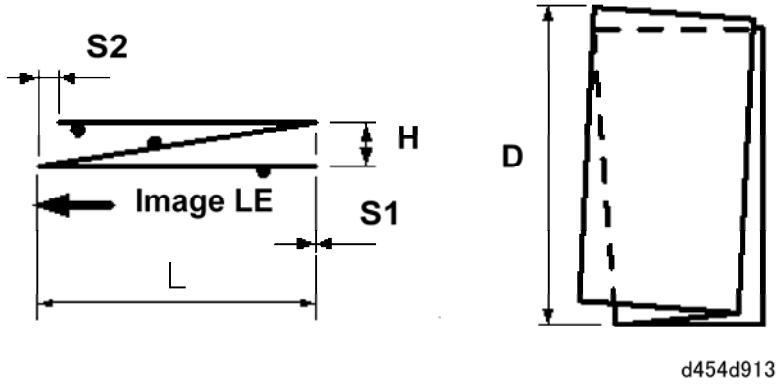
The following standard adjustment of "S1" can be done by the operator or skilled operator in the User Tools mode. Only "S1" can be adjusted by the operator, as shown in the table below.



Size	Setting	Default	Range	Setting	Default	Range
A3 SEF	S1	0 mm	±10 mm	---	---	---
B4 SEF	S1	0 mm	±10 mm	---	---	---
A4 SEF	S1	0 mm	±10 mm	---	---	---
DLT	S1	0 mm	±10 mm	---	---	---
LG	S1	0 mm	±10 mm	---	---	---
LT SEF	S1	0 mm	±10 mm	---	---	---
Other	S1	0 mm	±10 mm	---	---	---
Pitch Adj.	**1 mm**					

Engine SP Adjustment

The following fine adjustment of "S2" and "L" can be done by the customer engineer in the SP mode.

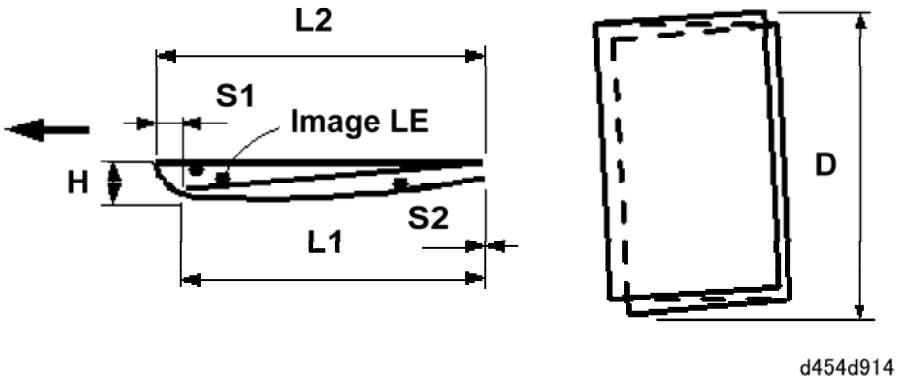


Size	Setting	Default	Range	Setting	Default	Range
A3 SEF	L	0 mm	±4 mm	S2	0 mm	±4 mm
B4 SEF	L	0 mm	±4 mm	S2	0 mm	±4 mm
A4 SEF	L	0 mm	±4 mm	S2	0 mm	±4 mm
B5 SEF	L	0 mm	±3 mm	S2	0 mm	±3 mm
DLT	L	0 mm	±4 mm	S2	0 mm	±4 mm
LG	L	0 mm	±4 mm	S2	0 mm	±4 mm
LT SEF	L	0 mm	±4 mm	S2	0 mm	±4 mm
12"x18"	L	0 mm	±4 mm	S2	0 mm	±4 mm
8-Kai	L	0 mm	±4 mm	S2	0 mm	±4 mm
Other	L	0 mm	±4 mm	S2	0 mm	±4 mm
Pitch Adj.	0.2 mm					

FM4 Letter Fold-in

User Tool Adjustment (Operator, Skilled Operator)

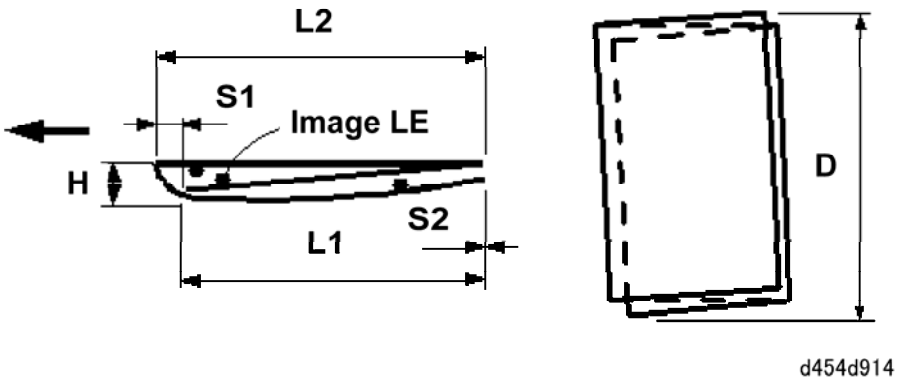
The following standard adjustment of "S1" can be done by the operator or skilled operator in the User Tools mode. Only "S1" can be adjusted by the operator as shown in the table below.



Size	Setting	Default	Range	Setting	Default	Range
A3 SEF	S1	2 mm	2 to 7 mm	---	---	---
B4 SEF	S1	2 mm	2 to 7 mm	---	---	---
A4 SEF	S1	2 mm	2 to 7 mm	---	---	---
DLT	S1	2 mm	2 to 7 mm	---	---	---
LG	S1	2 mm	2 to 7 mm	---	---	---
LT SEF	S1	2 mm	2 to 7 mm	---	---	---
Other	S1	2 mm	2 to 7 mm	---	---	---
Pitch Adj.	1 mm					

Engine SP Adjustment

The following fine adjustment of "L1" and "L2" can be done by the customer engineer in the SP mode.

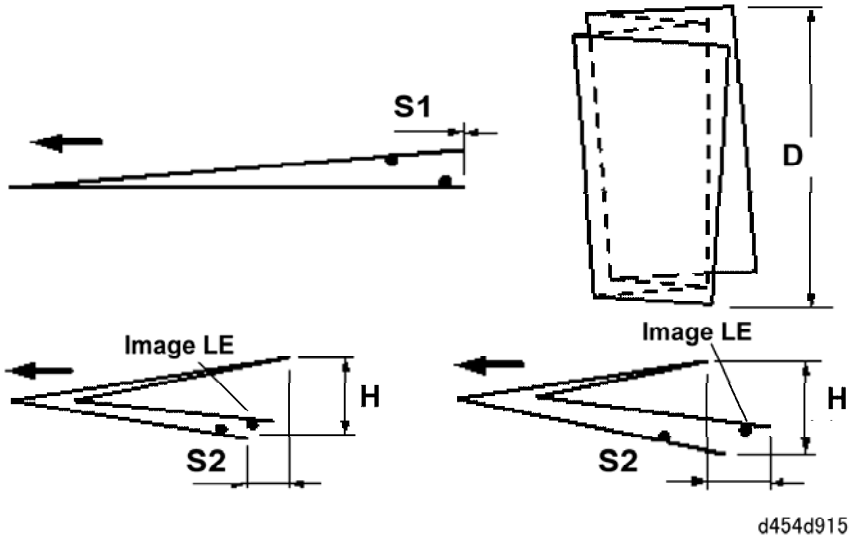


Size	Setting	Default	Range	Setting	Default	Range
A3 SEF	L1	0 mm	±4 mm	S1	0 mm	±4 mm
B4 SEF	L1	0 mm	±4 mm	S1	0 mm	±4 mm
A4 SEF	L1	0 mm	±4 mm	S1	0 mm	±4 mm
B5 SEF	L1	0 mm	±4 mm	S1	0 mm	±4 mm
DLT	L1	0 mm	±4 mm	S1	0 mm	±4 mm
LG	L1	0 mm	±4 mm	S1	0 mm	±4 mm
LT SEF	L1	0 mm	±4 mm	S1	0 mm	±4 mm
12"x18"	L1	0 mm	±4 mm	S1	0 mm	±4 mm
8-Kai	L1	0 mm	±4 mm	S1	0 mm	±4 mm
Other	L1	0 mm	±4 mm	S1	0 mm	±4 mm
Pitch Adj.	0.2 mm					

FM5 Double Parallel Fold

User Tool Adjustment (Operator, Skilled Operator)

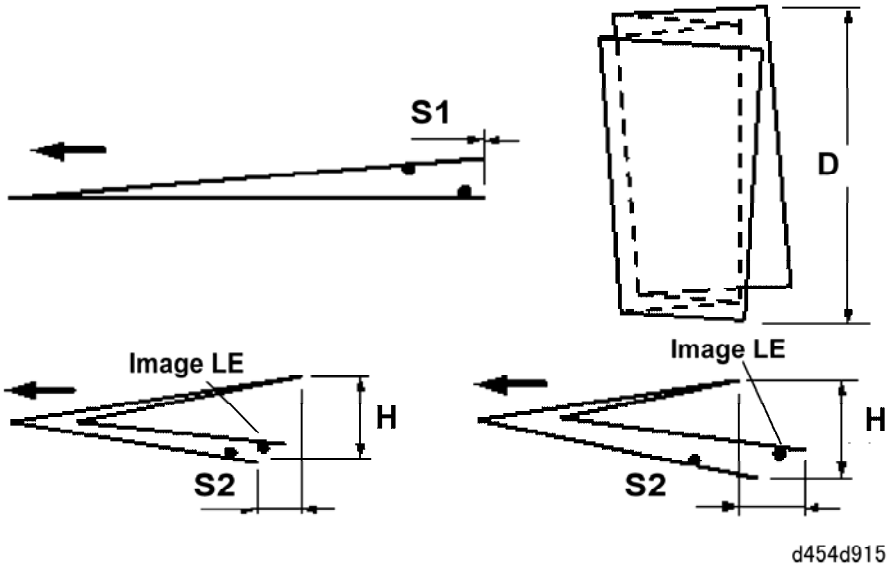
The following standard adjustment of "S1" can be done by the operator or skilled operator in the User Tools mode. Only "S1" can be adjusted by the operator as shown in the table below.



Size	Setting	Default	Range
A3 SEF	S1	0 mm	±10 mm
B4 SEF	S1	0 mm	±10 mm
A4 SEF	S1	0 mm	±10 mm
DLT	S1	0 mm	±10 mm
LG	S1	0 mm	±10 mm
LT SEF	S1	0 mm	±10 mm
Other	S1	0 mm	±10 mm
Pitch Adj.	**1 mm**		

Engine SP Adjustment

The following fine adjustment of "S1" and "S2" can be done by the customer engineer in the SP mode.

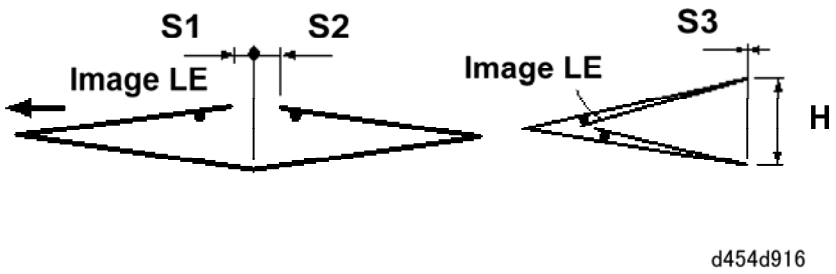


Size	Setting	Default	Range	Setting	Default	Range
A3 SEF	S1	0 mm	±4 mm	S2	0 mm	±4 mm
B4 SEF	S1	0 mm	±4 mm	S2	0 mm	±4 mm
A4 SEF	S1	0 mm	±4 mm	S2	0 mm	±4 mm
B5 SEF	S1	0 mm	±4 mm	S2	0 mm	±4 mm
DLT	S1	0 mm	±4 mm	S2	0 mm	±4 mm
LG	S1	0 mm	±4 mm	S2	0 mm	±4 mm
LT SEF	S1	0 mm	±4 mm	S2	0 mm	±4 mm
12"x18"	S1	0 mm	±4 mm	S2	0 mm	±4 mm
8-Kai	S1	0 mm	±4 mm	S2	0 mm	±4 mm
Other	S1	0 mm	±4 mm	S2	0 mm	±4 mm
Pitch Adj.	**0.2 mm**					

FM6 Gate Fold

User Tool Adjustment (Operator, Skilled Operator)

The following standard adjustment of "S1" and "S2" can be done by the operator or skilled operator in the User Tools mode.



Size	Setting	Default	Range
A3 SEF	S1, S2	2 mm	2 to 12 mm
B4 SEF	S1, S2	2 mm	2 to 12 mm
A4 SEF	S1, S2	2 mm	2 to 12 mm
DLT	S1, S2	2 mm	2 to 12 mm
LG	S1, S2	2 mm	2 to 12 mm
LT SEF	S1, S2	2 mm	2 to 12 mm
Other	S1, S2	2 mm	2 to 12 mm
Pitch Adj.	**1 mm**		

Engine SP Adjustment

The following fine adjustment of "S1", "S2", and "S3" can be done by the customer engineer in the SP mode.



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Size	Setting	Default	Range
A3 SEF	S1	0 mm	±4 mm
B4 SEF	S1	0 mm	±4 mm
A4 SEF	S1	0 mm	±4 mm
B5 SEF	S1	0 mm	±4 mm
DLT	S1	0 mm	±4 mm
LG	S1	0 mm	±4 mm
LT SEF	S1	0 mm	±4 mm
8-Kai	S1	0 mm	±4 mm
Other	S1	0 mm	±4 mm
Pitch Adj.	0.2 mm		

Size	Setting	Default	Range
A3 SEF	S2	0 mm	±4 mm
B4 SEF	S2	0 mm	±4 mm
A4 SEF	S2	0 mm	±4 mm
B5 SEF	S2	0 mm	±4 mm
DLT	S2	0 mm	±4 mm

Size	Setting	Default	Range
LG	S2	0 mm	±4 mm
LT SEF	S2	0 mm	±4 mm
8-Kai	S2	0 mm	±4 mm
Other	S1	0 mm	±4 mm
Pitch Adj.	0.2 mm		

Size	Setting	Default	Range
A3 SEF	S3	0 mm	±4 mm
B4 SEF	S3	0 mm	±4 mm
A4 SEF	S3	0 mm	±4 mm
B5 SEF	S3	0 mm	±4 mm
DLT	S3	0 mm	±4 mm
LG	S3	0 mm	±4 mm
LT SEF	S3	0 mm	±4 mm
12"x18"	S3	0 mm	±4 mm
8-Kai	S3	0 mm	±4 mm
Other	S1	0 mm	±4 mm
Pitch Adj.	0.2 mm		

1.9 SKEW ADJUSTMENT

1.9.1 MANUAL ADJUSTMENTS BY SERVICE TECHNICIAN

Before You Begin

These adjustments can be done by the service technician adjusting the set and adjustment screws on the multi-folder unit.

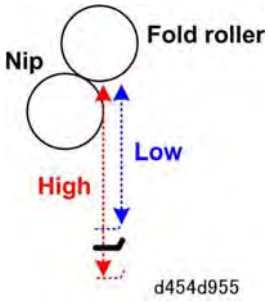


The illustration above shows the positions of the three stoppers inside the machine. The positioning of the stoppers is critical because this determines the types of folding.

Front and Rear

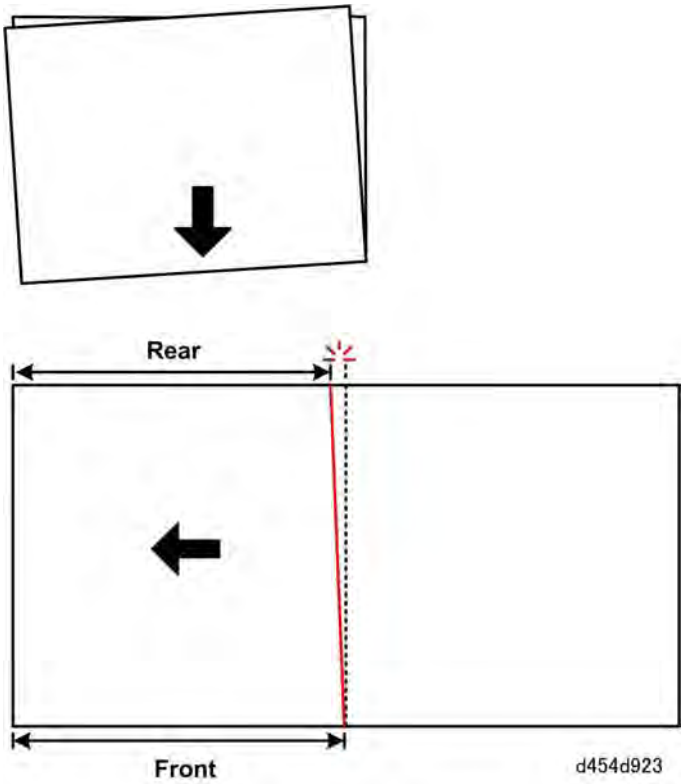
The terms "Front" and "Rear" are critical to understanding how paper is skewing during folding. These terms are defined relative to the positioning of the paper in the paper path as it feeds and exits.

- "High" means the distance from the nip of the fold roller to the stopper is too far on one end of the fence.
- "Low" means the distance from the nip of the fold roller to the stopper is too short.



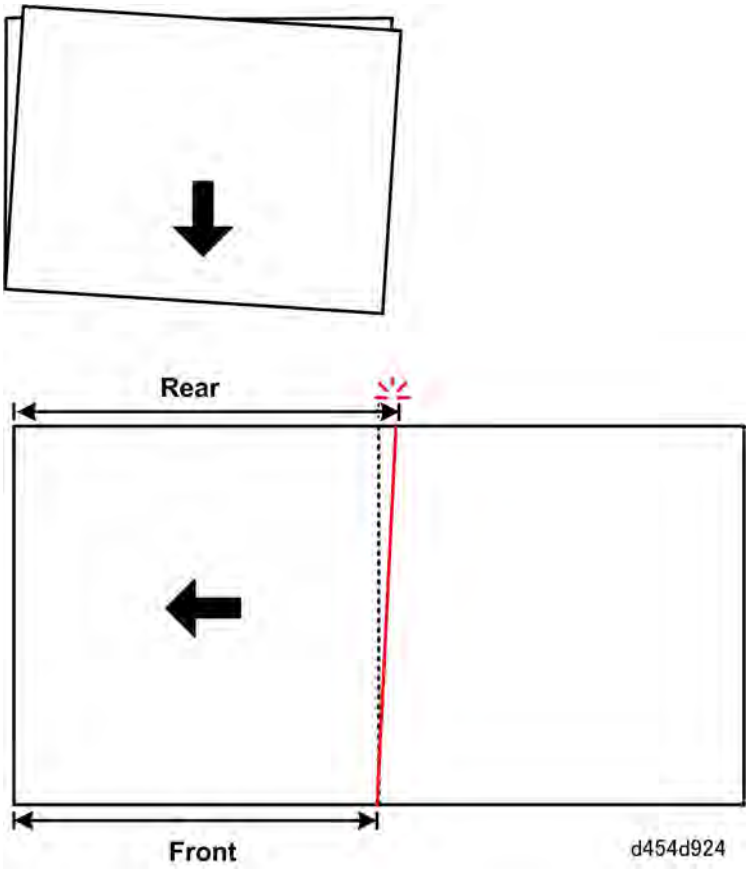
Two examples are shown below.

Example 1: High (Stopper Too Far From The Nip)



The black arrow shows the direction of paper feed from right to left. When the skew sheet is opened the **Front** edge is **longer** than the **Rear** edge.

Example 2: FM2: Low (Stopper to Close to the Nip)



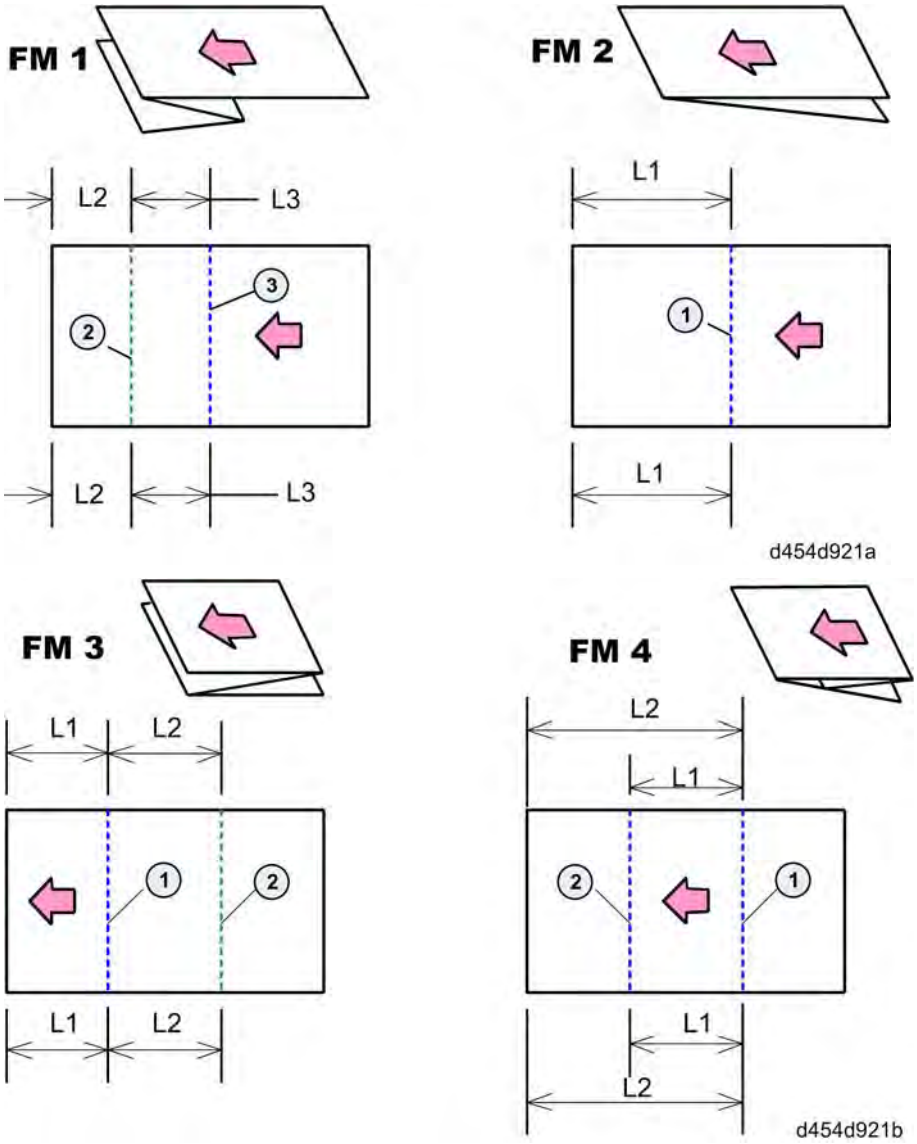
The black arrow shows the direction of paper feed from right to left. When the skew sheet is opened the **Front** edge is **shorter** than the **Rear** edge.

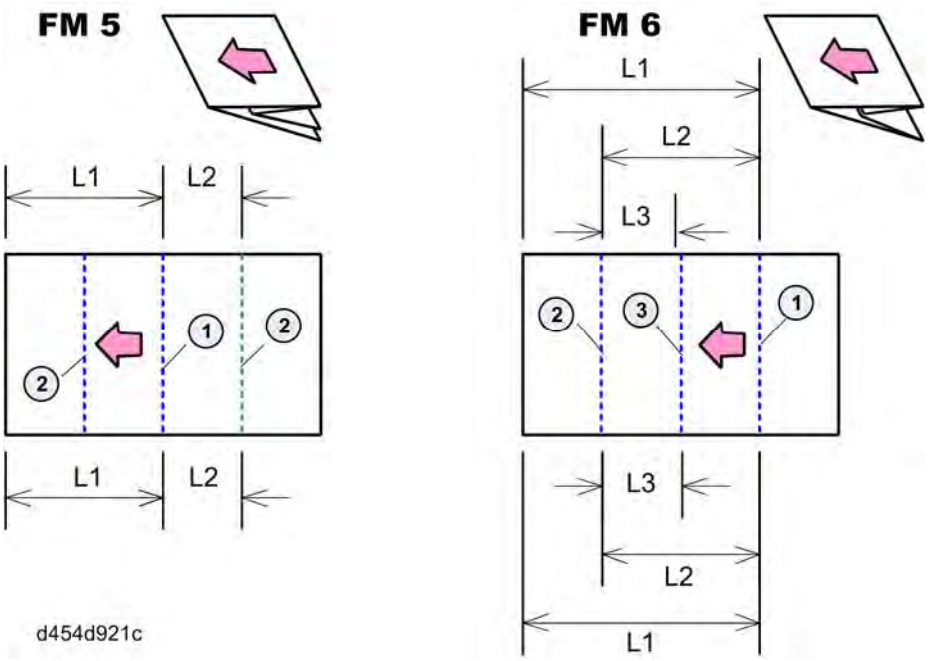
Skew Correction Reference Diagrams and Table

Skew Correction Reference Diagrams

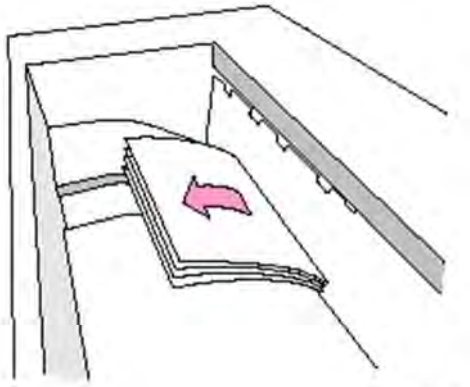
Key

Symbol/Color	What It Means
①	Stopper 1 needs adjustment
②	Stopper 2 needs adjustment
③	Stopper 3 needs adjustment
Blue line	Peak fold (points left)
Green line	Valley fold (points right)


FM 1
L2
L3
3
2
L2
L3
FM 2
L1
1
L1
d454d921a
FM 3
L1
L2
1
2
L1
L2
FM 4
L2
L1
2
1
L1
L2
d454d921b



General Procedure



1. Retrieve the first folded paper from the top of the multi-folder. The first sheet is on the bottom of the stack.
2. If a fold is skewed, spread the paper out in the direction of paper feed shown in the diagrams above.
3. Carefully measure the distances between the folds between L1, L2, L3.
4. Compare the **Front** and **Rear** measurements.
5. Refer to the table below to determine where the paper is skewing and what type of adjustment is required.

Skew Correction Reference Table

	L1	L2	L3	S1	S2	S3
FM1	---	**F** Long	**F** Long	---	Lower **F**	Raise **F**
	---	**F** Short	**F** Short	---	Raise **F**	Lower **F**
FM2	**F** Long	---	---	Raise **F**	---	---
	F Short	---	---	Lower **F**	---	---
FM3	**F** Long	**F** Long	---	Raise **F**	Lower **F**	---
	F Short	**F** Short	---	Lower **F**	Raise **F**	---
FM4	**F** Long	**F** Long	---	Raise **F**	Lower **F**	---
	F Short	**F** Short	---	Lower **F**	Raise **F**	---
FM5	**F** Long	**F** Long	---	Raise **F**	Lower **F**	---
	F Short	**F** Short	---	Lower **F**	Raise **F**	---
FM6	**F** Long	**F** Long	**F** Long	Lower **F**	Lower **F**	Raise **F**
	F Short	**F** Short	**F** Short	Raise **F**	Raise **F**	Lower **F**

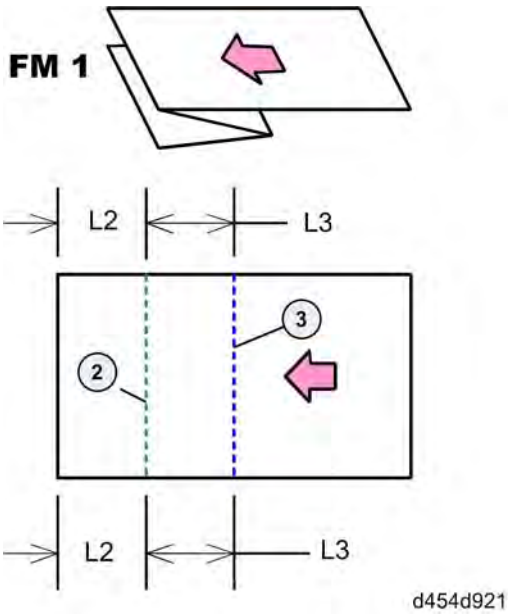
Replacement and Adjustment

Table Key

You must refer to the "Skew Correction Reference Diagrams". The following abbreviations are used in the table above.

Term	What It Means
F Long	**Front** measurement of L1, L2, or L3 is **longer** than **Rear**..
F Short	**Front** measurement of L1, L2, or L3 is **shorter** than **Rear**..
S1, S2, S3	Refers to Stopper 1, Stopper 2, Stopper. In the diagrams these are annotated as: ①, ②, ③ respectively.
Raise **F**	Raise the front end of the stopper fence. For more, see below.
Lower **F**	Lower the front end of the stopper fence. For more, see below.

Example: FM1 (Z-fold)



First, compare the L2 measurements.

- In this example, imagine that L2 is longer at the front than at the rear.
- Look at the table, in the row for FM1, and the column for L2.
  - ‘F Long’ means Front measurement longer than Rear
  - ‘F Short’ means Rear measurement longer than Front
- L2 is longer at the front, so we have an ‘F Long’ situation.
- Then look at the next line, below ‘F Long’. It says ‘Lower F on S2’.

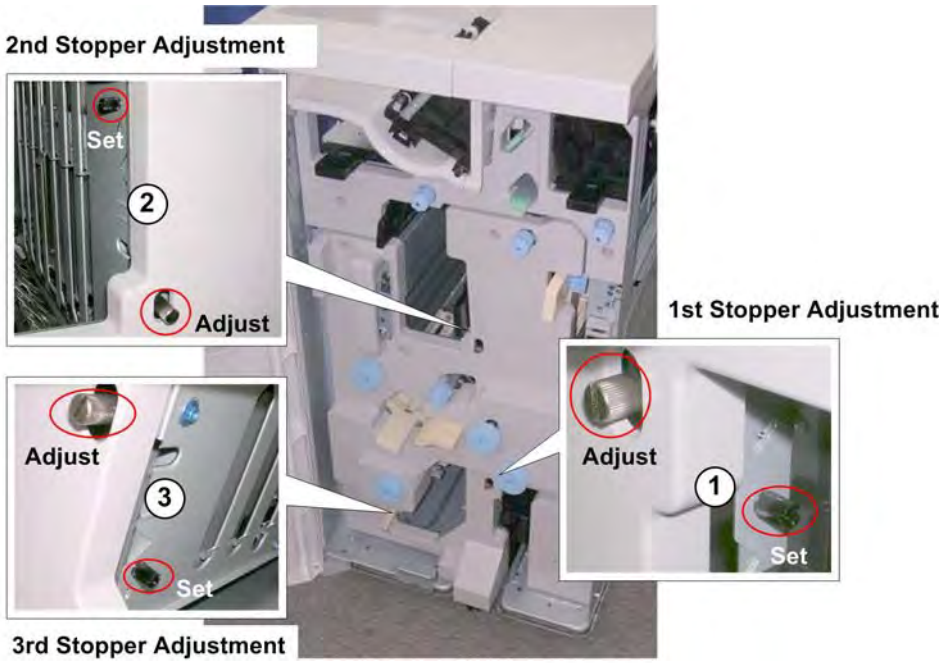
- This means you must lower the front end of stopper 2.

Then, compare the L3 measurements.

- In this example, imagine that L3 is longer at the front than at the rear.
- Look at the table, in the row for FM1, and the column for L3.
  - ‘F Long’ means Front measurement longer than Rear
  - ‘F Short’ means Rear measurement longer than Front
- L3 is longer at the front, so we have an ‘F Long’ situation again.
- Then look at the next line, below ‘F Long’. It says ‘Raise F on S3’.
- This means you must raise the front end of stopper 3.

Stopper Adjustment Procedures

1. Use the "Skew Correction Reference Diagrams" and "Skew Correction Reference Table" in the previous section to determine the location of the skew and which stopper needs adjustment.
2. Now you are ready to do the adjustment on the multi-folder unit.



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3. The illustration above shows the location for each stopper adjustment.
   - Each stopper is equipped with two screws.
   - The black plastic screw is the Set screw and the metal silver screw is the Adjustment screw.



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4. Remove the Set screw.



d454d942

5. Turn the Adjustment screw to do the adjustment for the stopper.

   1st, 3rd Stopper

   - Turn the Adjustment screw **clockwise** to **lower** the front end of the fence.

     -or-

   - Turn the Adjustment screw **counter-clockwise** to **raise** the front of the fence.

   2nd Stopper

   - Turn the Adjustment screw **clockwise** to **raise** the front end of the fence.

     -or-

   - Turn the Adjustment screw **counter-clockwise** to **lower** the front of the fence.



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6. Fasten the Set screw in the hole of the diagonal cutout near the hole where you removed it.

Note

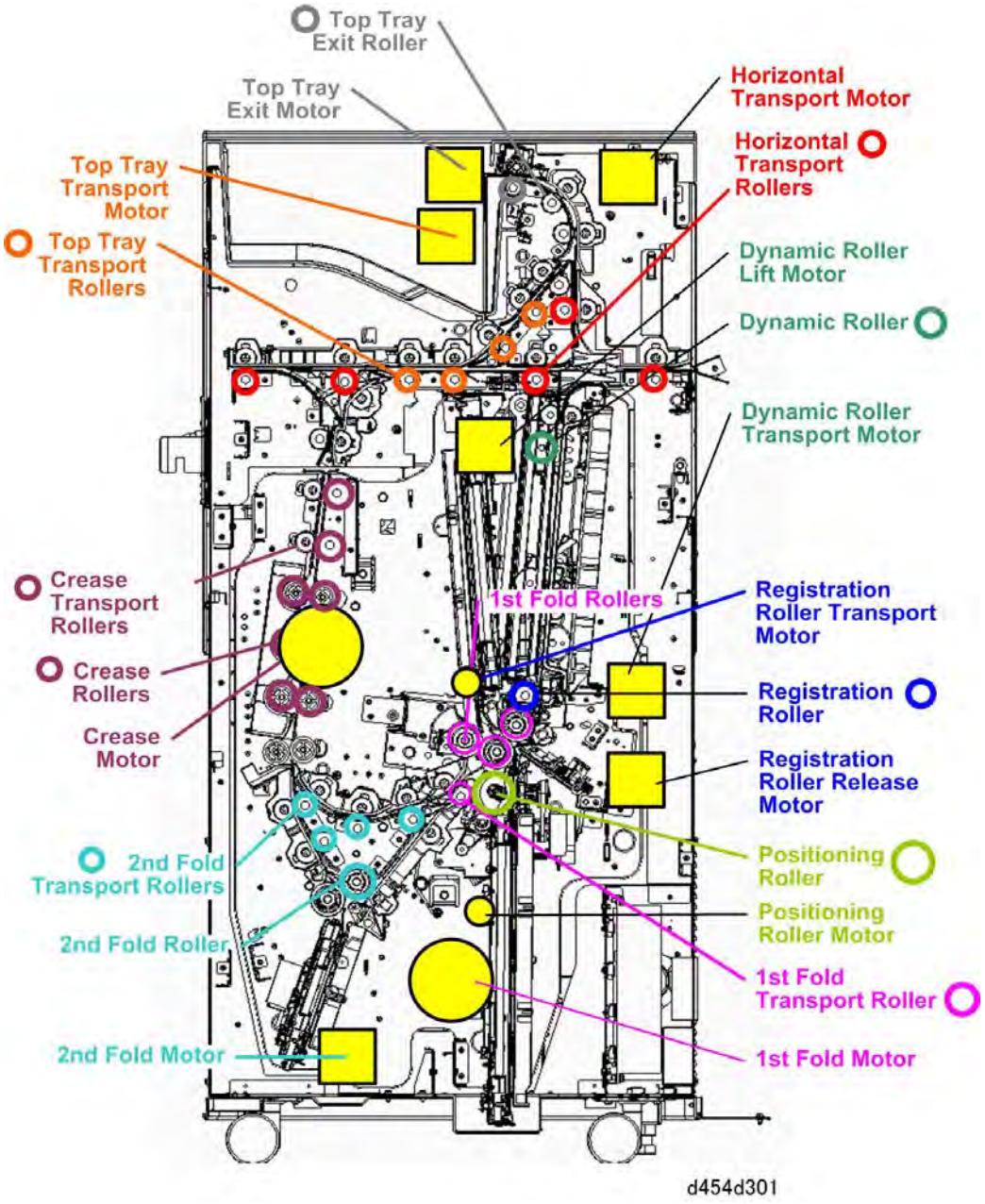
- The diagonal cut may be above or below the original hole, depending on which stopper you are adjusting.
- The photo above shows the Set screw for Stopper 2.

7. Tighten the Set screw so the plate holds the adjustment.

2. DETAILS

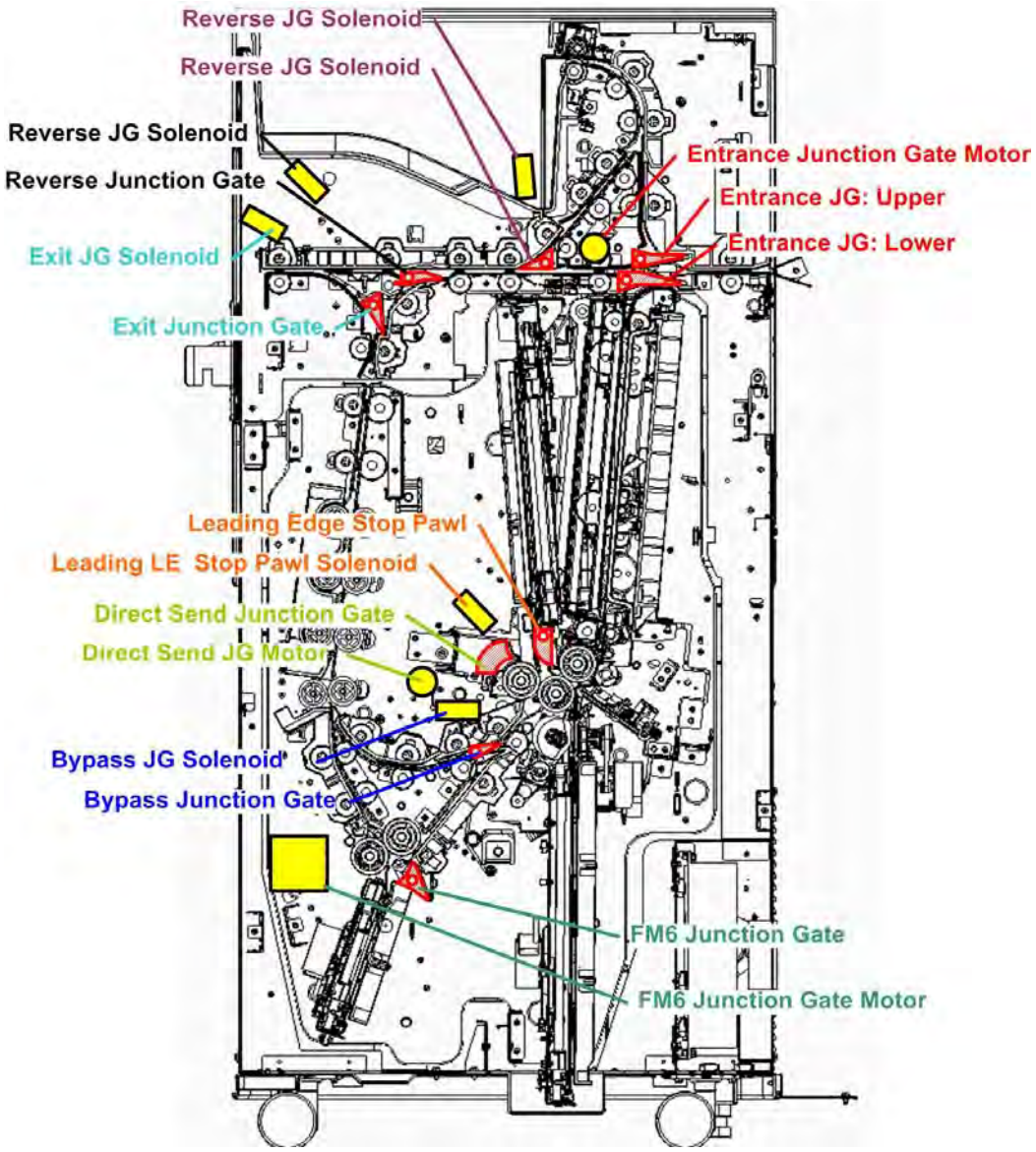
2.1 OVERVIEW

2.1.1 MOTORS, ROLLERS



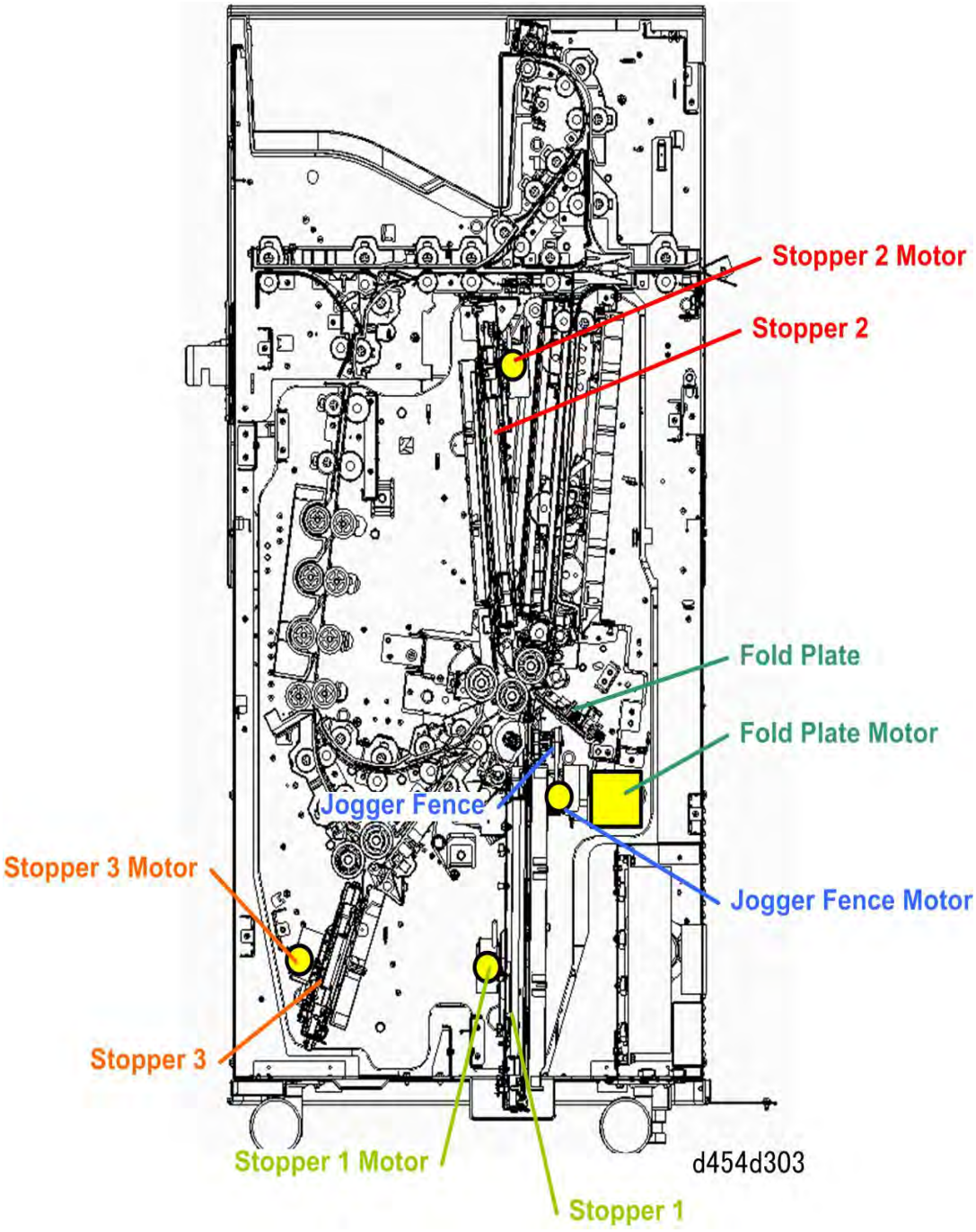
The illustration above shows the roller groups and their related motors.

2.1.2 JUNCTION GATES, JUNCTION GATE SOLENOIDS



The illustration above shows the paper path junction gates and the solenoids and motors that operate them.

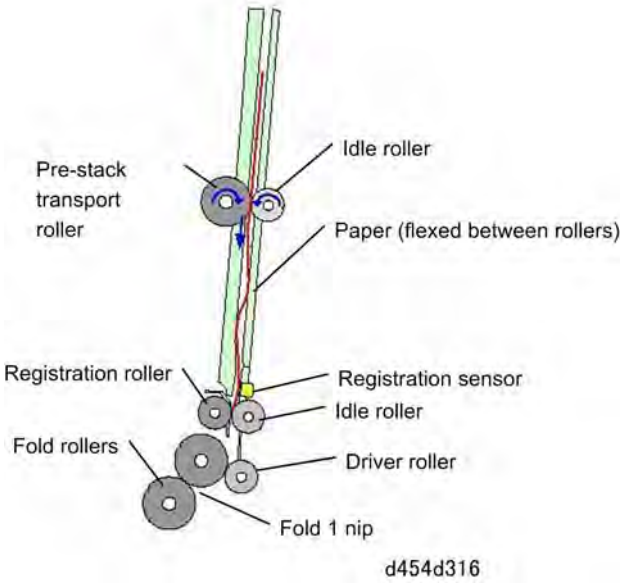
2.1.3 STOPPERS, STOPPER MOTORS



The illustration above shows the stoppers and the motors that operate them.

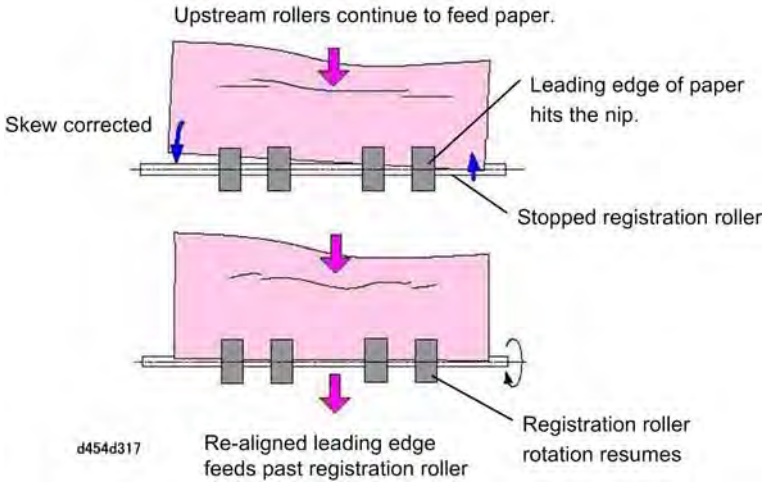
2.2 PAPER PATH

2.2.1 PAPER REGISTRATION



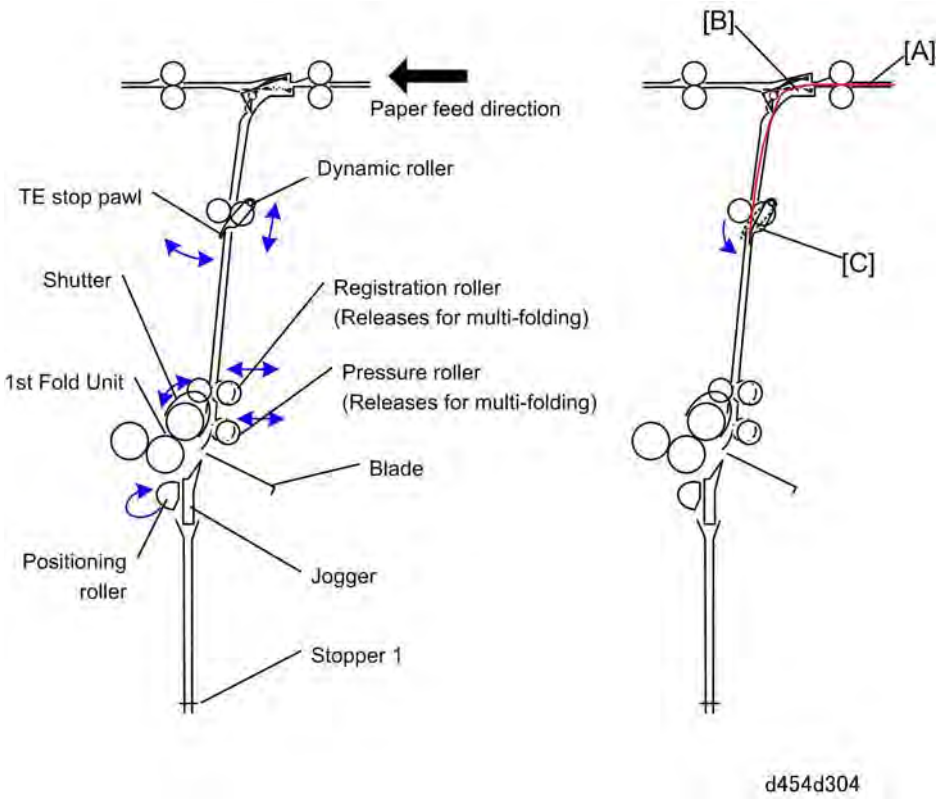
When paper is fed to the pre-stacker, the position of each sheet in the paper path is adjusted to correct skew:

- Leading edge of the sheet hits the registration roller and stops.
- The upstream rollers continue to rotate 5 mm.
- The leading edge of the paper buckles against the stationary registration roller to correct skew.
- The registration roller starts rotating again after the paper has been straightened in the paper path.



Details

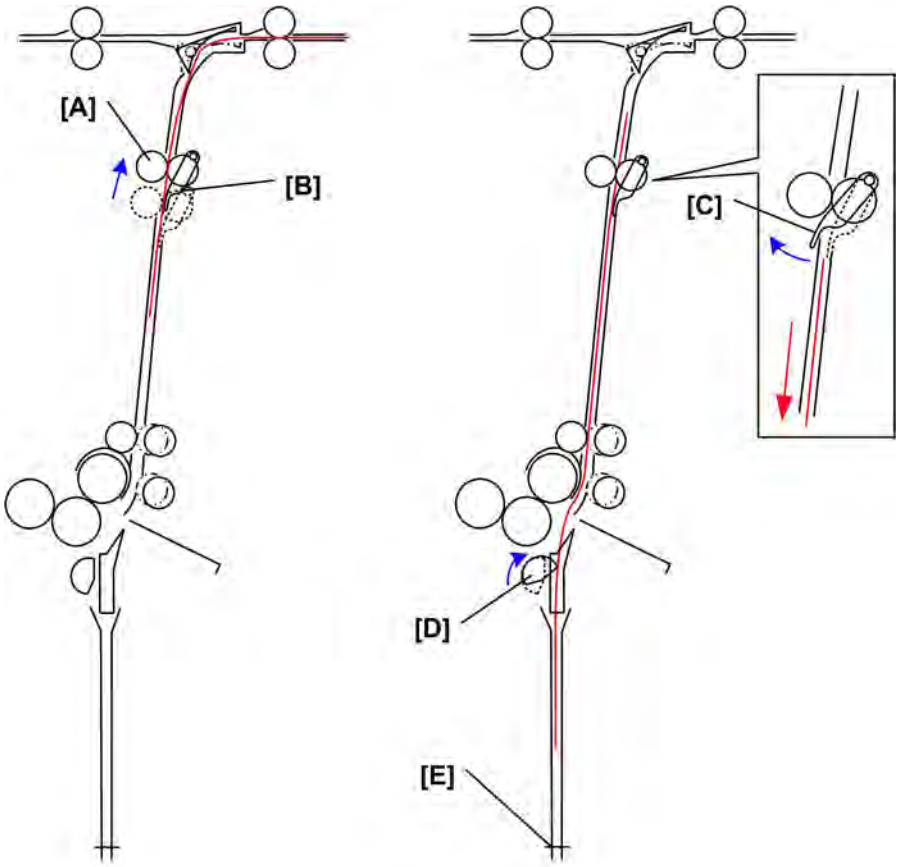
2.2.2 PRE-STACKING



Up to three sheets of paper can be pre-stacked for folding.

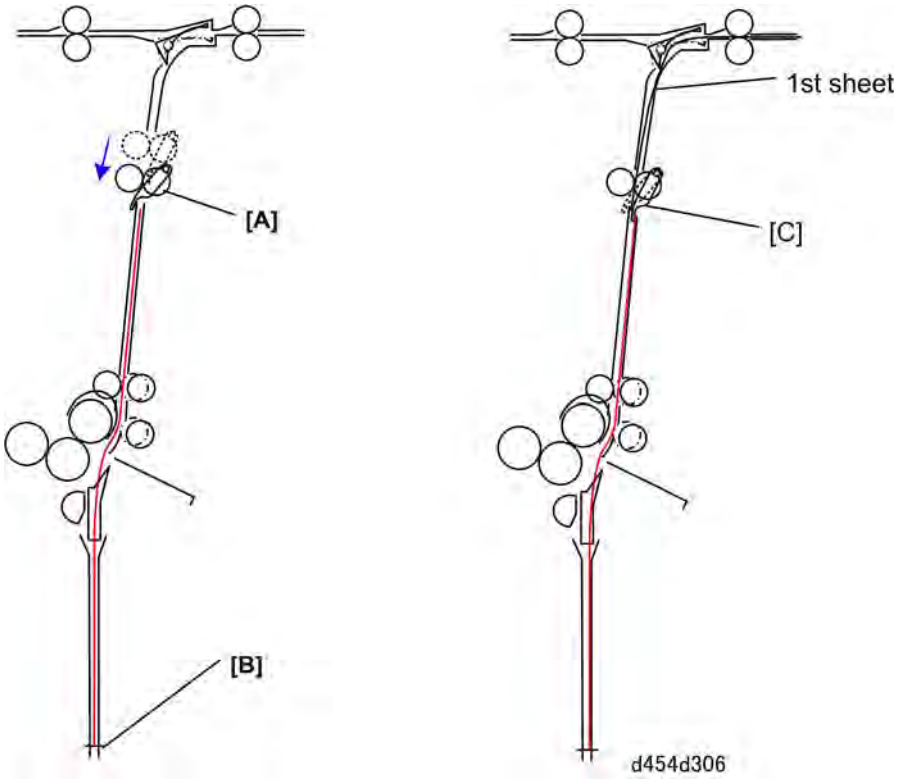
The left illustration shows the parts that operate during pre-stacking.

- The paper enters the machine [A].
- The lower entrance junction gate [B] opens and guides the paper to the TE stop pawl [C].
- The paper pushes the TE stop pawl aside so it can pass.



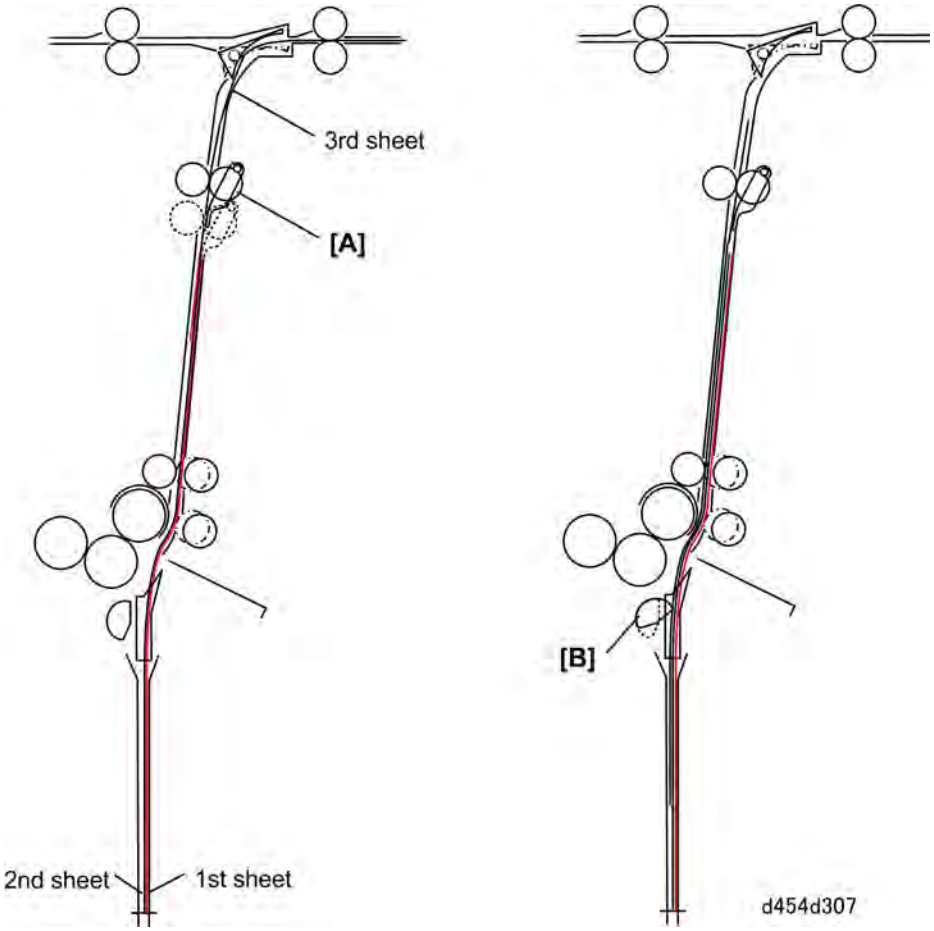
The dynamic roller [A] raises after the leading edge of the paper passes the TE stop pawl [B]. The TE stop pawl returns to its home position [C] after the trailing edge of the sheet passes. After the trailing edge of the paper passes the dynamic roller, the positioning roller [D] starts to rotate and feeds the paper as far as stopper 1 [E].

Details



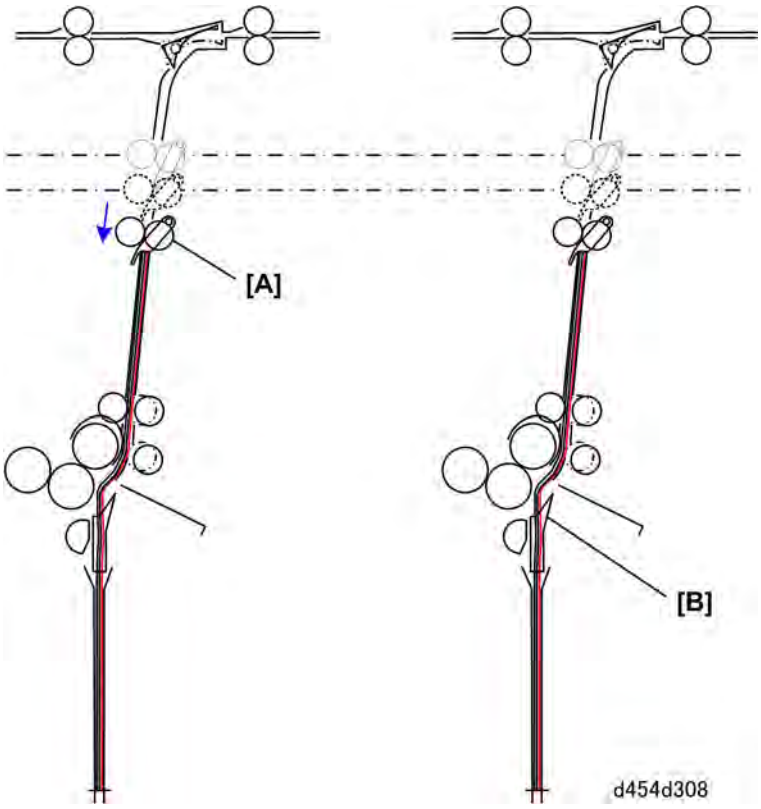
The dynamic roller [A] lowers when the leading edge reaches stopper 1 [B] within the time prescribed for feeding for the size of the paper selected for the job.

The TE stop pawl [C] presses on the 1st sheet to prevent the leading edge of the 2nd sheet from hitting it. The operation sequence for stacking the 2nd and 3rd sheets is the same as that of the 1st sheet.



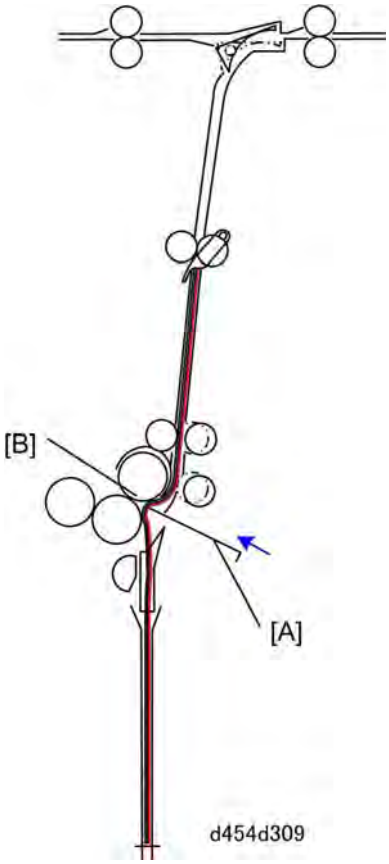
The dynamic roller [A] raises after the leading edge of the 3rd (and last sheet) passes the TE stop pawl. The position roller [B] rotates twice only after the last sheet has been pre-stacked.

Details



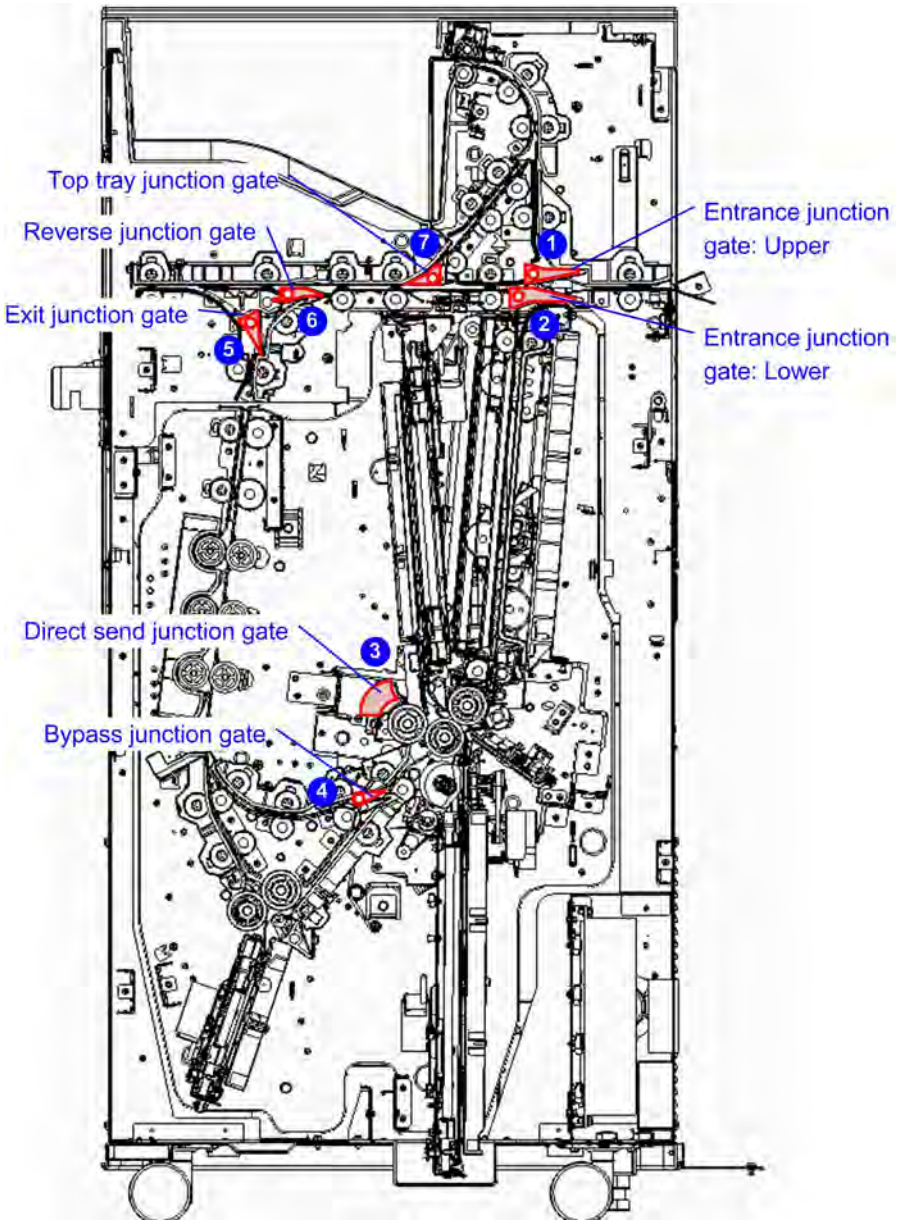
After the last sheet has been pre-stacked, the TE stop pawl [A] lowers and the sheets are jogged vertically (top to bottom).

Next, with the TE stop pawl pressing down on the trailing edges of the stacked sheets, the stack [B] is jogged horizontally (front to back).



Finally, after all three sheets have been pre-stacked and jogged, the fold blade [A] pushes the stacked sheets into the nip of the fold rollers [B].

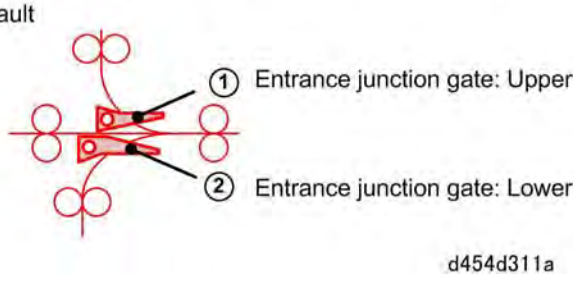
2.2.3 JUNCTION GATES



Entrance Junction Gates

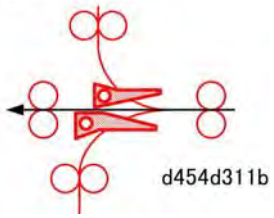
① ② **Entrance Junction Gates**

Default



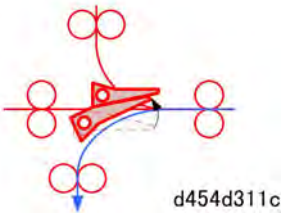
There are two junction gates in the paper path at the entrance of the multi-folder.

Straight-Through



Both junction gates remain at their home positions when paper is fed straight through the multi-fold unit to the next unit downstream.

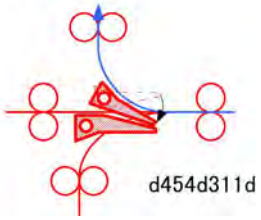
For Folding



When folding is selected, the lower entrance junction gate raises and guides the paper to the fold units below:

- Upper entrance junction gate remains at default position.
- Lower junction gate rotates up and guides paper down.

Exit to Top Tray



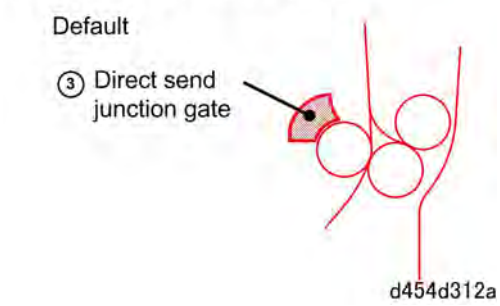
When draft copies are sent to the top tray:

- The upper entrance junction gate rotates down.
- The lower junction gate remains at default position.

Details

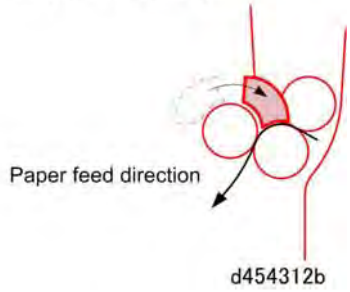
Direct Send Junction Gate

③ **Direct Send Junction Gate**

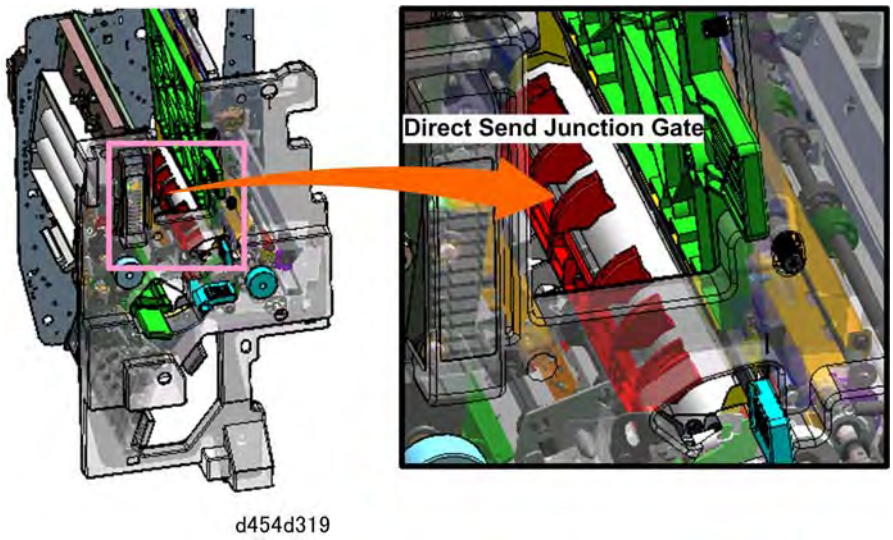


This is the direct send junction gate at its home position.

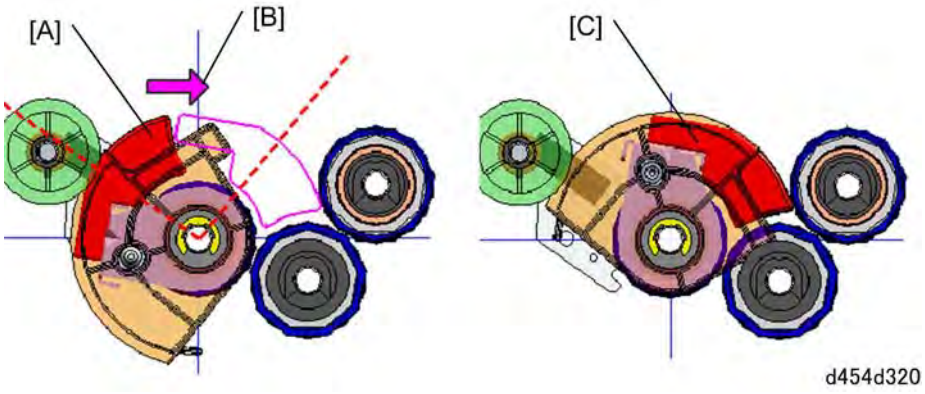
For FM1 (Half Fold) Only



The junction gate rotates to the right and paper is sent downstream without passing stopper 2. This is down for FM2 mode only when the paper is folded into equal halves.



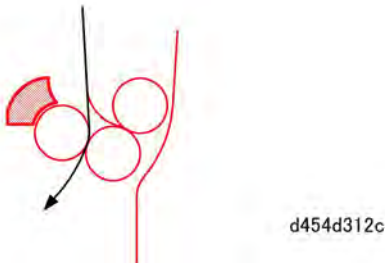
The illustration above shows the actual location and appearance of the direct send junction gate.



For all fold modes other than FM2 (Half Fold) the direct send junction gate remains at its home position.

- For FM2 the direct send junction gate motor rotates the junction gate [B] to position [C].
- After the job is finished the motor rotates the junction gate back to its home position [A].

Other Fold Modes



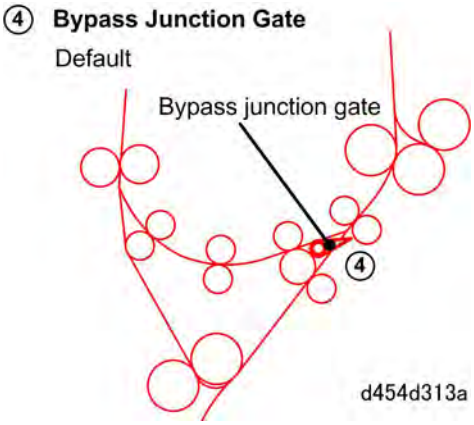
For the other fold modes (FM1, FM3 to FM6) the junction gate remains at its home position and does not touch the paper.

Details

Bypass Junction Gate

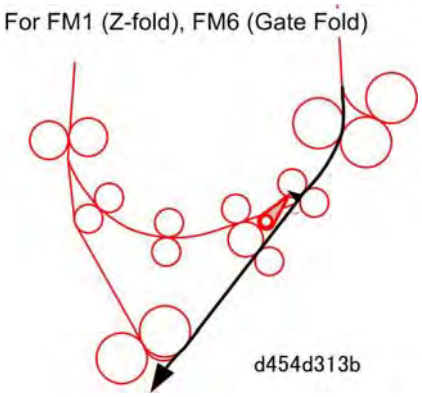
④ **Bypass Junction Gate**

Default



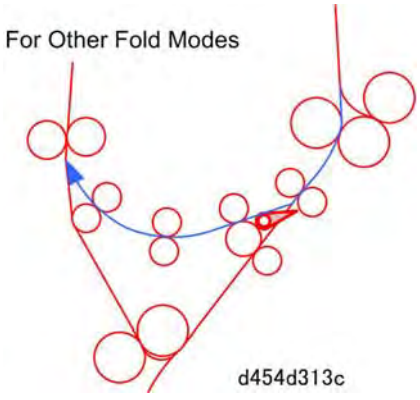
This is the bypass junction gate at its home position.

For FM1 (Z-fold), FM6 (Gate Fold)



When FM1 (Z-fold) or FM6 (Gate Fold) is selected, the bypass junction gate raises and allows paper to pass to folder unit 2.

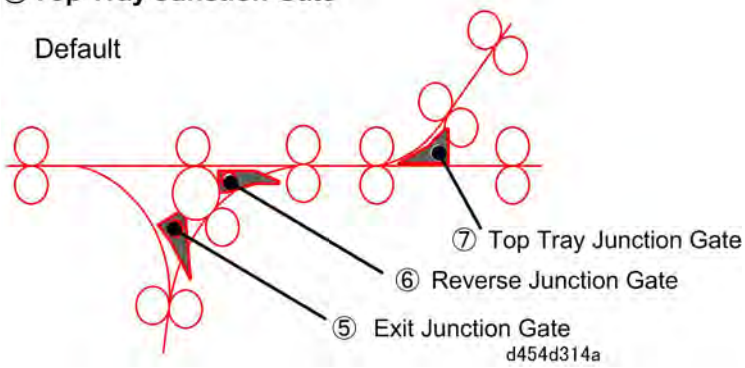
For Other Fold Modes



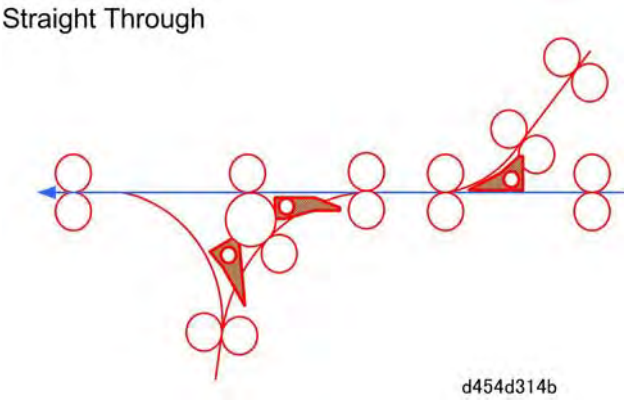
For fold modes other than FM1, FM6 the bypass junction gate remains at it default position. Paper passes over the top of the bypass junction gate and into the bypass paper path.

Exit, Reverse, and Top Tray Junction Gates

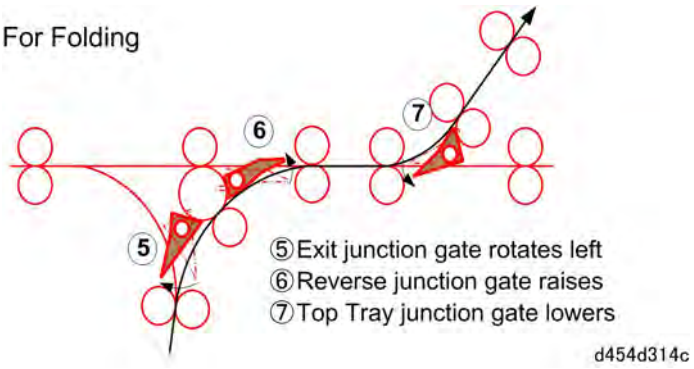
⑤Exit Junction Gate
⑥Reverse Junction Gate
⑦Top Tray Junction Gate



These three junction gates are shown above at their default positions.



For straight-through paper feed the junction gates remain at their home positions. Paper passes straight through the multi-folder to the next peripheral unit downstream.



All three junction gates operate to guide folded paper to the top tray:

- Exit junction gate rotates left
- Reverse junction gate raises
- Top tray junction gate lowers

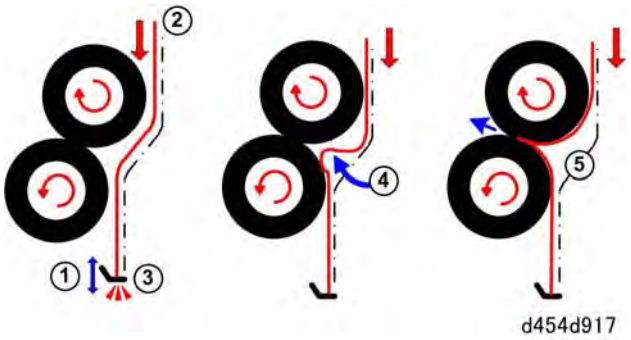
This sequence guides the folded paper to the top tray.

Details

Note: Only Z-folded paper is allowed to exit the multi-folder and pass downstream to other peripheral units. In this case, the junction gates remain at their default positions. The exit junction gate sensor (5) guides the paper toward the multi-folder exit above.

2.3 PAPER FOLDING

2.3.1 FLEX-NIP FOLDING

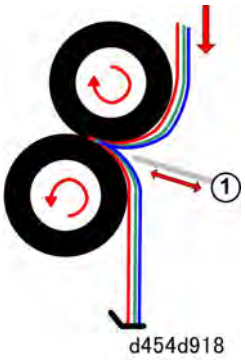


This machine uses the flex-nip method to fold paper.

In this method of folding a stopper fence ① is raised or lowered to the correct height for the size of the paper and the type of fold to be done. A sheet of paper ② descends, hits the stopper and stops. However, the upstream rollers continue to rotate. This causes the paper ④ to bulge and flex toward the nip of the rotating fold rollers on the left. When the paper ⑤ reaches the rotating rollers it feeds into the nip. The rollers catch the paper, pull it into the nip, and form the fold.

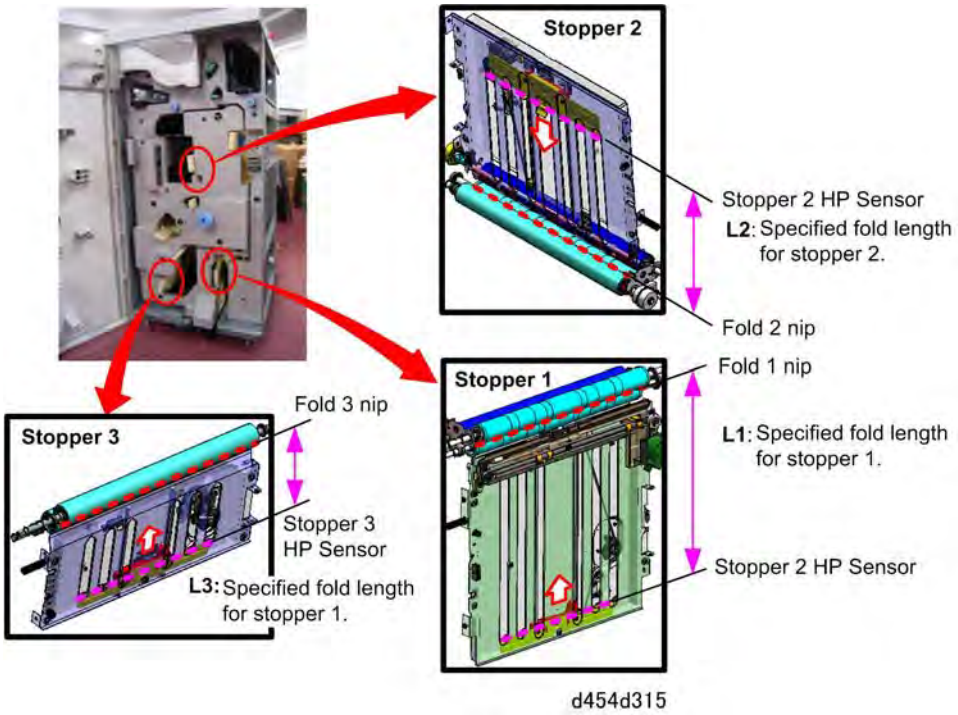
In this machine:

- There are three fold stoppers placed at strategic positions in the fold path.
- Not all the stoppers are used for folding. Only the stoppers needed for the type of folding are used.



When two or more sheets are fed together, a fold assist plate ① pushes the flexed paper toward the rotating fold rollers. The fold plate is used only when more than one sheet of paper is fed at a time. Up to three sheets can be fed.

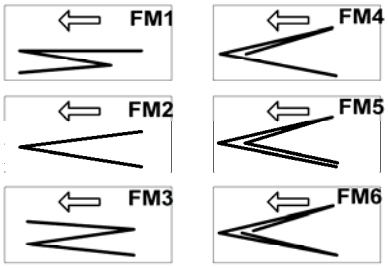
2.3.2 STOPPER LOCATIONS



The illustration above shows the stopper locations. Note the locations of Stopper 1, Stopper 2, and Stopper 3.

2.3.3 FOLDING METHODS

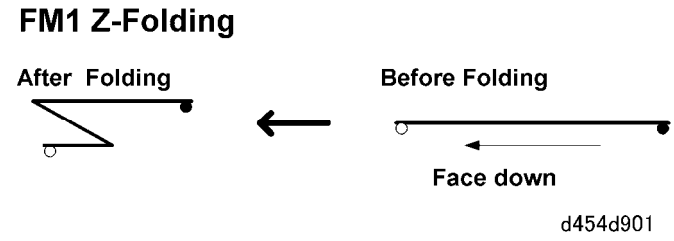
There are six Folding Methods (FM):

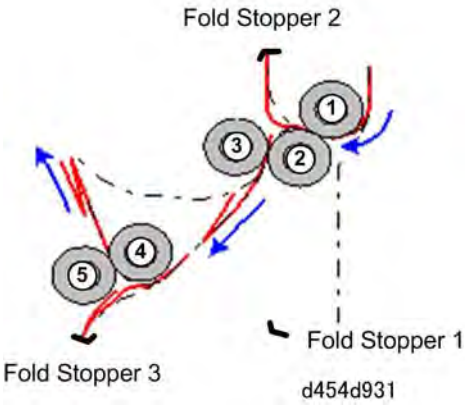


FM1	Z-Folding
FM2	Half Fold
FM3	Letter Fold-out
FM4	Letter Fold-in
FM5	Double Parallel Fold
FM6	Gate Fold

Details

FM1 Z-Folding

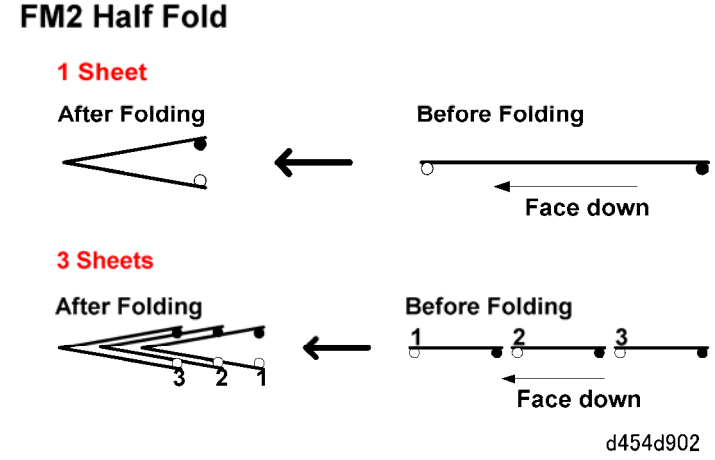


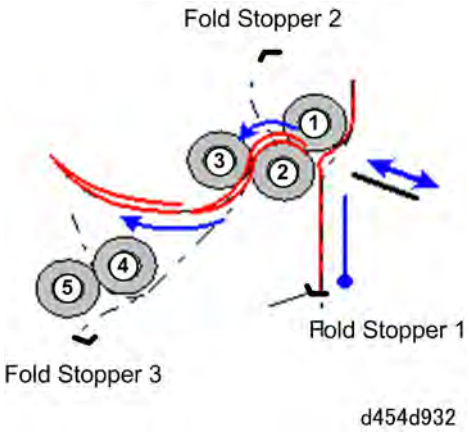


In Fold Method 1 (FM1):

- The leading edge of the paper feeds into the nip of fold rollers ① and ②.
- The paper is stopped by Fold Stopper 2. The paper flexes toward the nip of fold rollers ② and ③ which performs the first fold.
- Next, the paper is stopped by Fold Stopper 3. The paper flexes toward the nip of fold rollers ④ and ⑤ which performs the second fold and feeds the paper into the exit path.
- Fold Stopper 1 is not used.

FM2 Half Fold



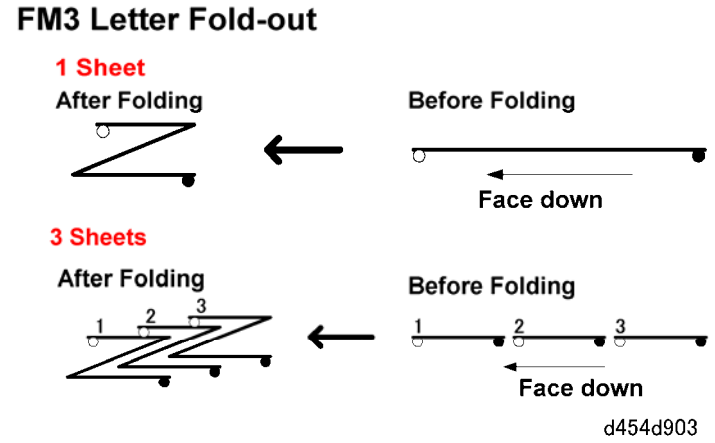


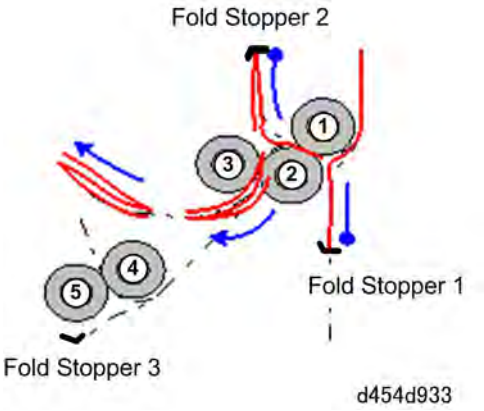
In Fold Method 2 (FM2):

- The leading edge of the paper is stopped by Fold Stopper 1.
- The paper flexes toward the nip of fold rollers ① and ② which performs the first fold and feeds the folded edge of the paper into the nip of fold rollers ② and ③.
- Fold rollers ② and ③ feed the paper into the exit path.
- Fold Stoppers 2, and 3 are not used.

Details

FM3 Letter Fold-out

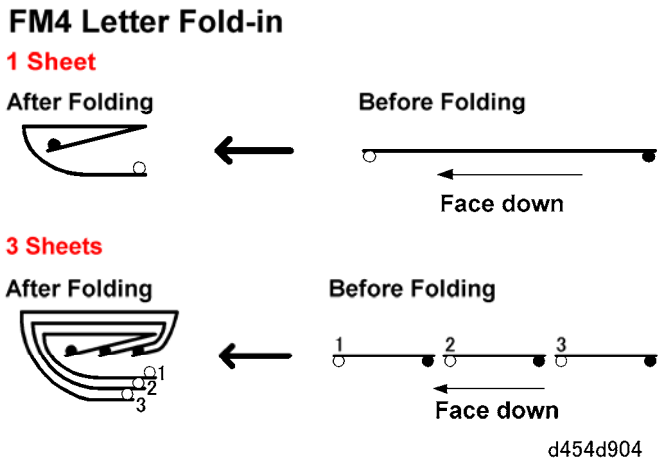


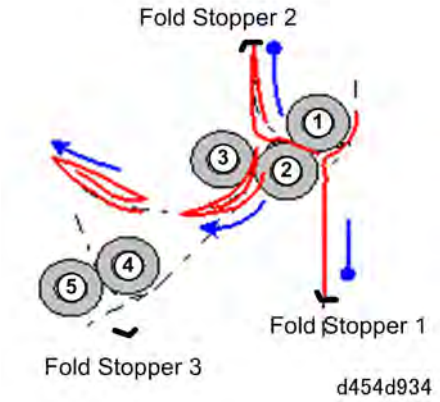


In Fold Method 3 (FM3):

- The leading edge of the paper is stopped by Fold Stopper 1.
- The paper flexes toward the nip of fold rollers ① and ② which performs the first fold.
- Fold Stopper 2 stops the paper and flexes it into the nip of fold rollers ② and ③.
- Fold rollers ② and ③ perform the second crease and feed the folded paper in exit path.
- Fold Stoppers 3 is not used.

FM4 Letter Fold-in





In Fold Method 4 (FM4):

- The leading edge of the paper is stopped by Fold Stopper 1.
- The paper flexes toward the nip of fold rollers ① and ② which performs the first fold.
- Fold Stopper 2 stops the paper and flexes it into the nip of fold rollers ② and ③.
- Fold rollers ② and ③ perform the second crease and feed the folded paper in exit path.
- Fold Stopper 3 is not used.

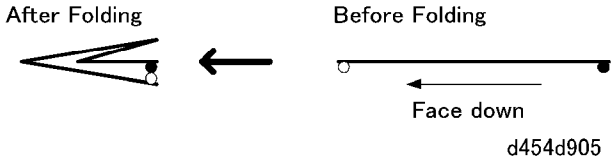
FM3 and FM4 follow the same sequence but the resultant fold is different:

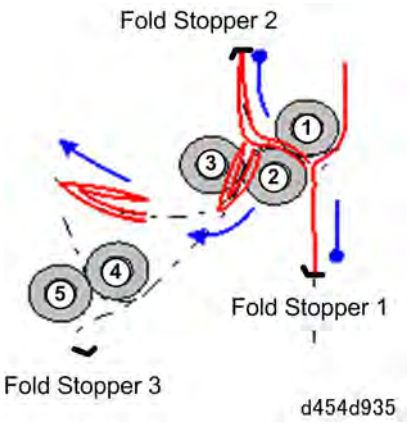
- In FM3 Fold Stopper 1 is positioned high so a short length of paper is allowed to feed before flexing toward the nip starts.
- In FM4 Fold Stopper 1 is positioned low so a long length of paper is allowed to feed before flexing toward the hip starts.
- This positioning of Fold Stopper 1 accounts for the difference in folding at the next nip.

Details

FM5 Double Parallel Fold

FM5: Double Parallel Fold





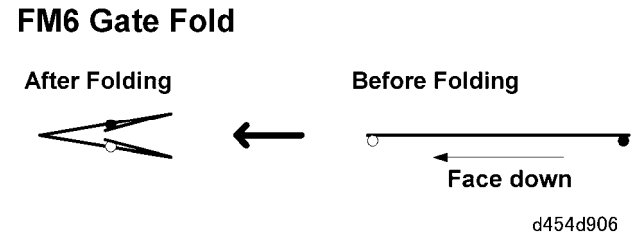
In Fold Method 5 (FM5):

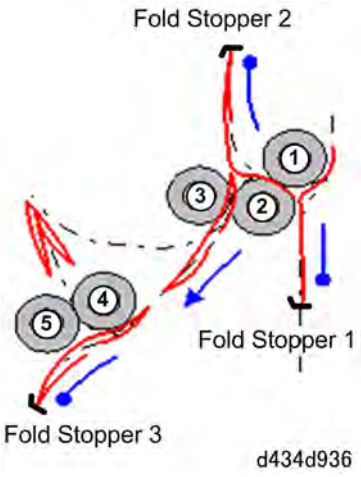
- The leading edge of the paper is stopped by Fold Stopper 1.
- The paper flexes toward the nip of fold rollers ① and ② which performs the first fold.
- Fold Stopper 2 stops the paper and flexes it into the nip of fold rollers ② and ③.
- Fold rollers ② and ③ perform the second crease and feed the folded paper in exit path.
- Fold Stopper 3 is not used.

FM3, FM4, and FM5 follow the same sequence but the resultant fold is different:

- In FM5 Fold Stopper 1 is positioned so the paper will fold into halves when it enters the first nip.
- This critical positioning of Fold Stopper 1 accounts for the difference in folding at the next nip.

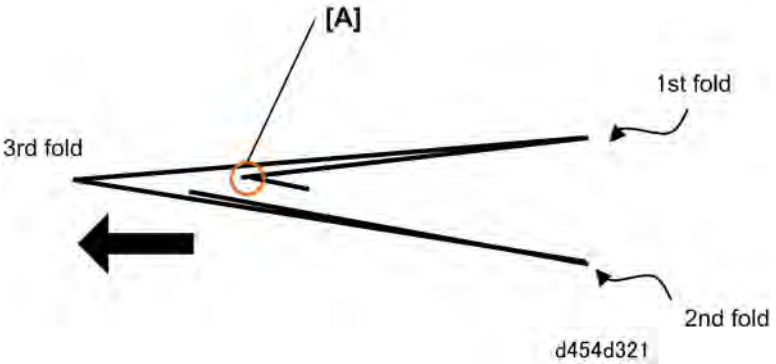
FM6 Gate Fold





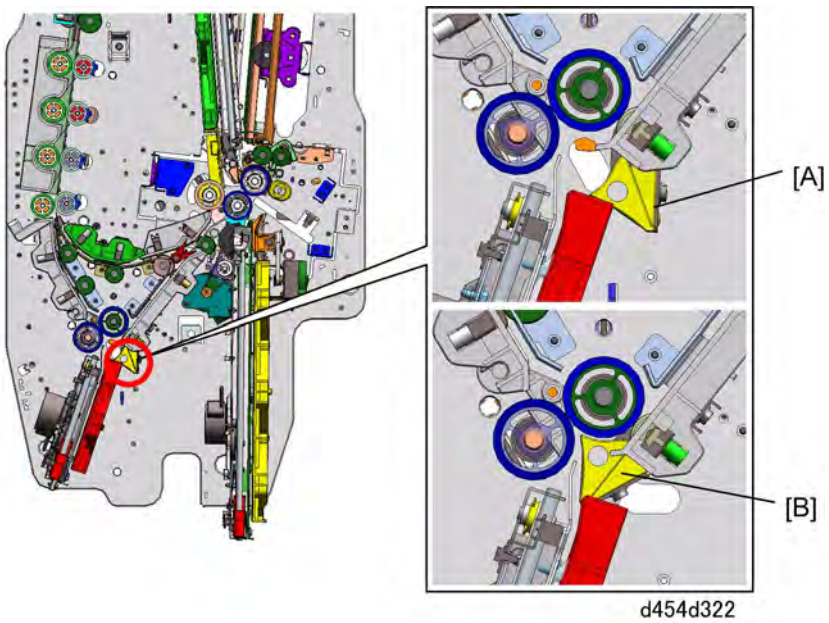
In Fold Method 6 (FM6):

- The leading edge of the paper is stopped by Fold Stopper 1.
- The paper flexes toward the nip of fold rollers ① and ② which performs the first fold.
- Fold Stopper 2 stops the paper and flexes it into the nip of fold rollers ② and ③.
- Fold rollers ② and ③ perform the second fold and feed the folded paper to Stopper 3.
- Fold Stopper 3 stops the paper and flexes it into the nip of fold roller ④ and ⑤.
- Fold roller ④ and ⑤ form the third crease and feed the folding paper into the exit path.
- All three stoppers are used with this method.



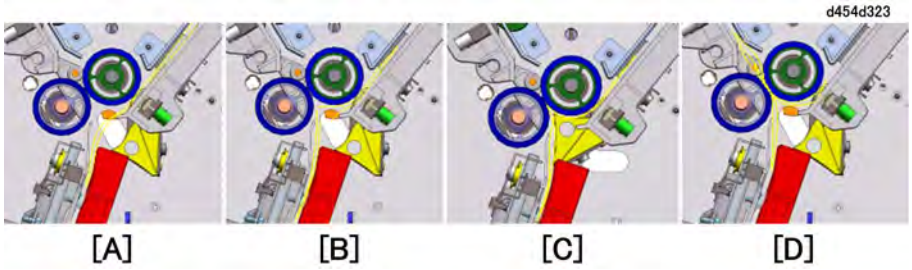
A mechanism is provided to prevent the leading edge from catching and folding over on itself [A] when the 3rd fold is done.

Details



Operation sequence for folding three sheets:

- At power on (initialization) the FM6 junction gate [A] moves to home position.
- The three sheets are pre-stacked then the first two folds are done
- The FM6 stop pawl moves to the operation position [B].



[A]	After the 2nd fold the sheet(s) are sent to the 3rd stopper for the last fold.
[B]	The leading edge of the sheets(s) hit stopper 3 and the upstream rollers continue rotate (equivalent to 18 mm of feed) to flex paper toward the fold rollers.
[C]	The edge of the FM6 pawl is raised to flatten the leading edge so it cannot bend back on itself as the paper enters the nip of the fold rollers.
[D]	When the 3rd fold starts the FM6 pawl returns to its home position.

Fold Adjustments with SP Codes

The fold positions can be adjusted in the User Tools (Operators, Skilled Operators) and the engine SP mode.

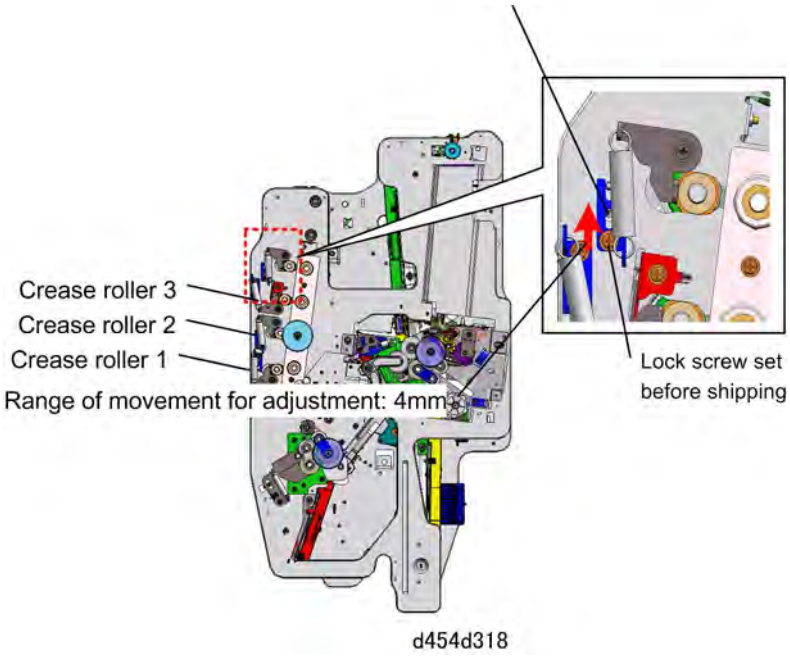
Mode	Name	Fold	User Tools*[1]	SP*[2]
FM1	Z-Fold	1st	0501	6750
		2nd	0502	6751
FM2	Equal Halves	1st	0503	6752
FM3	LT Fold Out	1st	0504	6753
		2nd	0505	6754
FM4	LT Fold In	1st	0506	6755
		2nd	0507	6756
FM5	Double Parallel	1st	0508	6757
		2nd	0509	6758
FM6	Gate Fold	1st	0510	6759
		2nd	0511	6760
		3rd	0512	6761

*[1]: These numbers are the same for Operators, Skilled Operators.

*[2]: The ranges for these SP codes are the same: [-4 to +4 / **0** / 0.2 mm]

Details

2.3.4 CREASE ROLLERS



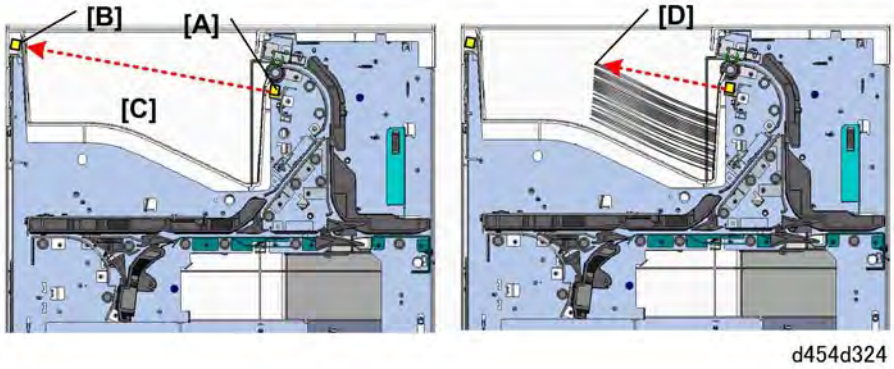
The amount of pressure exerted by the crease rollers can be adjusted. This can be done to eliminate splitting that can occur with coated paper and other types of media. The adjustment is a manual adjustment done on springs.]

Adjustment range

	R1	R2	R3	R4
Default Load	26 N	45 N		
Load Adjustment Possible (Hook 4 mm Distance)	-4.5 N	-9.5 N		

A projection fixed in slot and attached to a spring shortens the length to roller can be lowered. There are four crease rollers. Springs at the front and rear ends of each roller can be adjusted.

2.4 TRAY FULL

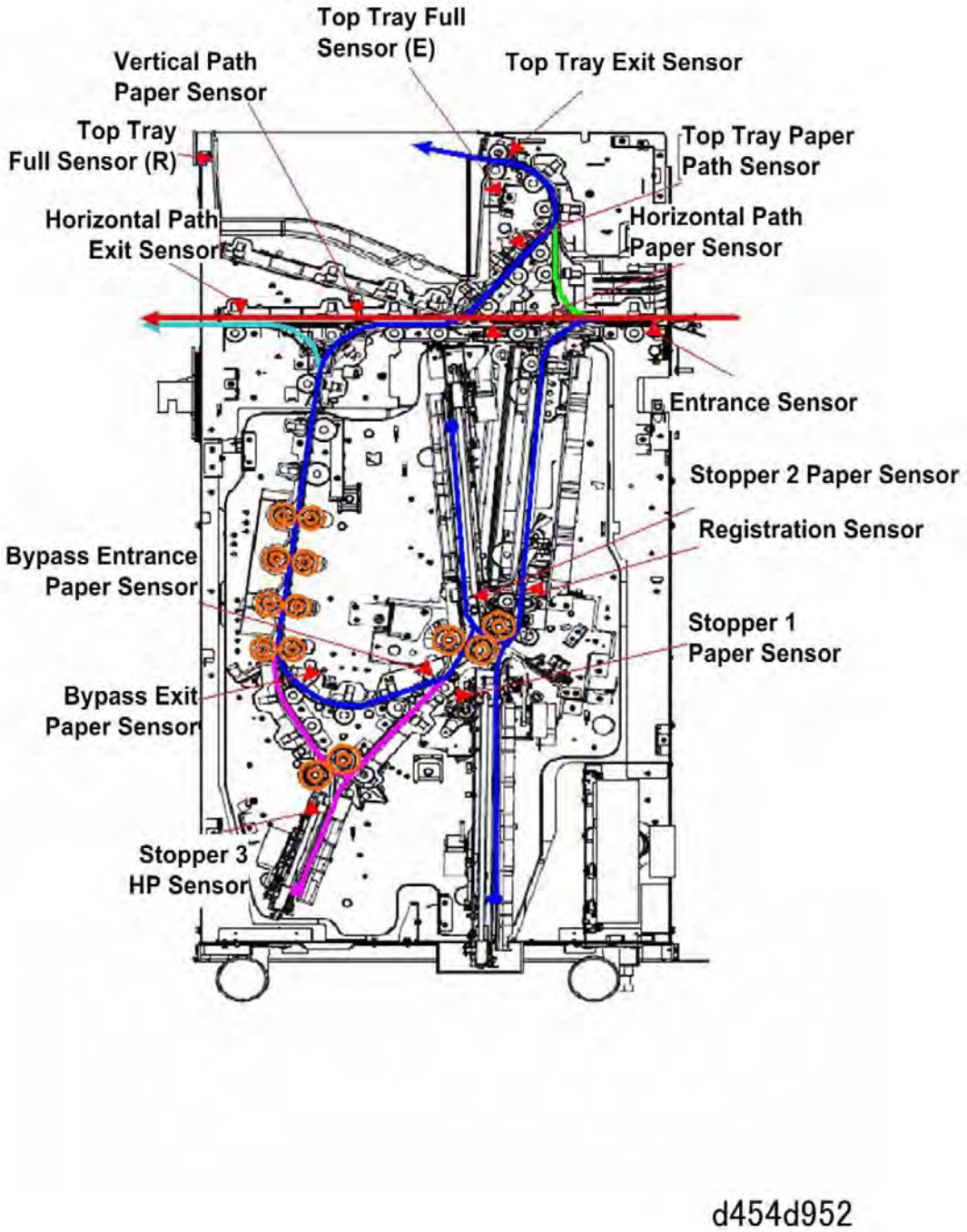


A pair sensors are used to detect the tray full condition. At the start of every job:

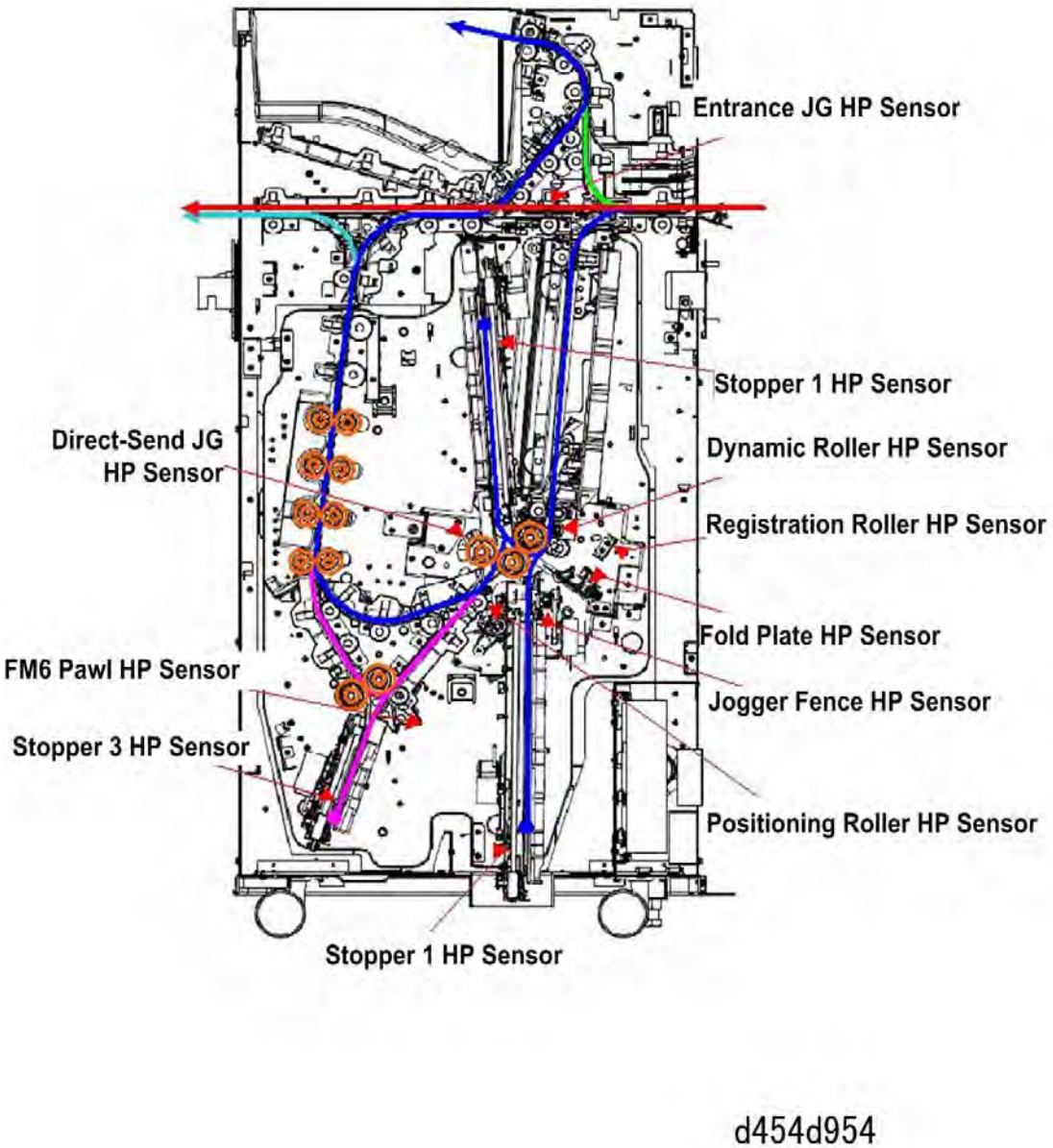
- Tray full sensor (Emitter) [A] emits a signal to tray full sensor (Receptor) [B].
- As long as the signal remains unbroken the multi-folder will continue to operate and feed folded paper to the top of the unit [C].
- When the top of the stack grows high enough to interrupt the signal between the tray full sensors [D], this will signal the machine to shut down the line temporarily.
- After the operator removes the stack from the top tray, folding and paper exit will resume.

2.5 ELECTRICAL COMPONENTS

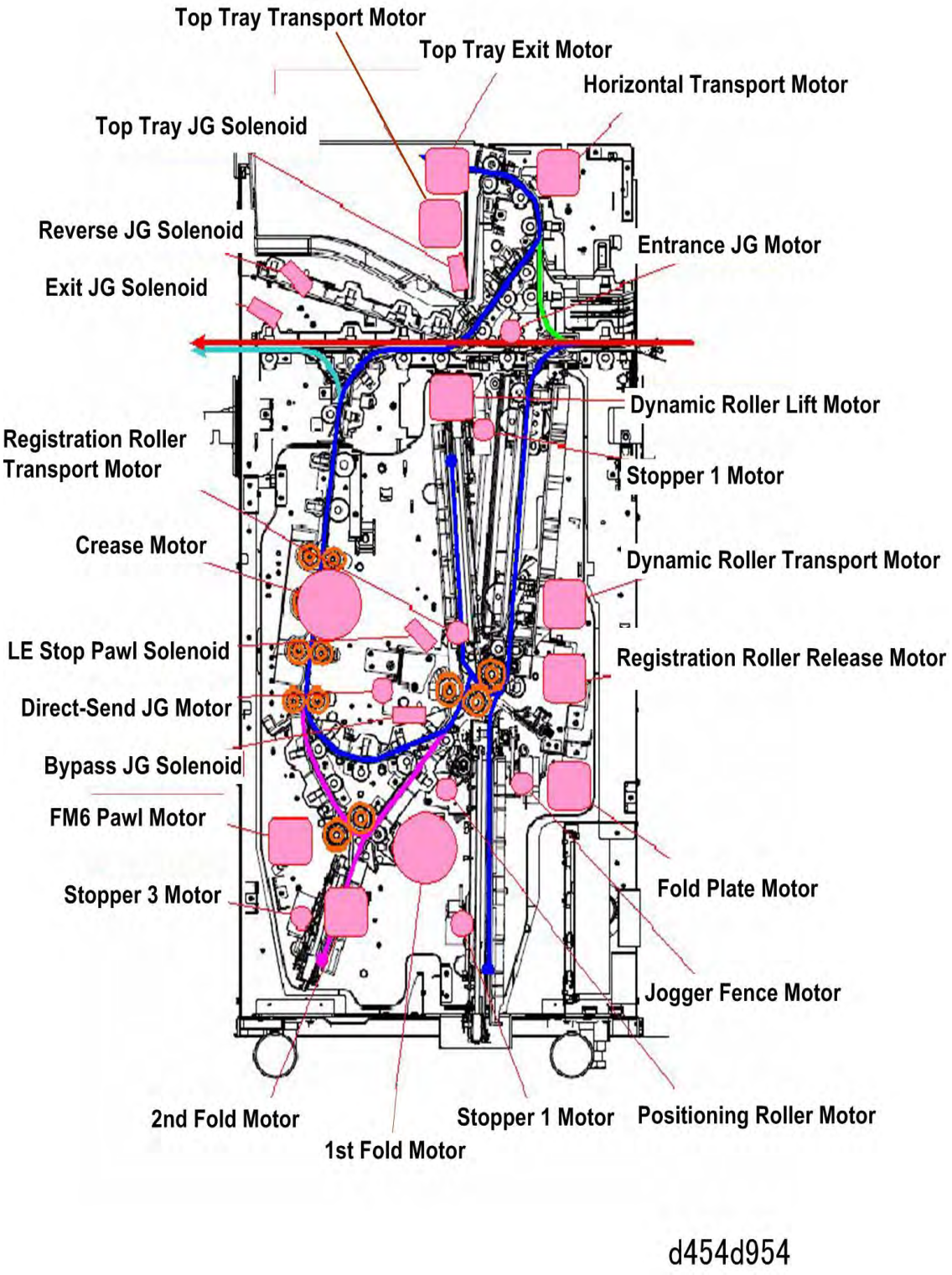
2.5.1 TRANSPORT SENSORS



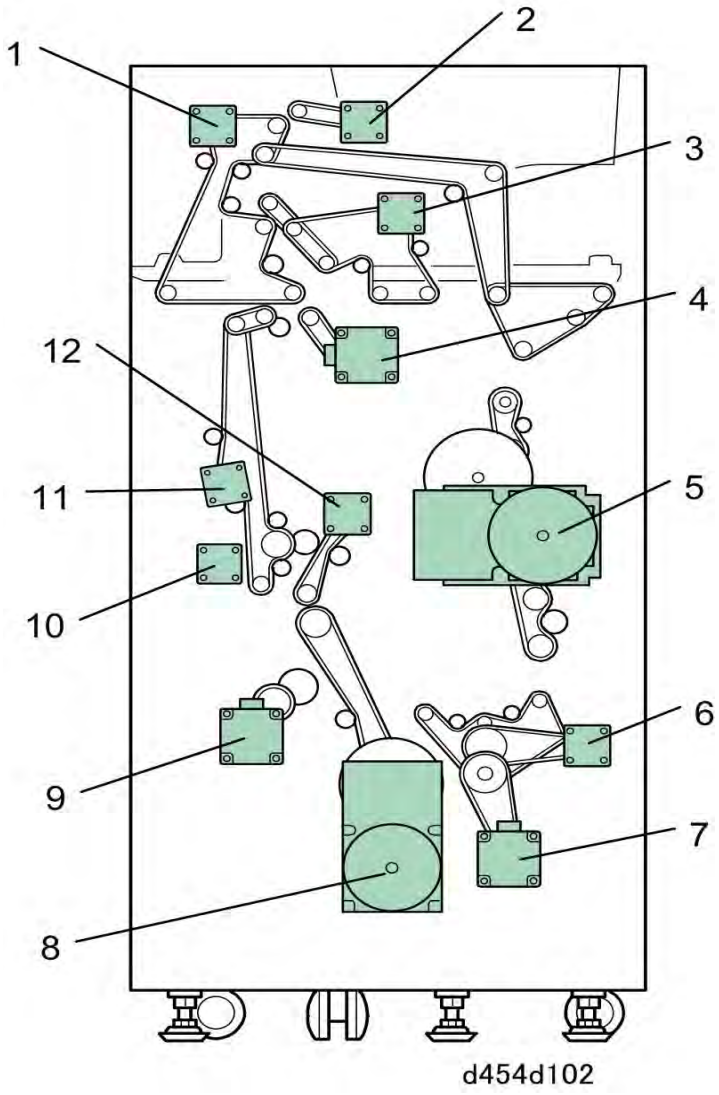
2.5.2 OPERATION SENSORS



2.5.3 MOTORS, SOLENOIDS



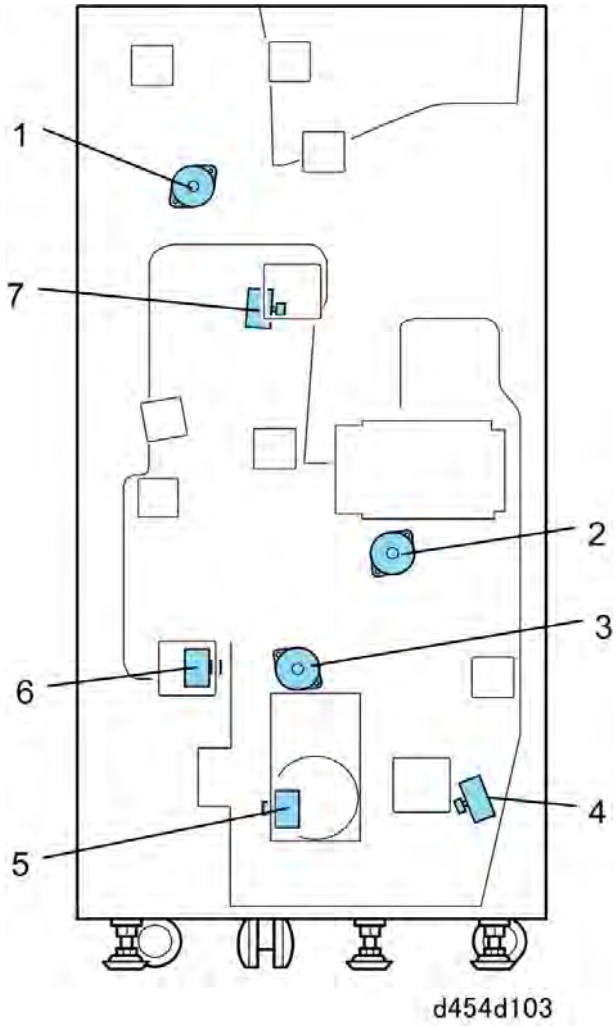
2.5.4 PAPER TRANSPORT MOTORS



1.	Horizontal Transport Motor	7.	2nd Fold Motor
2.	Top Tray Exit Motor	8.	1st Fold Motor
3.	Top Tray Transport Motor	9.	Fold Plate Motor
4.	Dynamic Roller Lift Motor	10.	Registration Roller Release Motor
5.	Crease Motor	11.	Dynamic Roller Transport Motor
6.	FM6 Pawl Motor	12.	Registration Roller Transport Motor

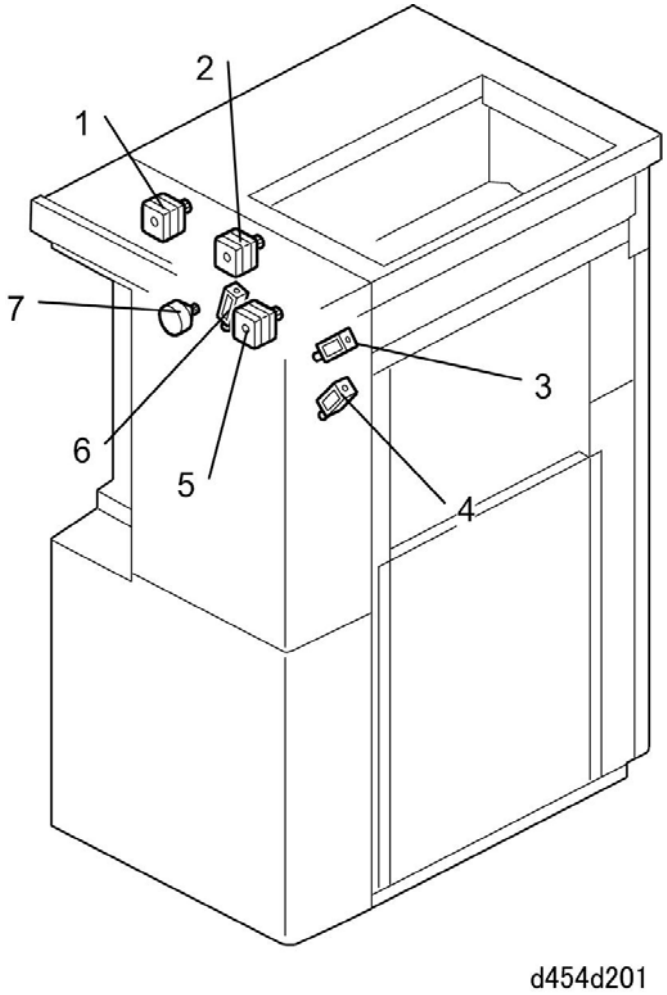
Details

2.5.5 FOLD MOTORS



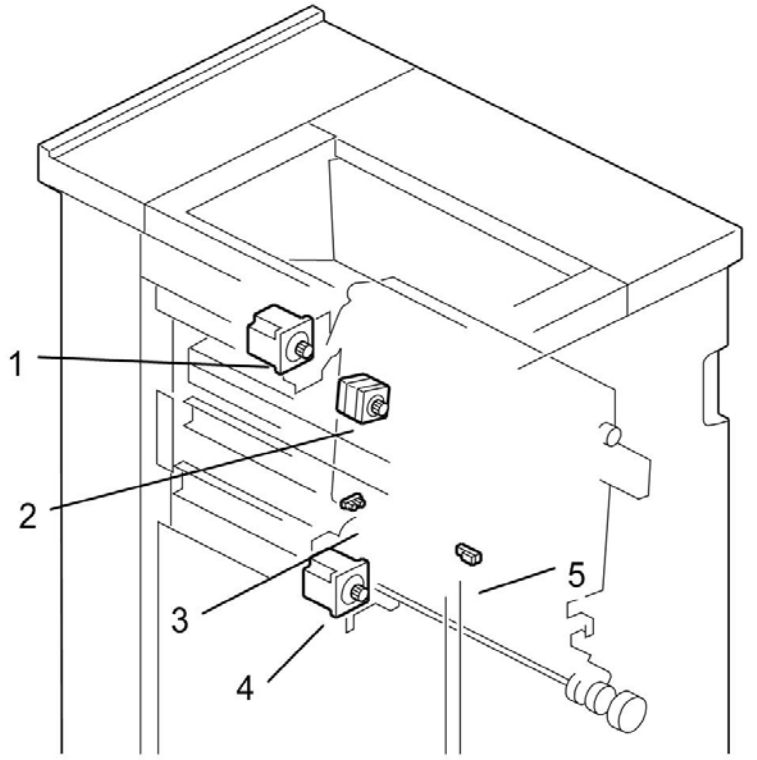
1.	Entrance JG Motor
2.	Direct Send JG Motor
3.	Positioning Roller Motor
4.	Stopper 3 Motor
5.	Stopper 1 Motor
6.	Jogger Fence Motor
7.	Stopper 2 Motor

2.5.6 MOTORS, SOLENOIDS AROUND THE TOP TRAY



1.	Horizontal Transport Motor
2.	Top Tray Exit Motor
3.	Reverse JG Solenoid
4.	Exit JG Solenoid
5.	Top Tray Transport Motor
6.	Entrance JG Solenoid
7.	Top Tray JG Solenoid

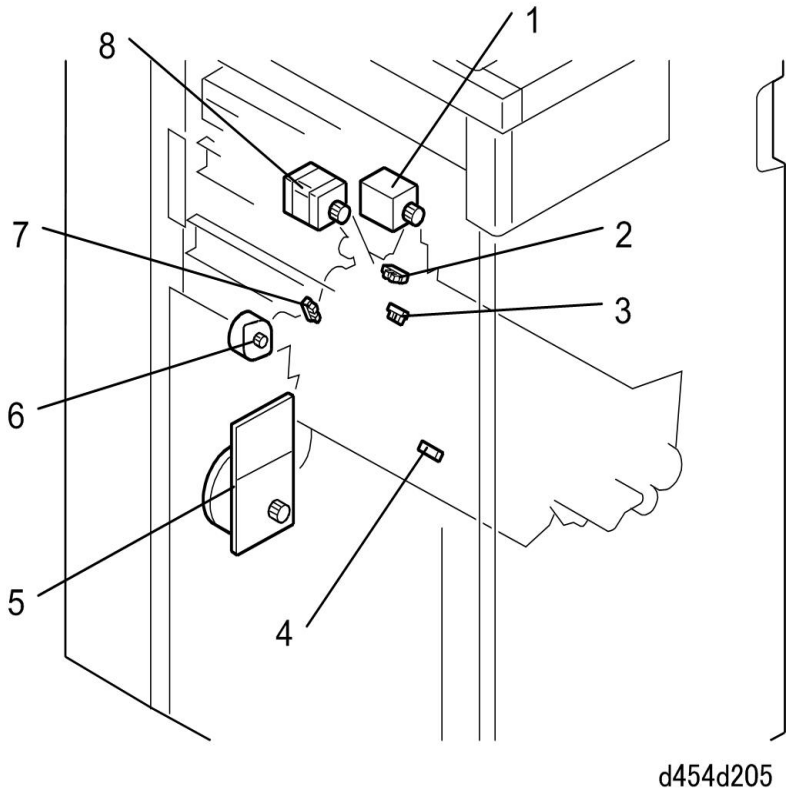
2.5.7 MOTORS, SENSORS TOP



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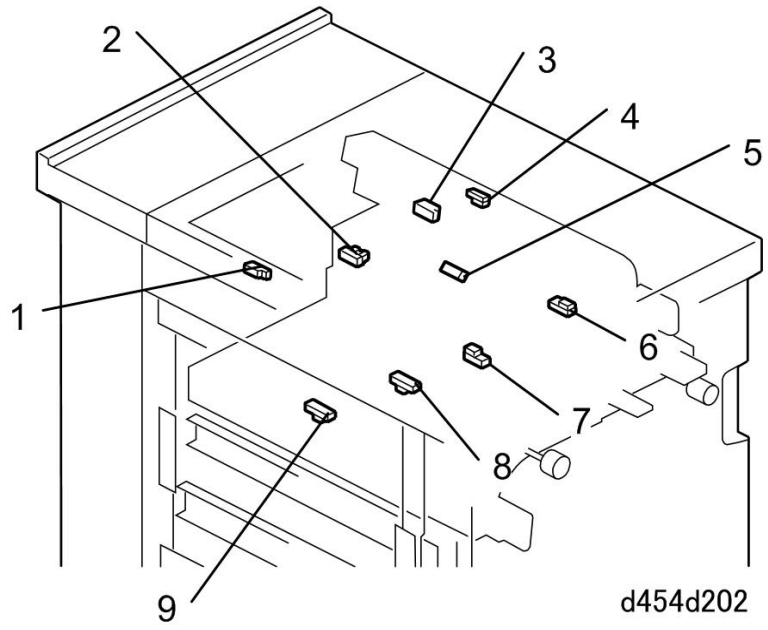
1.	Dynamic Roller Lift Motor
2.	Dynamic Roller Transport Motor
3.	Dynamic Roller HP Sensor
4.	Fold Plate Motor
5.	Registration Sensor

2.5.8 MOTORS, SENSORS BOTTOM



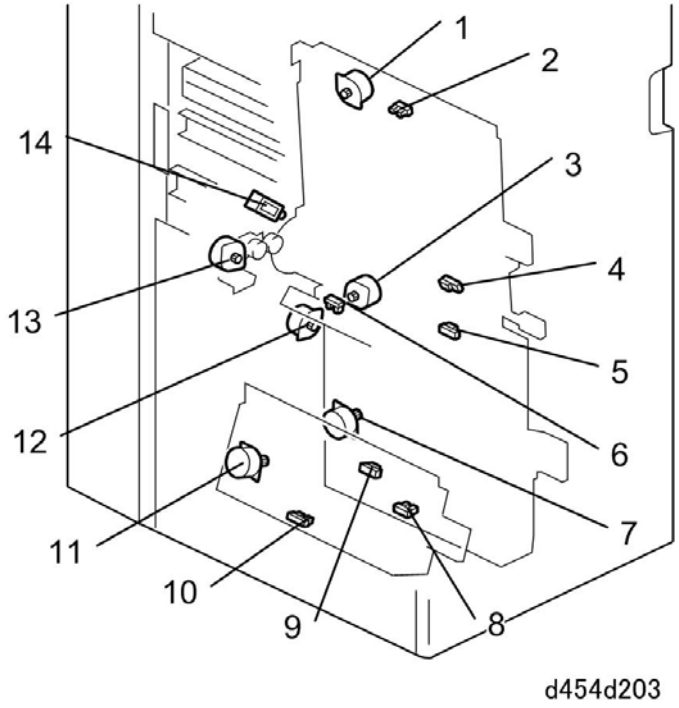
1.	Registration Roller Release Motor
2.	Jogger Fence HP Sensor
3.	Fold Plate HP Sensor
4.	FM6 Pawl HP Sensor
5.	1st Fold Motor
6.	Positioning Roller Motor
7.	Direct Send JG HP Sensor
8.	Registration Roller Transport Motor

2.5.9 SENSORS AROUND TOP TRAY



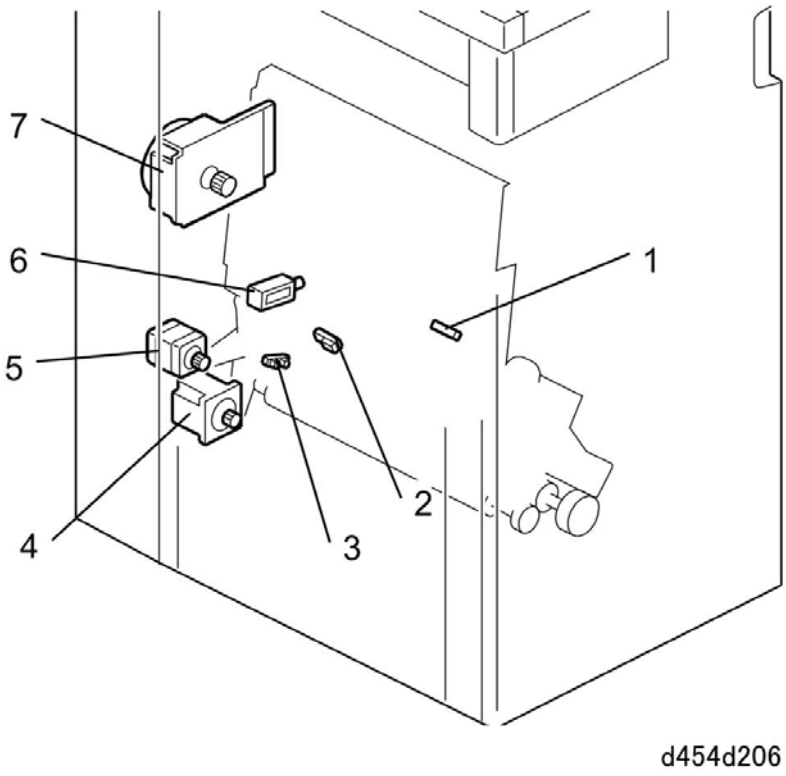
1.	Top Tray Full Sensor (R)
2.	Entrance JG HP Sensor
3.	Top Tray Full Sensor (E)
4.	Top Tray Exit Sensor
5.	Top Tray Paper Path Sensor
6.	Entrance Sensor
7.	Horizontal Path Paper Sensor
8.	Vertical Path Paper Sensor
9.	Horizontal Path Exit Sensor

2.5.10 FOLD MOTORS, SENSORS, SOLENOIDS



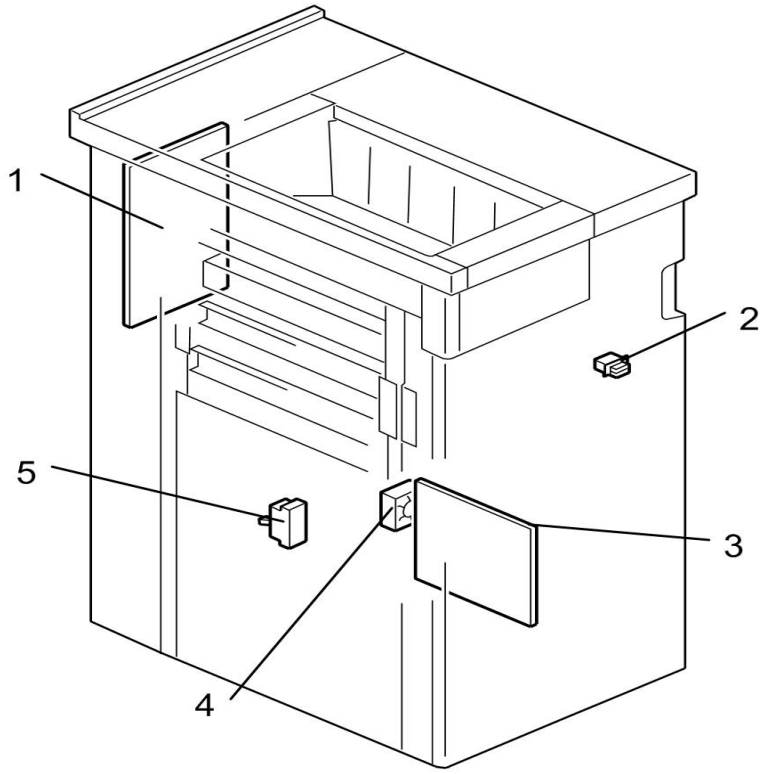
1.	Stopper 2 Motor	8.	Stopper 1 HP Sensor
2.	Stopper 2 HP Sensor	9.	Stopper 3 Paper Sensor
3.	Jogger Fence Motor	10.	Stopper 3 HP Sensor
4.	Stopper 2 Paper Sensor	11.	Stopper 3 Motor
5.	Stopper 1 Paper Sensor	12.	Positioning Roller Motor
6.	Positioning Roller HP Sensor	13.	Direct Send JG Motor
7.	Stopper 1 Motor	14.	LE Stop Pawl Solenoid

Details



1.	Bypass Entrance Paper Sensor
2.	Bypass Exit Paper Sensor
3.	FM6 Pawl HP Sensor
4.	2nd Fold Motor
5.	FM6 Pawl Motor
6.	Bypass JG Solenoid
7.	Crease Motor

2.5.11 BOARDS, SWITCHES, FAN



1.	Main Board
2.	Front Door Switch
3.	PSU
4.	PSU Fan
5.	Breaker Switch

2.5.12 COMPONENT LIST

Motors		
M	Entrance JG Motor	Operates the entrance junction that directs paper from the upstream device to the 1) horizontal paper path, 2) paper fold path, 3) top tray.
M	Top Tray Transport Motor	Drives the transport rollers that feed unfolded paper to the downstream unit. Reverses and feeds folded paper to the folded paper tray.
M	Horizontal Transport Motor	Drives the entrance roller at the entrance where the paper from the upstream device is received. Drives the exit roller that feeds the paper out to the downstream unit. Drives other transport rollers in the horizontal paper path.
M	Top Tray Exit Motor	Drives the exit roller that feeds paper into the top tray.
M	1st Fold Motor	Drives the 1st fold roller.
M	Jogger Fence Motor	Moves the jogger fence according to the width of the paper to align its edges.
M	Positioning Roller Motor	Operates the positioning roller when the paper strikes stopper 1 when more that one sheet of paper is stacked for folding.
M	Stopper 1 Motor	Moves Stopper 1 to the correct position for folding according to the paper size.
M	Fold Plate Motor	Operates the fold plate for the first fold during multi-sheet folding. Operates Stopper 1 1 during Z-folding.

Motors		
M	Registration Roller Release Motor	Releases the pressure of the registration roller so paper can be stacked for multi-sheet folding.
M	Dynamic Roller Lift Motor	Raises and lowers the dynamic roller to the correct position for folding.
M	Stopper 2 Motor	Moves Stopper 2 to the correct position for folding according to the paper size.
M	Dynamic Roller Transport Motor	Drives the Dynamic roller.
M	Registration Roller Transport Motor	Drives the registration roller.
M	Direct-Send JG Motor	Operates the direct send junction gate to the Stopper 2.
M	FM6 Pawl Motor	Drives the double-flap pawl that prevents bending of the leading edge when the 3rd fold is executed for FM6 folding (Fourths with 2 Flaps In)
M	Stopper 3 Motor	Moves Stopper 3 to the correct position for folding according to the paper size.
M	2nd Fold Motor	Drives 3rd fold roller. Reverses when the paper does not pass through the 3rd fold unit.
M	Crease Motor	Drives the crease rollers.

Details

Sensors		
S	Top Tray Exit Sensor	Checks for the presence of paper at power on. Detects paper jams at the exit of the top tray. Used to create timing for control of paper fed to the top tray.
S	Entrance Sensor	Checks for the presence of paper at power on. Detects paper jams of paper fed from the upstream unit. Used to create timing for operation of the shift roller during multiple-sheet folding.
S	Entrance JG HP Sensor	Detects when the entrance junction gate is in and out of its home position.
S	Horizontal Path Paper Sensor	Checks for the presence of paper at power on.
S	Top Tray Paper Path Sensor	Checks for the presence of paper at power on. Also checks for jams during paper feed.
S	Top Tray Full Sensor (E)	Detects when the top tray is full.
S	Top Tray Full Sensor (R)	Detects when the top tray is full.
S	Horizontal Path Exit Sensor	Checks for the presence of paper at power on. Checks for paper jams when paper exits to the downstream unit. Used to create timing for paper exit to the downstream unit.
S	Vertical Path Paper Sensor	Checks for the presence of paper at power on.
S	Positioning Roller HP Sensor	Detects when the jog roller is in and out of its home position.

Sensors		
S	Stopper 1 Paper Sensor	Checks for the presence of paper at power on. Also checks for jams during paper feed. Detects the condition of the stacked sheets during multi-sheet folding.
S	Stopper 1 HP Sensor	Detects when Stopper 1 is in and out of its home position.
S	Jogger Fence HP Sensor	Detects when jogger fence is in and out of its home position.
S	FM6 Pawl HP Sensor	Detects when the FM! pawl is in and out of its home position.
S	Registration Sensor	Checks for the presence of paper at power on. Also checks for jams during paper feed. Used to create timing for registration buckle adjustment during paper feed. Detects the condition of the stacked sheets during multi-sheet folding.
S	Registration Roller HP Sensor	Detects when registration roller is in and out of its home position.
S	Dynamic Roller HP Sensor	Detects when dynamic roller is in and out of its home position.
S	Fold Plate HP Sensor	Detects when the fold plate is in and out of its home position.
S	Direct-Send JG HP Sensor	Detects when the direct-send junction gate is in and out of its home position.
S	Stopper 2 Paper Sensor	Checks for the presence of paper at power on. Also checks for jams during paper feed. Used to create operation timing of the LE pawl solenoid.

Details

Sensors		
S	Stopper 2 HP Sensor	Detects when Stopper 2 is in and out of its home position.
S	Bypass Exit Paper Sensor	Checks for the presence of paper at power on.
S	Bypass Entrance Paper Sensor	Checks for the presence of paper at power on.
S	Stopper 3 Paper Sensor	Checks for the presence of paper at power on. Also checks for jams during paper feed. Used to create the timing that operates the 2nd fold motor during FM6 folding..
S	Stopper 3 HP Sensor	Detects when Stopper 3 is in and out of its home position.

Switches		
SW	Breaker Switch	-
SW	Front Door Switch (SW1)	Detects when the front door is opened or closed. When the front door is opened the interlock switch cuts off the 24V power supply.

Solenoids		
SOL	Top Tray JG Solenoid	Operates the junction gate that sends the paper to the top tray after the direction of the paper has been reversed up and out of the horizontal paper path.
SOL	Exit JG Solenoid	Operates the exit junction gate that directs paper from the multi-fold unit to the exit for the downstream unit or to the exit for the folded paper tray.
SOL	Reverse JG Solenoid	Operates the junction gate that opens the horizontal feed path to paper sent from the fold crease unit.
SOL	LE Stop Pawl Solenoid	Operates the pawl that prevents bending of the leading edge while the paper is being folded in the 2nd fold unit.
SOL	Bypass JG Solenoid	Operates the bypass junction gate which directs paper from the 2nd fold unit to either the bypass or the 3rd fold unit.

Boards		
PCB	PSU	Supplies the 24V power for the operation of the motors and solenoids, and the 5V power for the main board and sensors.
PCB	PSU Fan	Cools the PSU.
PCB	Main Board	Controls operation of the motors, solenoids, sensors, and interface with the main machine.