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G188/G189
SERVICE MANUAL

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Ricoh Americas Corporation

LEGEND

PRODUCT CODE	COMPANY			
	GESTETNER	LANIER	RICOH	SAVIN
G188	C8140ND	LP540C	SP C820DN	CLP340D
G189	C8150ND	LP550C	SP C821DN	CLP350D

DOCUMENTATION HISTORY

REV. NO.	DATE	COMMENTS
*	02/2009	Original Printing

G188/G189

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B804/B805 BOOKLET FINISHER SR3020/SR3030

SEE SECTION B804/B805 FOR DETAILED TABLE OF CONTENTS

D351 PAPER FEED UNIT PB3040

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D352 LCIT PB3050

SEE SECTION D352 FOR DETAILED TABLE OF CONTENTS

D386 BRIDGE UNIT BU3030

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D387 PAPER FEED UNIT PB3080

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G835 MAIL BIN TYPE C820

SEE SECTION G835 FOR DETAILED TABLE OF CONTENTS

Read This First

Important Safety Notices

Prevention of Physical Injury

1. Before disassembling or assembling parts of the printer and peripherals, make sure that the printer power cord is unplugged.
2. The wall outlet should be near the printer and easily accessible.
3. 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.
4. The printer drives some of its components when it completes the warm-up period. Be careful to keep hands away from the mechanical and electrical components as the printer starts operation.
5. The inside and the metal parts of the fusing unit become extremely hot while the printer is operating. Be careful to avoid touching those components with your bare hands.

Health Safety Conditions

1. Toner and developer are non-toxic, but if you get either of them in your eyes by accident, it may cause temporary eye discomfort. Immediately wash eyes with plenty of water. If unsuccessful, get medical attention.
2. The printer, which use high voltage power source, can generate ozone gas. High ozone density is harmful to human health. Therefore, the machine must be installed in a well-ventilated room.

Observance of Electrical Safety Standards

The printer and its peripherals must be serviced by a customer service representative who has completed the training course on those models.

⚠WARNING

- ⃠Keep the machine away from flammable liquids, gases, and aerosols. A fire or an explosion might occur.

⚠CAUTION

- The Controller board on this machine 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.
- The optional fax and memory expansion units contain lithium batteries, which can explode if replaced incorrectly. Replace only with the same or an equivalent type

recommended by the manufacturer. Do not recharge or burn the batteries. Used batteries must be handled in accordance with local regulations.

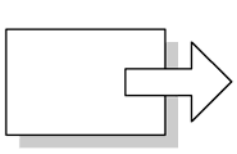
Safety and Ecological Notes for Disposal

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, the maintenance unit which includes developer or the organic photoconductor 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.

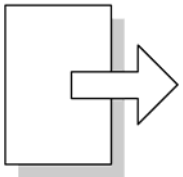
Symbols, Abbreviations and Trademarks

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

☛	See or Refer to
	Clip ring
	Screw
	Connector
	Clamp
	E-ring
SEF	Short Edge Feed
LEF	Long Edge Feed



Short Edge Feed (SEF)



Long Edge Feed (LEF)

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PRODUCT INFORMATION

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

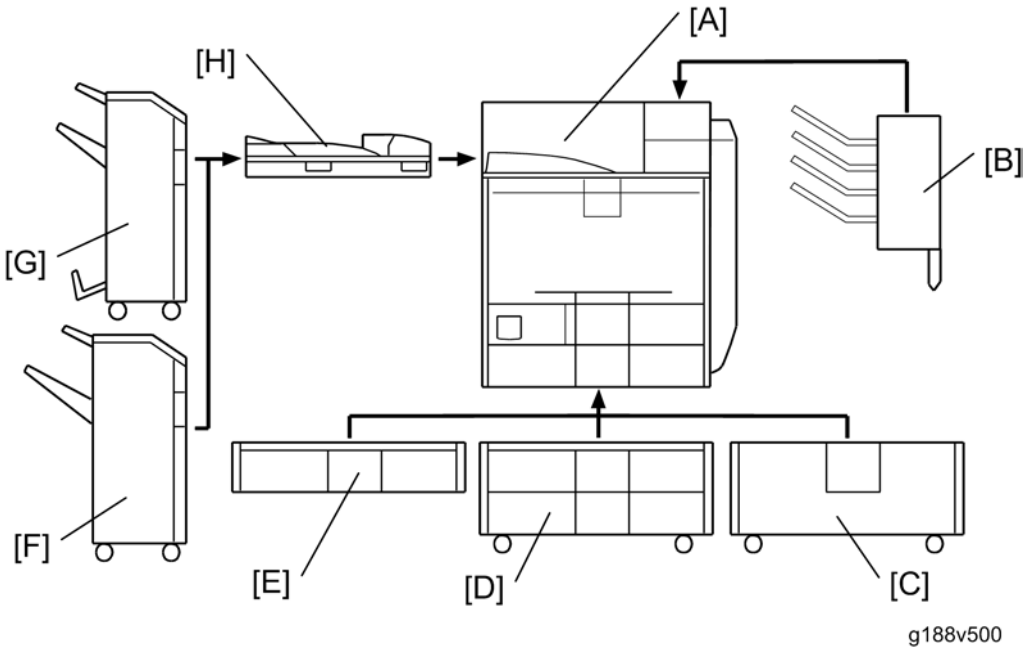
1. PRODUCT INFORMATION

1.1 SPECIFICATIONS

See "Appendices" for the following information:

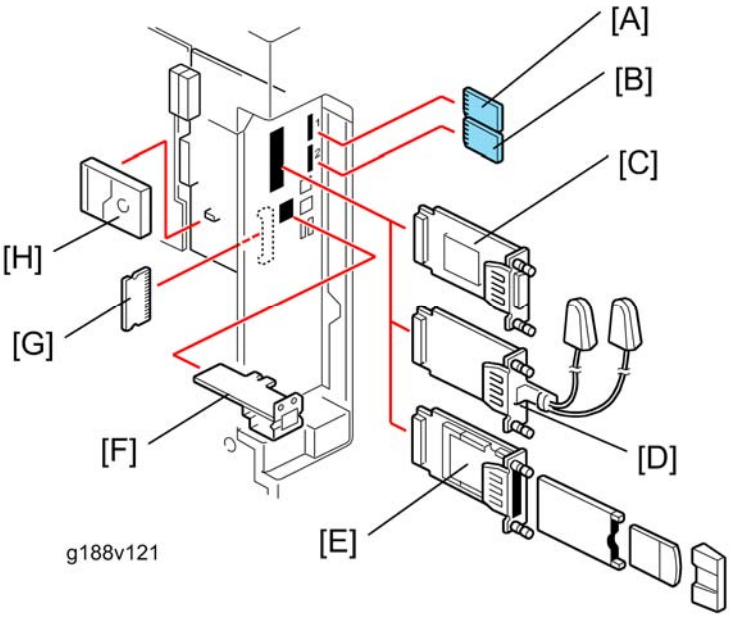
- Mainframe Specifications
- Printer Specifications
- Supported Paper Sizes
- Software Accessories
- Optional Equipment

1.2 MACHINE CONFIGURATION



Item	Machine Code	Call out	Remarks
Mainframe	G188/G189	[A]	-
Mail Bin	G835	[B]	One from [C] and [D]
LCT	D352-57/-67	[C]	One from the three and [D] + [E]
Two-tray paper feed unit	D351-57	[D]	
Paper tray unit (one tray)	D387-17	[E]	
3000-sheet finisher	B805	[F]	One from [F] and [G]; Requires [H] and one from [C] and [D]
- Punch unit: 3/2 holes	B702-17	-	Requires [F]
- Punch unit: 4/2 holes	B702-27	-	Requires [F]
- Punch unit: 4 holes	B702-28	-	Requires [F]

Item	Machine Code	Call out	Remarks
- Output Jogger Unit	B703	-	Requires [F]
1000-sheet booklet finisher	B793	[G]	One from [F] and [G]; Requires [H] and one from [C] and [D]
- Punch unit: 3/2 holes	B807-17	-	Requires [G]
- Punch unit: 4/2 holes	B807-27	-	Requires [G]
- Punch unit: 4 holes	B807-30	-	Requires [G]
Bridge unit	D386	[H]	-



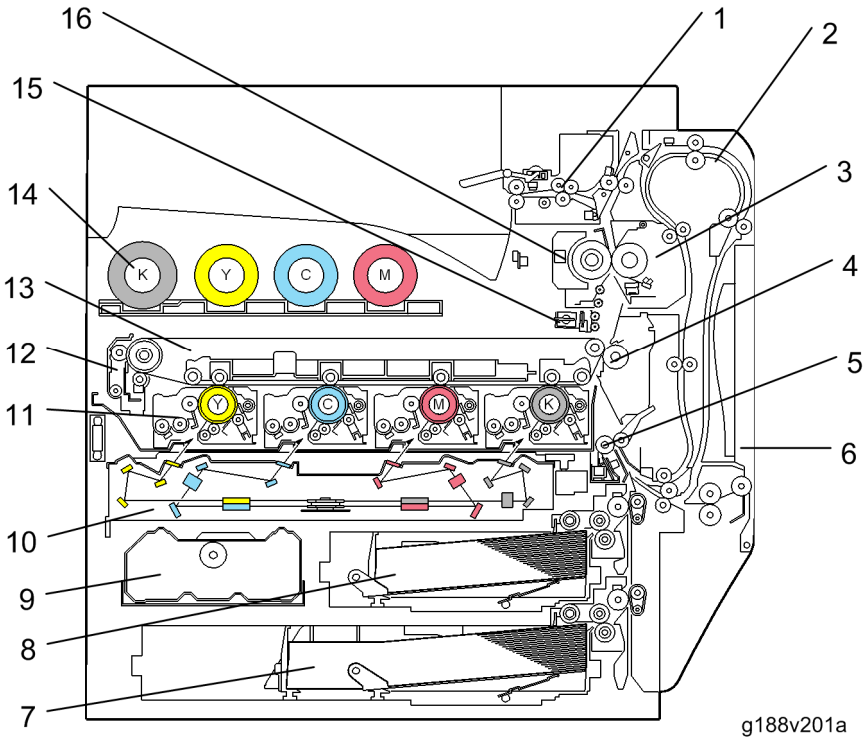
Item	Machine code	Call out	Remark
USB 2.0:	-	-	Standard
USB Host	-	-	Standard
Ethernet:	-	-	Standard

Machine Configuration

IEEE 1284	B679-17	[C]	One from the four devices
Wireless LAN (IEEE 802.11a/g)	D377-01/ 02	[D]	
Wireless LAN (IEEE 802.11 g)	D377-19		
Bluetooth	B826	[E]	
Gigabit Ethernet	D377-21	[F]	
Hard Disk Drive	M354-05	[H]	Standard for G189 Option for G188
Data Overwrite Security Unit	M354-21	[A]	One from the five in SD slot 1 at a time.
NetWare printing	M354-19		
Data Storage Card	G874		
PictBridge	M354-13		
VM Card Type K	M354-15/ 22/ 23	[B]	In SD slot 2
HDD Encryption Unit	M354-17		In SD card slot 2 Remove it from slot 2 after installing.
256 MB DIMM	M354-01	[G]	One from the two
512 MB DIMM	M354-03		

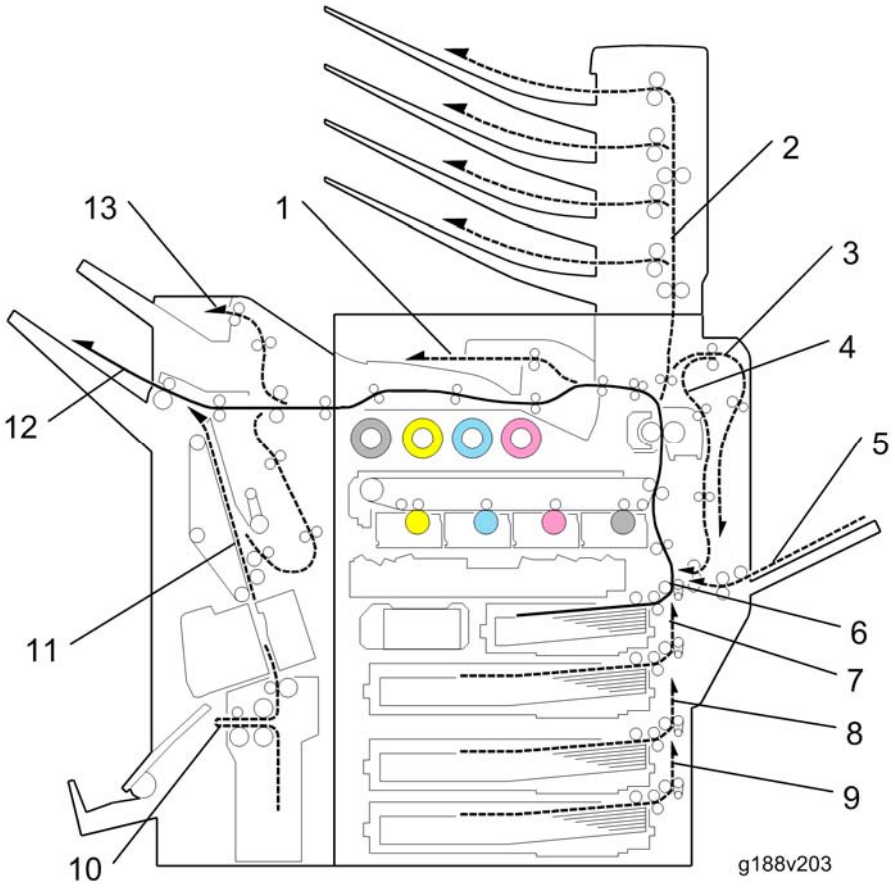
1.3 OVERVIEW

1.3.1 COMPONENT LAYOUT



1. Decurler rollers	9. Toner collection bottle
2. Duplex unit	10. Laser optics housing unit
3. Fusing unit	11. PCU (4 colors)
4. Paper transfer roller	12. Image transfer belt cleaning unit
5. Registration roller	13. Image transfer belt unit
6. By-pass feed table	14. Toner bottle (4 colors)
7. Tray 2	15. ID sensor
8. Tray 1	16. IH coil unit

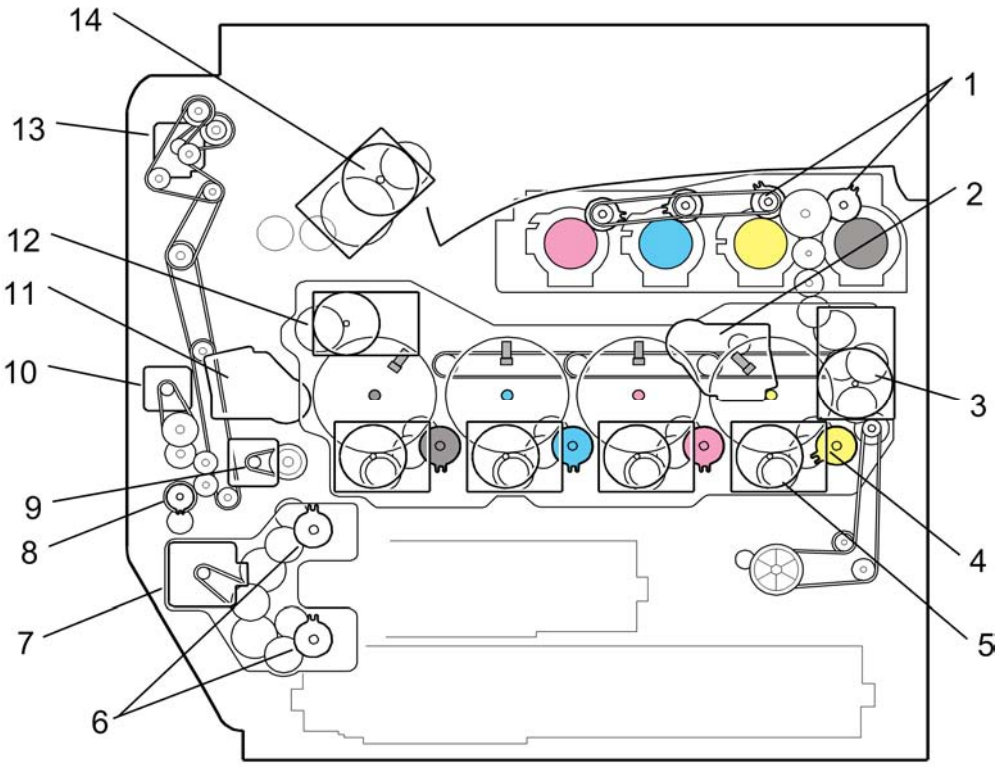
1.3.2 PAPER PATH



1. Inner Tray	8. Tray 3: Optional paper feed unit/LCT 9.
2. Mail Bin	Tray 4: Optional paper feed unit
3. Duplex inverter	10. Finisher booklet stapler
4. Duplex feed	(B793 Optional)
5. By-pass tray feed	11. Finisher stapler (Optional)
6. Tray 1 feed	12. Finisher upper tray (Optional)
7. Tray 2 feed	13. Finisher proof tray (Optional)

The 3000-sheet finisher and 1000-sheet booklet finisher require the bridge unit (D386) and one from the two-tray paper feed unit (D351) or the LCT (D352).

1.3.3 DRIVE LAYOUT



g188v202a

1. Toner supply clutch-K and -CMY:	Turns on/off the drive power to the toner supply unit (K and -CMY).
2.ITB (Image Transfer Belt) contact motor:	Moves the ITB into contact and away from the color PCUs.
3. Toner transport motor:	Drives the toner attraction pumps and the toner collection coils from the PCUs, from the transfer belt unit, and inside the toner collection bottle. Also rotates the toner bottles.
4. Development clutch (K, Y, M, C):	Turns on/off the drive power to the development unit (K, Y, M, C).
5. Drum/Development drive motor (K, Y, M, C)	Drives the color drum unit and development unit (K, Y, M, C).
6. Paper feed clutch	Switches the drive power between the tray 1 and tray 2.
7. Paper feed motor:	Drives the paper feed mechanisms (tray 1/tray 2/by-pass tray).

8. By-pass feed clutch:	Turns on/off the drive power to the by-pass pick-up, feed and separation rollers.
9. Registration motor:	Drives the registration roller.
10. By-pass/duplex feed motor:	Drives the by-pass pick-up, feed and separation roller, and duplex transport rollers.
11. Paper transfer contact motor:	Moves the paper transfer roller in contact with the image transfer belt.
12. ITB drive motor:	Drives the image transfer belt unit.
13. Duplex inverter motor	Drives the duplex inverter rollers and duplex transport rollers.
14. Fusing/paper exit motor:	Drives the fusing unit and paper exit section.

1.4 GUIDANCE FOR THOSE WHO ARE FAMILIAR WITH PREDECESSOR PRODUCTS

Machine G188/G189 is a successor model to Machine G133. If you have experience with the predecessor product, the following information will be of help when you read this manual.

Different Points from Predecessor Products

	G188/G189	G133
Fusing System	Roller-heating IH system	Belt-heating IH system
SD Card Slots	2 slots	3 slots
Location of Firmware for Printer, Netfile, NIB, WebDocBox, WebSys, and DESS	Flash ROM on the controller board	SD card

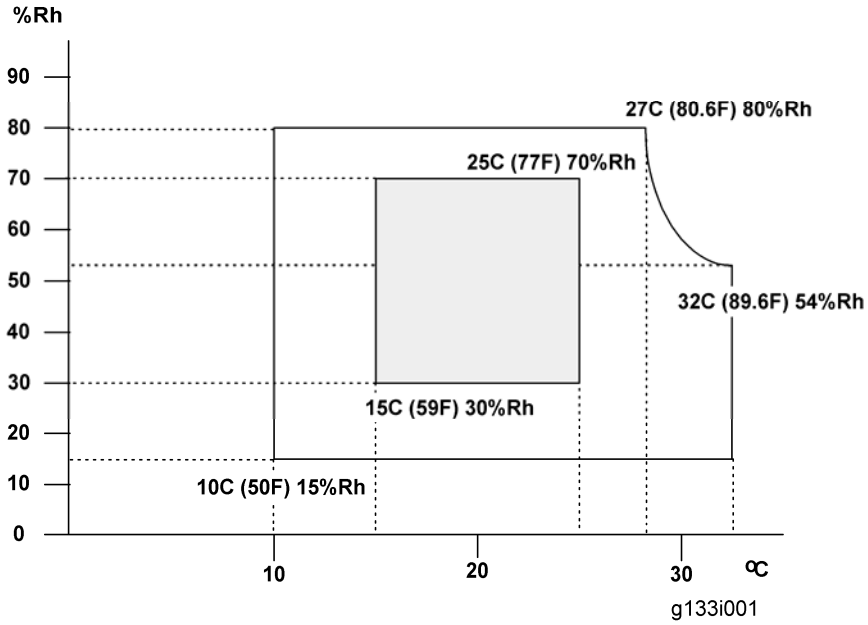
INSTALLATION

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

2. INSTALLATION

2.1 INSTALLATION REQUIREMENTS

2.1.1 ENVIRONMENT



1. Temperature Range: 10°C to 32°C (50°F to 89.6°F)
2. Humidity Range: 15% to 80% RH
3. Ambient Illumination: Less than 1500 lux (do not expose to direct sunlight)
4. Ventilation: 3 times/hr/person or more
5. Do not let the machine get exposed to the following:
   1) Cool air from an air conditioner
   2) Heat from a heater
6. Do not install the machine in areas that are exposed to corrosive gas.
7. Install the machine at locations lower than 2,500 m (8,200 ft.) above sea level.
8. Install the machine on a strong, level base. (Inclination on any side must be no more than 5 mm.)
9. Do not install the machine in areas that get strong vibrations.

2.1.2 MACHINE LEVEL

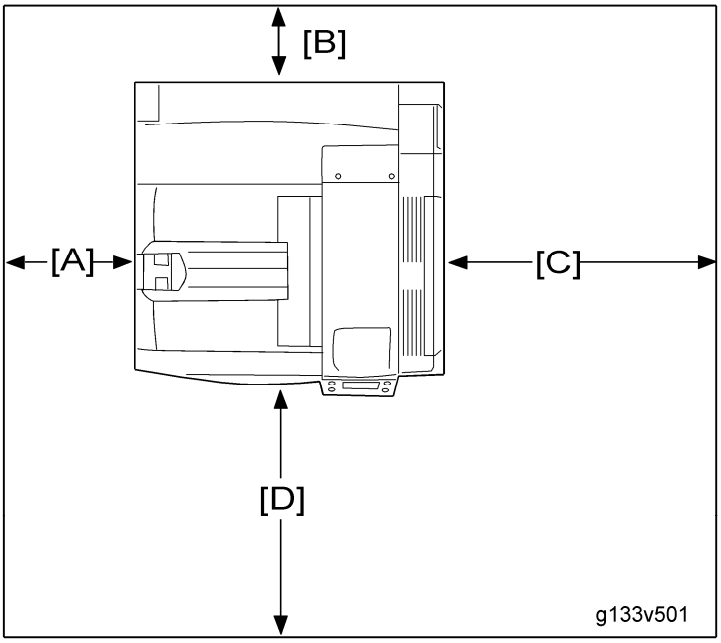
Front to back: Within 5 mm (0.2")

Right to left: Within 5 mm (0.2")

2.1.3 MACHINE SPACE REQUIREMENTS

⚠CAUTION

- This machine, which uses high voltage power sources, can generate ozone gas. High ozone density is harmful to human health. Therefore, the machine must be installed in a well-ventilated room.



A: Over 100 mm (3.9")

B: Over 100 mm (3.9")

C: Over 550 mm (21.7")

D: Over 750 mm (29.5")

Put the machine near the power source with the clearance shown above.

2.1.4 POWER REQUIREMENTS

⚠CAUTION

- Insert the plug firmly in the outlet.
- Do not use an outlet extension plug or cord.
- Ground the machine.

1. Input voltage level:
   120 V, 60 Hz: More than 12 A
   220 V to 240 V, 50 Hz/60 Hz: More than 7 A
2. Permissible voltage fluctuation: ±10 %
3. Do not put things on the power cord.

2.2 OPTIONAL UNIT COMBINATIONS

2.2.1 MACHINE OPTIONS

U: User installation, C: CE installation

No.	Options	Remarks	
1	Paper tray unit	U	One from No.1, No.2, No.3 and No.1 + No.2
2	2-tray paper feed unit	U	
3	Large capacity tray unit	U	
4	Bridge unit	C	-
5	1000-sheet booklet finisher	C	One from No.5 and No.7. Requires No.4 and one from No.2 and No.3.
6	*Punch kit (3 types)	C	No.5 required. One of the three types
7	3000-sheet finisher	C	One from No.5 and No.7. Requires No.4 and one from No.2 and No.3.
8	*Punch kit (3 types)	C	No.7 required. One of the three types
9	Mail Bin	C	No.2 or No.3 required.

*: Child options (Child options require a parent option.)

Note

- For details about installation procedures for the user installation options, see "Hardware Guide" of this model.

2.2.2 CONTROLLER OPTIONS

U: User installation, C: CE installation

No.	Options	Remarks	
1	Bluetooth	U	One from the three (I/F Slot)

Optional Unit Combinations

2	IEEE802.11a/g, g	U	
3	IEEE 1284	U	
4	Gigabit Ethernet Type B	U	Gigabit Ethernet Slot
5	HDD	U	Option only for G188
6	PictBridge Option	U	One from the two (SD card slot 1)
7	Data Storage Card Type A	U	
8	NetWare printing Type A	U	
9	Data Overwrite Security Unit Type M	U	
10	VM Card Type K	C	SD card slot 2
11	HDD Encryption Unit Type D	U	SD card slot 2 (during installation only)
12	128 MB DIMM	C	One from No.12 and No.13
13	256 MB DIMM	C	

Note

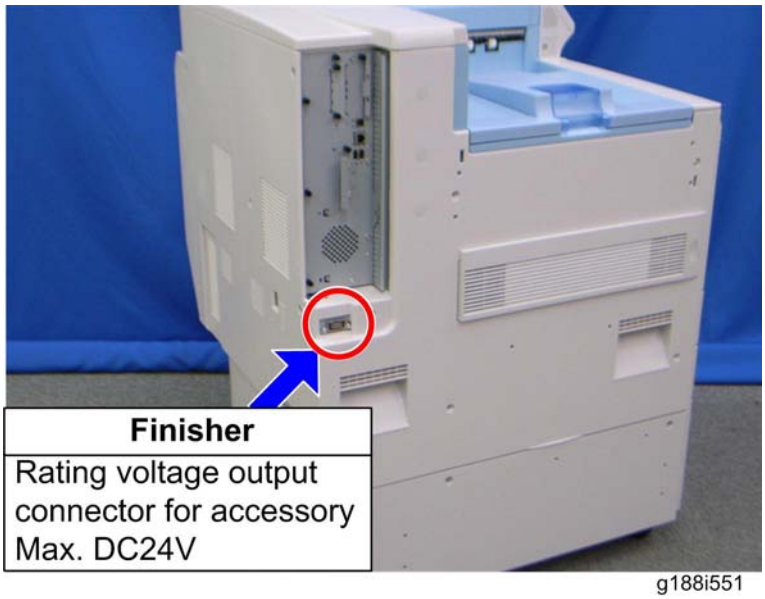
- For details about installation procedures for the user installation options, see "Hardware Guide" of this model.

2.3 PRINTER INSTALLATION

2.3.1 POWER SOCKET FOR PERIPHERAL

⚠CAUTION

- Rating voltage for peripheral.
- Make sure to plug the cable into the correct socket.



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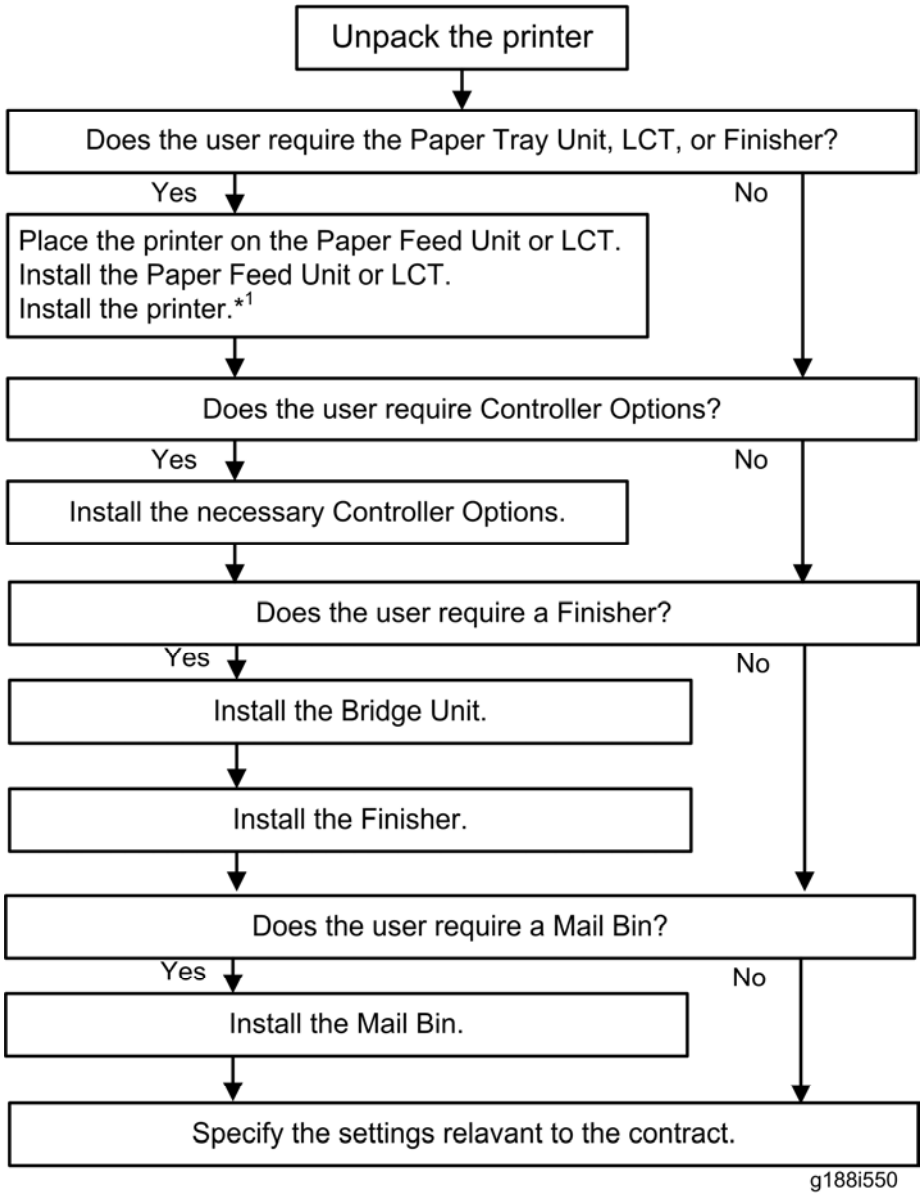
2.3.2 INSTALLATION FLOW CHART

This flow chart shows the best procedure for installation.

Printer Installation



*1: Available installation of the paper feed units are as follows:

▪ Mainframe + One-tray PFU ▪ Mainframe + One-tray PFU + Two-tray PFU	▪ Mainframe + Two-tray PFU ▪ Mainframe + LCT

You need the two-tray paper feed unit (D351-57) or the LCT (D352-57/-67) if you want to install the finisher (B793 or B805).

The punch unit "B702" is for the 3000-sheet finisher (B805).

The punch unit "B807" is for the 1000-sheet booklet finisher (B793).

2.3.3 INSTALLATION PROCEDURE

CAUTION

- **Remove the tape from the development units before you turn the main switch on. The development units can be severely damaged if you do not remove the tape.**

Put the machine on the paper tray unit or the LCT first if you install an optional paper tray unit or the optional LCT at the same time. Then install the machine and other options.

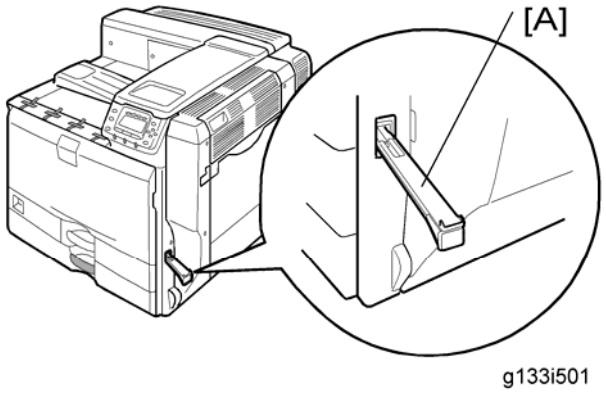
Note

- Keep the shipping retainers after you install the machine. You may need them in the future if you transport the machine to another location.

Unpacking

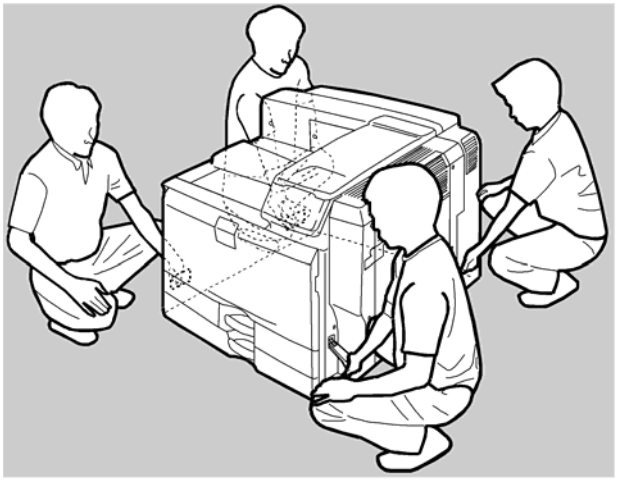
CAUTION

- When lifting the machine, use the handle and grips on both sides of the machine.
- If not, the machine could be dropped. This may cause an injury and may damage the machine.



1. Pull out the handle [A].

Printer Installation



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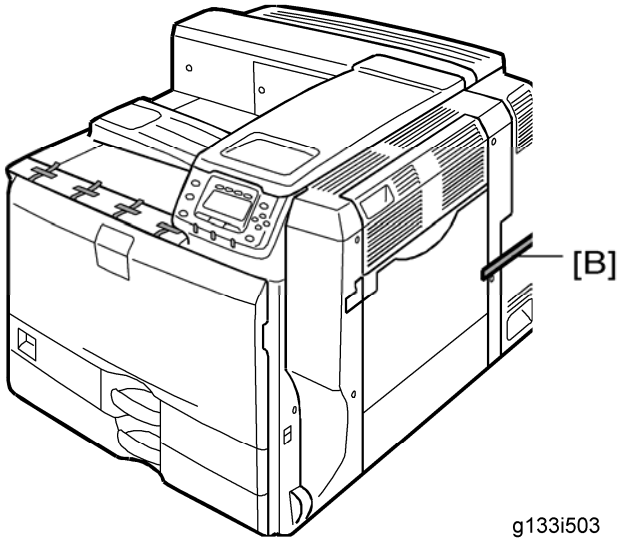
2. Lift the machine with four people by using the handle and grips on both sides of the machine.

Important

- Do not remove the tapes before placing the machine.
- Lower the machine slowly and carefully, so as not to pinch your hands.

3. Push back the handle into the machine.



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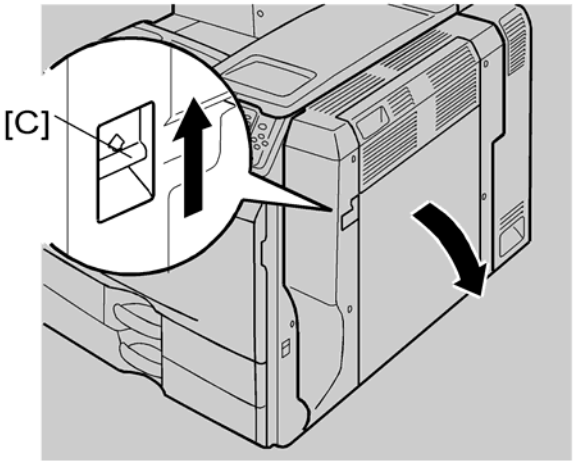
4. Remove the tape [B].



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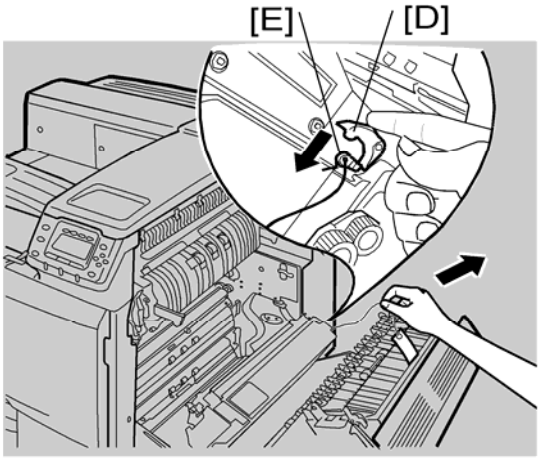
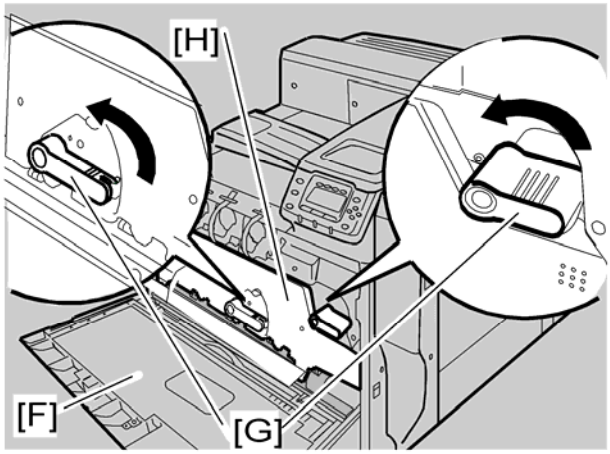
1. Push up the lever [C] on the right door, and then open the right door.



g133i505

2. Keep pushing the lever [D], and then remove the securing pin [E] by pulling the wire with the red tag.
3. Close the right door.

Printer Installation



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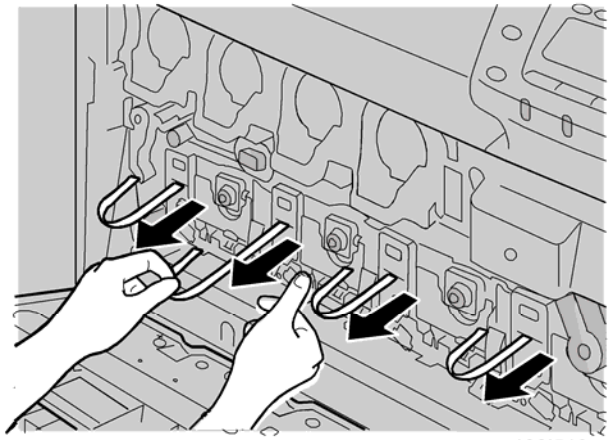
4. Open the front door [F].
5. Turn the two green levers [G] counterclockwise.
6. Open the drum positioning plate [H].


g133i510

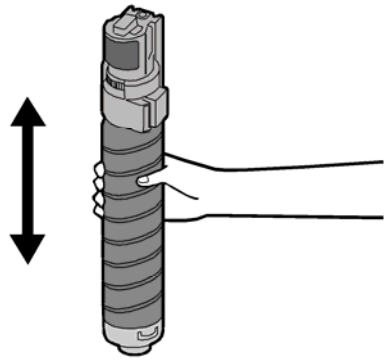
7. Remove and pull out the four tapes horizontally from all PCUs.

Note

- Make sure that all tapes are removed.

8. Close the drum positioning plate.
9. Turn the green levers clockwise to lock the levers.

Installing the Toner



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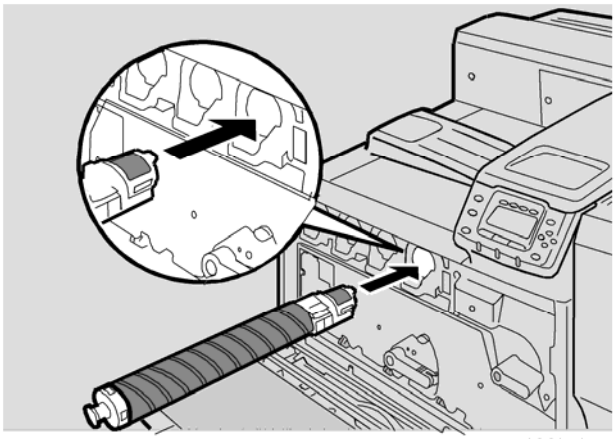
1. Shake the toner bottle up and down five or six times before installing.



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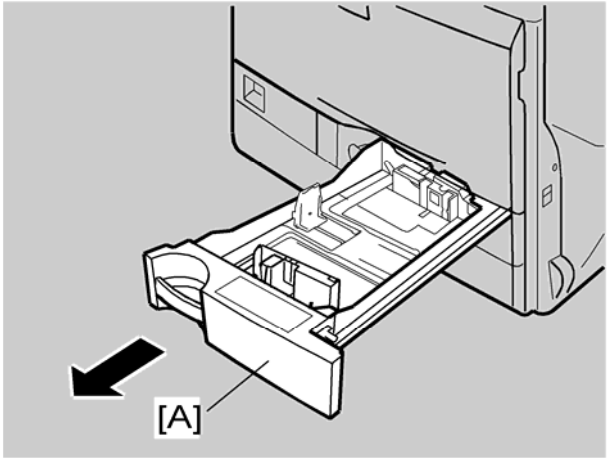
2. Insert the each toner bottle into the machine with the label facing up.
3. Close the front door.

Loading Paper



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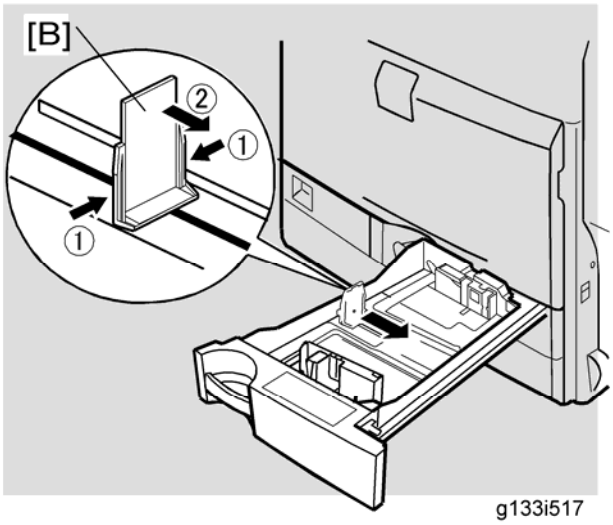
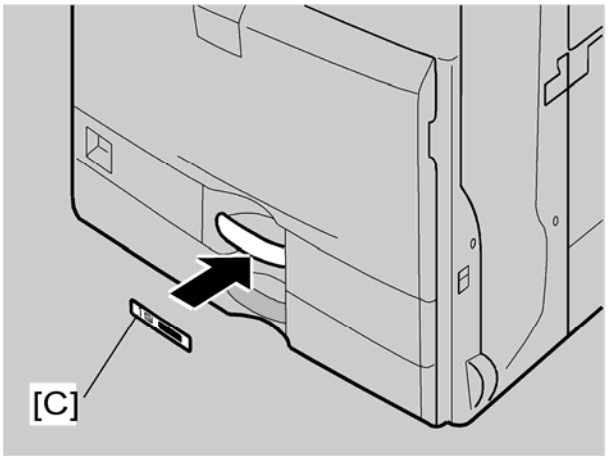
Printer Installation

1. Pull out the tray 1 [A] of the machine.
2. Take out the contents from tray 1.



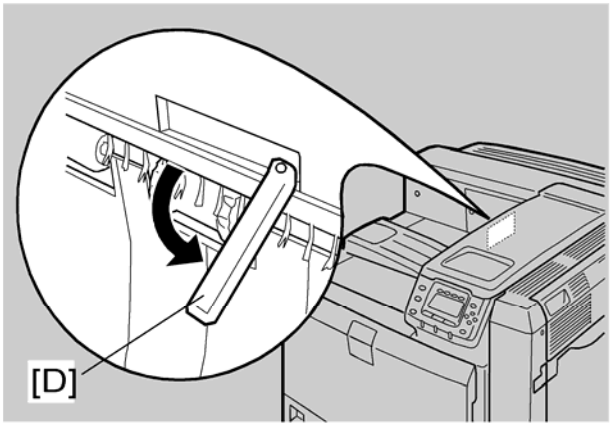
g133i517

3. Adjust the end plate [B] to A4 LEF/Letter LEF size.
4. Load paper in tray 1, and then close tray 1.



g133i520

5. Attach the tray number decal "1" to the handle [C] of tray 1.



g133i521

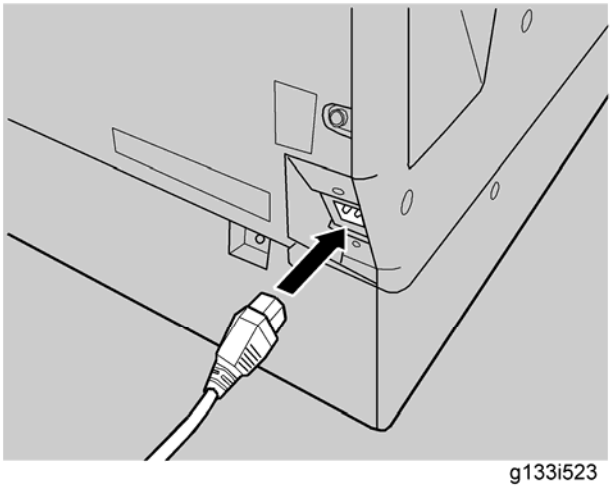
6. Pull out the feeler [D] for the output-tray-full detection mechanism.

Turning Power On

⚠CAUTION

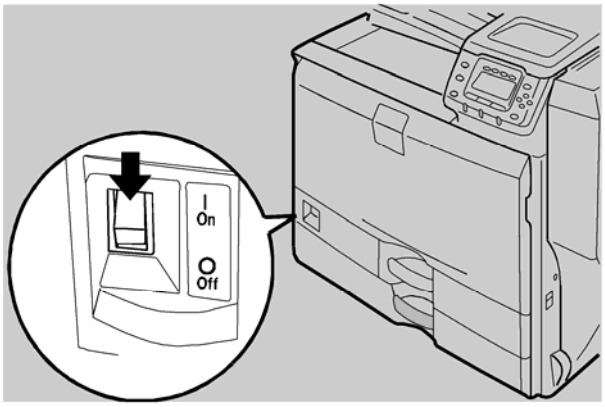
- Turn off the power switch whenever you plug in and unplug the power cord.

1. Make sure that the power switch is set to "○" (Off).



g133i523

2. Plug in the machine.



g133i524

3. Turn on the power switch.

Important

- Do not turn off the power switch until initialization is completed (‘Ready’ appears on the display when initialization is completed). Otherwise, the machine may malfunction.

Selecting the Panel Display Language

Note

- You can select one of these languages (the default is English): English, German, French, Italian, Dutch, Swedish, Norwegian, Danish, Spanish, Finnish, Portuguese, Czech, Polish or Hungarian.
- You do not have to do this procedure if you use English. Do this procedure if you want to use a different language.

1. Turn on the power switch of the printer.

Note

- “Ready” shows on the panel display after the machine warms up.

2. Press the "Menu" key.

Note

- “Menu” shows on the panel display.

3. Press the "▲" or "▼" key to show “Language.”
4. Press the "Enter" key. “Language:” shows on the panel display.
5. Press the "▲" or "▼" key to get the language you want.
6. Press the "Enter" key. “Menu” shows on the panel display.
7. Press the "Menu" key. “Ready” shows on the panel display.

Printing the Test Page

1. You can check if the printer works correctly by printing a test page such as the

configuration page. However, you cannot check the connection between the printer and the computer by printing the test page.

2. Turn on the printer.

Note

- "Ready" shows on the panel display after the machine warms up.

3. Press the "Menu" key.
4. Press the "▲" or "▼" key to get "List/Test Print."
5. Press the "Enter" key. "ListTest Print" shows on the panel display.
6. Make sure that "Config. Page" is on the display. Then press the "Enter" key.
7. The test printing starts shortly after.
8. Press the "Online" key. "Ready" shows on the panel display.
9. Turn off the power switch of the printer.

Settings Relevant to the Service Contract

Change the necessary settings depending on the each customer's service contract. For details, refer to "Meter Click Charge" following this section.

Settings for @Remote Service

Note

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

Check points before making @Remote settings

1. The setting of SP5816-201 in the mainframe must be "0".
2. Print the SMC with SP5990-002 and then check if a device ID2 (SP5811-003) must be correctly programmed.
   - 6 spaces must be put between the 3-digit prefix and the following 8-digit number (e.g. xxx_____xxxxxxxx).
   - ID2 (SP5811-003) and the serial number (SP5811-001) must be the same (e.g. ID2: A01_____23456789 = serial No. A0123456789)
3. The following settings must be correctly programmed.
   - Proxy server IP address (SP5816-063)
   - Proxy server Port number (SP5816-064)
   - Proxy User ID (SP5816-065)
   - Proxy Password (SP5816-066)
4. Get a Request Number

Execute the @Remote Settings

5. Enter the SP mode.

Printer Installation

6. Input the Request number which you have obtained from @Remote Center GUI, and then press "OK" key with **SP5816-202**.
7. Confirm the Request number, and then press "EXECUTE" key with **SP5816-203**.
8. Check the confirmation result with **SP5816-204**.

Value	Meaning	Solution/ Workaround
0	Succeeded	-
1	Request number error	Check the request number again.
3	Communication error (proxy enabled)	Check the network condition.
4	Communication error (proxy disabled)	Check the network condition.
5	Proxy error (Illegal user name or password)	Check Proxy user name and password.
6	Communication error	Check the network condition.
8	Other error	See "SP5816-208 Error Codes" below this.
9	Request number confirmation executing	Processing… Please wait.

9. Make sure that the screen displays the Location Information with **SP5816-205** only when it has been input at the Center GUI.
10. Press "EXECUTE" key to execute the registration with **SP5816-206**.
11. Check the registration result with **SP5816-207**.

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

Value	Meaning	Solution/ Workaround
3	Communication error (proxy enabled)	Check the network condition.
4	Communication error (proxy disabled)	Check the network condition.
5	Proxy error (Illegal user name or password)	Check Proxy user name and password.
8	Other error	See "SP5816-208 Error Codes" below this.
9	Request number confirmation executing	Processing… Please wait.

12. Exit the SP mode.

SP5816-208 Error Codes

Cause	Code	Meaning	Solution/ Workaround
Operation Error, Incorrect Setting	-12002	Inquiry, registration attempted without acquiring Request No.	Obtain a Request Number before attempting the Inquiry or Registration.
	-12003	Attempted registration without execution of a confirmation and no previous registration.	Perform Confirmation before attempting the Registration.
	-12004	Attempted setting with illegal entries for certification and ID2.	Check ID2 of the mainframe.
	-12005	@Remote communication is prohibited. The device has an Embedded RC gate-related problem.	Make sure that "Remote Service" in User Tools is set to "Do not prohibit".
	-12006	A confirmation request was made after the confirmation had been already completed.	Execute registration.

Printer Installation

Cause	Code	Meaning	Solution/ Workaround
	-12007	The request number used at registration was different from the one used at confirmation.	Check Request No.
	-12008	Update certification failed because mainframe was in use.	Check the mainframe condition. If the mainframe is in use, try again later.
Error Caused by Response from GW URL	-2385	Other error	
	-2387	Not supported at the Service Center	
	-2389	Database out of service	
	-2390	Program out of service	
	-2391	Two registrations for the same mainframe	Check the registration condition of the mainframe
	-2392	Parameter error	
	-2393	External RCG not managed	
	-2394	Mainframe not managed	
	-2395	Box ID for external RCG is illegal.	
	-2396	Mainframe ID for external RCG is illegal.	
	-2397	Incorrect ID2 format	Check the ID2 of the mainframe.
	-2398	Incorrect request number format	Check the Request No.

2.3.4 METER CLICK CHARGE

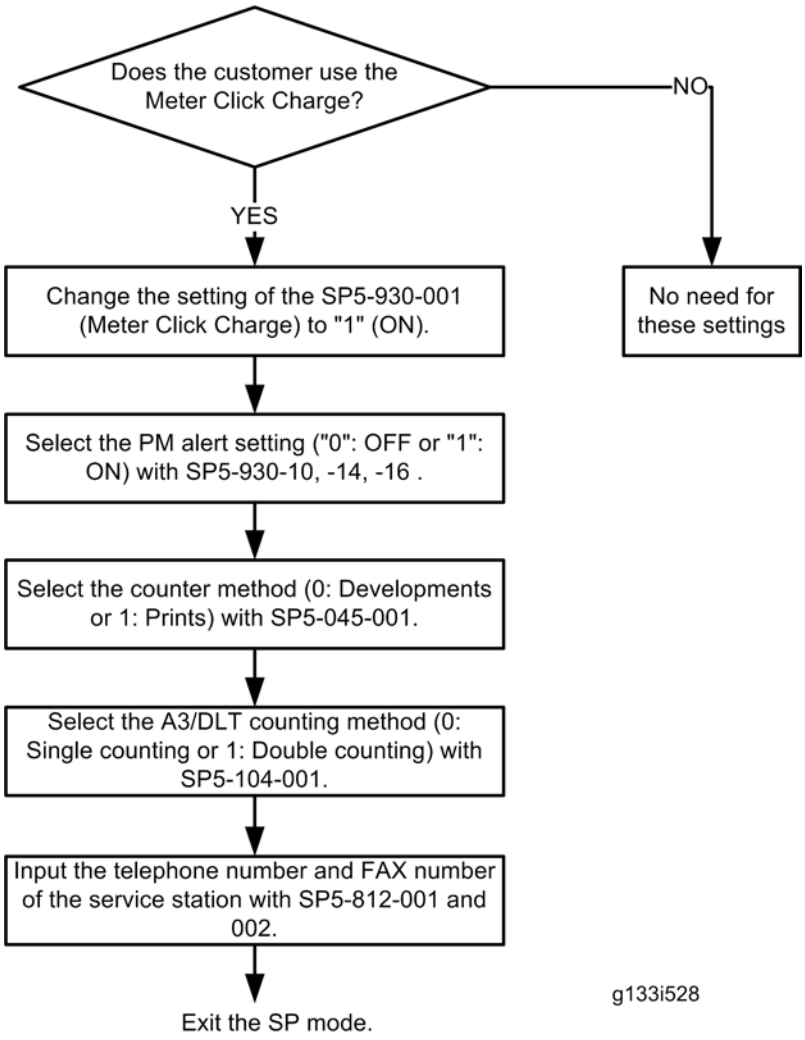
Basically, there are two ways to set up this function.

Meter click change enabled (SP 5-930-001 set to 'enabled'): The counter can be displayed and printed by the customer. The technician can then call the customer and ask them to read the counter.

Meter click charge disabled (SP 5-930-001 set to 'disabled'; this is the default setting): The counter cannot be displayed or printed by the customer. To check the counter, the technician must print the SMC report (SP 5-990).

Note

- You must select one of the counter methods (developments/prints) in accordance with the contract (☛ SP5-045-001).



g133i528

Printer Installation

Item	SP No.	Function	Default
Meter Click Charge	SP5-930-001	Enables or disables Meter Click Charge. When enabled: ▪ The counter menu shows immediately after you push the "Menu" key. The "Counter Method" (SP5-045) sets the type of the counter. ▪ You can print the counter from the counter menu. When disabled: ▪ The counter menu does not show.	"0": OFF
Meter Click Charge: PCU	SP5-930-010	Enables or disables the PM alert for the PCUs. If this SP is enabled, an alert message is displayed when the PCUs need to be replaced.	"1": No alert
Meter Click Charge: Image Transfer Belt Unit	SP5-930-014	Enables or disables the PM alert for the image transfer belt unit. If this SP is enabled, an alert message is displayed when the image transfer belt unit needs to be replaced.	"1": No alert
Meter Click Charge: Fusing Unit	SP5-930-016	Enables or disables the PM alert for the fusing unit. If this SP is enabled, an alert message is displayed when the fusing unit needs to be replaced.	"1": No alert
Counter method	SP5-045-001	Specifies if the counting method used in meter charge mode is based on developments or prints.	“1”: Prints

A3/DLT double count	SP5-104-001	Specifies whether the counter is doubled for A3/DLT paper.	“0”: Single counting
Service Tel: Telephone /Facsimile	SP5-812-001 and -002	-001: shows or sets the telephone number of the service representative. -002: shows or sets the fax number of the service station. The number is printed on the counter list when the "Meter Click Charge" is enabled. User can send a fax message with the counter list.	-

2.3.5 MOVING THE MACHINE

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

- Remove all trays from the optional paper feed unit or LCT.

2.3.6 TRANSPORTING THE MACHINE

1. Make sure there is no paper left in the paper trays. Then fix down the bottom plates with a sheet of paper and tape.
2. Replace the waste toner bottle. Then attach securing tape to stop the toner bottle from coming out.
3. Do one of the following:
   - Attach shipping tape to the covers and doors.
   - Shrink-wrap the machine tightly.

Note

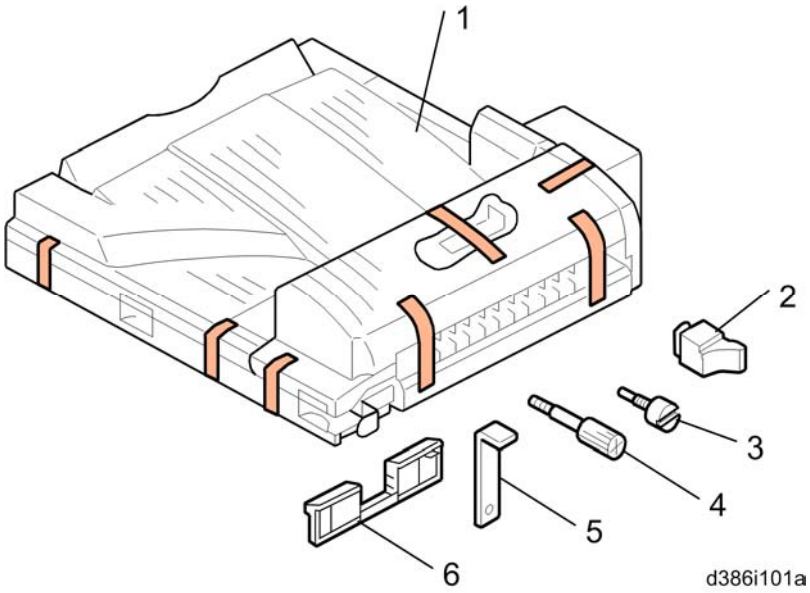
- After you move the machine, make sure you do the "Auto Color Registration" as follows. This optimizes color registration.
- 1) Do the "Forced Line Position Adj. Mode c" (SP2-111-3).
- 2) Then do the "Forced Line Position Adj. Mode a" (SP2-111-1).
  To check if SP 2-111-1 was successful, watch the screen during the process. A message is displayed at the end. Also, you can check the result with SP 2-194-10 to -12.

2.4 BRIDGE UNIT (D386)

2.4.1 COMPONENT CHECK

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

No.	Description	Q'ty
1	Bridge Unit	1
2	Screw	1
3	Knob screw	1
4	Long Knob Screw	1
5	Holder bracket	1
6	Guide	2



2.4.2 INSTALLATION PROCEDURE

⚠CAUTION

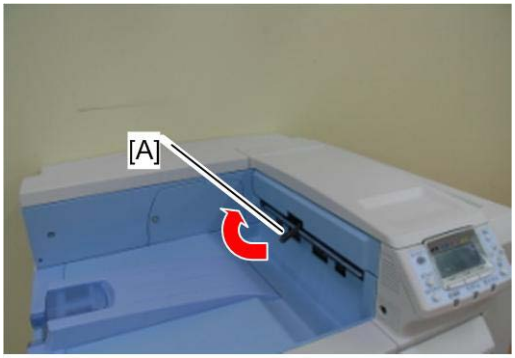
- **Unplug the printer power cord before starting the following procedure.**

Note

- If you will install a finisher (B793 or B805) in the machine, install the finisher after

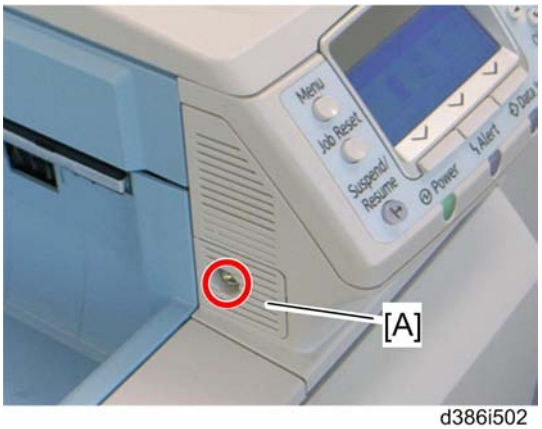
you install the bridge unit (D386).

1. Remove all tapes.



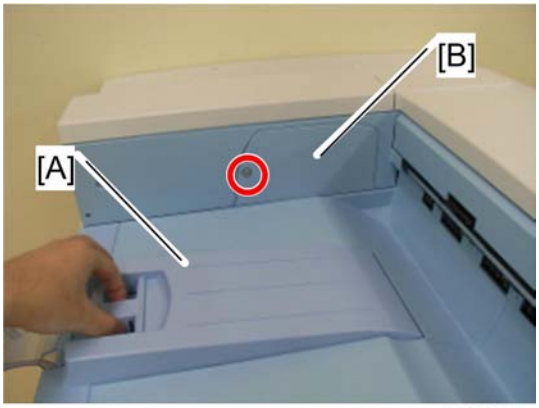
d386i501

2. If the sensor feeler [A] is out, fold it into the machine.



d386i502

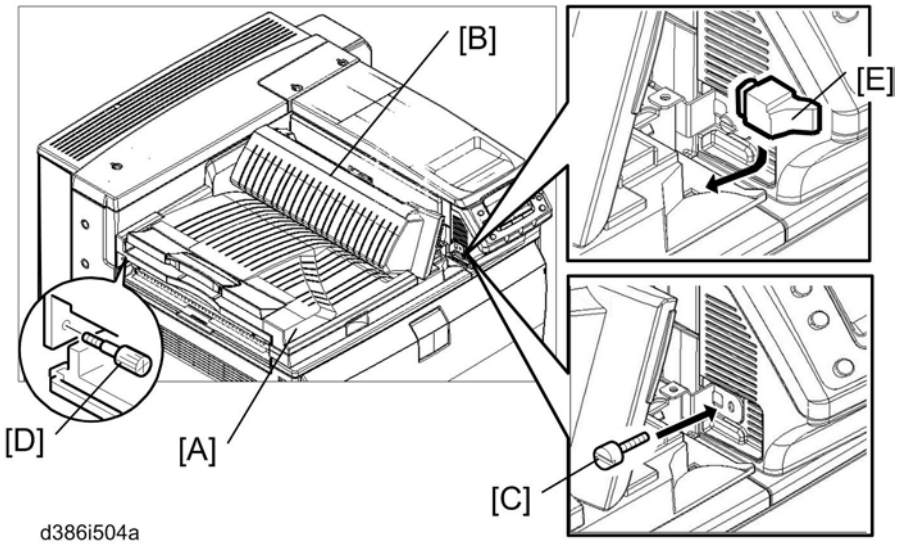
3. Remove the connection cover [A] (x 1).



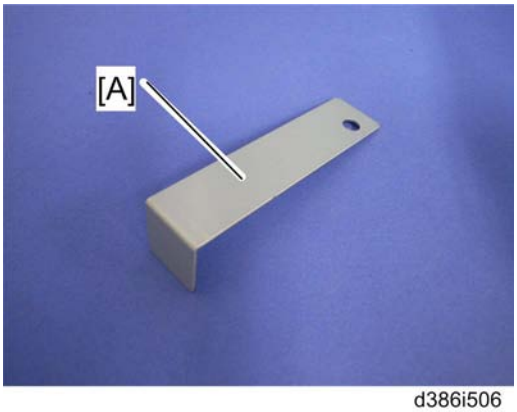
d386i503

4. Remove the inner tray [A].
5. Remove the connector cover [B] (x 1).

Bridge Unit (D386)



6. Install the bridge unit [A].
7. Open the bridge unit cover [B]
8. Secure it with the knob screw [C] and long knob screw [D].
9. Attach the frame cover [E].
10. Close the bridge unit cover [B].



11. Reassemble the machine.
12. Install the optional finisher (refer to the finisher installation procedure).

Note

- Holder bracket [A] is used in the installation procedure of the finisher (B793 or B805). At this time, do not install it yet.

13. Turn on the main power switch of the machine.
14. Check the bridge unit operation.

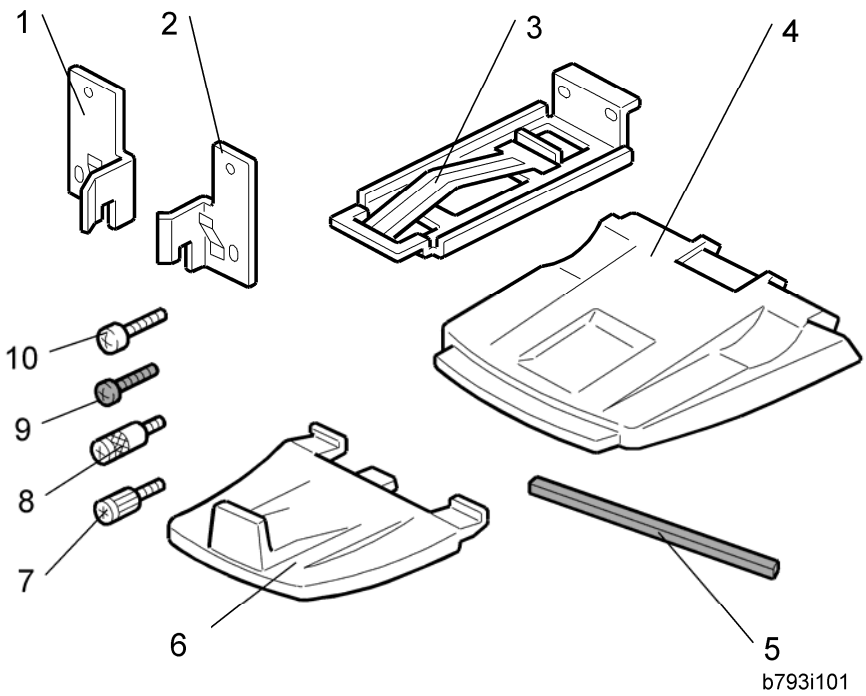
2.5 1000-SHEET BOOKLET FINISHER (B793)

2.5.1 ACCESSORY CHECK

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

No.	Description	Q'ty
1	Rear Joint Bracket	1
2	Front Joint Bracket	1
3	Grounding Plate	1
4	Upper Output Tray	1
5	Cushion	2
6	Lower Output Tray	1
7	Short Knob Screw	1
8	Long Knob Screw	1
9	Screw (M3 x 8)	2
10	Screw (M4 x 14)	4

1000-Sheet Booklet Finisher (B793)

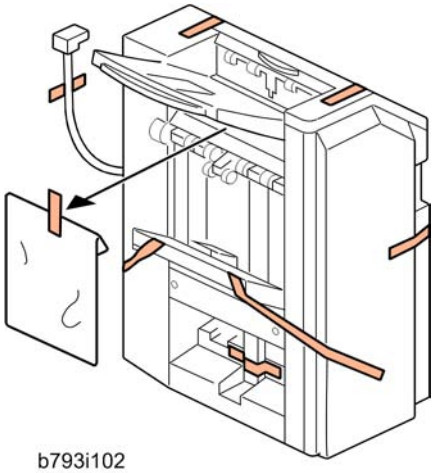


2.5.2 INSTALLATION PROCEDURE

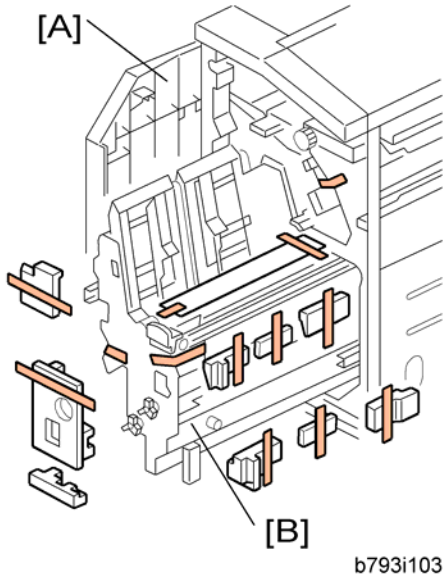
⚠CAUTION

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

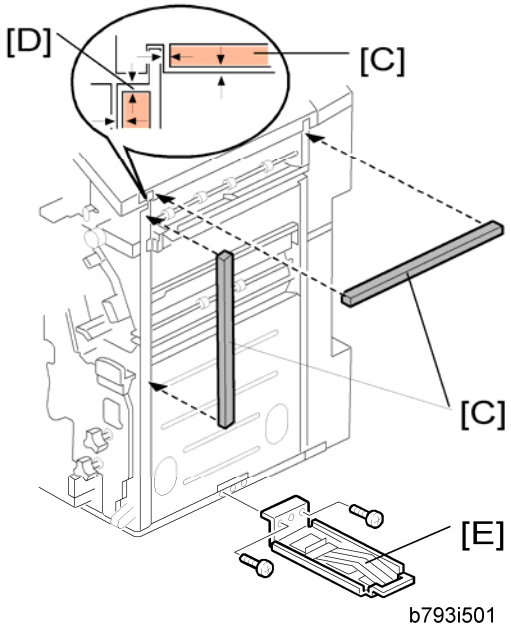
The bridge unit (D386) and optional paper feed unit (D351 or D352) must be installed before installing this finisher (B793).



1. Unpack the finisher and remove all tapes and packing materials from the finisher.



2. Open the front door [A] of the 1000-sheet booklet finisher, and then pull out the jogger unit [B].
3. Remove all tapes and packing materials from the inside of the finisher.



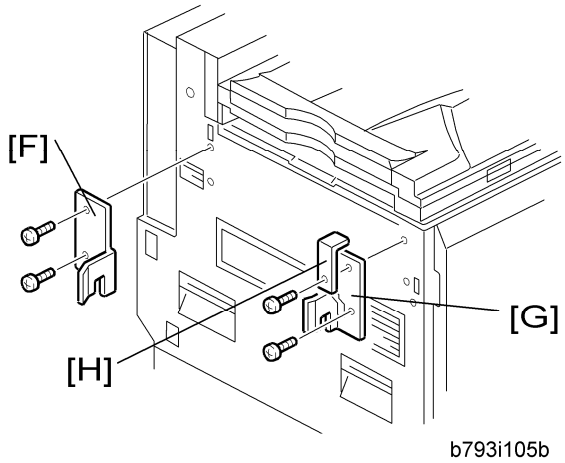
4. Attach the cushions [C] to the finisher.

Note

- Make sure that the cushions are placed within 0 to 1 mm [D] from the edge of the cover or frame.

5. Install the ground plate [E] on the finisher (x 2; M3 x 8).

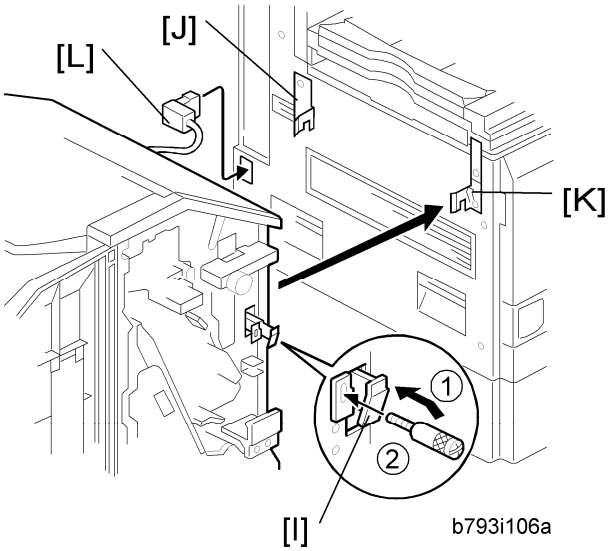
1000-Sheet Booklet Finisher (B793)



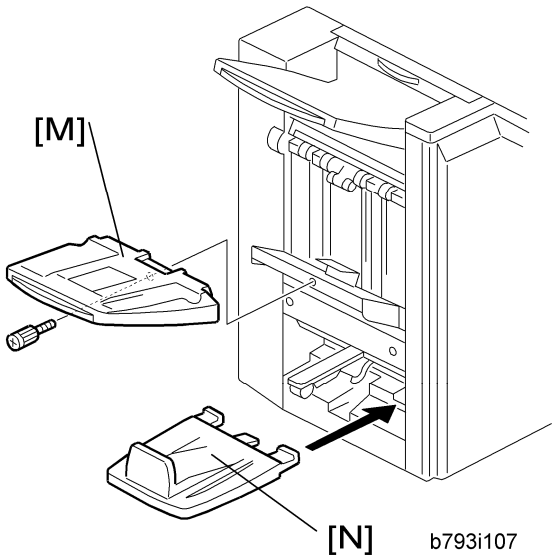
6. Attach the rear joint bracket [F] (x 2, M4 x 14).
7. Attach the front joint bracket [G] and the holder bracket [H] (x 2; M4 x 14).

Note

- The holder bracket [H] must be placed outside the front joint bracket [G]. The holder bracket is provided with the bridge unit (D386).



8. Pull the lock lever [I] (Long knob screw x 1).
9. Slowly push the finisher to the left side of the machine, keeping its front door open until the brackets [J] [K] go into their slots.
10. Push the lock lever [I], and then secure it (Long knob screw x 1).
11. Close the front door of the finisher.
12. Connect the finisher connector [L] to the machine.



13. Install the upper output tray [M] (Short knob screw x 1).
14. Install the lower output tray [N].
15. Turn on the main power switch of the machine.
16. Check the 1000-sheet booklet finisher operation.

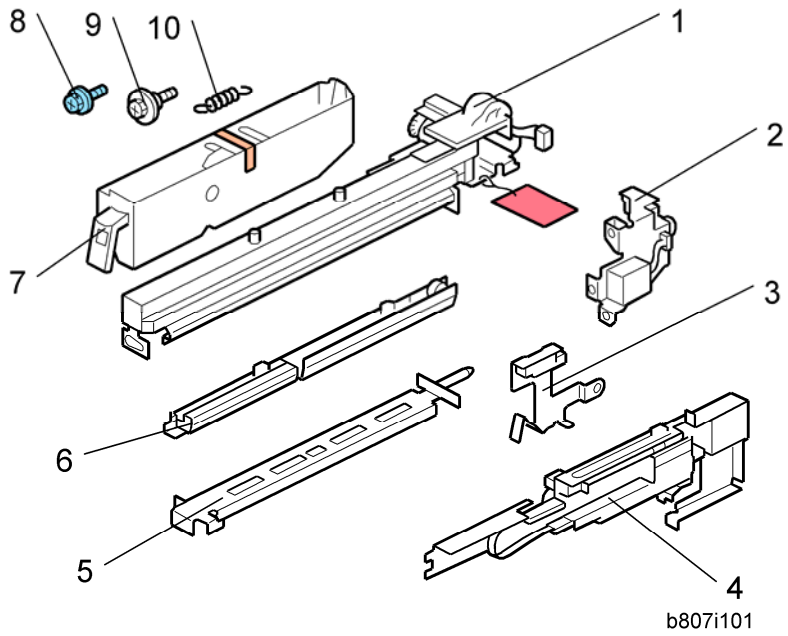
2.6 PUNCH UNIT (B807)

The punch unit "B807" is used for the 1000-sheet booklet finisher (B793).

2.6.1 COMPONENT CHECK

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

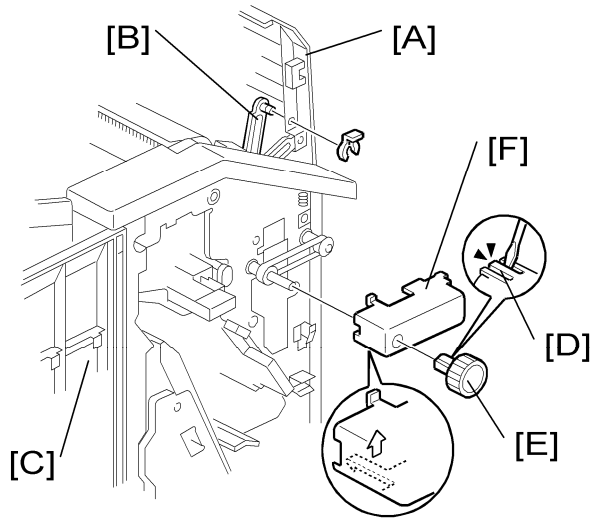
No.	Description	Q'ty
1	Punch Unit	1
2	Punch Drive Motor	1
3	Hopper Full Sensor Arm	1
4	Sub-scan Registration Sensor Unit	1
5	Punch Unit Stay	1
6	Sub-scan Registration Sensor Guide	1
7	Hopper	1
8	Screw	1
9	Step Screw	1
10	Spring	1



2.6.2 INSTALLATION PROCEDURE

CAUTION

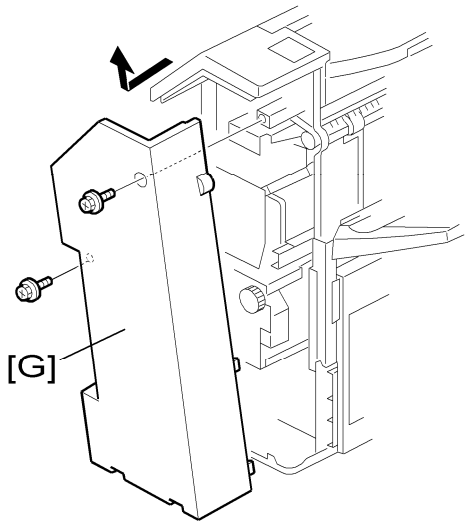
- **Unplug the main machine power cord before starting the following procedure. If the 1000-sheet booklet finisher has been installed, disconnect it and pull it away from the machine.**



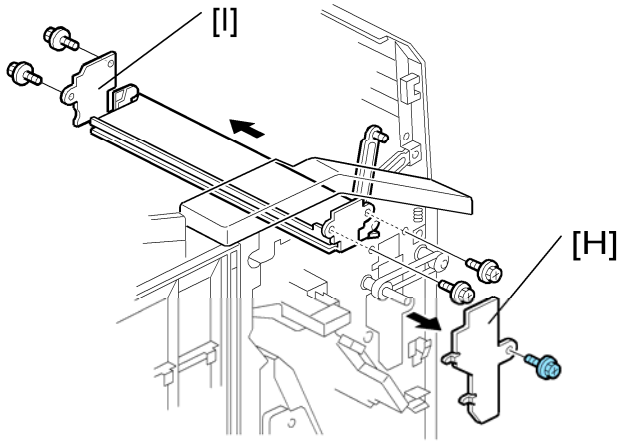
1. If the finisher is connected to the machine, disconnect it.
2. Open the top cover [A] and then release the guide arm [B] (x 1).
3. Open the front door [C].
4. Pull the hook [D] up then remove the knob [E].

Punch Unit (B807)

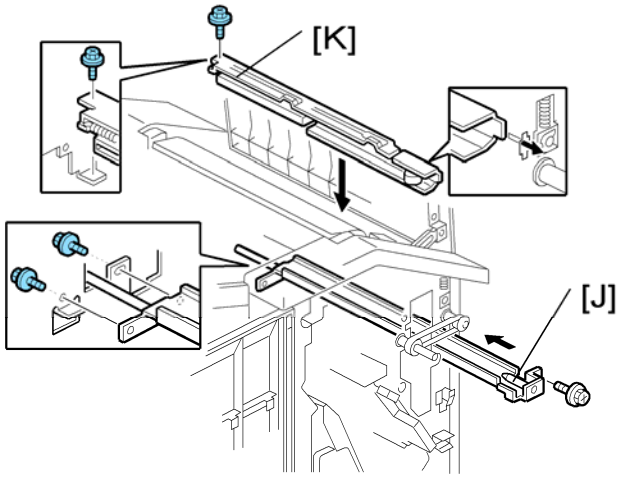
5. Timing belt cover [F].



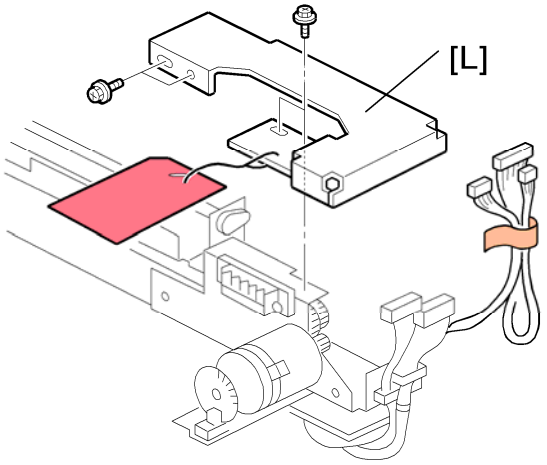
6. Rear cover of the 1000-sheet booklet finisher [G] (x 2).



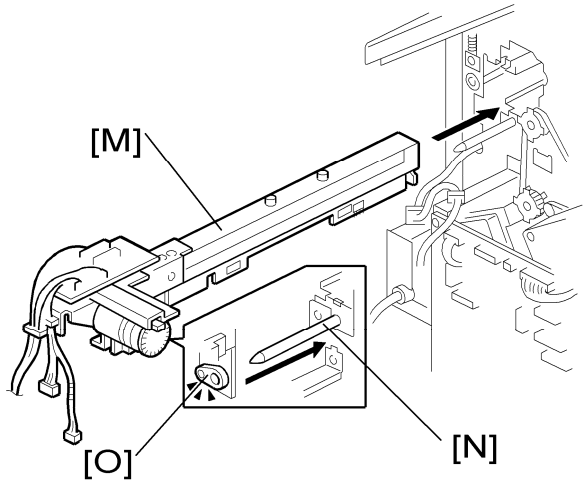
7. Cover bracket [H] (x 1)
8. Remove the paper guide plate [I] from the rear side (x 4).



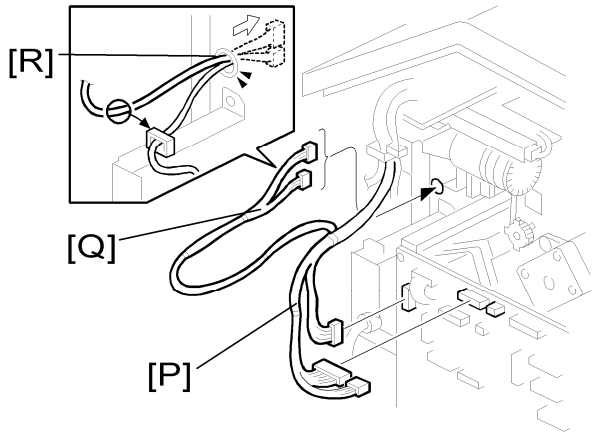
9. Install the punch unit stay [J] from the front side (x 3).
10. Install the sub-scan registration sensor guide [K] from the top (x 1).



11. Remove the bracket [L] from the punch unit (x 1).

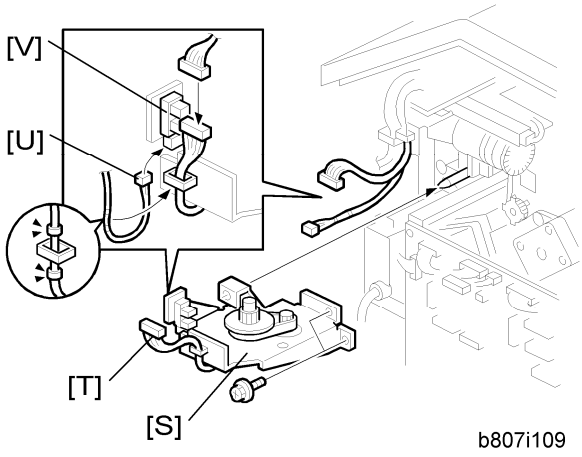


12. Install the punch unit [M] along the punch unit stay from the rear side.
13. Make sure to put the punch unit stay pin [N] through the hole [O].



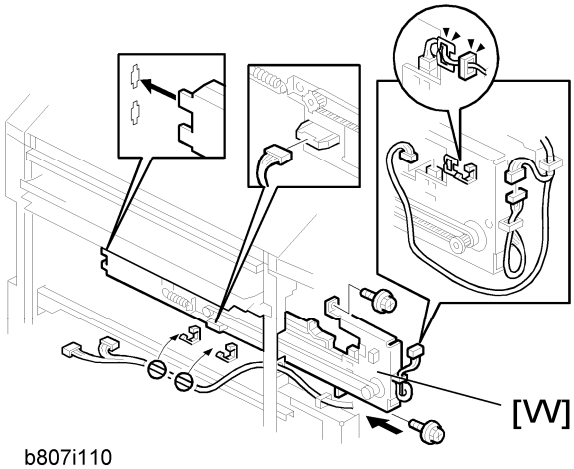
Punch Unit (B807)

14. Connect the harnesses [P] to the main PCB.
15. Put the harnesses [Q] through the hole [R] in the rear frame (x 1).



b807i109

16. Install the punch drive motor [S] on the rear frame (x 2).
17. Connect the drive motor harness [T] (yellow connector) to the harness from the punch unit (x 1).
18. Connect the home position sensor harness [U] (yellow connector) from the punch unit to the home position sensor [V].



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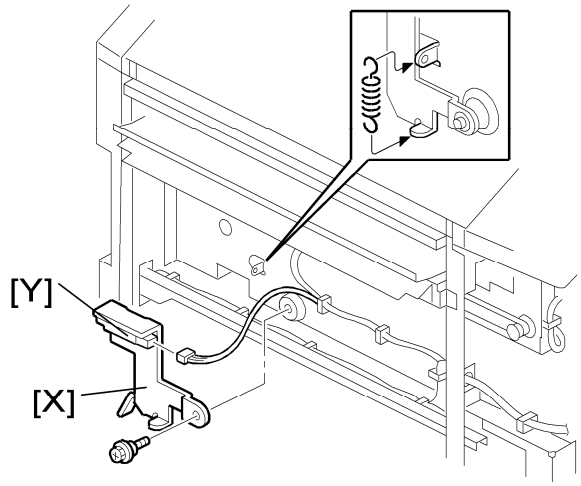
19. Install the sub-scan registration sensor unit [W] from the rear side (x 2).
20. Route and connect the harnesses as shown (x 2).



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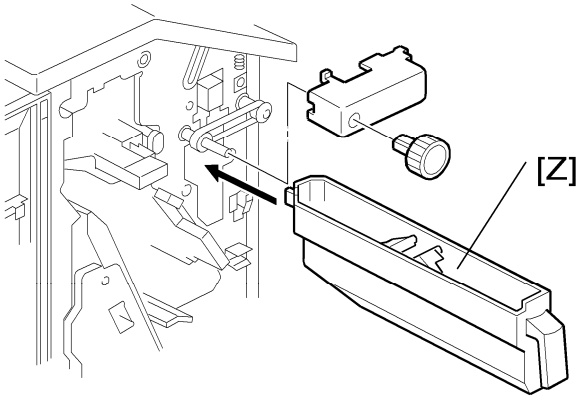
21. Install the hopper full sensor arm [X] (x 1, spring x 1).
22. Connect the harness from the sub-scan registration sensor unit to the hopper full sensor [Y].



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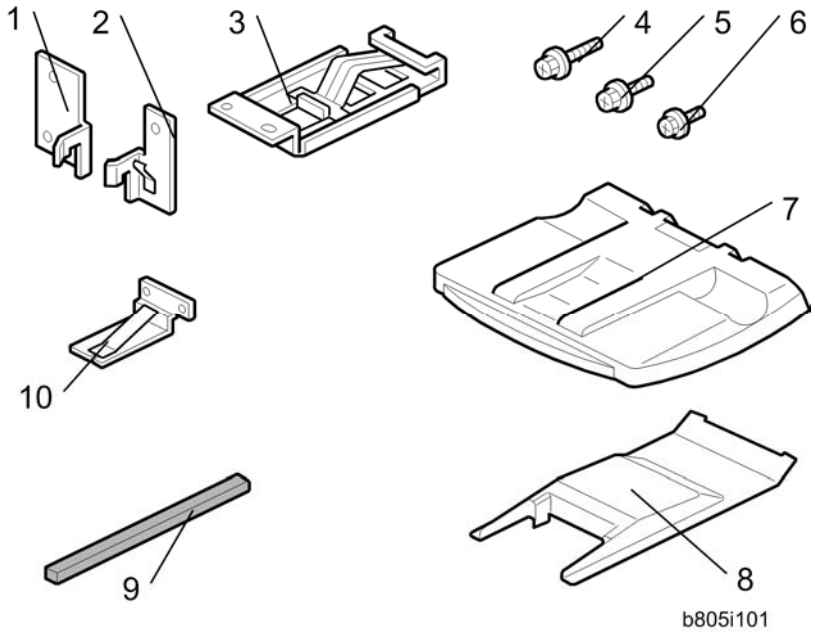
23. Install the hopper [Z] from the front side.
24. Reinstall the timing belt cover and knob.
25. Reinstall the rear cover (x 2).
26. Close the front door and top cover.
27. Install the 1000-sheet booklet finisher on the mainframe.
28. Plug in and turn on the main power switch.
29. Check the 1000-sheet booklet finisher operation.

2.7 3000-SHEET FINISHER (B805)

2.7.1 ACCESSORY CHECK

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

No.	Description	Q'ty
1	Rear joint bracket	1
2	Front joint bracket	1
3	Ground (earth) plate	1
4	Tapping screws - M4 x14	4
5	Tapping screws - M3 x 8	1
6	Tapping screws - M3 x 6	6
7	Upper output tray	1
8	Support Tray	1
9	Cushion (with double-sided tape)	1
10	Small ground (earth) plate	2



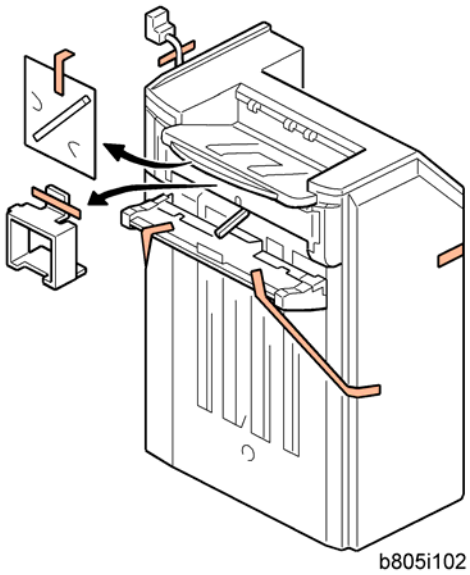
2.7.2 INSTALLATION PROCEDURE

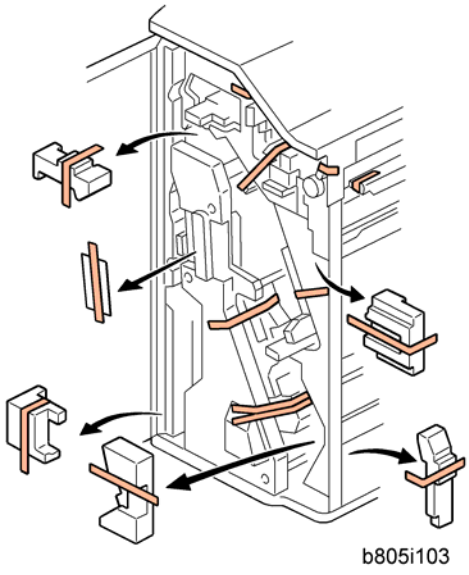
This installation procedure uses the following symbols.

⚠CAUTION

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

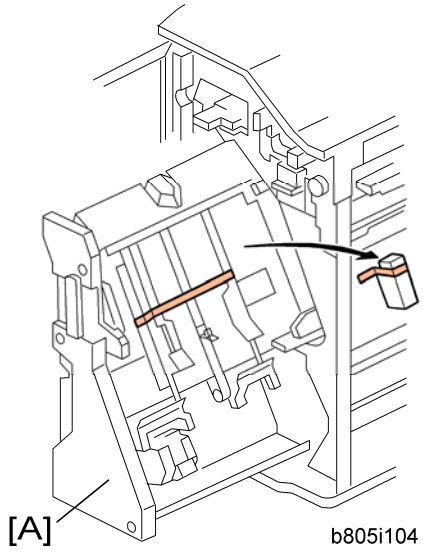
The bridge unit (D386) and optional paper feed unit (D351 or D352) must be installed before installing this finisher.



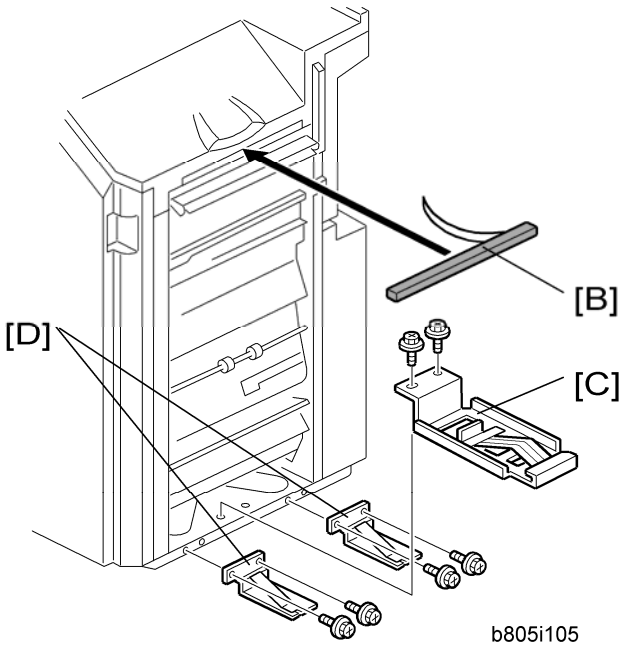


1. Unpack the finisher and remove all tapes and packing materials from the finisher.

2. Open the front door, and then remove all tapes and packing materials from the inside of the finisher.



3. Pull out the jogger unit [A], and then remove all tapes and retainers.

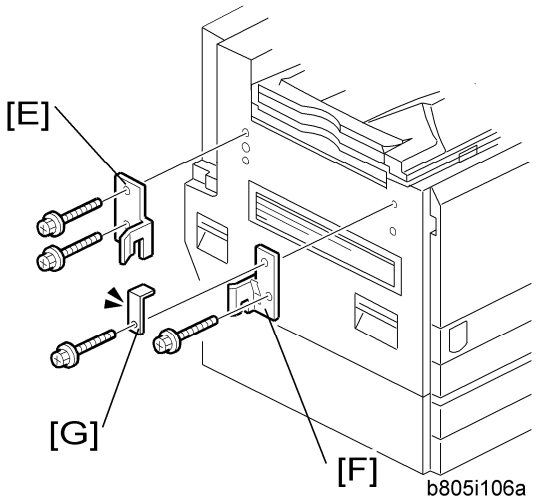


4. Attach the cushion [B] to the finisher.

Note

- Make sure that the cushion is placed within 0 to 1 mm from the edge of the cover.

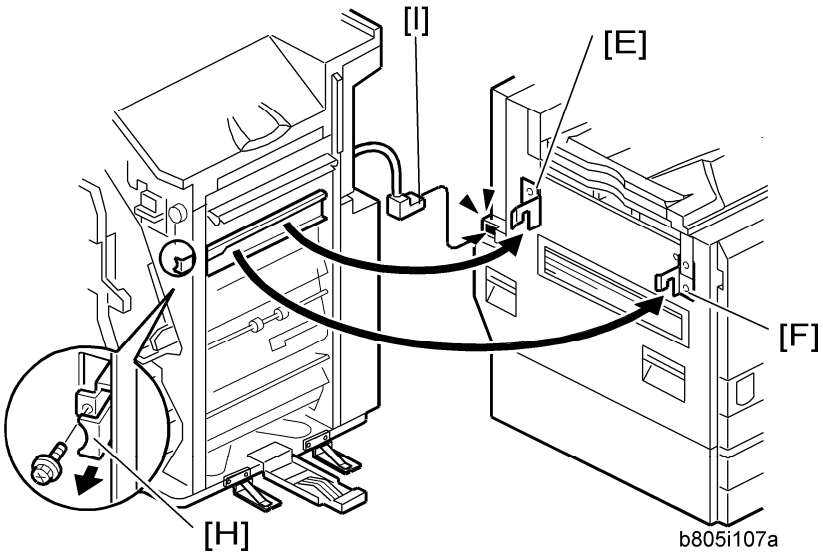
5. Install the ground plate [C] to the finisher (x 2; M3 x 6).
6. Install the small ground plates [D] to the finisher (x 2; M3 x 6 each).



7. Attach the rear joint bracket [E] (x 2; M4 x 14).
8. Attach the front joint bracket [F] and the holder bracket [G] (x 2; M4 x 14).

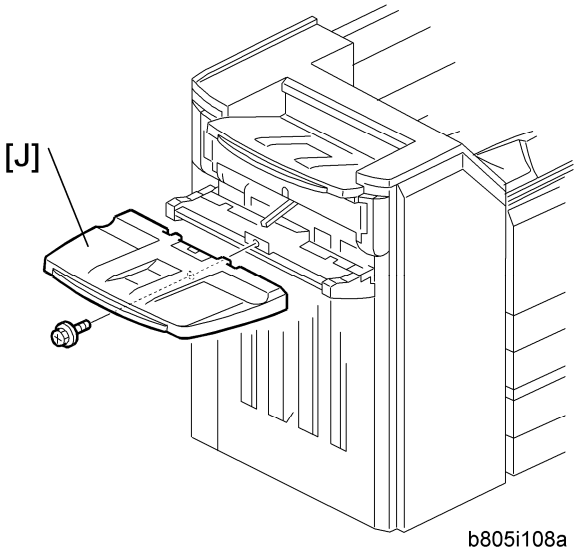
Note

- Holder bracket [G] must be placed outside the front joint bracket [F]. This bracket is provided with the Bridge Unit (D386).



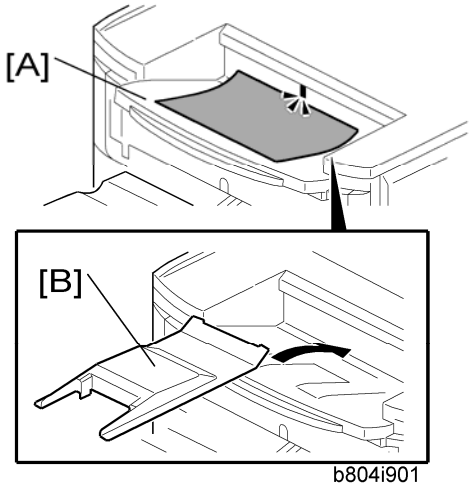
9. Pull the lock lever [H] (x 1).
10. Slowly push the finisher to the left side of the machine keeping its front door open until the brackets [E] [F] go into their slots.
11. Push the lock lever [H], and then secure it (x 1).
12. Close the front door of the finisher.
13. Connect the finisher connector [I] to the machine.

3000-Sheet Finisher (B805)



14. Install the upper output tray [J] (x 1; M3 x 8).
15. Turn on the main power switch of the machine.
16. Check the finisher operation.

Support Tray Installation



1. If a stack problem occurs several times on the upper output tray [A], put the support tray [B] on the tray as shown.
2. Keep this tray in the manual pocket if this tray does not need to be installed.

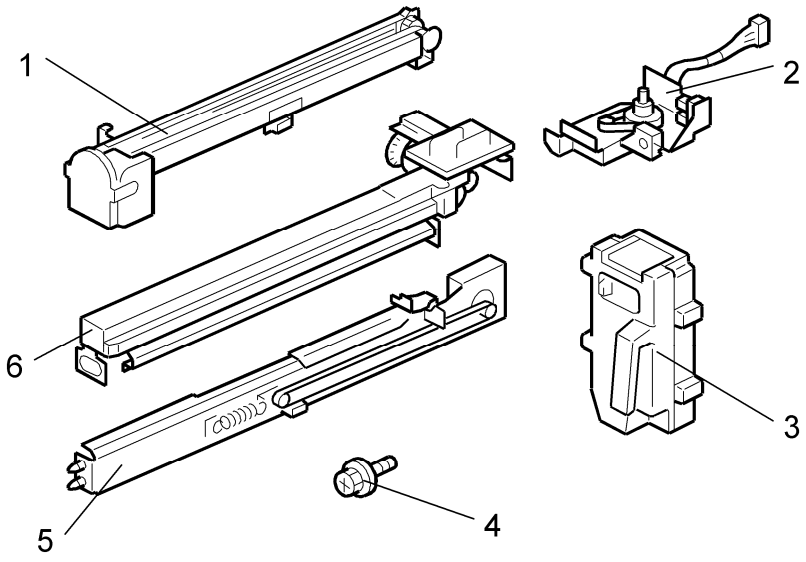
2.8 PUNCH UNIT (B702)

The Punch Unit "B702" is used for the 3000 Sheet Finisher (B805).

2.8.1 COMPONENT CHECK

Check the quantity and condition of the components 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

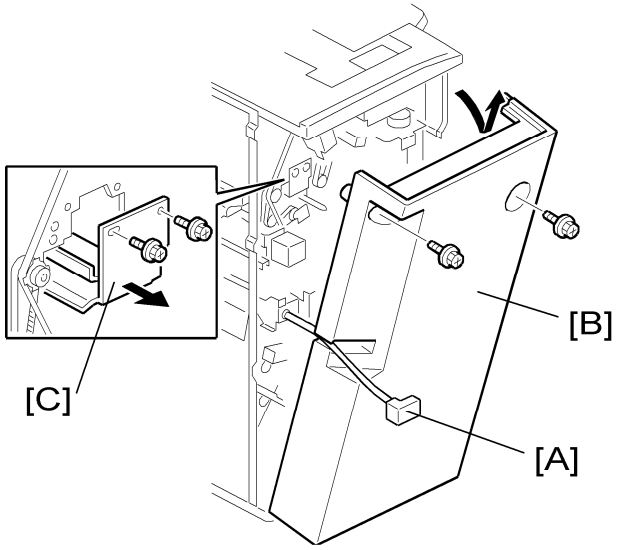


2.8.2 INSTALLATION PROCEDURE

⚠CAUTION

- **Unplug the main machine power cord before starting the following**

procedure. If the 3000-sheet finisher has been installed, disconnect it and pull it away from the machine.

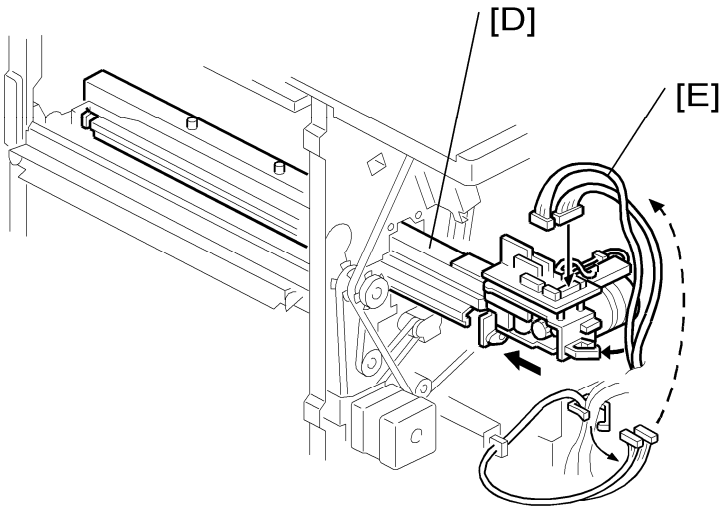


1. If the finisher is connected to the mainframe, disconnect the power connector [A] and move the finisher away from the mainframe.
2. Remove the rear cover [B] (x 2) and open the front door.

Note

- At the bottom of the rear cover, make sure to disconnect the tabs that attach the cover to the frame.

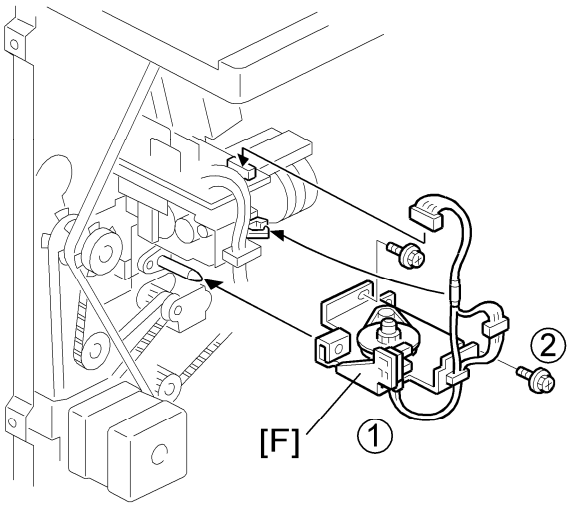
3. Remove the guide plate [C] (x 2).



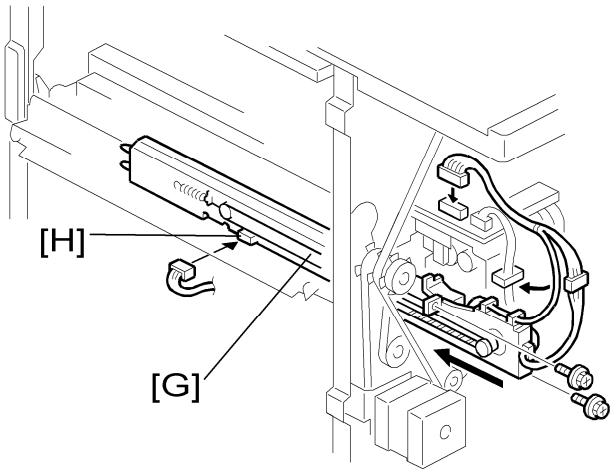
4. Move the punch unit [D] along its rails into the finisher. Make sure that the pin engages correctly at the front and rear.
5. Connect the cables [E] of the finisher to the connectors (CN601 and CN602) on the

punch unit board (x 2, x 1).

- The cables [E] are coiled and attached to the PCB.



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

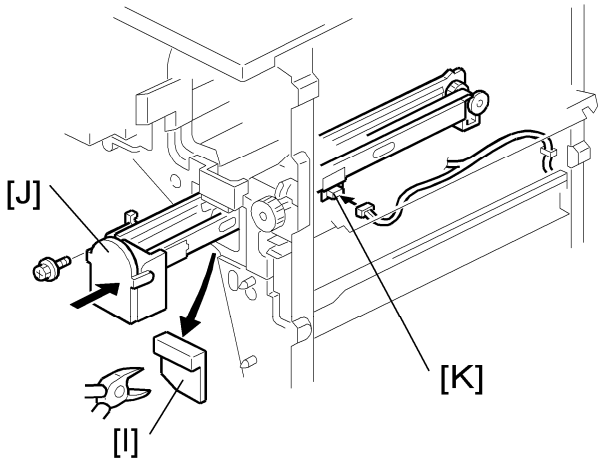


8. Put the side-to-side detection unit [G] in the machine. Make sure that the two pins are engaged correctly at the front.
9. Make sure that the side-to-side detection unit moves smoothly on its rails. If it does not, make sure that the rails are aligned with their grooves.
10. Attach the side-to-side detection unit and connect it at the rear (x 2, x 1, x 1).
11. Pull the short connector out of the connector [H] then connect the cable of the finisher (x 1).

Note

Punch Unit (B702)

- This is the 3-pin connector.

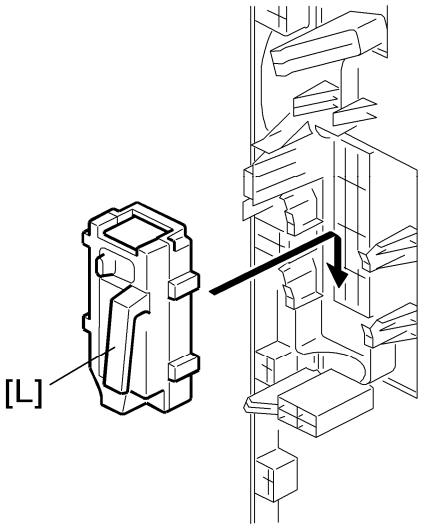


12. At the front, use a pair of wire cutters to remove the part [I] of the cover.
13. Install the punch-waste transport unit [J] in the finisher.
14. Make sure that the punch-waste transport unit moves smoothly on its rails. If it does not, make sure that the rails are aligned with the grooves.
15. Remove the short connector from the connector [K].

Note

- This is the 4-pin connector.

16. Connect the cable and attach the punch-waste transport unit (x 1, x 1, x 1).



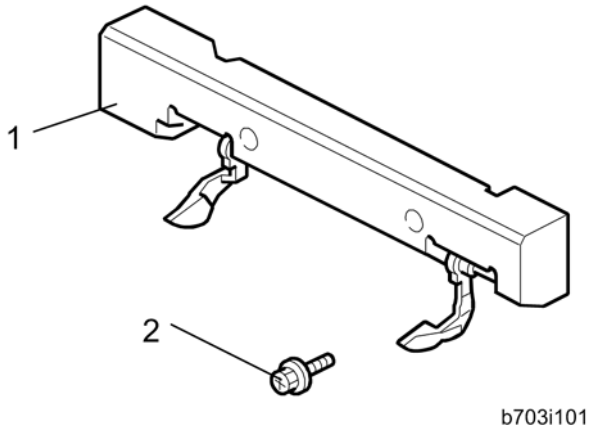
17. Set the hopper [L] in its holder.
18. Reassemble the finisher, and then install it on the main machine.
19. Connect the power cord to the outlet, and then turn the main power switch on.
20. Check the punch unit operation.

2.9 OUTPUT JOGGER UNIT (B703)

2.9.1 ACCESSORIES

Check the accessories and their quantities against this list.

Description	Qty
1. Jogger Unit	1
2. Tapping Screws M3x6	2



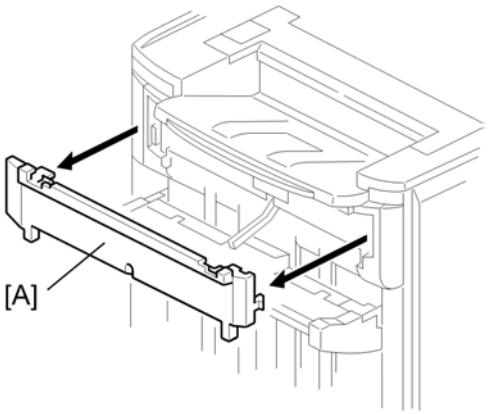
2.9.2 INSTALLATION

The Output Jogger Unit B703 is installed only on the 3000-Sheet Finisher (B805).

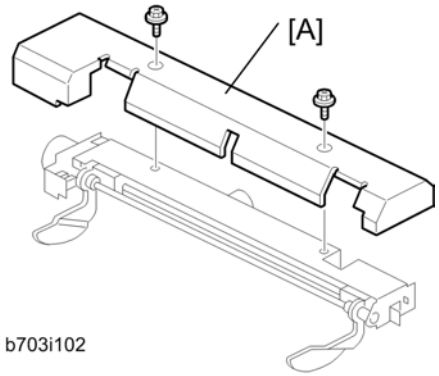
WARNING

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

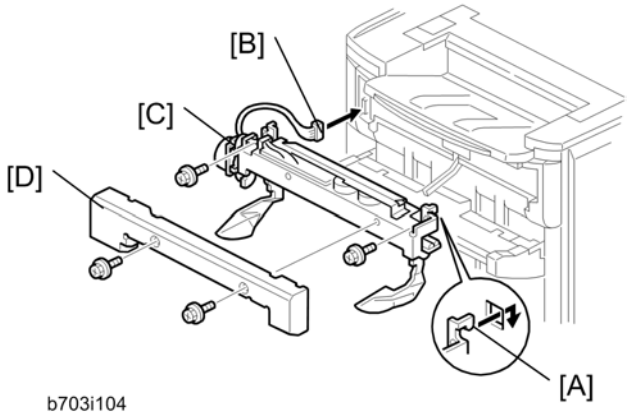
Output Jogger Unit (B703)



1. Turn the main machine switch off.
2. Disconnect the finisher from the main frame.
3. Use the flat head of a screwdriver to remove the left upper cover [A].



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



5. While holding the jogger unit with the connector on the left, put the hooks on the frame of the jogger unit [A] into the holes in the left and right side of the finisher frame.
6. Connect connector [B] to the socket (x 1).
7. Attach the jogger unit [C] to the finisher (x 2).
8. Reattach the jogger unit cover [D] to the jogger unit (x 2).

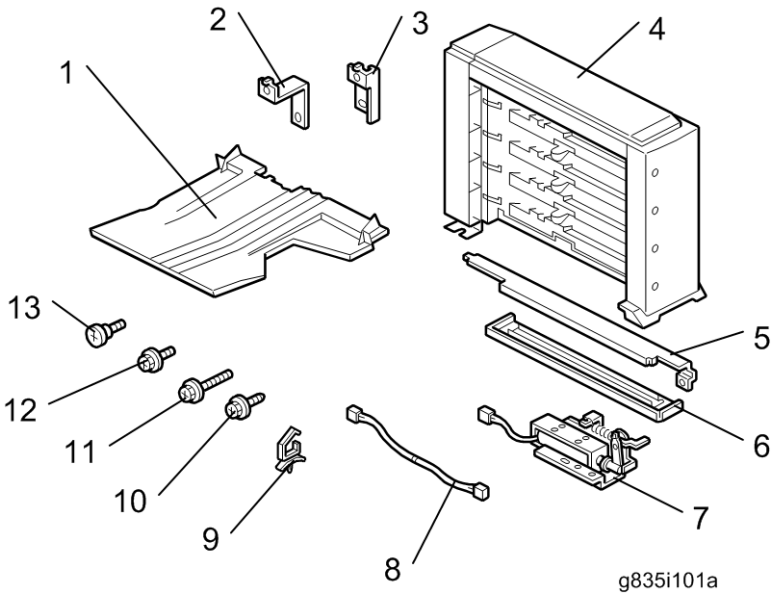
2.10 MAIL BIN (G835)

2.10.1 COMPONENT CHECK

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

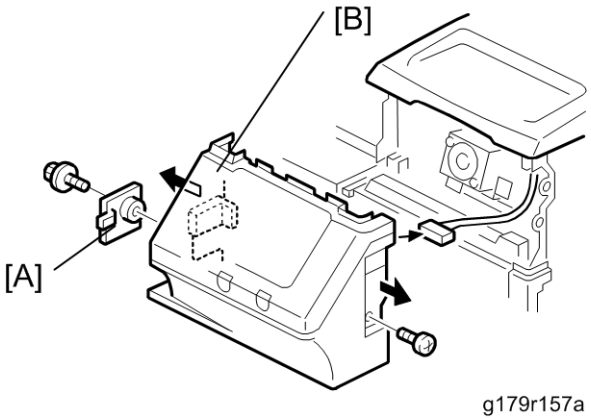
No.	Description	Q'ty
1	Tray	4
2	Rear Hold Bracket	1
3	Front Hold Bracket	1
4	Mail Bin	1
5	Right Stay	1
6	Guide Bracket	1
7	Mail Bin Solenoid	1
8	Harness	1
9	Clamp (Not used)	1
10	Screw: M3x8	2
11	Screw: M4x10	3
12	Screw: M3x6	7
13	Step Screw	2
-	Decal Sheet	1

Mail Bin (G835)

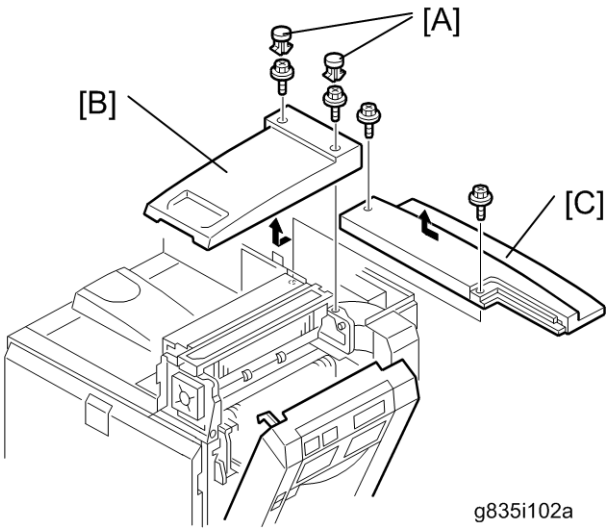


2.10.2 INSTALLATION PROCEDURE

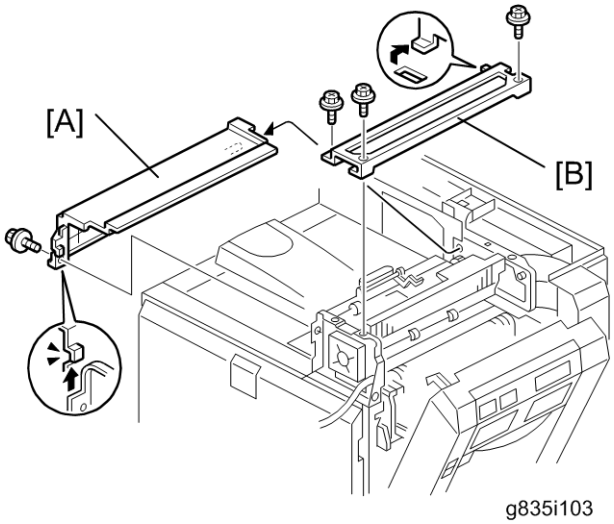
1. Open the right door.



2. Remove the following:
   - Connection cover [A] (x 1)
   - Operation panel [B] (x 1, x 1)

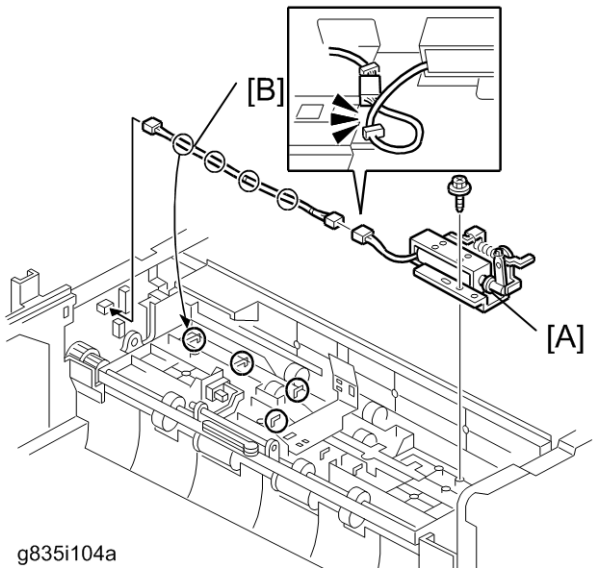


3. Remove the following:
   - Screw caps [A]
   - Top right cover [B] (x 2)
   - Top rear cover [C] (x 2)

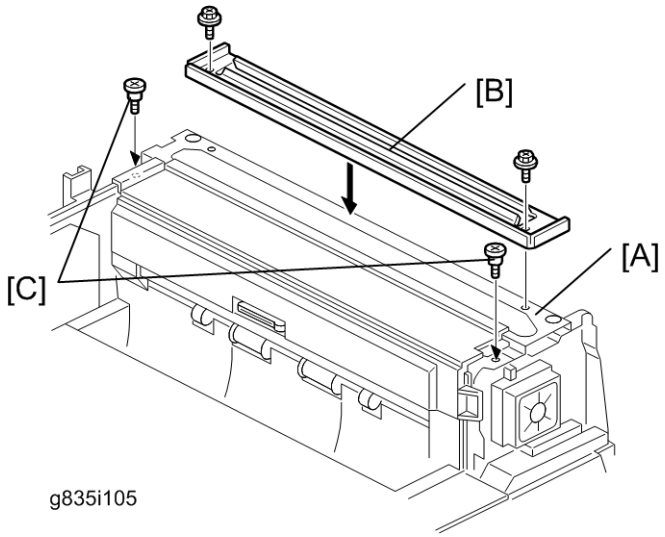


4. Remove the paper exit cover [A] (x 1).
5. Remove the top right stay [B] (x 3).

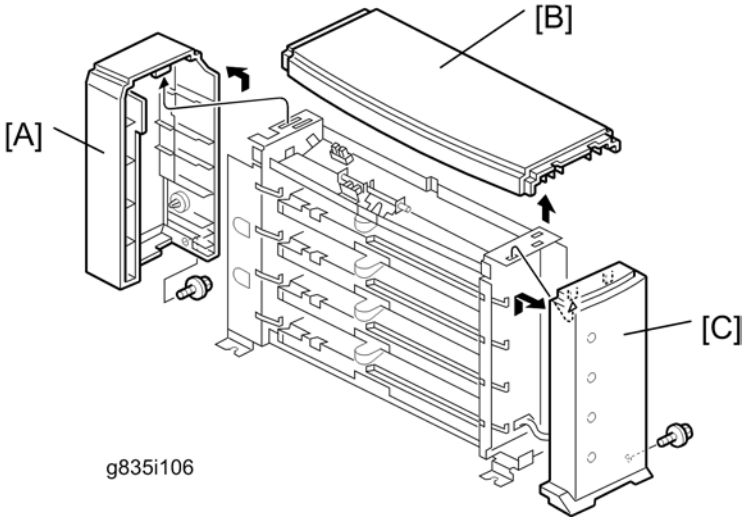
Mail Bin (G835)



6. Install the mail bin solenoid [A] (x 1: M3x8).
7. Connect the harness [B] and then clamp the harness with the four clamps.



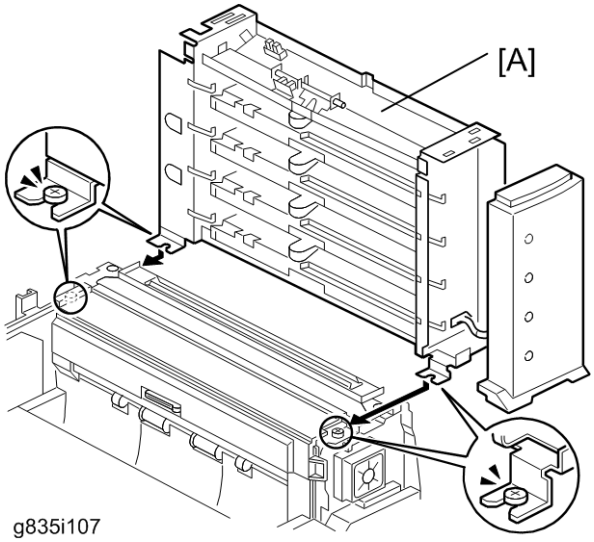
8. Reinstall the top right stay [A] (x 3).
9. Install the guide plate [B] (x 2: M3x6).
10. Install the two step screws [C].



11. Remove the rear cover [A].
12. Remove the top cover [B] of the mail bin unit.
13. Remove the front cover [C].

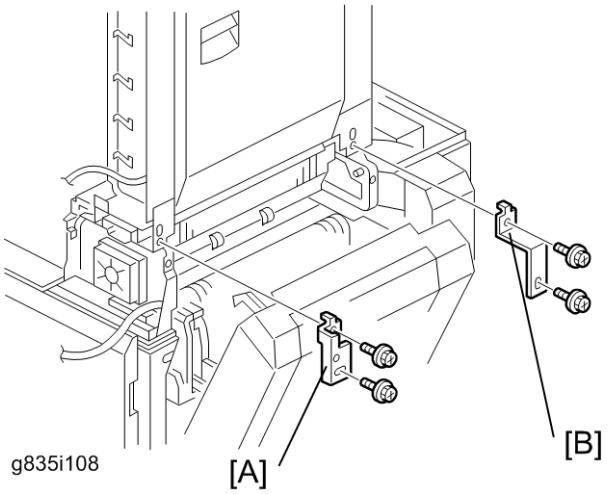
Note

- The front cover is connected to the mail bin unit with the harnesses. It is not necessary to disconnect the harnesses from the front cover. However, take care not to break or disconnect the harnesses during this installation procedure.

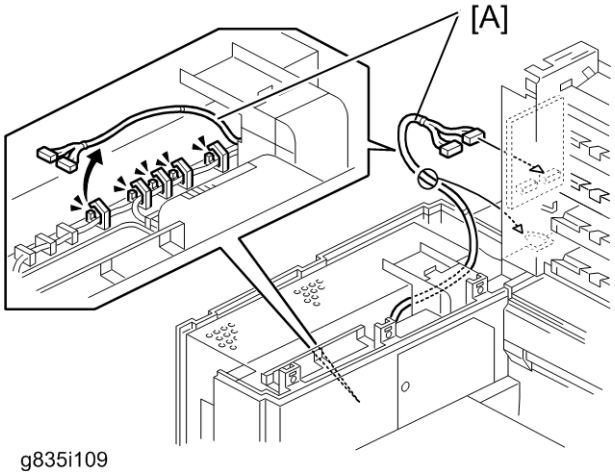


14. Install the mail bin unit [A] on the printer as shown above.

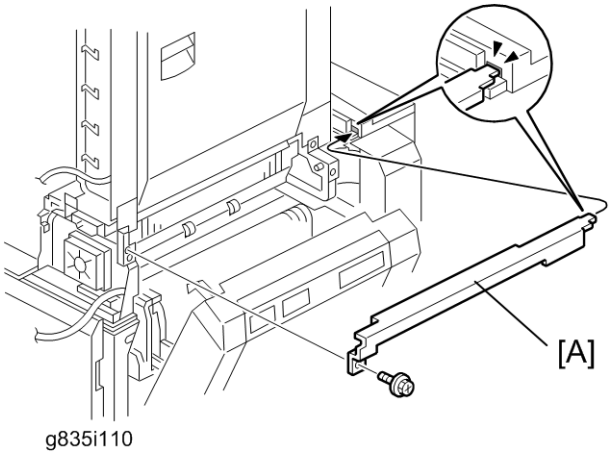
Mail Bin (G835)



15. Attach the front hold bracket [A] and rear hold bracket [B] (x 2 each).

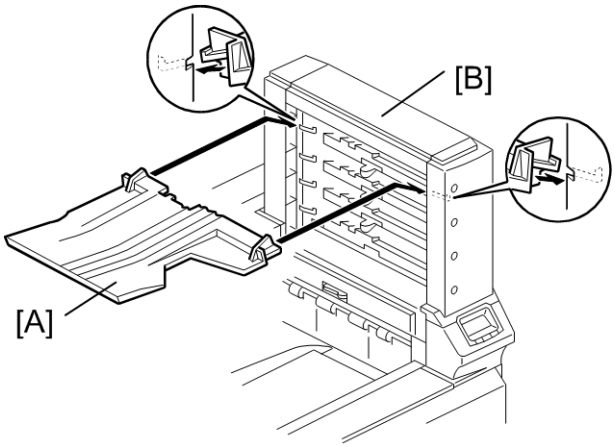


16. Release the harness [A] from the printer (x 5).
17. Connect the harness [A] to the main board of the mail box unit (x 1).



18. Reinstall the top rear cover (x 2)
19. Install the right stay [A] (x 1).

20. Reinstall the front and rear cover of the mail bin unit (x 1 each).
21. Reinstall the operation panel and connection cover (x 1 each).
22. Close the right door.

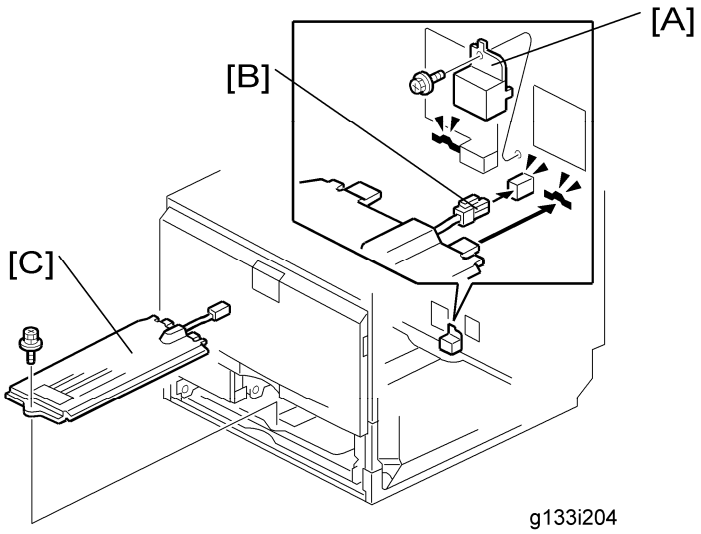


g835i111

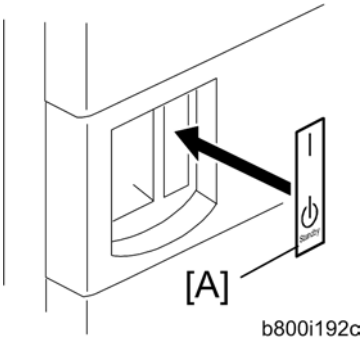
23. Install the tray [A] in each bin of the mail bin unit [B].
24. Plug in and turn on the printer.
25. Check the operation of the mail bin unit.

2.11 TRAY HEATER (STANDARD TRAY)

2.11.1 INSTALLATION PROCEDURE



1. Remove trays 1 and 2 from the machine.
2. Remove the connector cover [A] (x 1).
3. Connect the connector [B] of the heater to the connector of the main machine.
4. Install the heater [C] inside the machine (x 1)
5. Reassemble the machine.

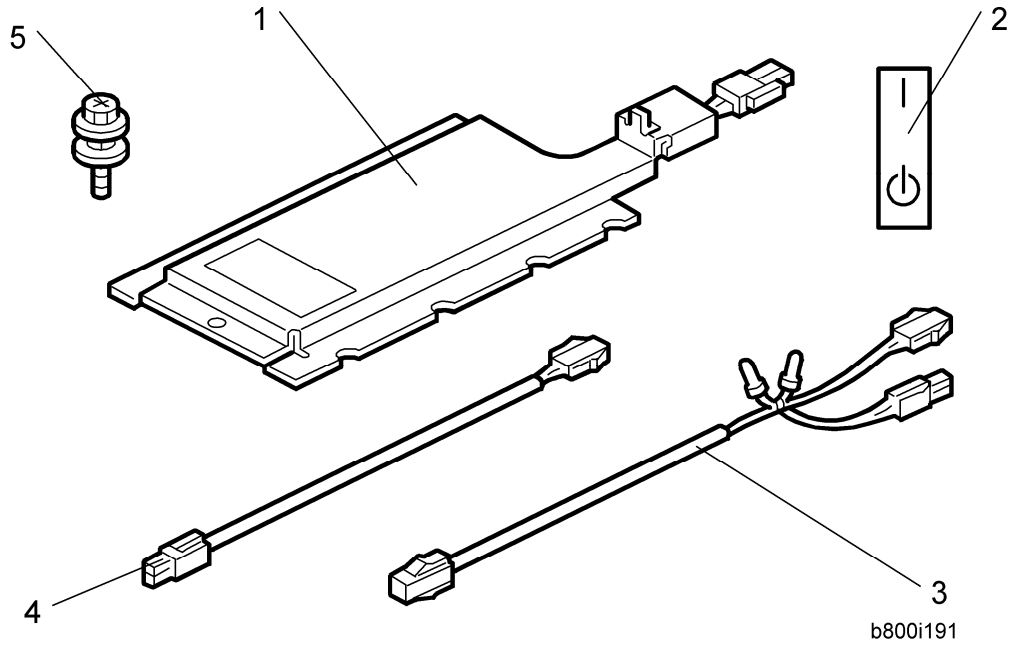


6. Attach the on/standby decal [D] to the right-hand side of the main power switch.

2.12 TRAY HEATER (OPTIONAL TRAY)

2.12.1 COMPONENT CHECK

No.	Description	Q'ty
1	Tray heater	1
2	On-standby decal	1 (-90) or 2 (-91)
3	Harness 2 (For D387)	1
4	Harness 1 (For D351/D352)	1
5	Screw M4 x 10	2
-	Installation procedure	1



2.12.2 INSTALLATION PROCEDURE

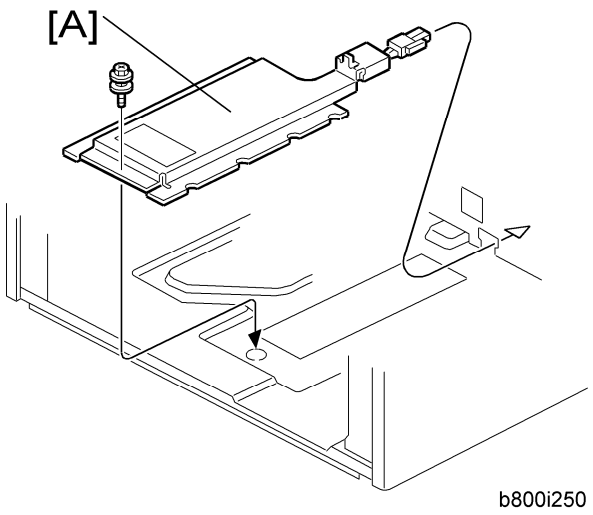
⚠CAUTION

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

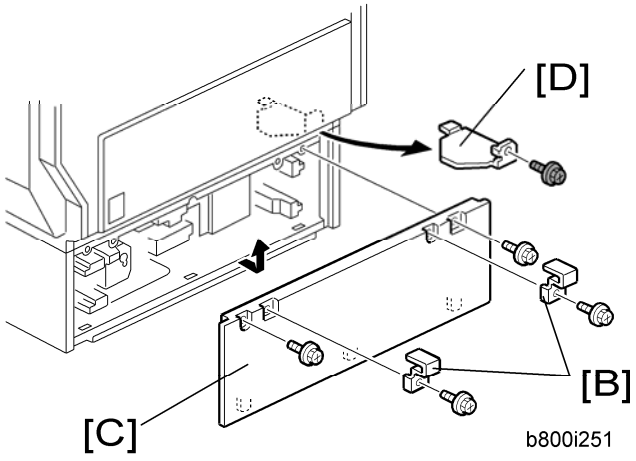
Tray Heater (Optional Tray)

For installing the tray heater in the D351 (Two-tray paper feed unit)

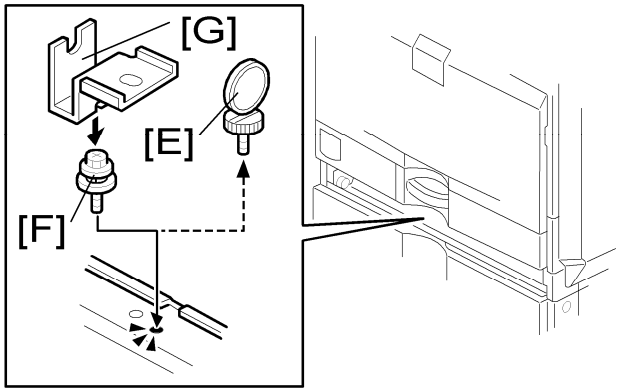
1. Remove the rear cover of the mainframe (x 6).
2. Pull out the two trays from the optional paper feed unit.



3. Install the tray heater [A] in the optional paper feed unit (x 1).



4. Remove the two securing brackets [B] (x 1 each), and then the rear cover [C] of the optional paper feed unit (x 2).
5. Remove the harness cover bracket [D] (x 1).



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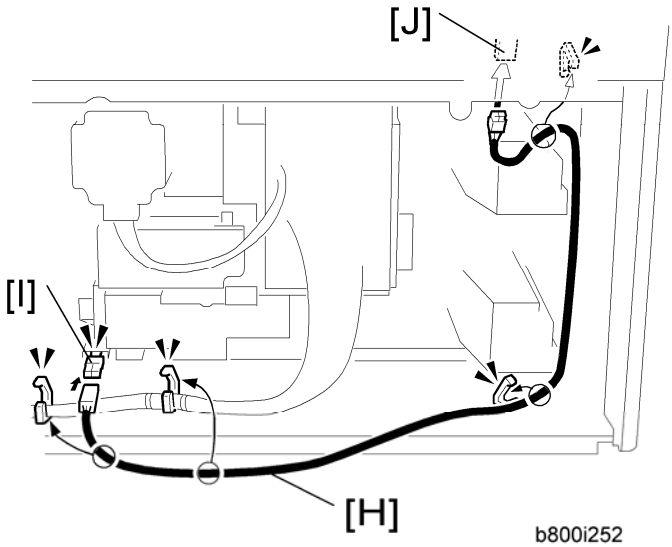
6. Pull out tray 2 from the mainframe.
7. Replace the shoulder screw [E] with the washer screw [F], using securing bracket [G] (x 1).



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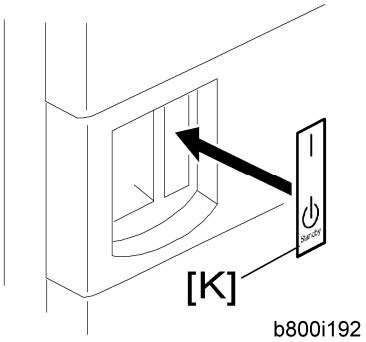
8. Connect the harness [H] to the connector [I] of the tray heater.
9. Route the harness [H] as shown and clamp it with four clamps (x 4).
10. Connect the harness [H] to the connector [J] of the mainframe.
11. Reassemble the mainframe and optional paper feed unit.

Tray Heater (Optional Tray)



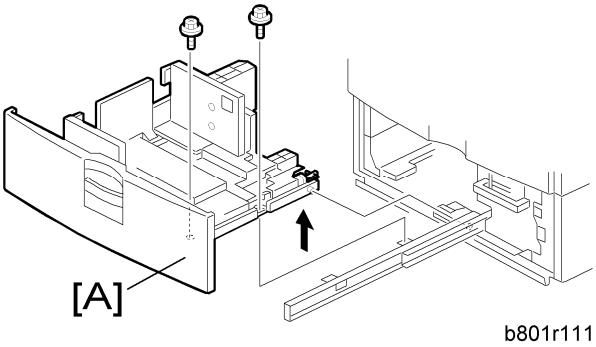
12. Attach the on/standby decal [K] to the right-hand side of the main power switch.

For installing the tray heater in the D352 (LCT)

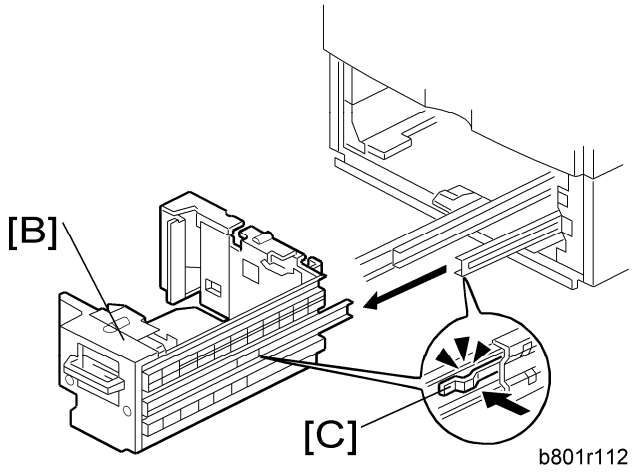
1. Remove the rear cover of the mainframe (x 6).
2. Pull out the LCT drawer.

Note

- If the right tray comes out with the left tray, push the right tray into the LCT.



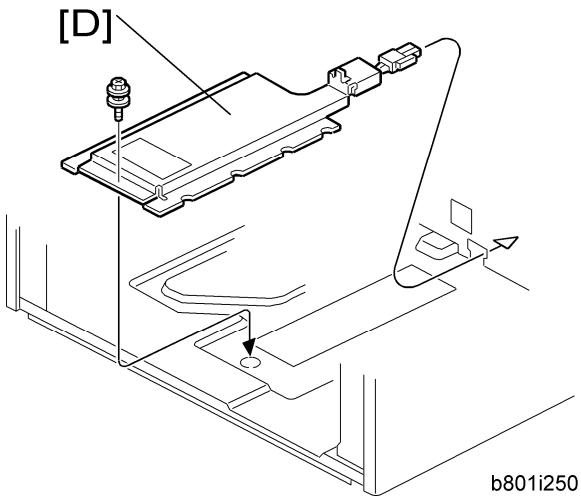
3. Left tray [A] (x 2)



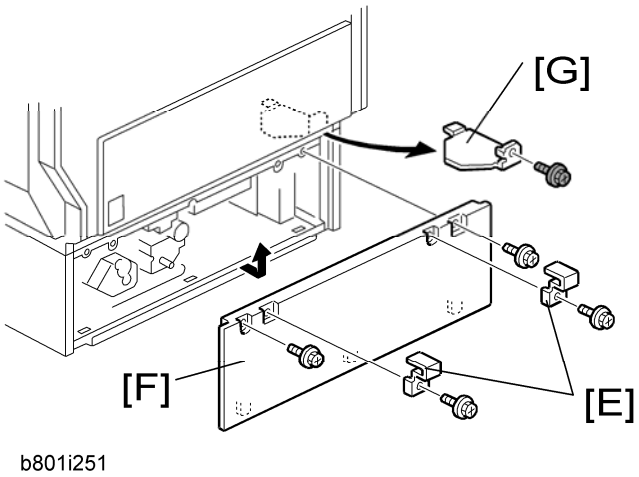
4. Remove the right tray [B] while pressing down the stopper [C].

Note

- When reinstalling the right tray, set the right tray on the guide rail and carefully push the tray in, making sure to keep the tray level.

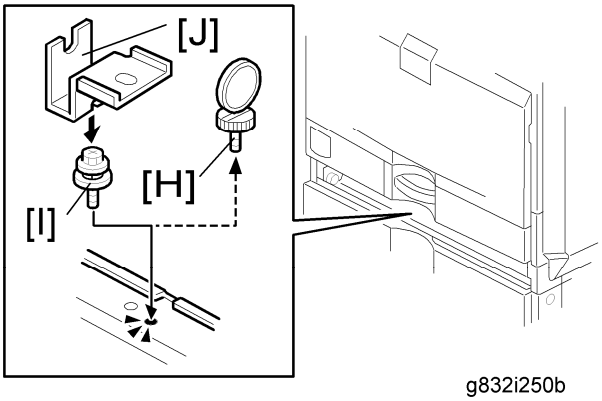


5. Install the tray heater [D] in the optional LCT (x 1).



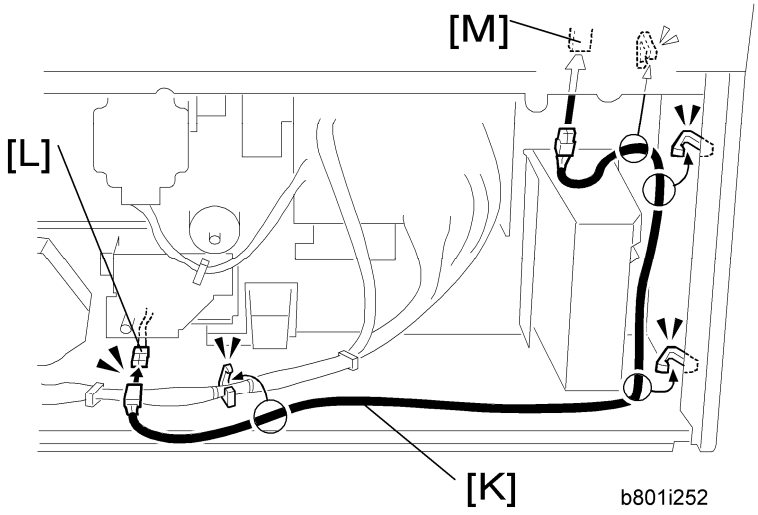
6. Remove the two securing brackets [E] (x 1 each), and then the rear cover [F] of the optional LCT (x 2).
7. Remove the harness cover bracket [G] (x 1).

Tray Heater (Optional Tray)



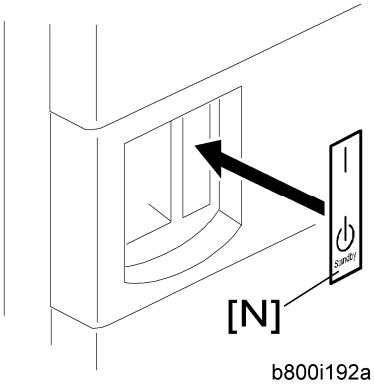
g832i250b

8. Pull out tray 2 from the mainframe.
9. Replace the shoulder screw [H] with the washer screw [I], using the securing bracket [J] (x 1).



b801i252

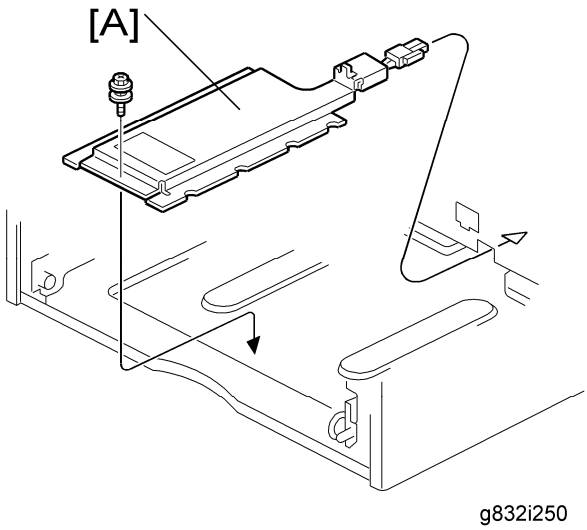
10. Connect the harness [K] to the connector [L] of the tray heater.
11. Route the harness [K] as shown and clamp it with four clamps (x 4).
12. Connect the harness [K] to the connector [M] of the mainframe.
13. Reassemble the mainframe and optional LCT.



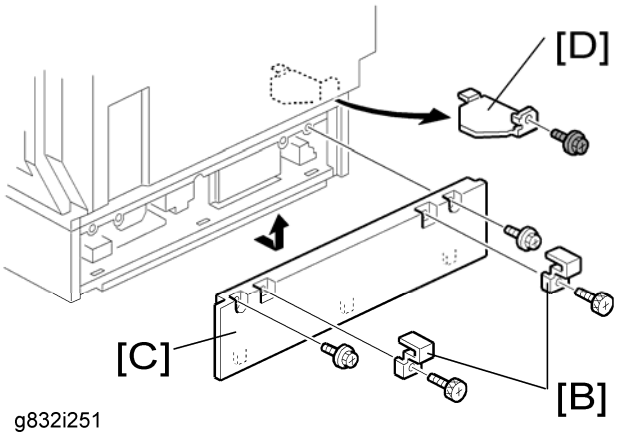
14. Attach the on/standby decal [N] to the right-hand side of the main power switch.

For installing the tray heater in the D387 (Paper tray unit)

1. Remove the rear cover of the mainframe (x 6).
2. Pull out the tray from the optional paper tray.

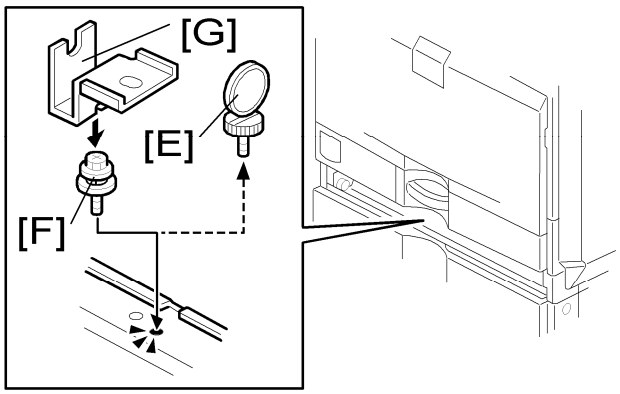


3. Install the tray heater [A] in the optional paper tray (x 1).



Tray Heater (Optional Tray)

4. Remove the two securing brackets [B] (x 1 each), and then the rear cover [C] of the optional paper tray (x 2).
5. Remove the harness cover bracket [D] (x 1).



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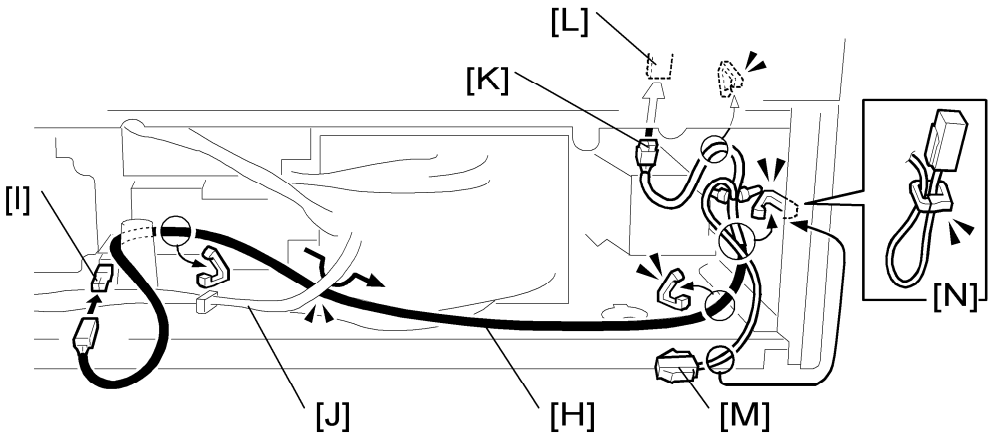
6. Pull out tray 2 from the mainframe.
7. Replace the shoulder screw [E] with the washer screw [F], using the securing bracket [G] (x 1).



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8. Connect the harness [H] to the connector [I] of the tray heater.
9. Route the harness [H] as shown and clamp it with four clamps (x 4).

Note

- Make sure that the harness [H] is placed below the harness [J].

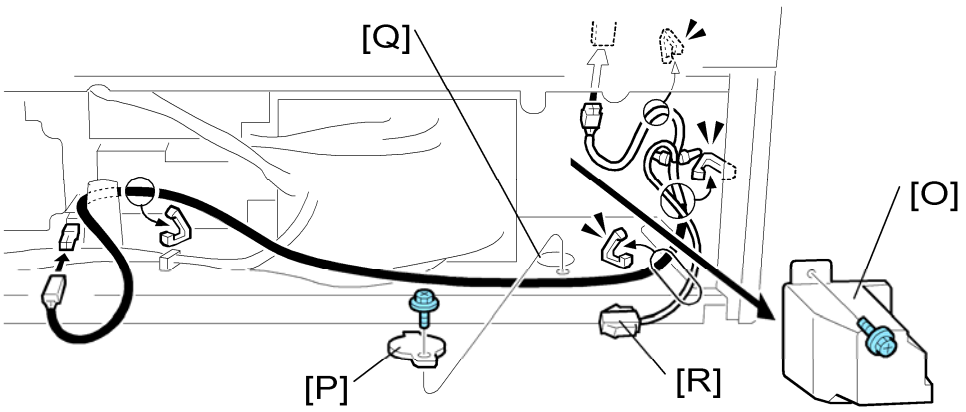
10. Connect one harness [K] of the two-way harness to the connector [L] of the mainframe.

Note

- Connect [K] to the connector on the mainframe. The harness of connector [K] has two binders. The harness of the other connector [M] has one binder, and this is for another optional paper feed unit.

11. Clamp the other harness [M] of the two-way harness as shown [N] if you do not install another optional paper feed unit.

    Do steps 12 to 14 if you install another optional paper feed unit below D387. If not, skip to step 15.



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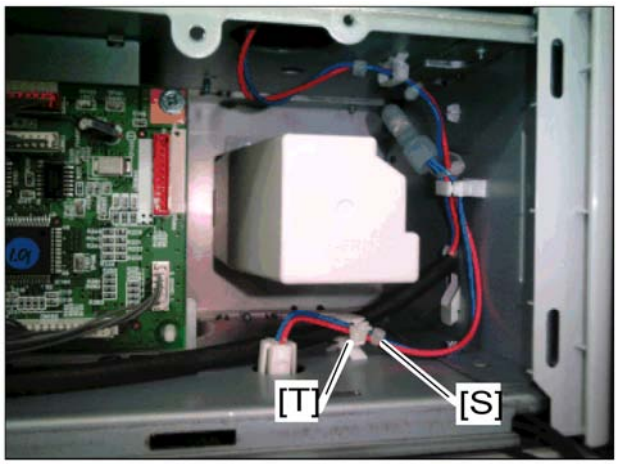
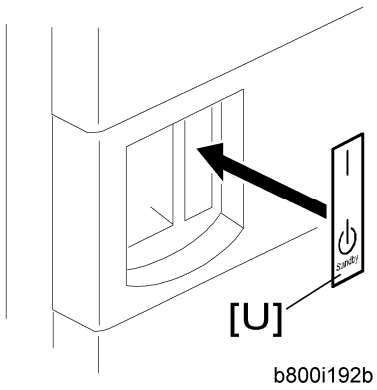
12. Remove the tray bar cover [O] (x 1).
13. Remove the harness cover bracket [P].
14. Pass the harness from the lower paper feed unit through the hole [Q], and then connect it to the harness [R].



Note

- Make sure that the harness is clamped, with the bind [S] placed at the right hand side of the clamp [T].

Tray Heater (Optional Tray)

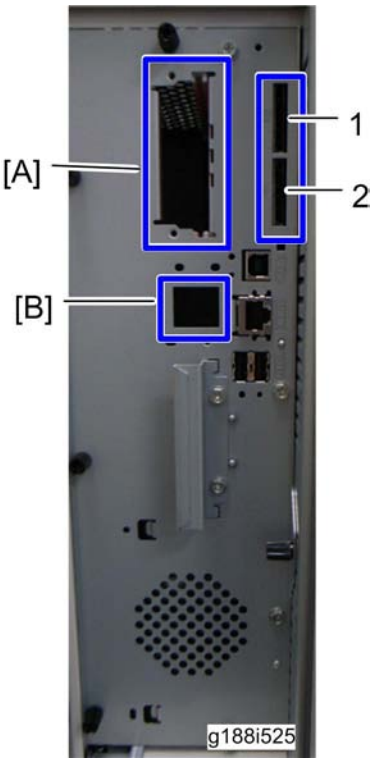


15. Reassemble the mainframe and optional paper tray.
16. Attach the on/standby decal [U] to the right-hand side of the main power switch.

2.13 CONTROLLER OPTIONS

2.13.1 OVERVIEW

This machine has I/F card slots for optional I/F connections and SD card slots applications. After you install an option, check that the machine can recognize it (see “Check All Connections” at the end of this section).



I/F Card Slots

- I/F Slot [A] is used for one of the optional I/F connections (only one can be installed): IEEE1284, IEEE802.11a/g, g (Wireless LAN) or Bluetooth.
- Gigabit Ethernet Slot [B] is used for only Gigabit Ethernet.

SD Card Slots

- Slot 1 is used for one of the optional applications: Data Overwrite Security Unit, NetWare, PictBridge, Data Storage Card.
- Slot 2 is used for installing the VM card, HDD Encryption Unit, or for service only (for example, updating the firmware).

2.13.2 SD CARD APPLI MOVE

Overview

The service program “SD Card Appli Move” (SP5-873) lets you to copy application programs from one SD card to another SD card.

Slot 1 and Slot 2 are used to store application programs. However, more than two optional applications are supplied for this machine. In that case, you can move application programs from Slot 2 to Slot 1 with the following procedure.

Consider the following limitations when you try to merge SD cards.

- The destination SD card should have the largest memory size of all the application SD cards. Refer to the following table for the memory size of each SD card.

Outline of SD Card Appli Move

1. Choose a SD card with enough space.

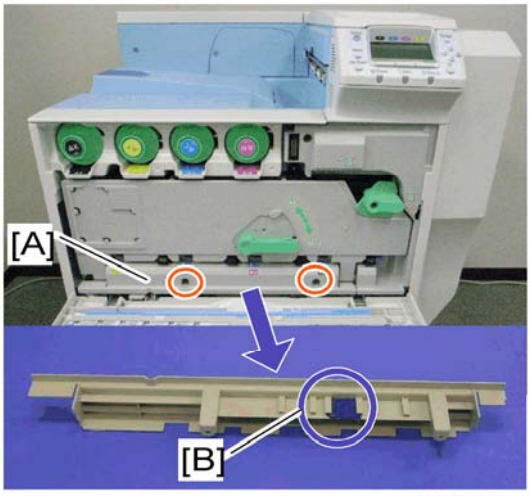
   Note

   - Do not use an SD card if it has been used on a computer. Normal operation is not guaranteed when such an SD card is used.
2. Enter SP5873 “SD Card Appli Move”. Then move the application from the SD Card in Slot 2 to the card in slot 1.
3. Exit the SP mode

   Use caution when you do the SD Card Appli Move procedure:

   Note

   - The data necessary for authentication is transferred with the application program from an SD card to another SD card. Authentication fails if you try to use the SD card after you copy the application program from one card to another card.



g133i511

4. Remove the cover [A] (x 2).
5. Keep the SD card in the place [B] after you have copied the application program from one card to another card. This is done for the following reasons:
   - 1) The SD card can be the only proof that the user is licensed to use the application program.
   - 2) You may need to check the SD card and its data to solve a problem in the future.

Move Exec

The menu “Move Exec” (SP5-873-001) lets you copy application programs from the original SD card to another SD card.

Important

- Do not turn **ON** the write protect switch of an application SD card on the machine. If the write protect switch is ON, a download error (e.g. Error Code 44) occurs during a firmware upgrade or application merge.

1. Turn the main switch off.
2. Make sure that an SD card is in SD card slot 1. The application program is copied into this SD card.
3. Insert the SD card (having stored the application program) to SD card slot 2. The application program is copied from this SD card.
4. Turn the main switch on.
5. Start the SP mode.
6. Select SP5-873-001 “Move Exec.”
7. Follow the messages shown on the operation panel.
8. Turn the main switch off.
9. Remove the SD card from SD card slot 2.
10. Turn the main switch on.
11. Check that the application programs run normally.

Undo Exec

The menu “Undo Exec” (SP5-873-002) lets you copy back application programs from an SD card to the original SD card. You can use this program when, for example, you have mistakenly copied some programs by using Move Exec (SP5-873-001).

Important

- Do not turn **ON** the write protect switch of an application SD card on the machine. If the write protect switch is **ON**, a download error (e.g. Error Code 44) occurs during a firmware upgrade or application merge.

Controller Options

1. Turn the main switch off.
2. Insert the original SD card in SD card slot 2. The application program is copied back into this card.
3. Insert the SD card (having stored the application program) to SD card slot 1. The application program is copied back from this SD card.
4. Turn the main switch on.
5. Start the SP mode.
6. Select SP5-873-002 “Undo Exec.”
7. Follow the messages shown on the operation panel.
8. Turn the main switch off.
9. Remove the SD card from SD card slot 2.

   Note

   - This step assumes that the application programs in the SD card are used by the machine.
10. Turn the main switch on.
11. Check that the application programs run normally.

PREVENTIVE MAINTENANCE

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

3. PREVENTIVE MAINTENANCE

3.1 MAINTENANCE ITEMS

See "Appendices" for the following information:

- User Maintenance Items
- Service Maintenance Items

REPLACEMENT AND ADJUSTMENT

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

4. REPLACEMENT AND ADJUSTMENT

4.1 BEFOREHAND

⚠CAUTION

- Before installing options, please do the following:
  1. If there are printer jobs in the machine, print out all jobs in the printer buffer.
  2. Turn off the main switch and disconnect the power cord and the network cable.

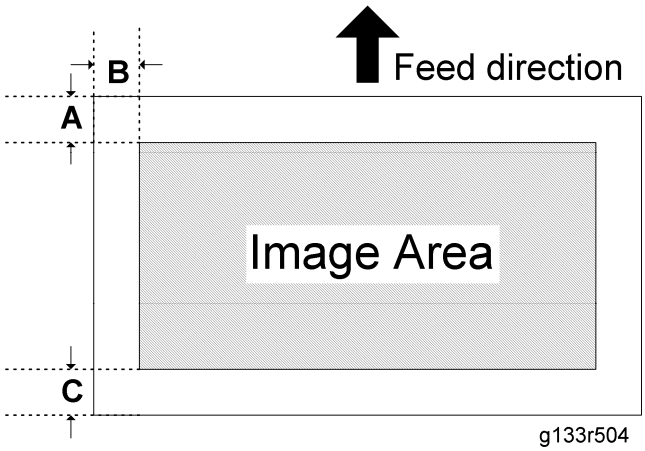
4.2 SPECIAL TOOLS

Part Number	Description	Q'ty
B645 5010	SD Card	1
B645 6705	PCMCIA Card Adapter	1
B645 6830	USB Reader/Writer	1
VSSM9000	Digital Multimeter – FLUKE87	1
C401 9503	20X Magnification Scope	1
A257 9300	Grease Barrierta – S552R	1
5203 9502	Silicone Grease G-501	1
B679 5100	Plug - IEEE1284 Type C	1
B132 9700	Lubricant Powder	1

4.3 IMAGE ADJUSTMENT

4.3.1 REGISTRATION

Image Area



A = 5.2 mm (0.21"), B = 4.2 mm (0.17") C = 3.2 mm (0.13")

Make sure that the registration is adjusted within the adjustment standard range as shown above.

Leading Edge

Adjusts the leading edge registration for each paper type and process line speed.

Side to Side

Adjusts the side-to-side registration for each paper feed station. Use SP mode (SP1-002) to adjust the side-to-side registration.

Adjustment Standard

- Leading edge (sub-scan direction): 5.2 ± 1.5 mm
- Side to side (main-scan direction): 2.0 ± 1 mm

Paper Registration Standard

The registration in both main- and sub-scan directions can change within the following tolerance.

- Sub-scan direction: 0 ± 9 mm
- Main-scan direction: 0.5 ± 4 mm

Adjustment Procedure

1. Enter SP2-109-003.
2. Select the test pattern (14: 1-dot trimming pattern) with SP2-109-003.

3. Exit SP mode.
4. Enter the menu mode, and then select "Color Demo Page" (Menu > "List/Test Print" > "Color Demo Page").

Note

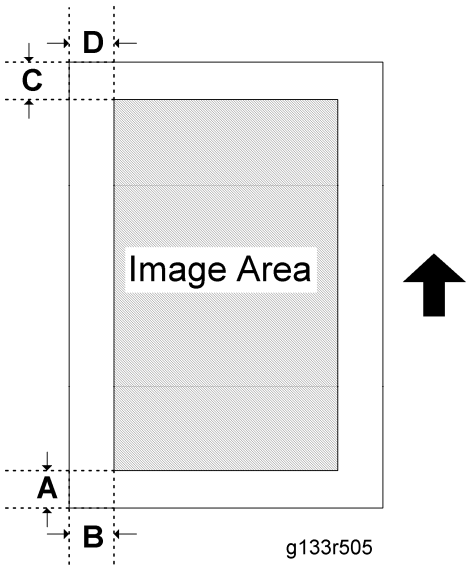
- Registration can change slightly as shown on the previous page. Print some pages of the 1-dot trimming pattern for step 3 and 4. Then average the leading edge and side-to-side registration values, and adjust each SP mode.

5. Do the leading edge registration adjustment.
   a. Check the leading edge registration and adjust it with SP1-001.
   b. Select the adjustment conditions (paper type and process line speed).
   c. Change the value with the ◄/►, ▲/▼ keys. Then press the "OK" key.
   d. Generate a trim pattern to check the leading edge adjustment.
6. Do the side-to-side registration adjustment.
   a. Check the side-to-side registration and adjust it with SP1-002.
   b. Select the adjustment conditions (paper feed station).
   c. Change the value with the ◄/►, ▲/▼ keys. Then press the "OK" key.
   d. Generate a trim pattern to check the leading edge adjustment.
7. Return the value of the setting in SP2-109-003 to "00" before completing this procedure.

4.3.2 ERASE MARGIN ADJUSTMENT

Note

- Adjust the erase margin C and D only if the registration (main scan and sub scan) cannot be adjusted within the standard values. Do the registration adjustment after adjusting the erase margin C and D, and then adjust the erase margin A and B.



1. Enter SP2-109-003.
2. Select the test pattern (14: 1-dot trimming pattern) with SP2-109-003.
3. Exit SP mode.
4. Enter the menu mode, and then select "Color Demo Page" (Menu > "List/Test Print" > "Color Demo Page").
5. Check the erase margin A and B. Adjust them with SP2-103-001 to -010 if necessary.
   Leading edge: 1.5 to 5.2 mm,
   Side-to-side: 0.5 to 4.0 mm,
   Trailing edge: 0.5 to 0.6 mm
6. Return the value of the setting in SP2-109-003 to "00" before completing this procedure.

4.3.3 COLOR REGISTRATION

Line Position Adjustment

The automatic line position adjustment usually is done for a specified condition to get the best color prints.

Do the following if color registration shifts:

- Do “Forced Line Position” as follows to do the forced line position adjustment.
  1) First do SP2-111-3.
  2) Then do SP2-111-1.
  To check if SP 2-111-1 was successful, watch the screen during the process. A message is displayed at the end. Also, you can check the result with SP 2-194-10 to -12.

Image Adjustment

- You should also do the line position adjustment at these times:
  - After you transport or move the machine (you should do the forced line position adjustment if you install the machine at the user location.) if the machine is pre-installed at the workshop and moved to the user location,
  - When you remove or replace the motors, clutches, and/or gears related to the drum/development/transfer sections
  - When you remove or replace the image transfer belt or laser optical housing unit

4.3.4 GAMMA ADJUSTMENT

Note

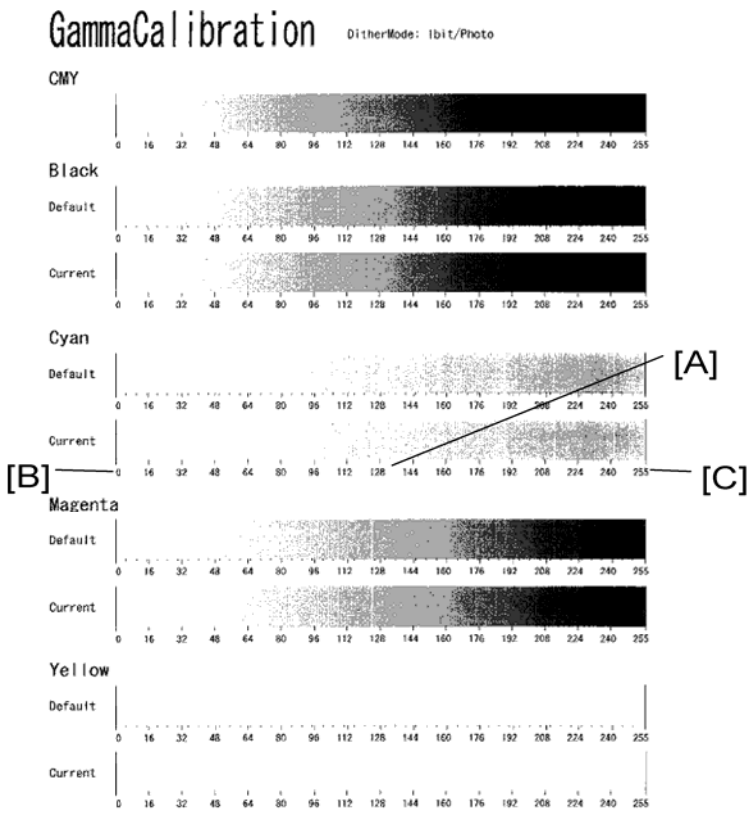
- Clean and/or replace related parts first to solve color quality problems. Do these procedures if adjustments are necessary:

Summary

To adjust the printer gamma:

- Select the print mode you want to calibrate
- Print a color calibration test sheet
- Make the gradation scales on the printout smooth from the lowest to the highest density. Adjust the CMY gradation scale at the top of the chart by balancing the density of the C, M, and Y gradation scales – the CMY gray scale should change smoothly from minimum to maximum. There should be no coloration.

Examine this color adjustment sheet:



g133r913

You can adjust 15 points for each color: (example [A]) between 0 (lowest density) [B] and 255 (highest density) [C]. For each point, you can adjust the density within 0 and 255.

The gradation scales marked ‘Default’ are printed according to the default gamma settings in the flash ROM in the controller. The gamma adjustment changes the densities at the adjustable points in the gradation scale. The gradation scale marked “Current” shows the current settings.

Compare the “Current” gradation scale with the ‘Default’ at the time you do the adjustment procedure. Select the density for each of the 15 adjustable points, excluding points 0 and 255, from the ‘Default’ gradation scale.

The NVRAM holds three sets of controller gamma settings:

- Those saved this time: Controller SP1-101 "ToneCtlSet" - "Tone (Current)"
- Those saved in the previous adjustment: Controller SP1-101 "ToneCtlSet - Tone (Prev)"
- The factory settings: Controller SP1-101 "ToneCtlSet - "Tone (Factory)".

Adjustment Procedure

1. Enter the controller service mode.

Image Adjustment

2. Use the down arrow key to select Controller SP1-102 “ToneCtlSet”. Then press the Enter key.
3. Use the up/down key to select the mode you want to calibrate, Then press the Escape key until you get back to the controller service mode menu.
4. Use the down arrow key to select Controller SP1-103 “PrnColorSheet”. Then press the Enter key.
5. Use the up/down key to select Controller SP1-103-001 “ToneCtlSheet” (normally this is displayed by default). Then press the Enter key.
6. Press the Enter key to print out the “color calibration test sheet”. When “Execute?” shows.
7. Press the Escape key 2 times to exit from the menu. when “Execute OK” shows. (You return to Controller SP1-103 “PrnColorSheet” in the controller service menu.)
8. Use the down arrow key to select Controller SP1-104 “ToneCtlValue”. Then press the enter key.
9. Use the up/down arrow key to select the setting you want to adjust. Then press the enter key. The three digits in the display (example ‘016’) indicate a position on the color calibration test sheet.

Operation Panel Display	**Color Calibration Test Sheet**
Set Black 1	Default Value 16
Set Black 2	Default Value 32
Set Black 3	Default Value 48
:	:
:	:
Set Black 13	Default Value 208
Set Black 14	Default Value 224
Set Black 15	Default Value 240
Set Cyan 1 ~ 15	See Set Black 1 ~ 15
Set Magenta 1 ~ 15	See Set Black 1 ~ 15
Set Yellow 1 ~ 15	See Set Black 1 ~ 15

Adjust the color density at each of the 15 points for each of the four colors.

Do the following to decide what density value to input:

a) Look at the color adjustment sheet.

b) Look at the gradation scale entitled 'Default' for the color you want to adjust.

c) Go along the scale until you reach the density you want to input.

d) Read off the value on the scale and store it in the machine.

- Use the up/down key to move the cursor along the three-digit display. Then press the Enter key.
- Use the up/down key to change the digit at the cursor. Then press the Enter key.
- Press the Escape key to exit from the menu.

e) Do the same for all 15 points.

10. When the density setting is complete for all colors, print out a color adjustment sheet again and make sure that the gradation scale for each printed color is smooth and that the CMY gradation scale is gray. Do the adjustment again if there is an anomaly (normally, repeat this procedure 3 to 5 times).
11. Do these when the adjustment results are satisfactory:
12. Use Controller SP1-105 "ToneCtlSave" in the controller service menu, to store the new settings in the controller.
13. Reset the controller (press the [Reset] key when the machine is off line") to use the new settings.

Note

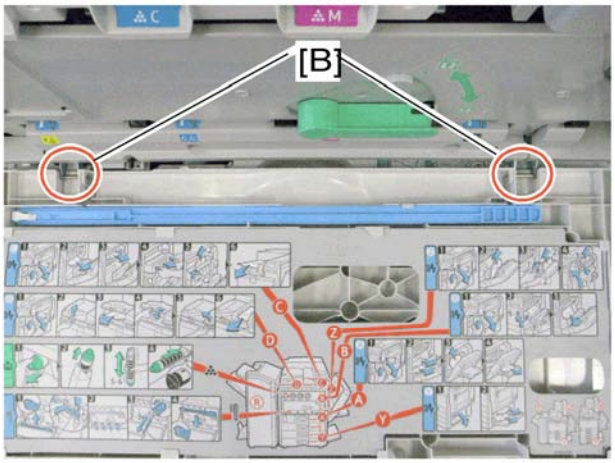
- You must reset the controller to keep the new settings in the controller NVRAM.

4.4 EXTERIOR COVERS

4.4.1 FRONT DOOR

g133r512

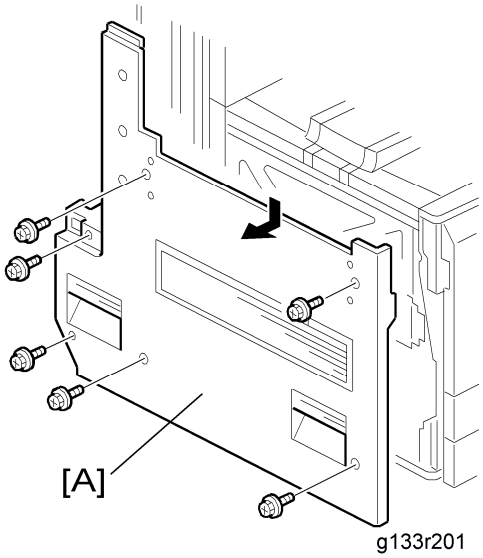
1. Open the front door [A].



g133r513

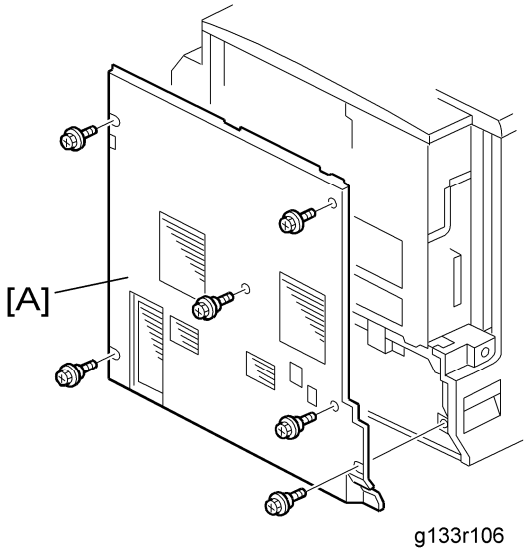
2. Remove the two pins [B], and then remove the front cover.

4.4.2 LEFT COVER



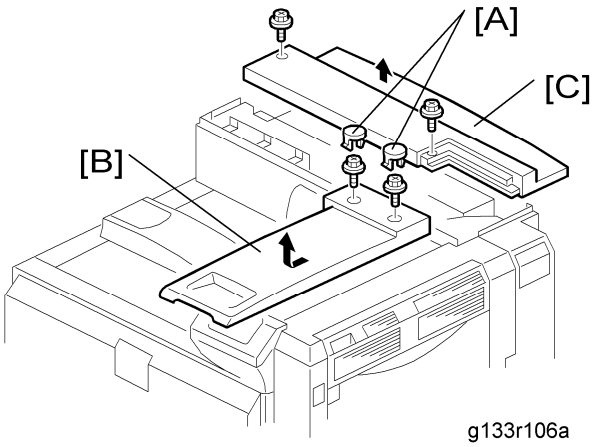
1. Left cover [A] (x 6)

4.4.3 REAR COVER



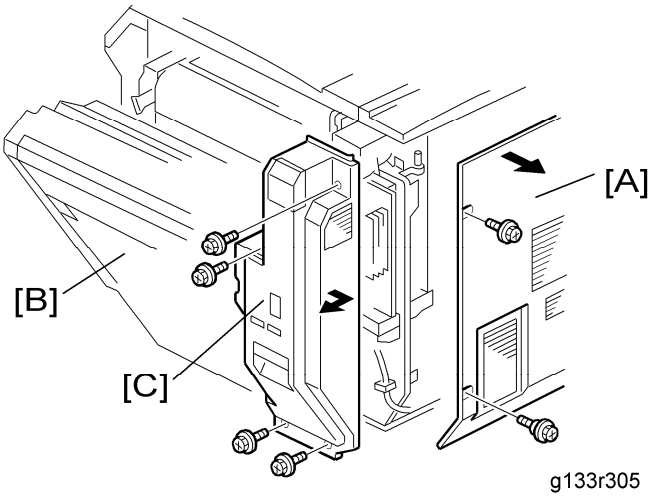
1. Rear cover [A] (x 6)

4.4.4 TOP RIGHT AND REAR COVER



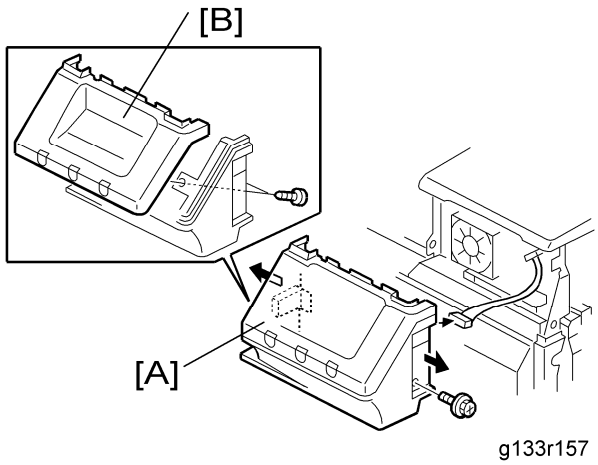
1. Remove the screw caps [A].
2. Top right cover [B] (x 2)
3. Top rear cover [C] (x 2)

4.4.5 RIGHT REAR COVER



1. Rear cover [A] (x 6)
2. Open the right door [B].
3. Right rear cover [C] (x 4)

4.4.6 OPERATION PANEL



1. Open the right door.
2. Operation panel cover [A] (x 1, x 1, hook)
3. Operation panel [B] (x 2)

4.4.7 PAPER EXIT COVER

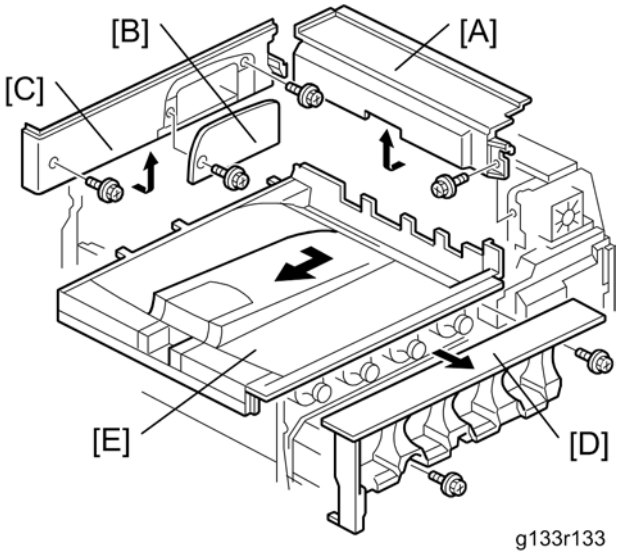
1. Top right cover (☛Section: Top Right and Rear Cover 4-12)
2. Operation panel cover (☛Section: Operation Panel 4-13)

3. Paper exit cover [A] (x 1)

4.4.8 OUTPUT TRAY

1. Top right cover and top rear cover(☛Section: Top Right and Rear Cover 4-12)
2. Operation panel cover (☛Section: Operation Panel 4-13)
3. Left cover (☛Section: Left Cover 4-11)

Exterior Covers

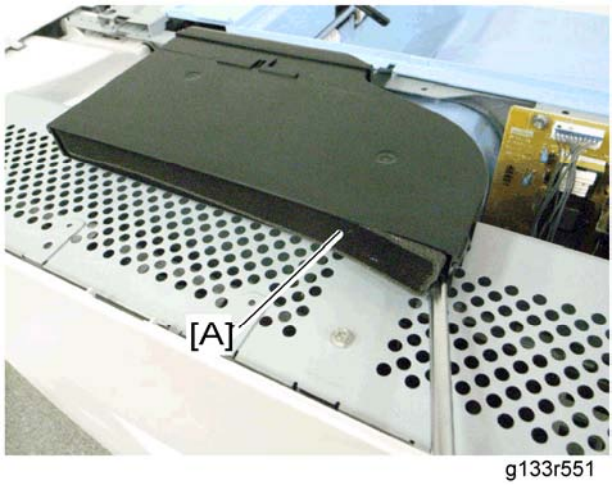


4. Paper exit cover [A] (x 1)
5. Inner rear cover [B] (x 2)
6. Connector cover [C] (x 1)
7. Front door (☛Section: Front Door 4-10)
8. PCU (☛Section: PCU 4-23)
9. Toner cartridge cover [D] (x 2)
10. Output tray [E]

4.4.9 OZONE FILTER

Ozone filter for charge unit

1. Top right cover (☛Section: Top Right and Rear Cover 4-12)
2. Top rear cover (☛Section: Top Right and Rear Cover 4-12)

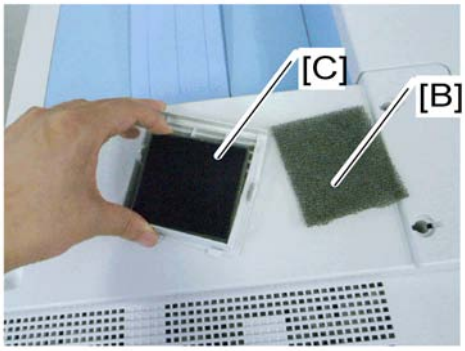


3. Ozone filter [A]

Ozone filter for IH inverter

g133r672

1. IH inverter fan cover [A] (hook)



g133r673

2. Filter [B]
3. Ozone filter [C]

4.5 LASER OPTICS

⚠WARNING

- Turn off the main switch and unplug the machine before beginning any of the procedures in this section. Laser beams can cause serious eye injury.

4.5.1 CAUTION DECAL LOCATION

Caution decals are placed as shown below.

d027r113

⚠WARNING

- Be sure to turn off the main switch and disconnect the power plug from the power outlet before beginning any disassembly or adjustment of the laser unit. This copier uses a class IIIb laser beam with a wavelength of 655 nm and an output of 7 mW. The laser can cause serious eye injury.

4.5.2 LASER OPTICS HOUSING UNIT

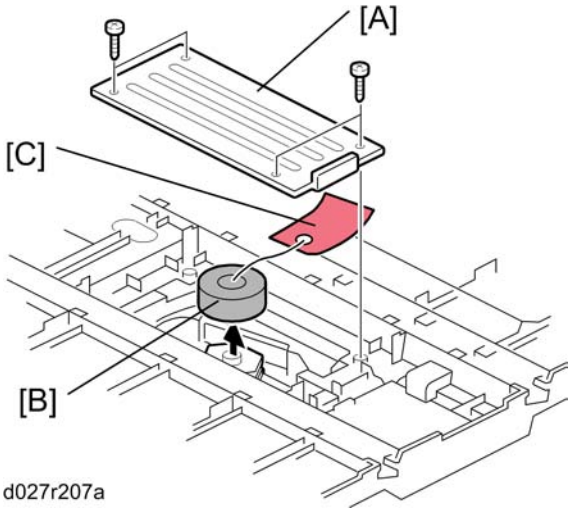
⚠CAUTION

- Before installing a new laser optics housing unit, remove the sponge padding and the tag from the new unit.

Note

- A new laser optics housing unit has a bracket to protect the LD units. When you install the new unit, do not remove the bracket until near the end of the installation procedure (the correct time is stated in the manual).
- This bracket protects a capacitor on the unit. If the bracket is removed too early, you could break the capacitor on the corner of the main frame when you install the new unit.

Preparing the new laser optics housing unit



1. Polygon motor cover [A] of the laser optics housing unit (x 4)
2. Sponge padding [B]
3. Tag [C]
4. Reinstall the polygon motor cover [A].

Before removing the old laser optics housing unit

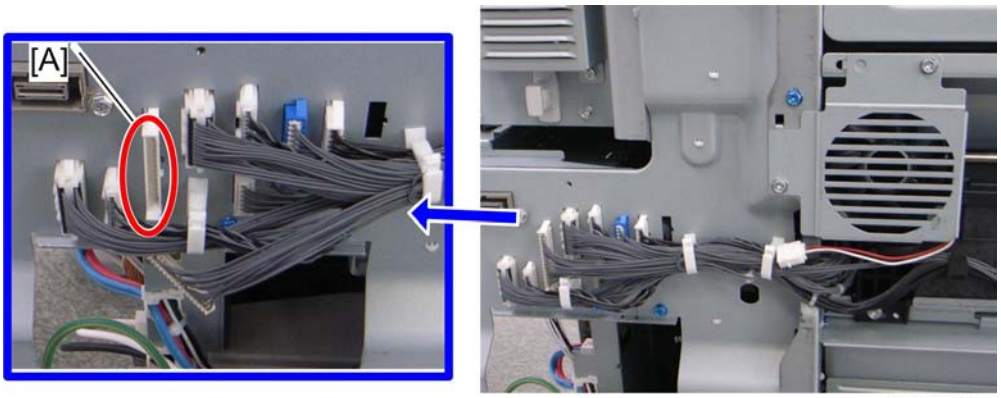
Do the following settings before removing the laser optics housing unit. These are adjustments for skew adjustment motors in the laser optics housing unit.

1. Plug in and turn on the main power switch of the copier.
2. Enter the SP mode.
3. Execute SP9511-001 to clear the L2 lens positioning motor setting for Magenta.
4. Execute SP9511-002 to clear the L2 lens positioning motor setting for Cyan.
5. Execute SP9511-003 to clear the L2 lens positioning motor setting for Yellow.
6. Exit the SP mode.
7. Turn off the main power switch and disconnect the power cord of the copier.

Recovery procedure for no replacement preparation of laser optics housing unit

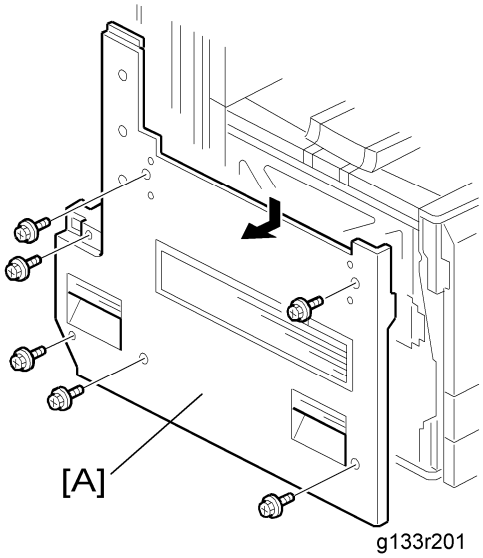
If you did not do the procedure in ‘Before removing the old laser optics housing’ before removing the old laser optics housing unit, you must do the following.

1. Turn off the main power switch and disconnect the power cord of the copier.
2. Remove the left cover and harness cover bracket (see the following "Removing the old laser optics housing unit")

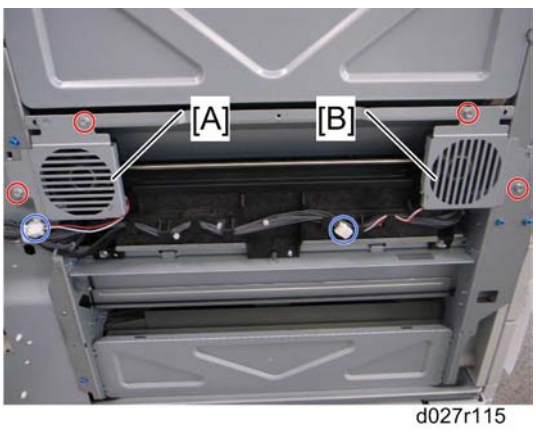


3. Disconnect the harness [A] of the skew correction motor.
4. Do steps 1 to 7 of "Before removing the old laser optics housing unit".
5. Connect the harness [A] and reinstall the harness bracket and left cover.
6. Plug in and turn on the main power switch.

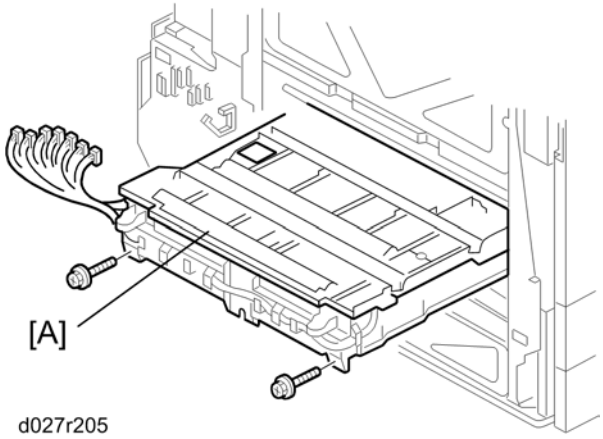
Removing the old laser optics housing unit



1. Left cover [A] (x 6)



2. Rear fan bracket [A] for the laser housing optics unit (x 2, x 1)
3. Front fan bracket [B] for the laser housing optics unit (x 2, x 1)

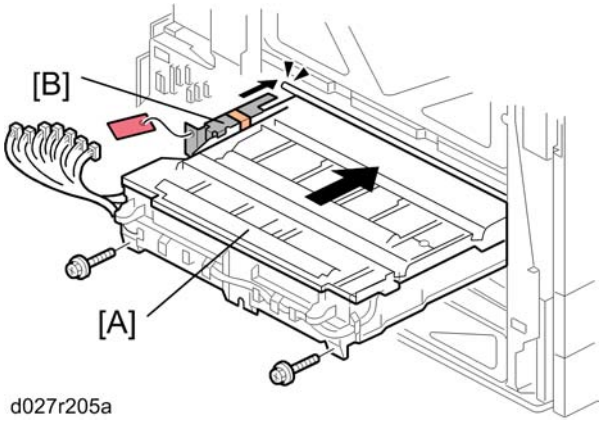


4. Remove the old laser optics housing unit [A] (x 2, All 's, x 3)

Installing a new Laser Optics Housing Unit

Note

- A new laser optics housing unit has a bracket to protect the LD units. When you install the new unit, do not remove the bracket until near the end of the installation procedure (the correct time is stated in the manual).
- This bracket protects a capacitor on the unit. If the bracket is removed too early, you could break the capacitor on the corner of the main frame when you install the new unit.



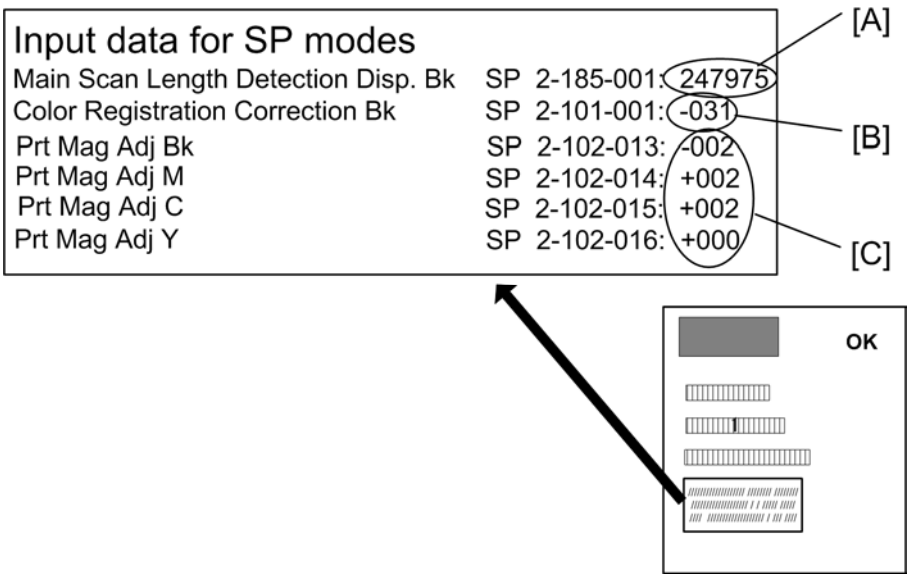
1. Push the new laser optics housing unit [A] slowly into the copier until the bracket [B] bumps against the frame of the copier.
2. Remove the bracket [B], and then push the new laser optics housing unit fully into the copier (x 2, All 's, x 3).
3. Reassemble the machine.

Laser Optics

After installing the new laser optics housing unit

Do the following adjustment after installing the new laser optics housing unit.

1. Plug in and turn on the main power switch.



2. Adjust the main scan magnification for K, M, C, Y.
   - Input the standard values [C] provided with a new laser optics housing unit for the main scan magnification adjustment with SP2-102-013, 014, 015, 016.

     Note

     - The values [C] are different for each laser optics housing unit.
3. Adjust the main scan magnification only for black (K).
   - Input the standard value [A] provided with a new laser optics housing unit for the main scan magnification adjustment with SP2-185-001.

     Note

     - The value [A] is different for each laser optics housing unit.
   - Print the test pattern (14: 1-dot trimming pattern in the SP2-109-003).
   - Check that the left and right trim margin is within 4 ± 1 mm. If not, change the standard value for the main scan magnification adjustment.
4. Adjust the main scan registration only for black (K).
   - Input the registration value [B] provided with a new laser optics housing unit for the main scan registration adjustment with SP2101-001.

     Note

     - The value [B] is different for each laser optics housing unit.
   - Print the test pattern (14: 1-dot trimming pattern in the SP2-109-003).
   - Check that the left trim margin is within 2 ± 1 mm. If not, change the registration

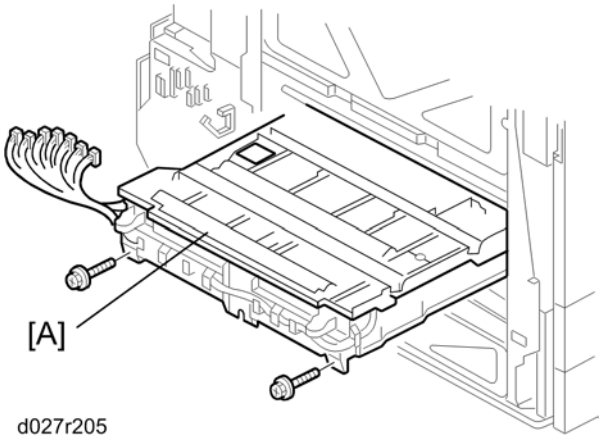
value for the main scan registration adjustment.

5. Select "0" with SP2-109-003 after printing the "1-dot trimming pattern.
6. Do the line position adjustment.
   - First do SP2-111-3.
   - Then do SP2-111-1.

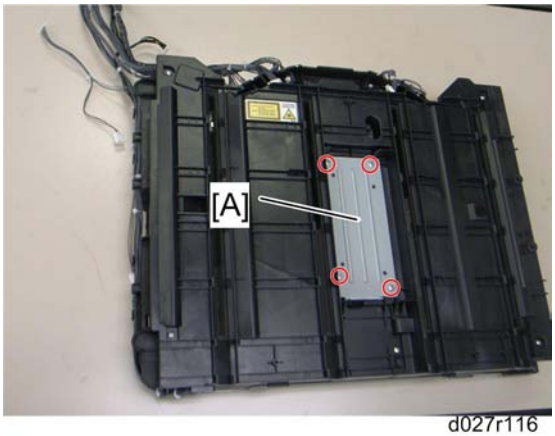
     To check if SP 2-111-1 was successful, watch the screen during the process. A message is displayed at the end. Also, you can check the result with SP 2-194-10 to -12.
7. Exit the SP mode.

After you replace the housing unit, do the adjustments in the following section of the manual: Image Adjustment – Registration.

4.5.3 POLYGON MIRROR MOTOR AND DRIVE BOARD

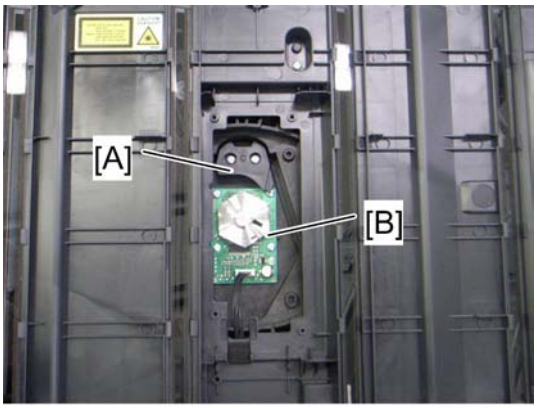


1. Laser optics housing unit [A] (☛Section: Laser Optics Housing Unit4-16)



2. Polygon mirror motor cover [A] of the laser optics housing unit (x 4)

Laser Optics



d027r117

3. Polygon mirror motor holder [A] (x 2)
4. Polygon mirror motor [B] (x 4, x 1)

After installing the polygon mirror motor:

- 1) Do the "Forced Line Position Adj. Mode c" (SP2-111-3).
- 2) Then do the "Forced Line Position Adj. Mode a" (SP2-111-1).

To check if SP 2-111-1 was successful, watch the screen during the process. A message is displayed at the end. Also, you can check the result with SP 2-194-10 to -12.

After you replace the motor, do the adjustments in the following section of the manual: Image Adjustment – Registration.

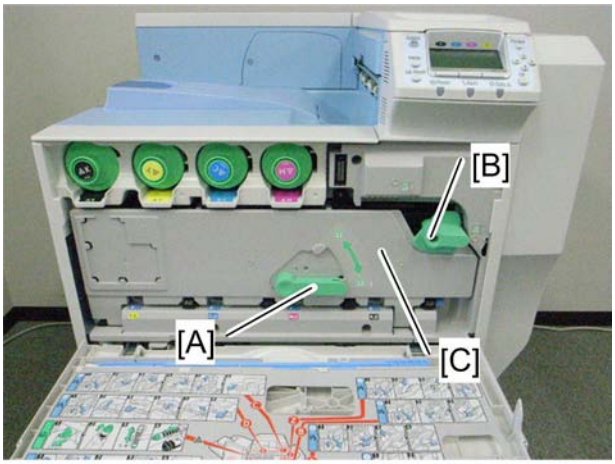
4.6 IMAGE CREATION

4.6.1 PCU

Note

- Do not touch the OPC drum. Do not let metal objects touch the development sleeve.

1. Open the front door.



g133r527

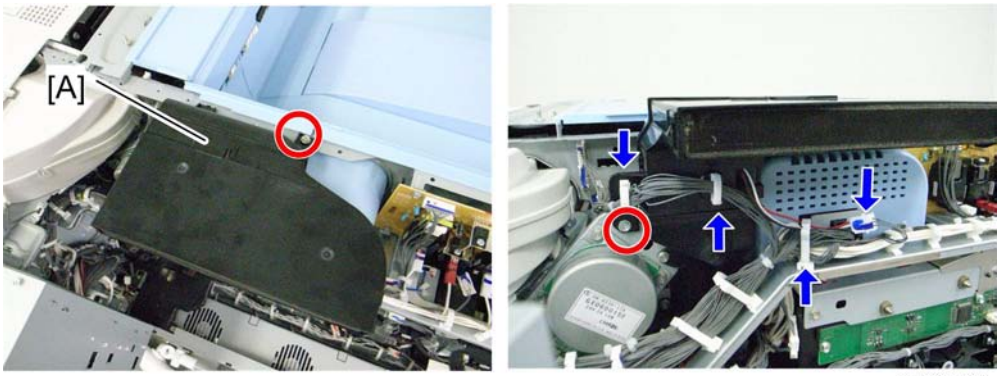
2. Turn the drum positioning plate lever [A] and the image transfer unit lock lever [B] counter-clockwise.
3. Open the drum positioning plate [C].

g133r528

4. Pull out the PCU (hold the grip while you pull it out) [A].

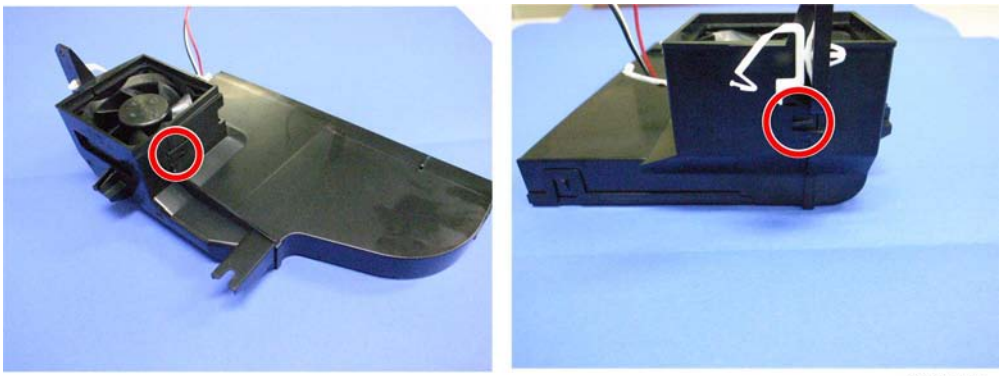
4.6.2 SECOND DUCT FAN

1. Rear cover (☛Section: Rear Cover 4-11)
2. Top right cover (☛Section: Top Right and Rear Cover 4-12)
3. Top rear cover (☛Section: Top Right and Rear Cover 4-12)
4. Open the controller box (☛Section: Controller Box 4-104)



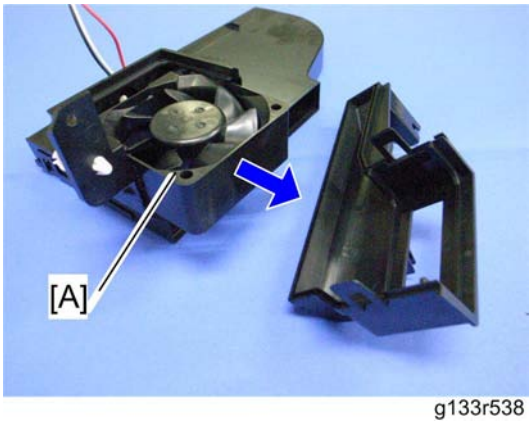
g133r536

5. Second duct [A] (x 2, x 1, x 3)



g133r537

6. Split the second duct (2 hooks).



g133r538

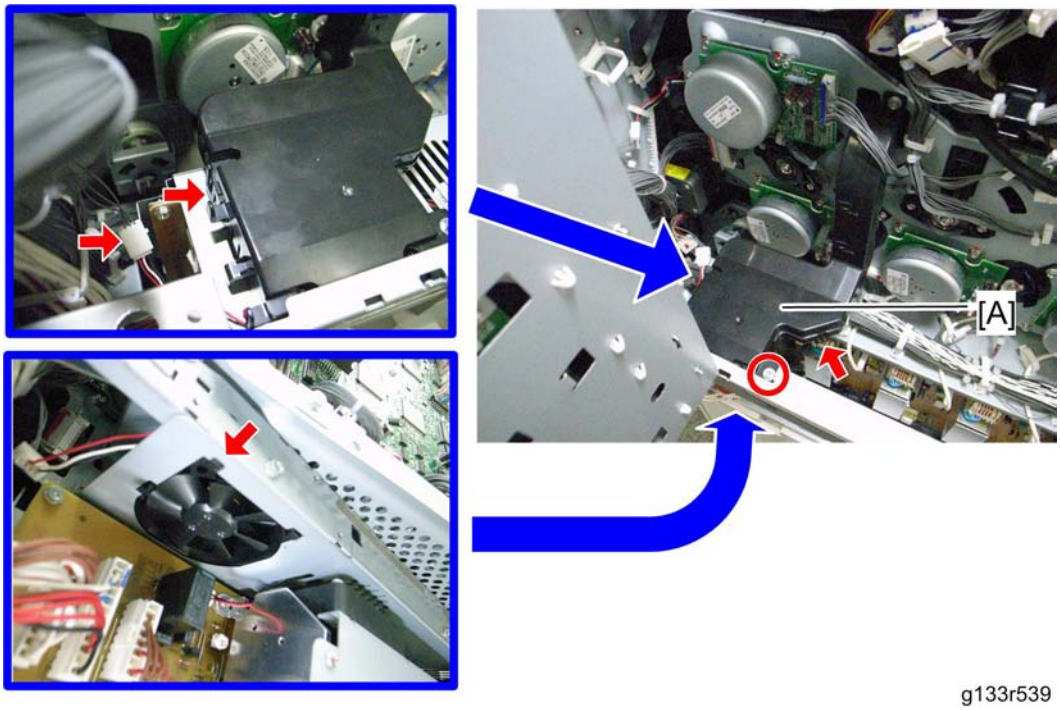
7. Second duct fan [A]

When reinstalling the second duct fan

Make sure that the second duct fan is installed with its decal facing the upper side of the machine.

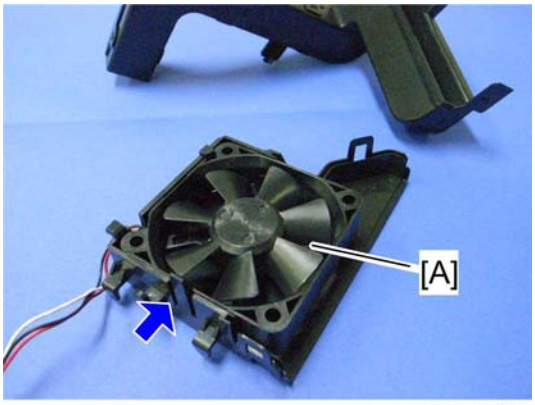
4.6.3 THIRD DUCT FAN

1. Rear cover (☛Section: Rear Cover 4-11)
2. Top right cover (☛Section: Top Right and Rear Cover 4-12)
3. Top rear cover (☛Section: Top Right and Rear Cover 4-12)
4. Open the controller box (☛Section: Controller Box 4-104).
5. PSU bracket (☛Section: PSU)



g133r539

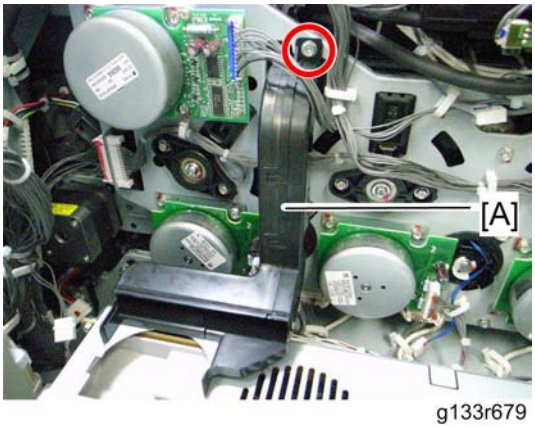
6. Third duct fan cover [A] (x 1, x 1, hook x 3)



g133r540

7. Third duct fan [A] (hook x 1)

Image Creation



g133r679

8. Third duct [A] (🔩 x 1)

When reinstalling the third duct fan

Make sure that the third duct fan is installed with its decal facing the upper side of the machine.

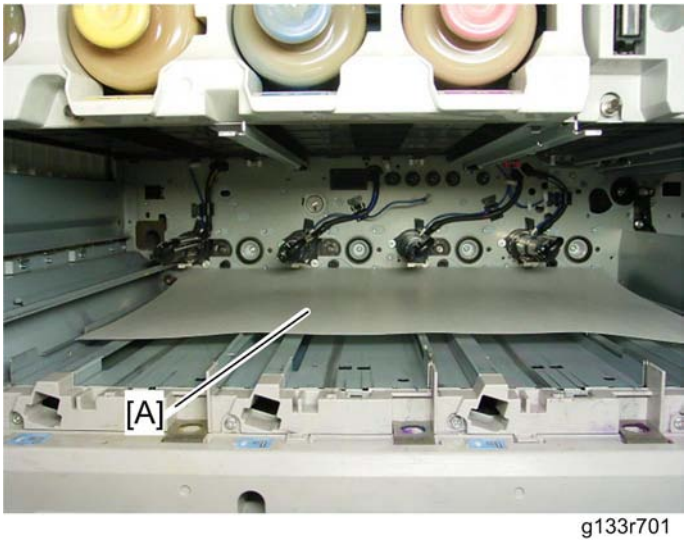
4.6.4 TONER PUMP UNIT

There are four pump units inside the machine. This procedure describes the replacement procedure only for one unit. If you need to replace another unit, do the same as this procedure.

Note

- Put some sheets of paper on the floor before doing this procedure. Toner may fall on the floor.

1. Front door (☛Section: Front Door 4-10)
2. Image transfer belt unit (☛Section: Image Transfer Belt Unit 4-33)
3. All PCUs (☛Section: PCU 4-23)

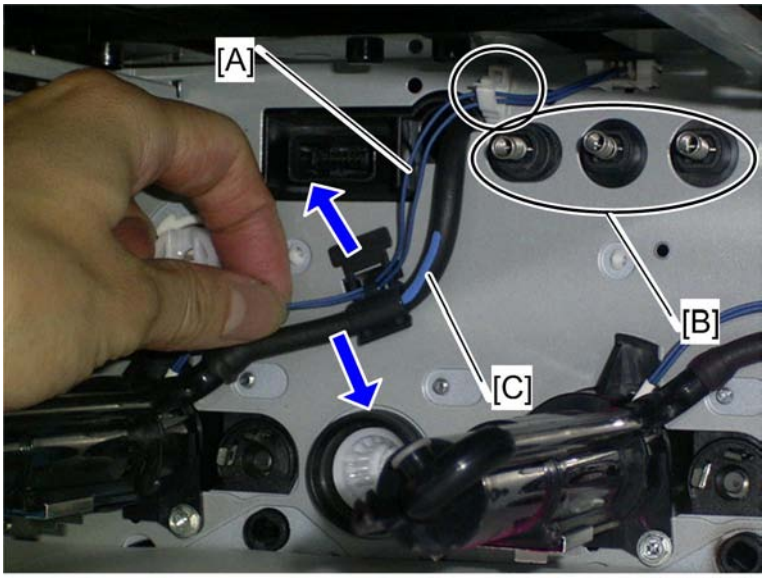


g133r701

4. Put a sheet of paper [A] (A3/DLT) inside the machine as shown and on the floor.

Note

- The sheet of paper on the floor is used in a later step.



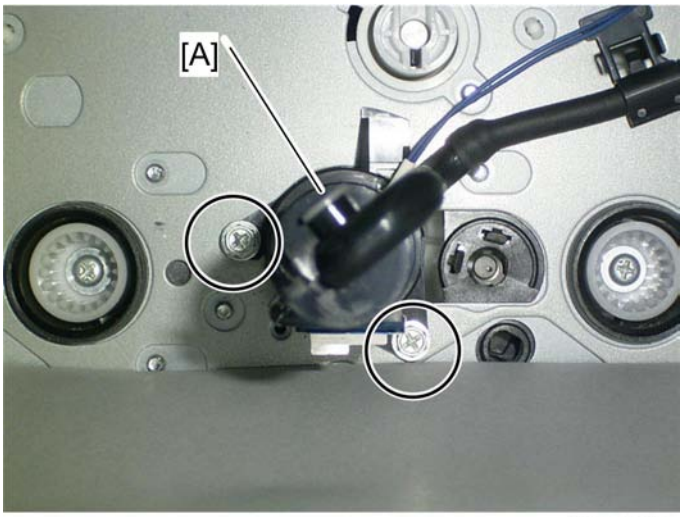
g133r702

5. Release the harness [A] from the clamp (x 1 for YCM, x 2 for K) and hook, and then disconnect the harness.

Note

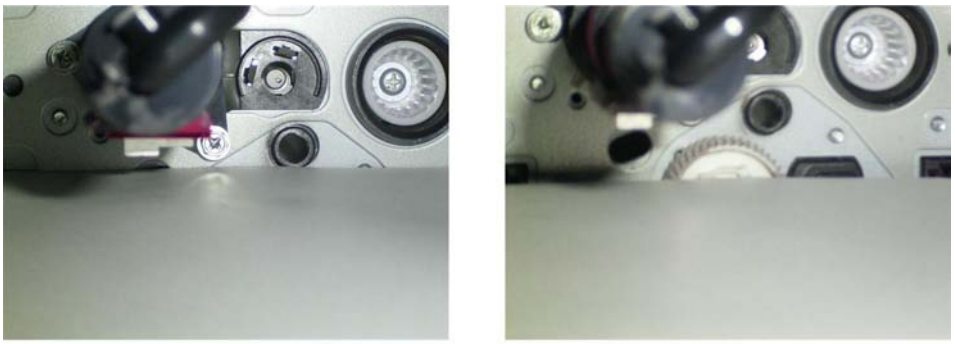
- Avoid touching these spring terminals [B].

6. Release the toner supply tube [C].



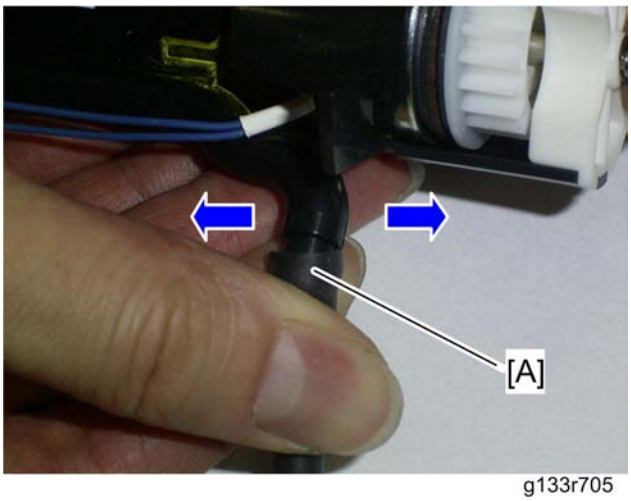
g133r703

7. Remove the toner pump unit [A] (x 2)



g133r704

Make sure that a sheet of paper is attached to the frame of the rear side and covers the four gears. The picture on the left shows a sheet of paper that is correctly set, but the picture on the right shows a sheet of paper that is not correctly set. This sheet of paper prevents toner and screws from falling into the laser optics housing unit through cutouts.

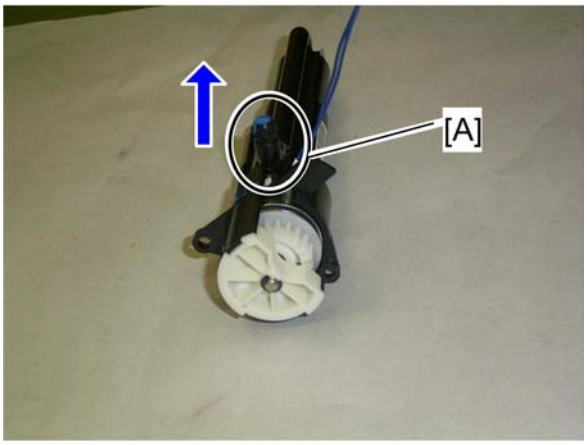


g133r705

8. Slowly remove the toner supply tube [A] from the toner pump unit by pulling the tube right and left.
9. Turn up the openings of the toner pump unit and toner supply tube just after removing the tube.

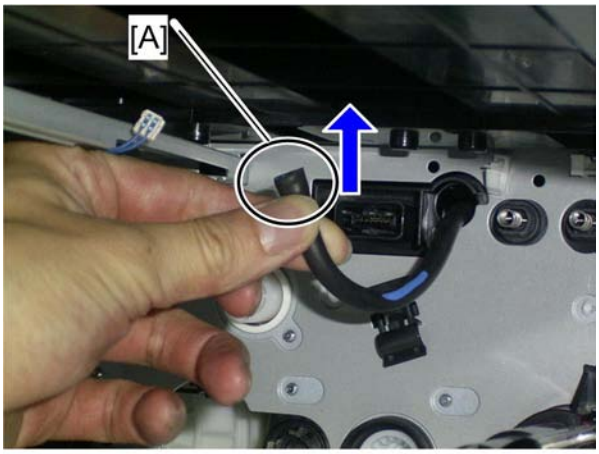
Note

- If not, the toner may scatter and fall.



g133r706

10. Put the toner pump unit on the sheet of paper, which has been put in step 4, with its opening [A] up.



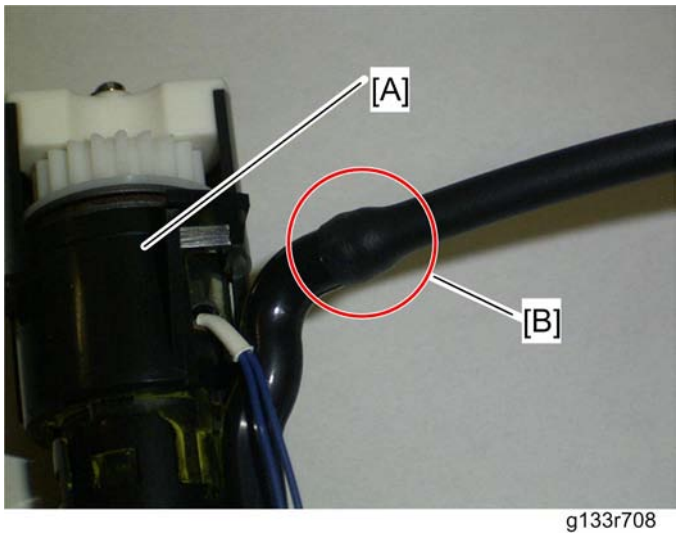
g133r707

11. Keep the opening [A] of the toner supply tube up, and then clip the opening of the toner supply.

When you install the new toner pump unit

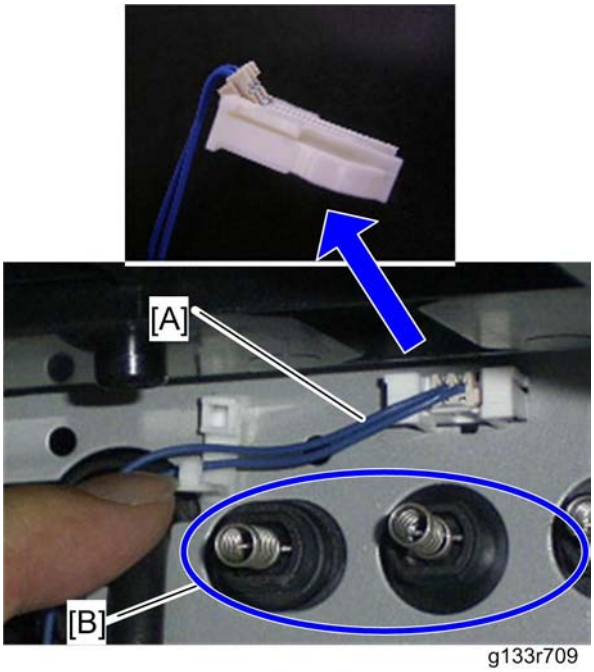
Before installing the new toner pump unit, mask the opening of the old toner pump unit with tape. Dispose of it following local rules.

Image Creation



g133r708

1. Put a sheet of paper (A3/DLT) inside the machine.
2. Turn up the opening of the toner supply tube, and then remove the object that was used to clip the opening of the toner supply tube.
3. Insert the opening of the toner pump unit [A] into the opening of the toner supply tube [B] as far as possible.



g133r709

4. Connect the harness [A] to the connector of the machine.

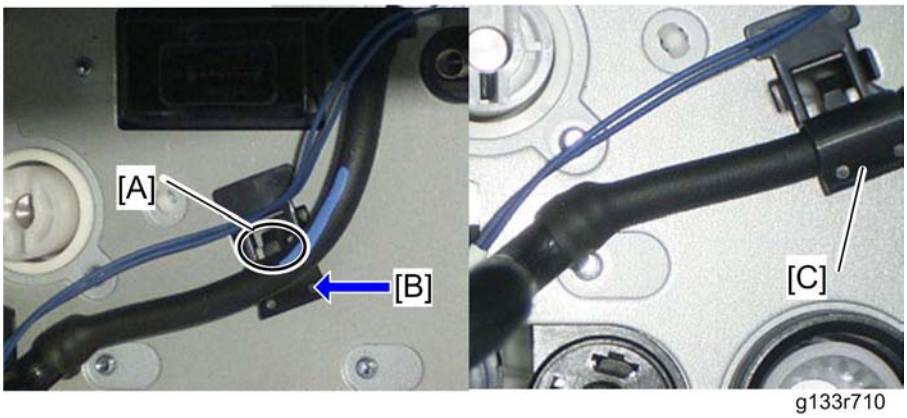
Note

- On the above picture, the magnified picture of the connector shows the easiest way to connect it.

5. Clamp the harness [A] (x 1 for YCM, x 3 for K).

Note

- Avoid touching these spring terminals [B].

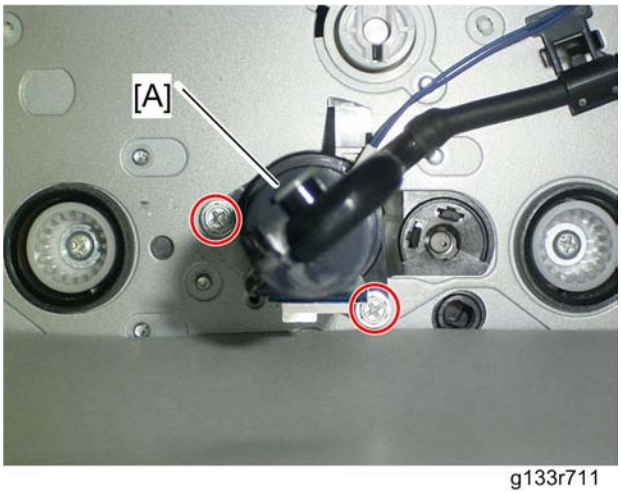


g133r710

6. Pass the harness of the toner pump unit behind the hook [A], while pressing at [B].
7. Secure the toner supply tube with the holder [C], lifting up the edge of the holder "very gently".

Note

- Be careful when you lift the edge of the holder, because the holder is easily broken.



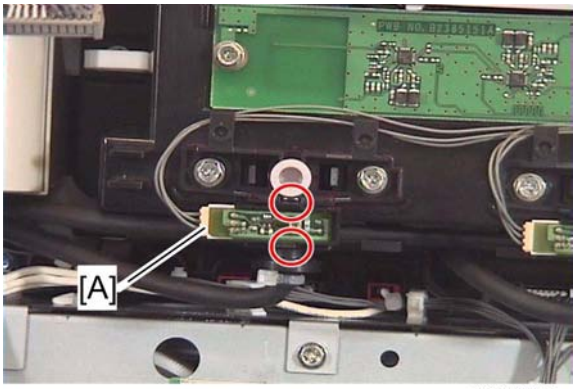
g133r711

8. Insert the toner pump unit [A] into the rear frame of the machine (x 2).

4.6.5 TONER END SENSOR

1. Rear cover (☛Section: Rear Cover 4-11)
2. Open the controller box (☛Section: Controller Box 4-104)

Image Creation



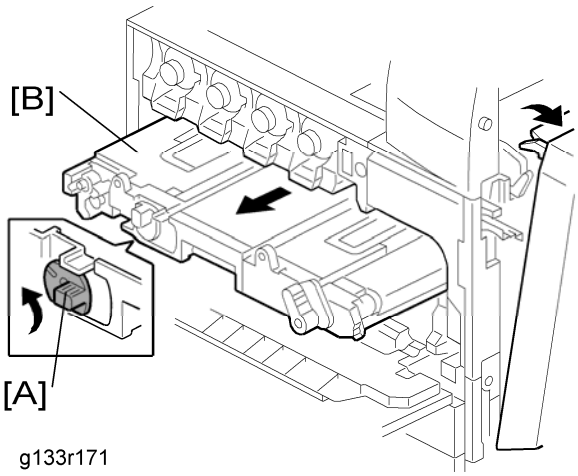
g133r042

3. Toner end sensor [A] (x 1, 2 hooks each)

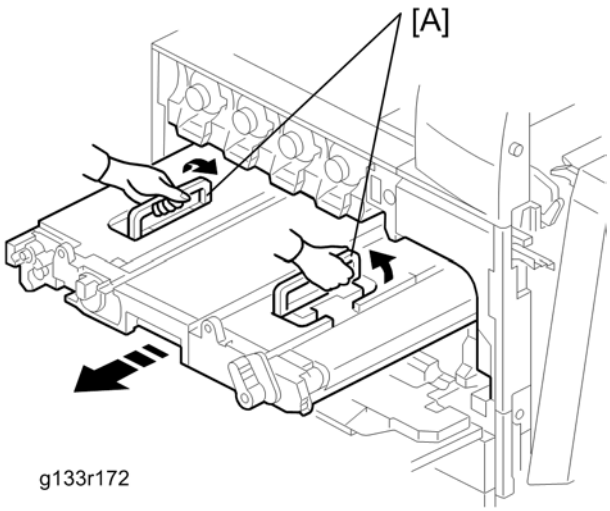
4.7 IMAGE TRANSFER

4.7.1 IMAGE TRANSFER BELT UNIT

1. Open the right door.
2. Open the front door.
3. Open the drum positioning plate (☛Section: PCU).



4. Turn the image transfer belt unit lock lever [A] counterclockwise.
5. Pull out the image transfer belt unit [B] halfway.



6. Grasp the handles [A], and then pull out the image transfer belt unit fully.

4.7.2 IMAGE TRANSFER BELT CLEANING UNIT

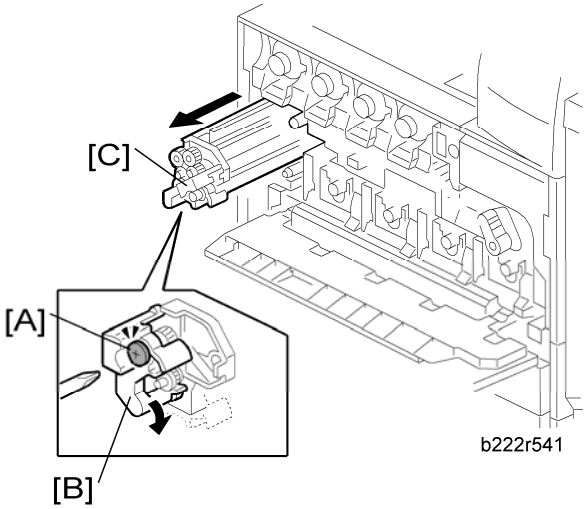
1. If you will install a new belt cleaning unit, then set SP 3902-015 to 1.

Image Transfer

Note

- If you do this, then the machine will reset the PM counter for the belt cleaning unit automatically, after you turn the power on again.
- Do not use SP3902-015 or 013 if you replace the complete ITB unit.

2. Turn off the main power switch.
3. Open the right door.
4. Open the front door.
5. Open the drum positioning plate (☛Section: PCU).

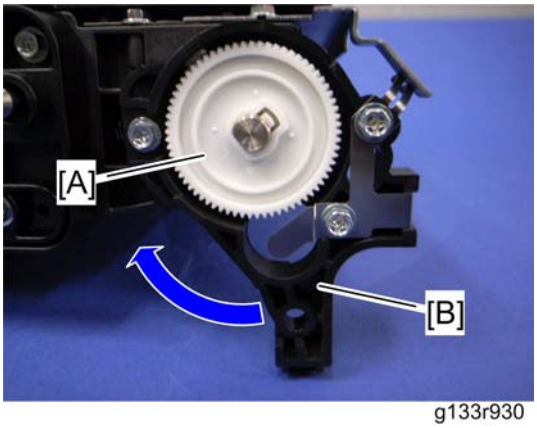


6. Loosen the screw [A].
7. Turn the lock lever [B] clockwise
8. Pull out the image transfer belt cleaning unit [C].

4.7.3 IMAGE TRANSFER BELT

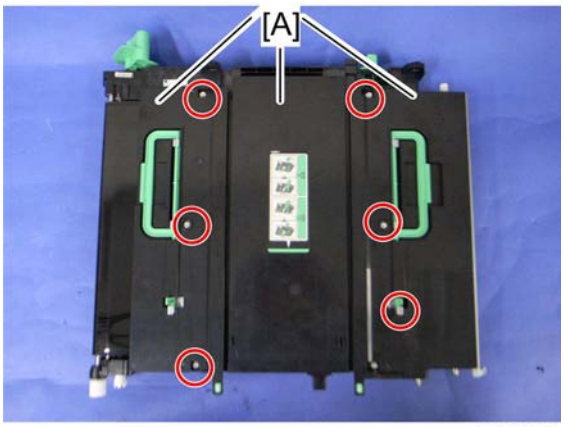
1. Image transfer belt cleaning unit (☛Section: Image Transfer Belt Cleaning Unit 4-33)
2. Image transfer belt unit (☛Section: Image Transfer Belt Unit 4-33)

3. Turn the image transfer unit contact lever counterclockwise (as seen from the rear).



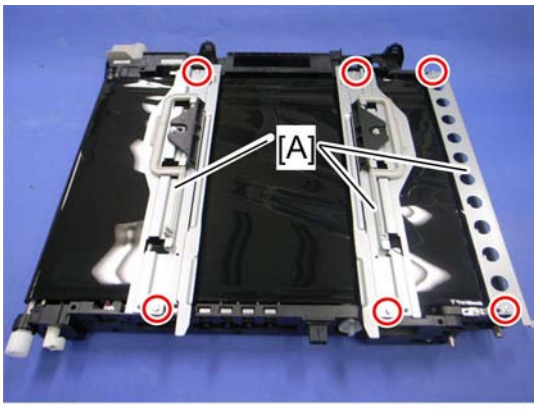
g133r930

4. Gear [A] (hook x 1)
5. Turn the gear cover [B] clockwise (as seen from the rear) (x 1).



g133r931

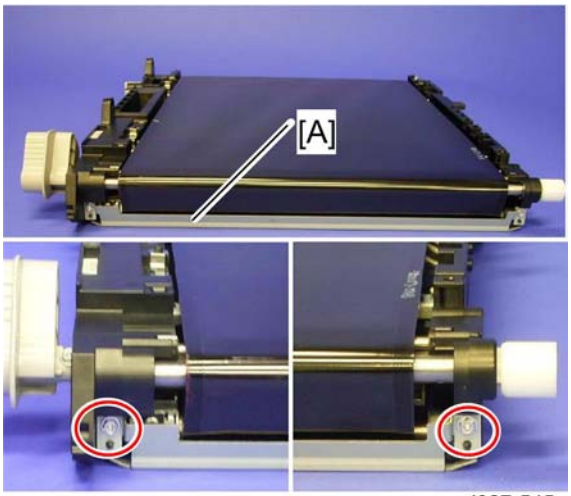
6. Remove the top covers [A] (x 6).



d027r139

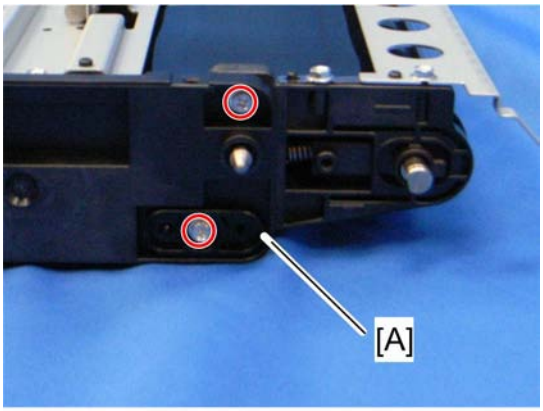
7. Three stays [A] (x 6)

Image Transfer



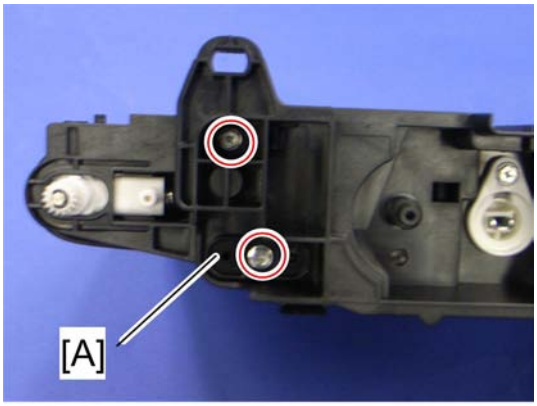
d027r545

8. Guide plate [A] (as seen from the right side of the machine) (x 2)



d027r545a

9. Remove the two screws and then the rear holder bracket [A] (as seen from the rear).

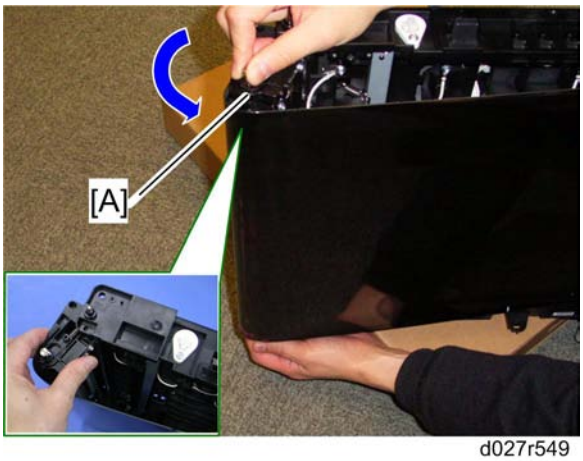


d027r140

10. Remove the two screws and then the front holder bracket [A] (as seen from the front).

b222r548

11. Put the front side of the image transfer belt unit on a corner of the table or a box as shown.



d027r549

12. Pull the tension roller [A] as shown.

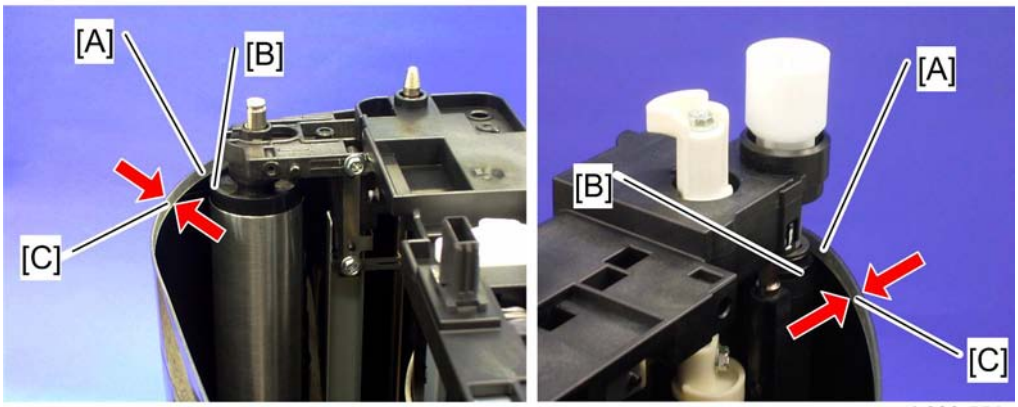
d027r550

13. Image transfer belt [A]

When reinstalling the image transfer belt

- Clean all rollers with dry cloth before installing the image transfer belt.

Image Transfer

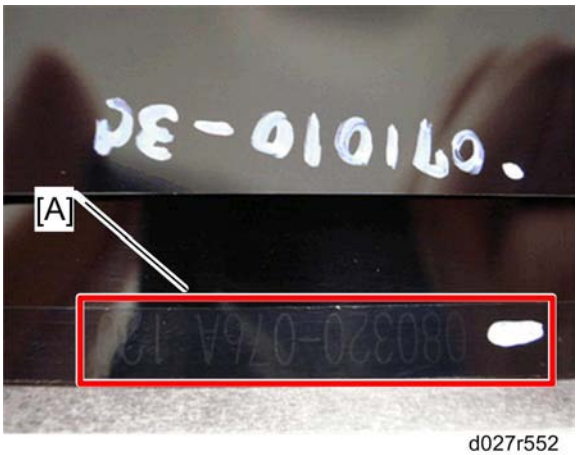


b222r551

- There is a rim [A] at each edge of the transfer belt. The ends of all the rollers ([B] for example) in the transfer belt unit must be between the two rims.

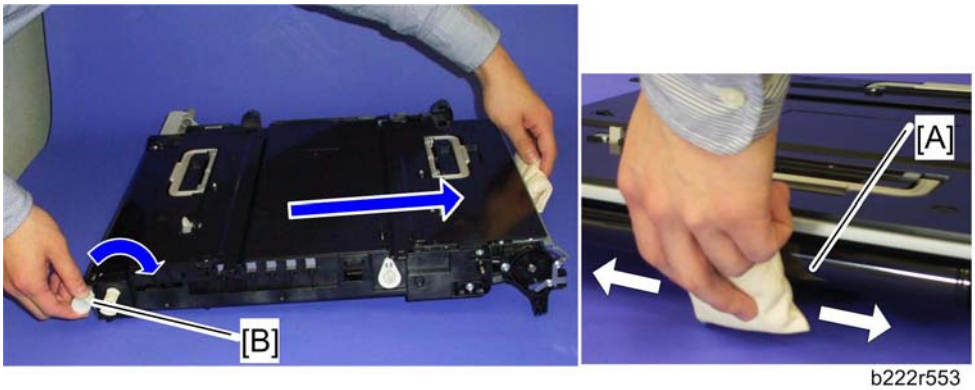
Note

  - There are two rims (width [C]: about 5 mm) on the underside of the front and rear edges of the image transfer belt.



d027r552

- This belt must be installed the correct way around. When you reinstall the image transfer belt unit, install it with the number [A] on the belt at the rear side of the unit.



b222r553

- Put "Lubricant Powder" (B132 9700) on the surface of the image transfer belt [A], while

you turn the drive gear [B] at a constant speed, as shown. (The straight arrow in the picture shows belt movement direction.) Lubricant powder prevents the image transfer cleaning blade from turning up.

Note

- Do not put the lubricant powder at the right side of the image transfer belt unit (the above picture is taken from the rear). Otherwise, lubricant powder may damage the encoder sensor.

4.8 PAPER TRANSFER

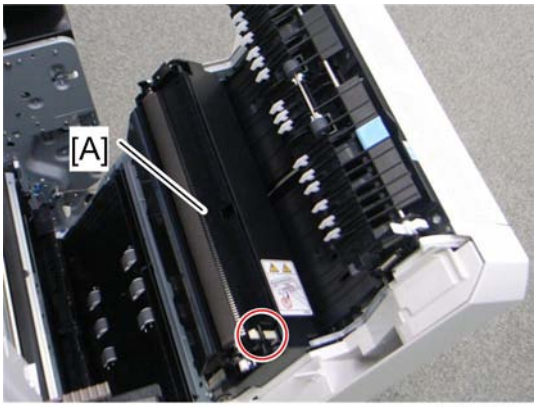
4.8.1 PAPER TRANSFER ROLLER UNIT

If you will install a new paper transfer unit, then set SP 3902-016 to 1.

Note

- If you do this, then the machine will reset the PM counter for the paper transfer unit automatically, after you turn the power on again.

1. Open the right door.

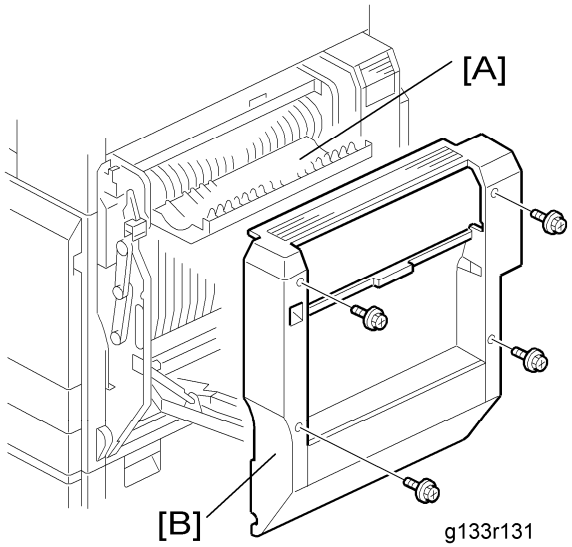


d027r141

2. Release the white hook.
3. Paper transfer roller unit [A]

4.8.2 PAPER TRANSFER UNIT

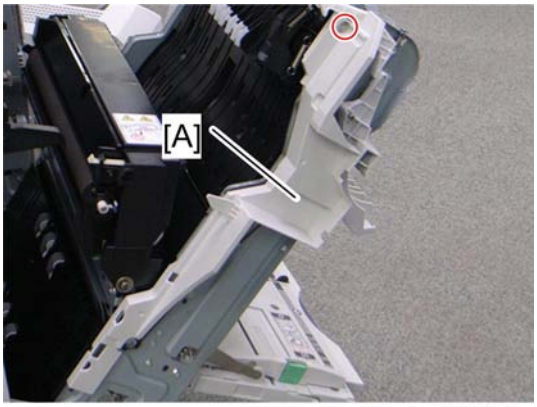
1. Turn off the main power switch.



g133r131

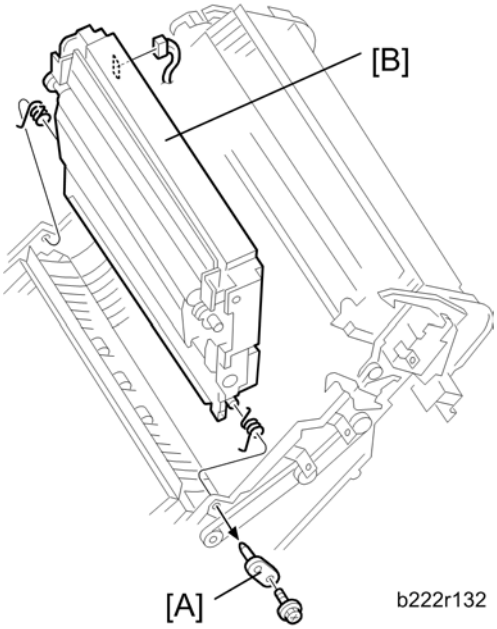
2. Open the duplex door [A].

3. Right door cover [B] (x 4)
4. Open the right door.
5. Paper transfer roller unit (☛ Section: Paper Transfer Roller Unit4-40)



d027r143

6. Right door inner cover [A] (x 1)



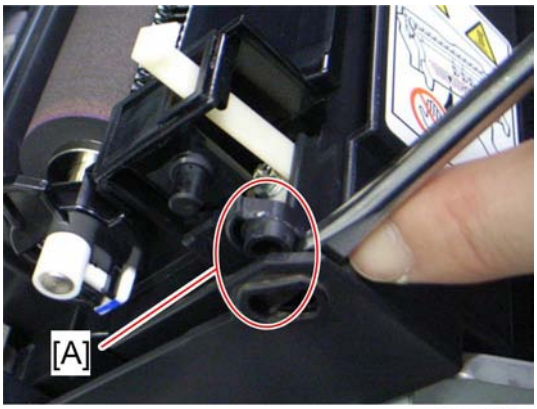
b222r132

7. Pivot bracket [A] (x 1)
8. Paper transfer unit [B] (x 1, 2 springs)

4.8.3 HIGH VOLTAGE SUPPLY BOARD – DISCHARGE PLATE

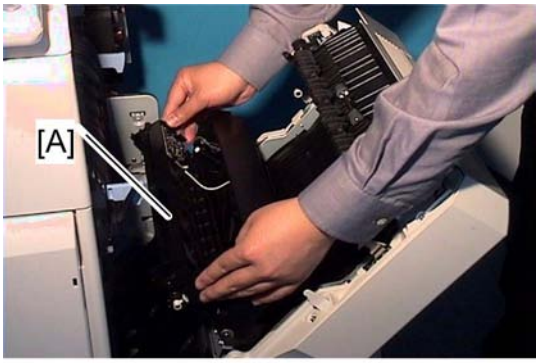
1. Open the right door.

Paper Transfer



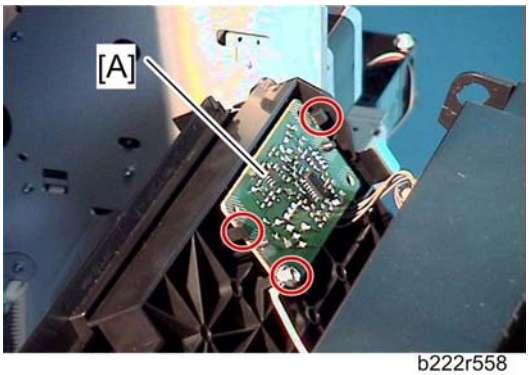
d027r144

2. Release the front [A] and rear pivots of the paper transfer roller case.



b222r557

3. Paper transfer roller case [A]

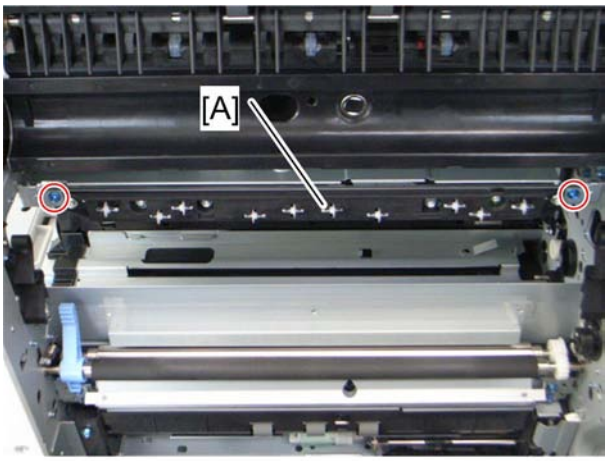


b222r558

4. High voltage supply board [A] (x 3, x 1, ground cable x 1)

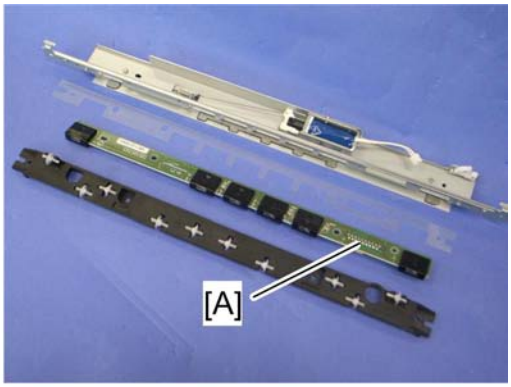
4.8.4 ID SENSOR BOARD

1. K PCU (☛Section: PCU 4-23)
2. Open the right door.
3. Fusing unit (☛Section: Fusing Unit 4-66)
4. Image transfer belt unit (☛Section: Image Transfer Belt Unit 4-33)



d027r145

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

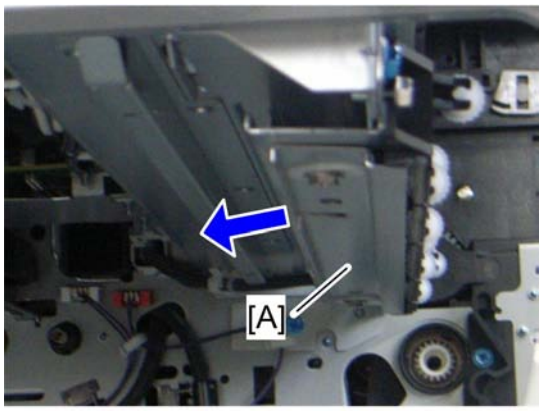


d027r146

6. ID sensor board [A] (x 6)

Cleaning for ID sensors

ID sensors must be cleaned when you visit the customer to service the machine. Do the following steps for ID sensor cleaning.



d027r147

1. K PCU (☛Section: PCU4-23)

Paper Transfer

2. Fusing unit (☛Section: Fusing Unit4-66)
3. Image transfer belt unit (☛Section: Image Transfer Belt Unit4-33)
4. Slide the ID sensor shutter [A] to the left side.
5. Clean the ID sensors keeping the ID sensor shutter to the left.

After installing a new ID sensor unit/board

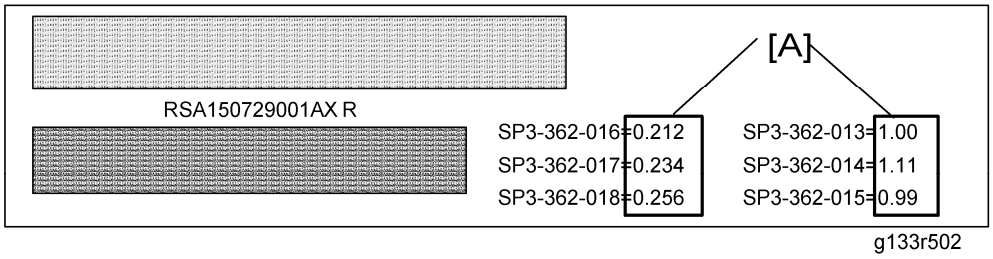
Do the following adjustment after installing a new ID sensor unit/board.

1. Plug in and turn on the main power switch of the mainframe.
2. Enter the SP mode.
3. Input all correction coefficients [A] for the ID sensor with the SP modes referring to the barcode sheet provided with the new ID sensor unit/board.

Note

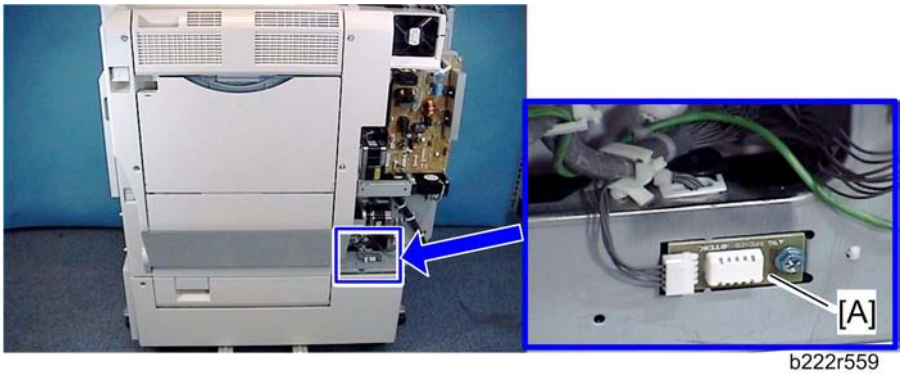
- For example, input "**1.00**" with SP3-362-013.

4. Exit the SP mode.



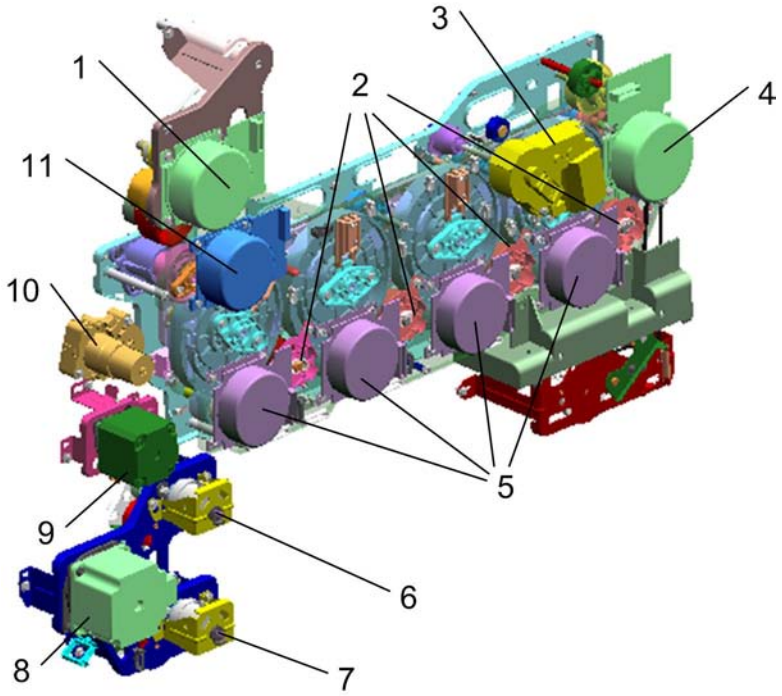
4.8.5 TEMPERATURE AND HUMIDITY SENSOR

1. Rear cover (☛Section: Rear Cover 4-11)
2. Right rear cover (☛Section: Top Right and Rear Cover4-12)



3. Temperature and humidity sensor [A] (x 1, x 1)

4.9 DRIVE UNIT



The drawing above shows the drive unit layout.

1. Fusing/paper exit motor 2. Development clutches 3. Image transfer belt contact motor 4. Toner transport motor 5. Drum/Development drive motors 6. Paper feed clutch – Tray 1	7. Paper feed clutch – Tray 2 8. Paper feed motor 9. Registration motor 10. Paper transfer contact motor 11. ITB drive motor

There are some motors and clutches that are not shown in the above drawing:

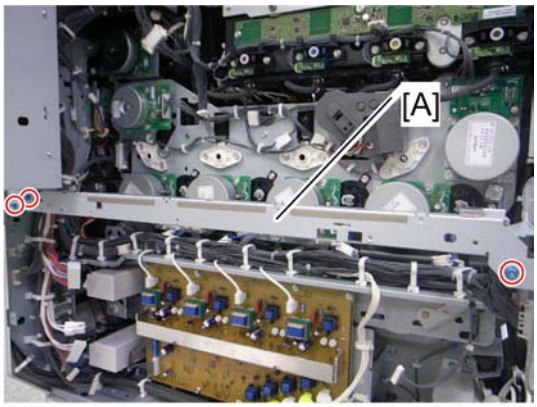
▪ Tray lift motor 1 and 2 ▪ Duplex inverter motor ▪ Duplex/By-pass Motor	▪ Junction gate 1 motor ▪ Shutter motor ▪ By-pass clutch

4.9.1 GEAR UNIT

1. All PCU's
2. Image transfer belt unit.

Drive Unit

3. Rear cover (☛Section: Rear Cover4-11)
4. Controller box (☛Section: Controller Box4-104)
5. Third duct (☛Section: Third Duct Fan4-25)
6. Left cover (☛Section: Left Cover4-11)
7. PSU bracket (☛Section: PSU Bracket4-108)

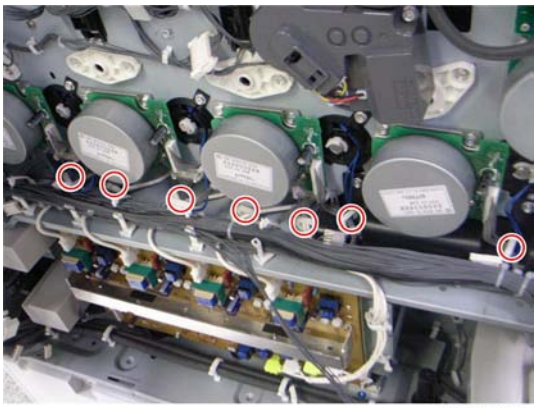


d027r148

8. Remove the rear stay [A] (x 3).

d027r149

9. Remove ten clamps (blue arrows).

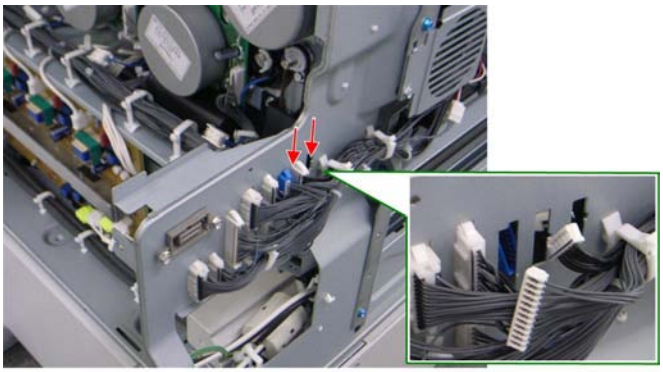


d027r150

10. Release seven clamps and turn each harness aside.

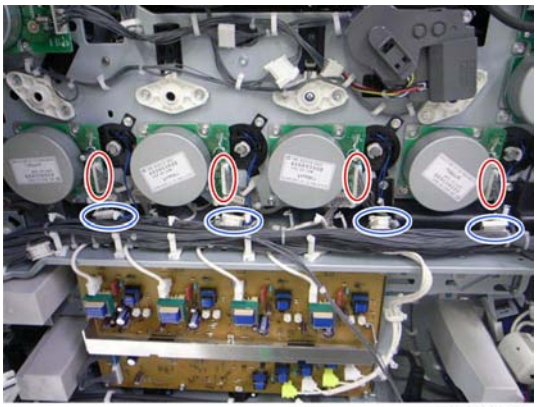
d027r151

11. Disconnect four connectors (red arrows).



d027r152

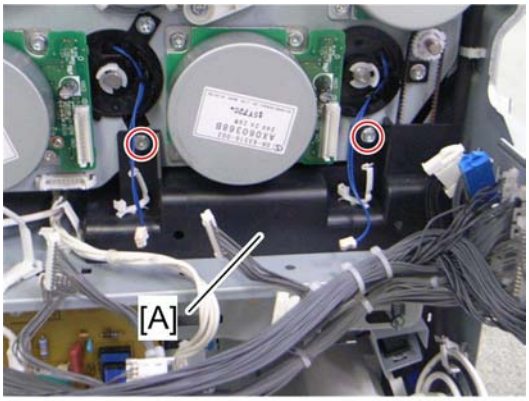
12. Disconnect two connectors (red arrows) and put these harnesses inside the machine.



d027r153

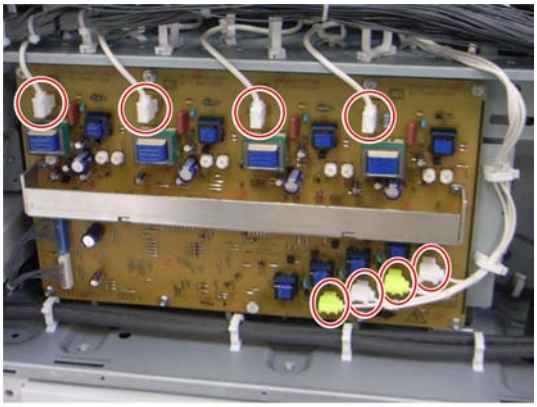
13. Disconnect each connector (red circles) from the drum/development drive motors (x 1, x 1 each).
14. Disconnect each connector (blue circles) from the development clutches (x 1 each).

Drive Unit



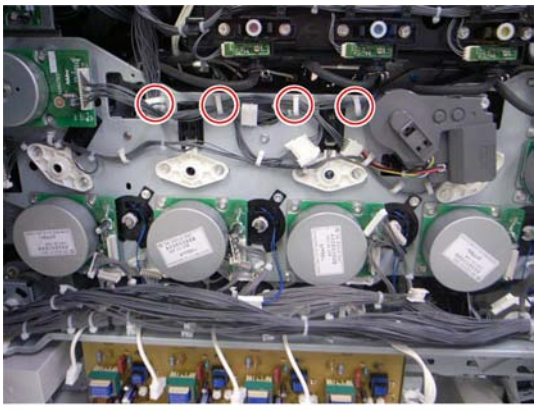
d027r155

15. Cover [A] (x 2)



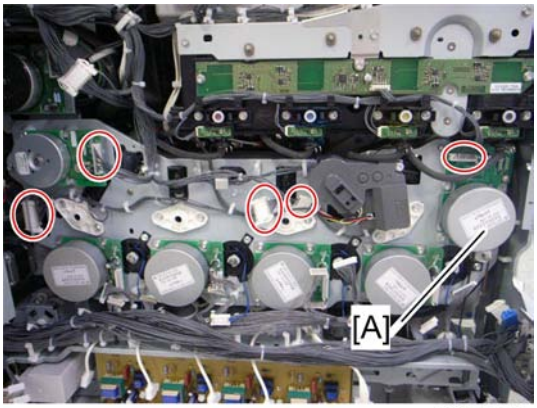
d027r156

16. Disconnect eight connectors from the high voltage supply board (x 8, x 2).



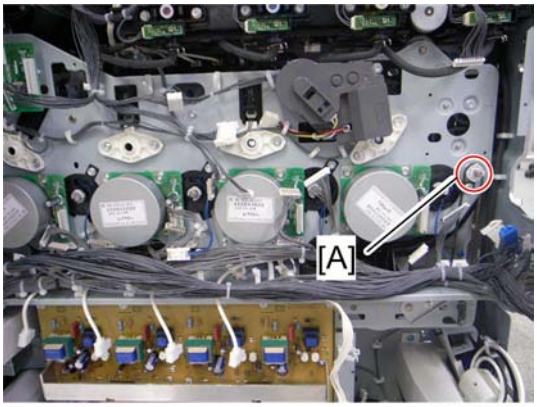
d027r157b

17. Release four clamps (red circles) and turn the harnesses aside.



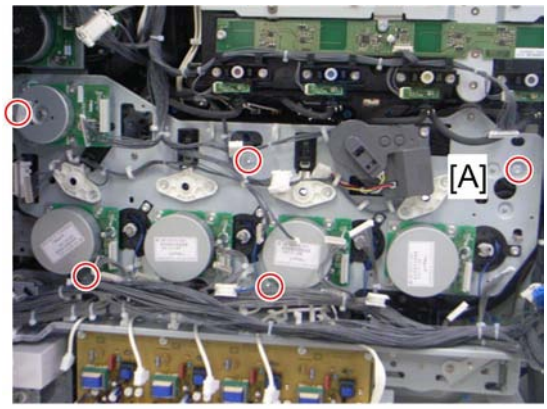
d027r158

18. Disconnect five connectors (red circles) (x 5).
19. Toner transport motor [A] (x 3)



d027r159

20. Pulley [A] (timing belt)

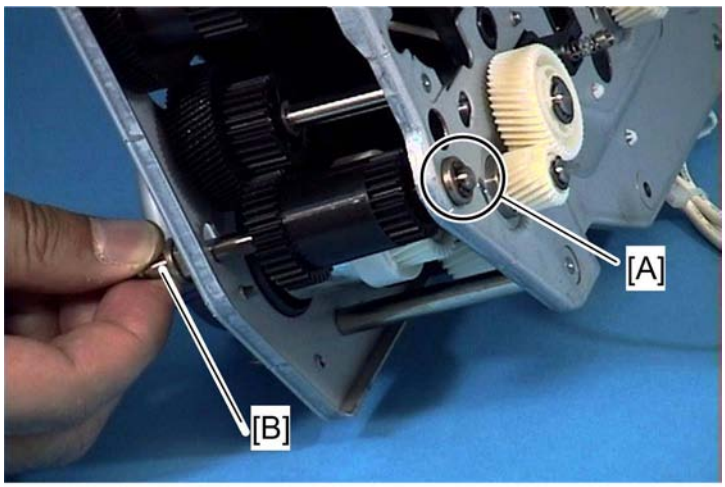


d027r160a

21. Gear unit [A] (x 8)

Drive Unit

When installing the drive unit



b222r573

Make sure that the bushing [A] is fully set in the frame of the gear unit before installing the timing belt and pulley on the shaft [B].

Adjustment after replacing the gear unit

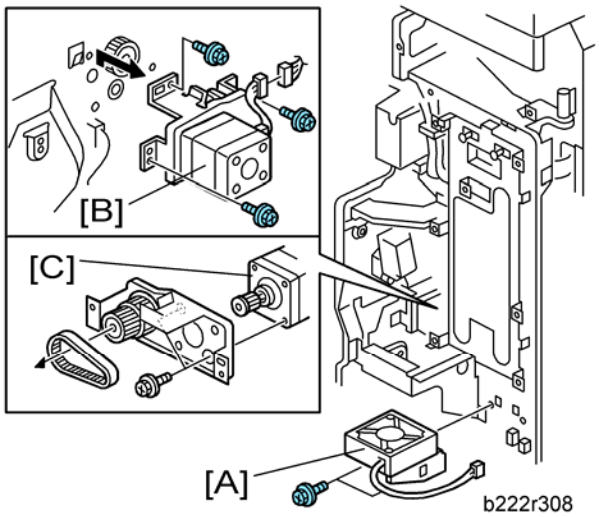
Do the following procedures after replacing the gear unit.

1. Turn on the main power switch.
2. Enter "System SP" in the SP mode.
3. Do the "Amplitude Control" with SP1-902-001.
4. Check the result of the Amplitude Control with SP1-902-002.
   0: Success, 2: Failure due to no sampling data,
   3: Failure due to insufficient number of pattern detections
   When the result of this adjustment is "2" or "3":
   - Check that all the PCUs are correctly set and that the image transfer belt unit is correctly set.
   - Do the "Amplitude Control" again after checking the PCUs and image transfer belt unit.

   When the result is still "2" or "3" after checking the PCUs and image transfer belt unit:
   - Check that the gear unit is installed correctly.
5. Exit the SP mode.

4.9.2 REGISTRATION MOTOR

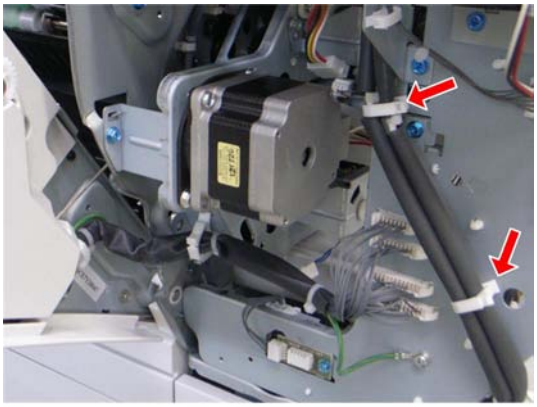
1. Rear cover (☛Section: Rear Cover4-11)
2. Right rear cover (☛Section: Right Rear Cover4-12)
3. Ventilation duct (☛Section: PSU4-108)
4. Turn the harnesses aside (x 5)



5. Fusing power supply board fan bracket [A] (x 2, x 1)
6. Registration motor assembly [B] (x 3, x 1)
7. Registration motor [C] (x 2, timing belt)

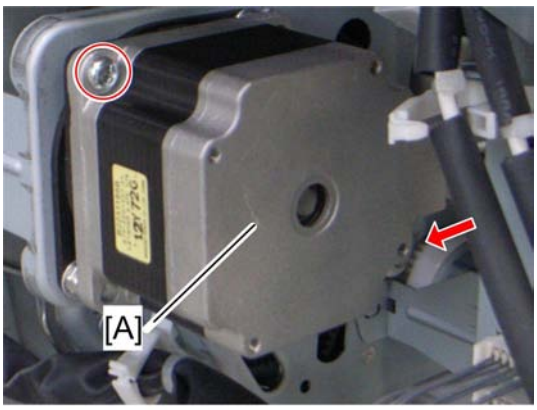
4.9.3 PAPER FEED MOTOR

1. Rear cover (☛Section: Rear Cover4-11)
2. Right rear cover (☛Section: Right Rear Cover4-12)



3. Release the two clamps (x 2)

Drive Unit

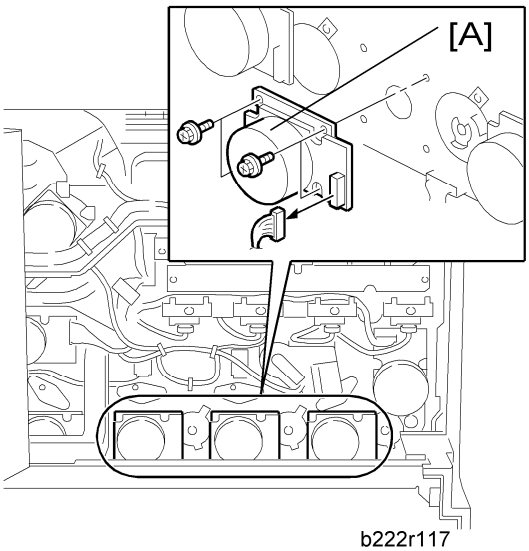


d027r162a

4. Paper feed motor [A] (x 1, x 2, timing belt)

4.9.4 DRUM/DEVELOPMENT MOTORS FOR M, C, AND Y

1. Rear cover (☛Section: Rear Cover4-11)
2. PSU bracket (☛Section: PSU)
3. Open the controller box.

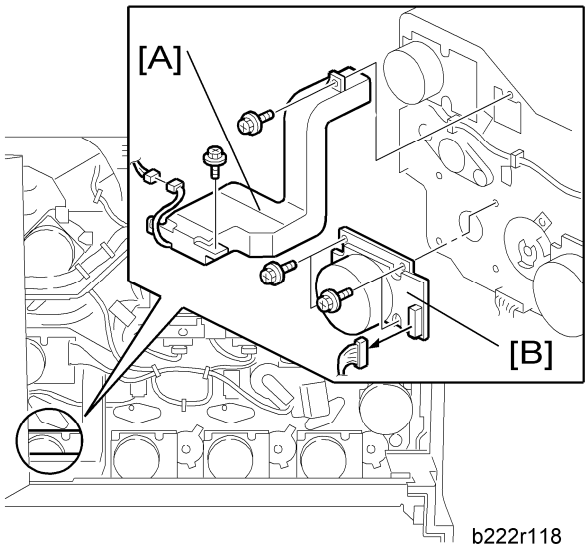


b222r117

4. Drum/Development motors (three motors, one each for MCY) [A] (x 4, x 1 each)

4.9.5 DRUM/DEVELOPMENT MOTOR-K

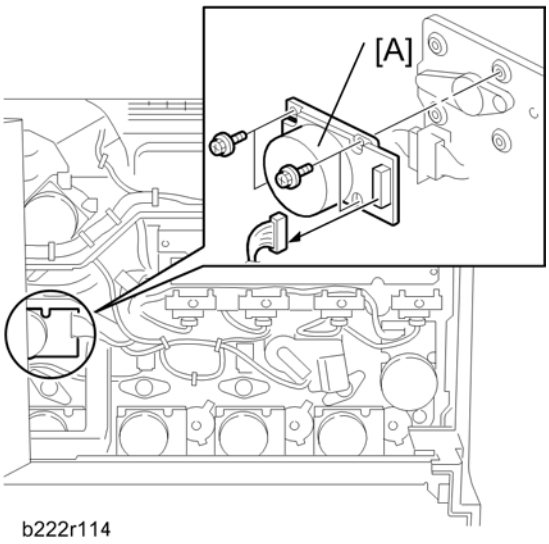
1. Rear cover (☛Section: Rear Cover4-11)
2. PSU bracket (☛Section: PSU)
3. Controller box (☛Section:Controller Box4-104)



4. Third duct [A] (x 2, x 1)
5. Drum/Development motor-K [B] (x 4, x 1)

4.9.6 ITB DRIVE MOTOR

1. Rear cover (☛Section: Rear Cover4-11)
2. Controller box (☛Section: Controller Box4-104)

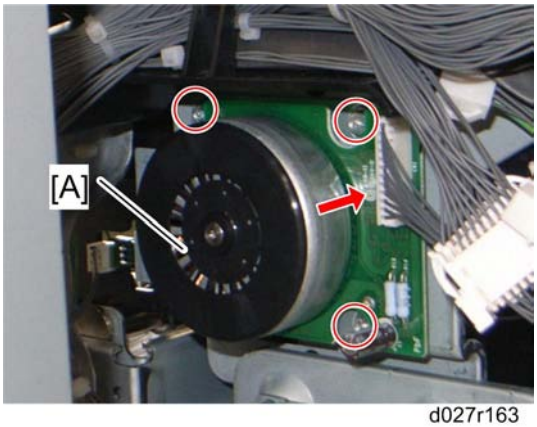


3. ITB drive motor [A] (x 4, x 1)

4.9.7 FUSING/PAPER EXIT MOTOR

1. Rear cover (☛Section: Rear Cover4-11)
2. Controller box (☛Section: Controller Box4-104)

Drive Unit

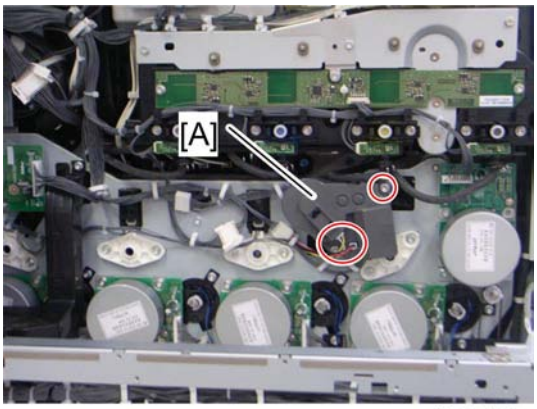


d027r163

3. Fusing/paper exit motor [A] (x 4, x 1, x 1)

4.9.8 IMAGE TRANSFER BELT CONTACT MOTOR

1. Rear cover (☛Section: Rear Cover4-11)
2. Controller box (☛Section: Controller Box)

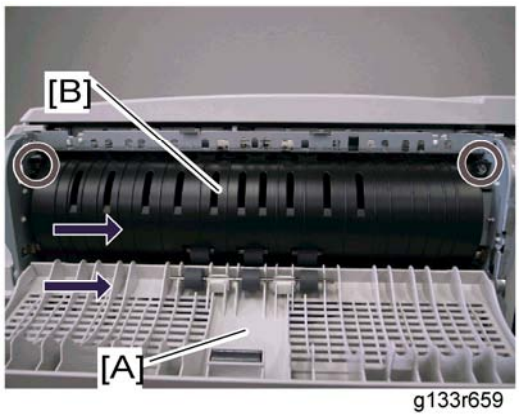


d027r164

3. Transfer belt contact motor [A] (x 2, x 2, x 1)

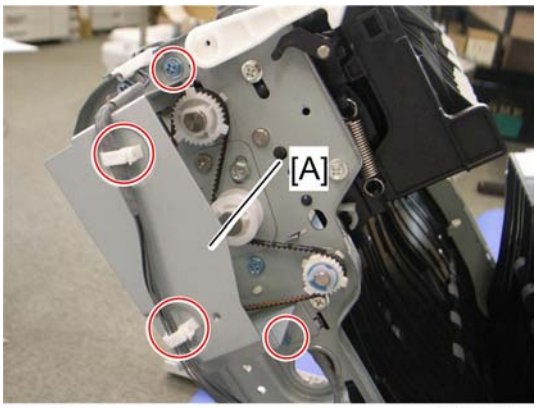
4.9.9 DUPLEX INVERTER MOTOR

1. Open the right door.
2. Right door cover (☛Section: By-pass Bottom Tray)



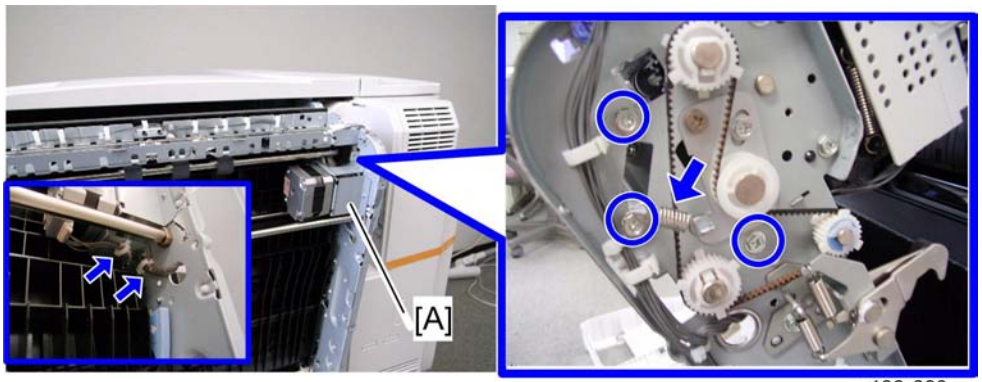
g133r659

3. Duplex door [A] (2 hooks)
4. Duplex guide plate [B] (x 1, stepped screw x 1; front side, 2 hooks)
5. Right door rear cover (☛Section: By-pass Bottom Tray)



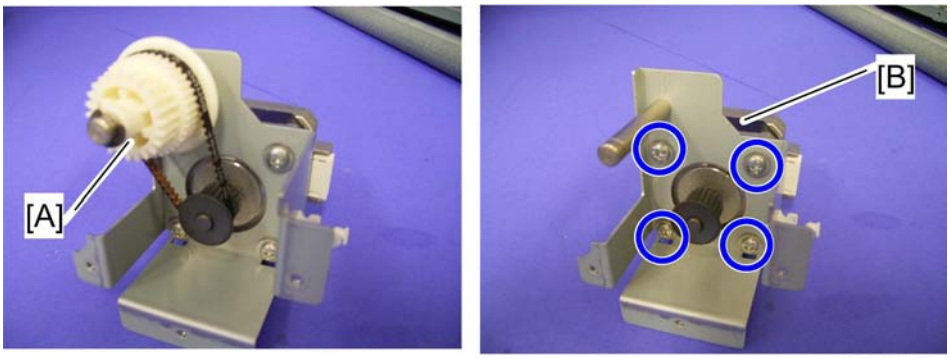
d027r166

6. Duplex inverter motor bracket cover [A] (x 2, x 2)



g133r660

7. Duplex inverter motor bracket [A] (x 3, x 1, x 2, spring x 1)

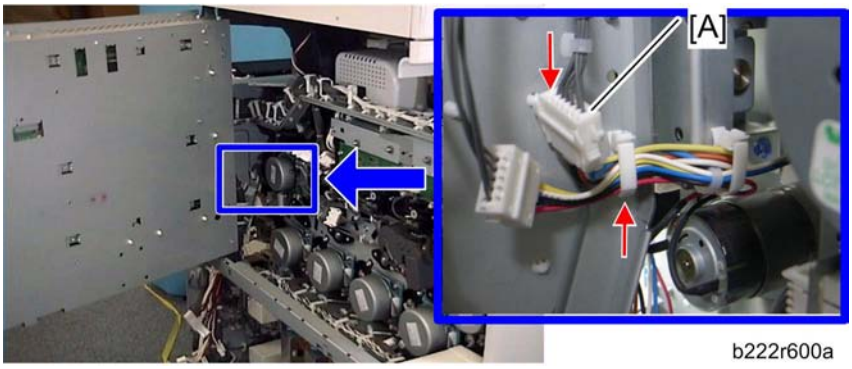


b222r661

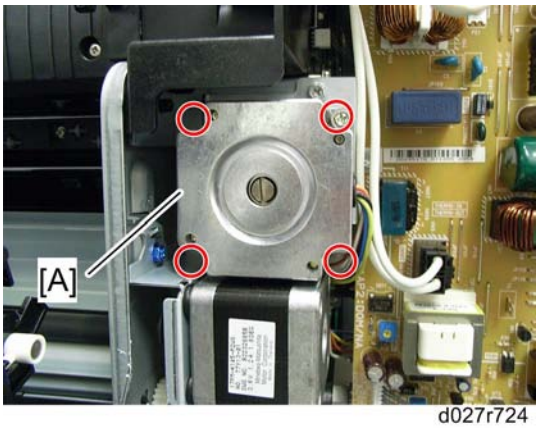
8. Gear [A] (x 1, belt x 1)
9. Duplex inverter motor [B] (x 4)

4.9.10 PRESSURE ROLLER CONTACT MOTOR

1. Rear cover (☛Section: Rear Cover4-11)
2. Right rear cover (☛Section: Right Rear Cover4-12)
3. Open the controller box (☛Section: Controller Box4-104).



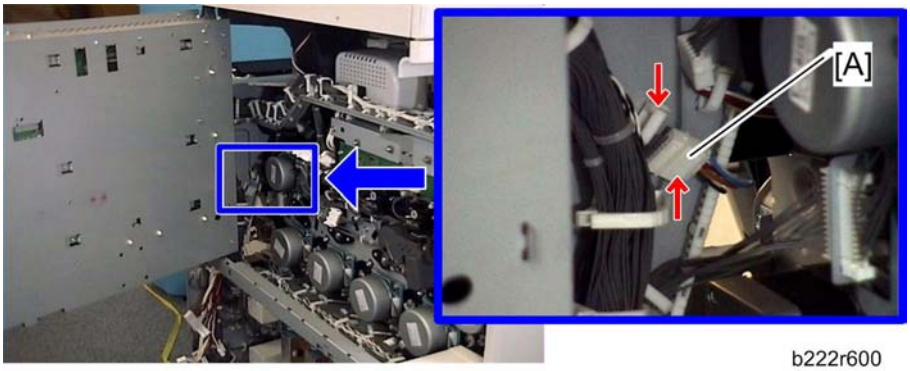
4. Disconnect the connector (x 1).



5. Pressure roller contact motor [A] (x 4)

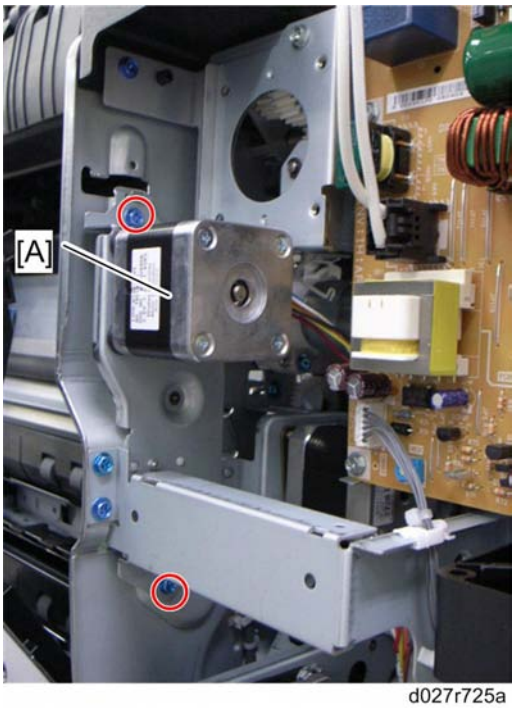
4.9.11 DUPLEX/BY-PASS MOTOR

1. Rear cover (☛Section: Rear Cover4-11)
2. Right rear cover (☛Section: Right Rear Cover4-12)
3. Open the controller box (☛Section: Controller Box4-104).
4. Pressure roller contact motor (☛Section: Pressure Roller Contact Motor4-56)



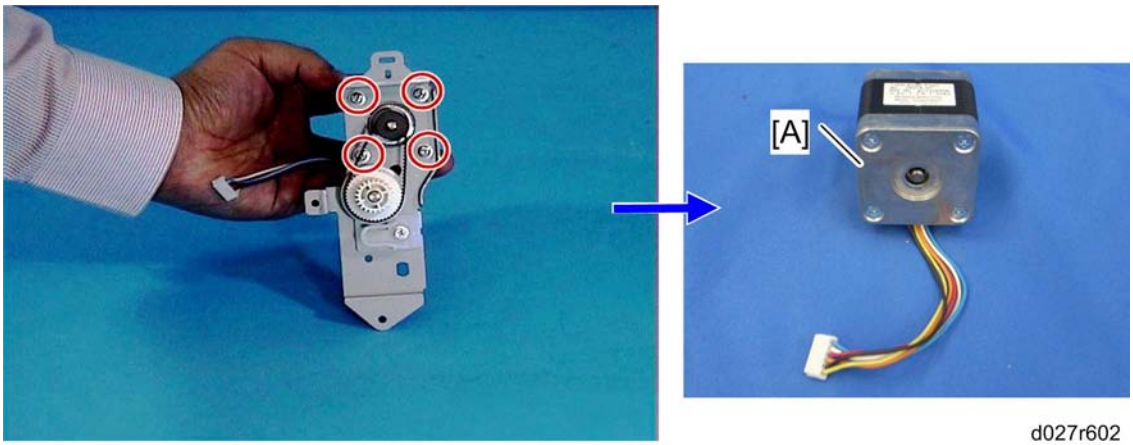
b222r600

5. Disconnect the connector [A] (x 1, x 1)



d027r725a

6. Duplex/by-pass motor bracket [A] (x 2)

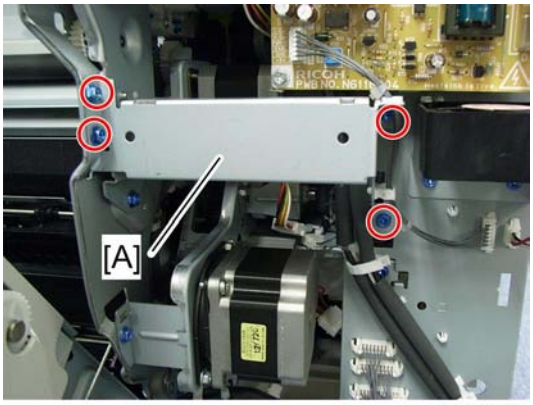


d027r602

7. Duplex/by-pass motor [A] (x 4, belt x 1)

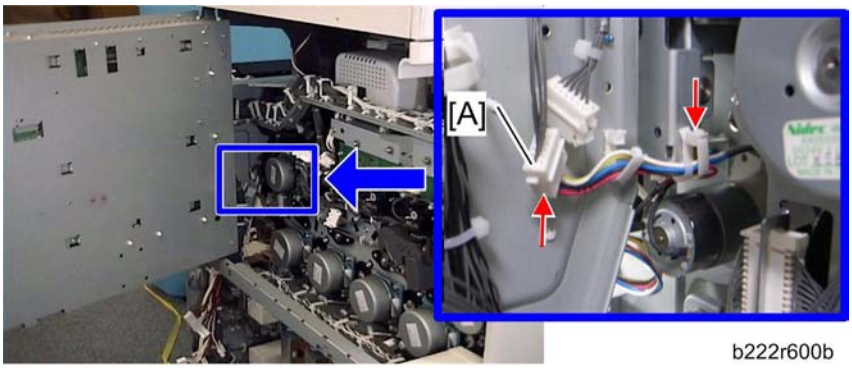
4.9.12 PAPER TRANSFER CONTACT MOTOR

1. Rear cover (☛Section: Rear Cover4-11)
2. Right rear cover (☛Section: Right Rear Cover4-12)
3. Open the controller box (☛Section: Controller Box4-104).



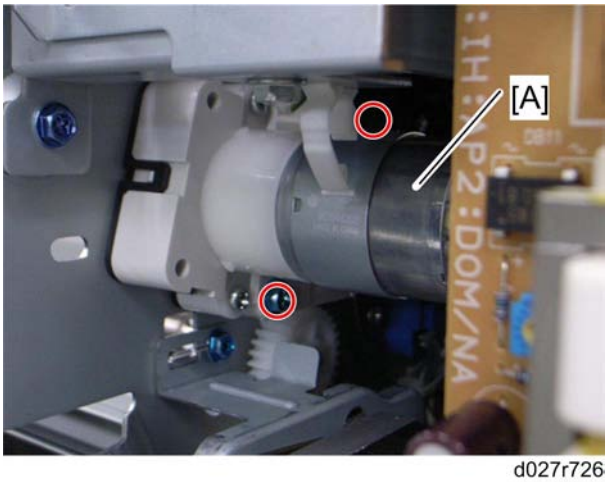
d027r723

4. Stay [A] (x 4)
5. Pressure roller contact motor (☛Section: Pressure Roller Contact Motor4-56)
6. Duplex/by-pass motor bracket (☛Section: Duplex/by-pass Motor)



b222r600b

7. Disconnect the connector [A] (x 1)

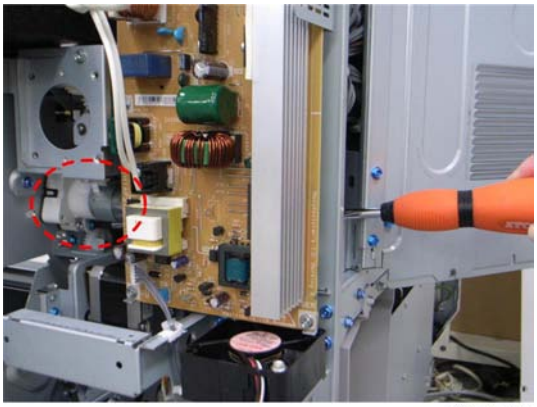


d027r726

8. Paper transfer contact motor [A] (x 2)

NOTE:

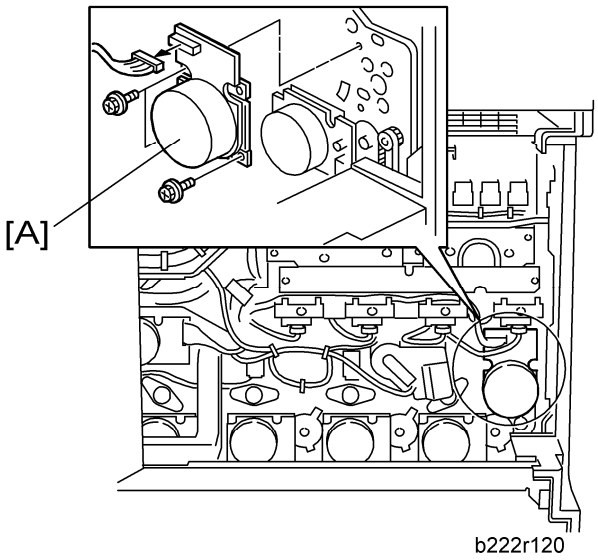
The picture below shows how to use the screwdriver to remove the screws of the paper transfer contact motor.



d027r727

4.9.13 TONER TRANSPORT MOTOR

1. Rear cover (☛Section: Rear Cover)
2. Open the controller box (☛Section: Controller Box).



b222r120

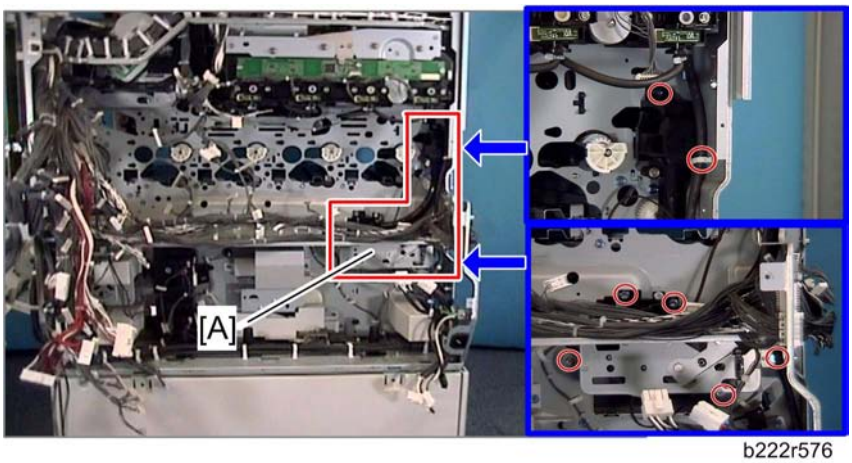
3. Toner transport motor [A] (x 3, x 1)

4.9.14 TONER COLLECTION UNIT

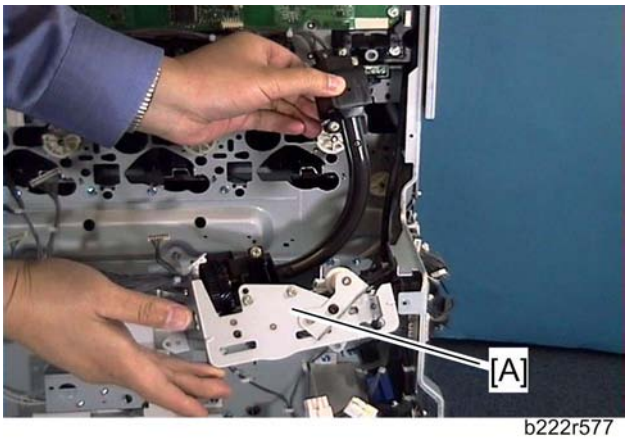
1. Remove all PCUs (☛ Section: PCU).
2. Image transfer belt unit (☛Section: Image Transfer Belt Unit)
3. Rear cover (☛Section: Rear Cover)
4. Controller box (☛Section: Controller Box)

Drive Unit

5. Third duct (☛Section: Third Duct Fan4-25)
6. Left cover (☛Section: Left Cover4-11)
7. PSU bracket (☛Section: PSU)
8. High voltage power supply board bracket (☛Section: High Voltage Supply Board Bracket4-110)
9. Gear unit (☛Section: Gear Unit 4-45)



b222r576

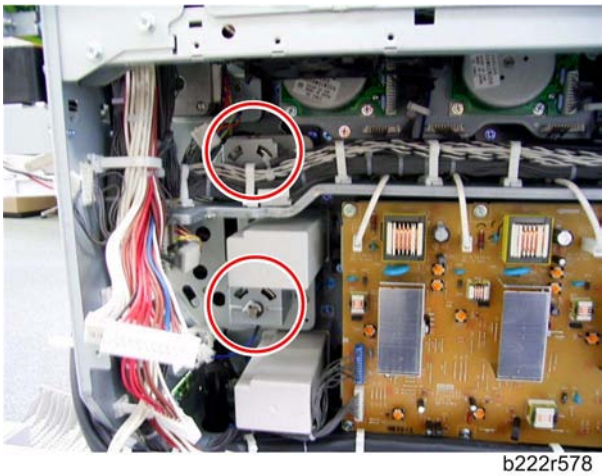


b222r577

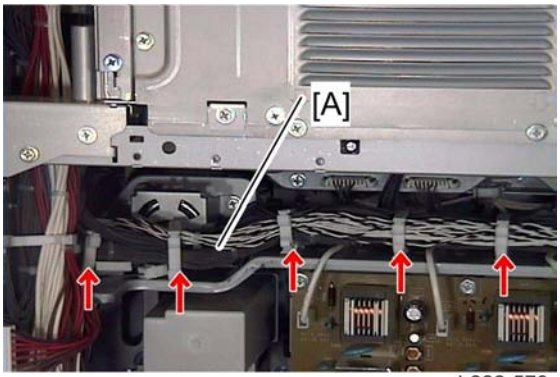
10. Toner collection unit [A] (x 6, x 1)

4.9.15 PAPER FEED CLUTCHES

1. Rear cover (☛Section: Rear Cover4-11)
2. PSU bracket (☛Section: PSU)

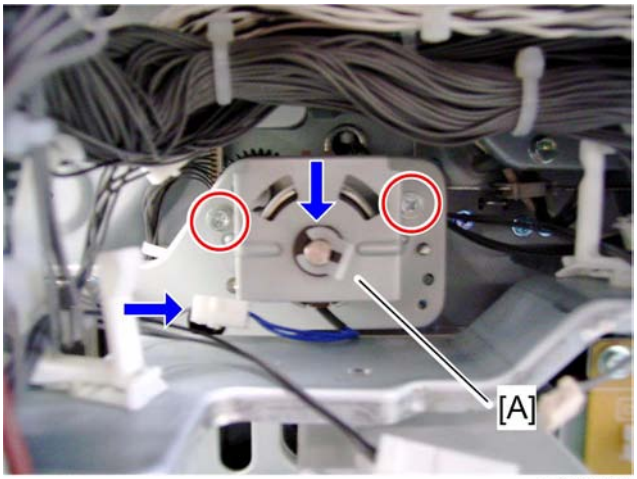


b222r578



b222r579

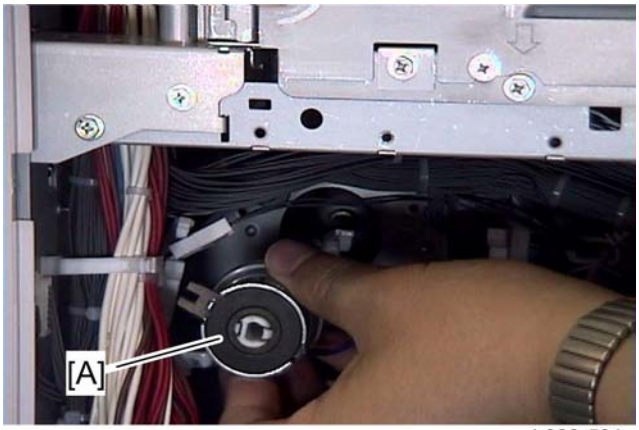
3. Release five clamps, and then turn the harness [A] aside.



b222r580

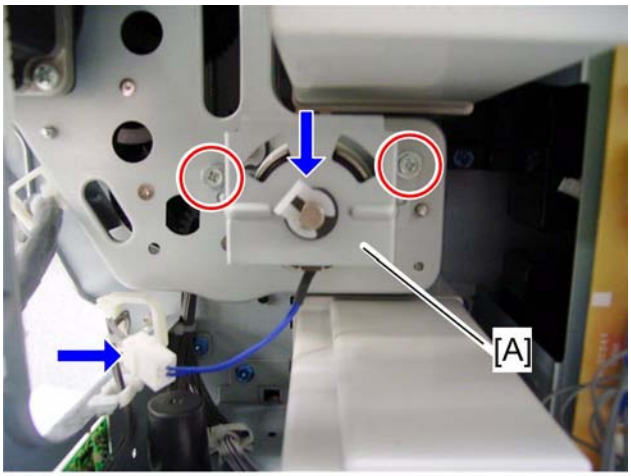
4. Paper feed clutch 1 bracket [A] (x 2, x 1, x 1)

Drive Unit



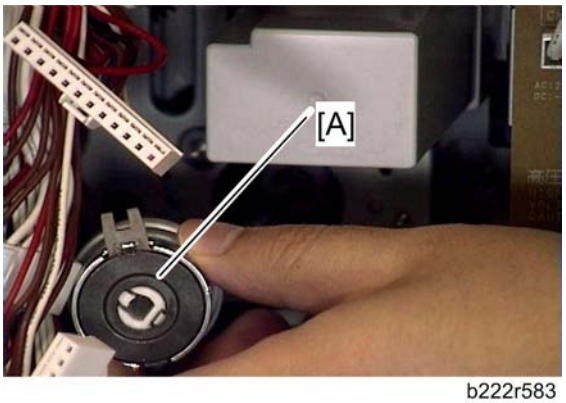
b222r581

5. Paper feed clutch 1 [A]



b222r582

6. Paper feed clutch 2 bracket [A] (x 2, x 1, x 1)

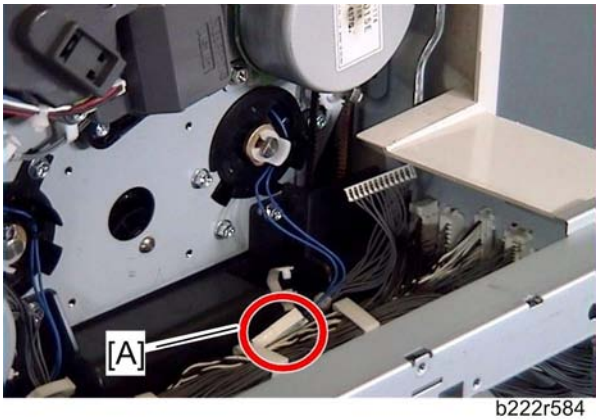


b222r583

7. Paper feed clutch 2 [A]

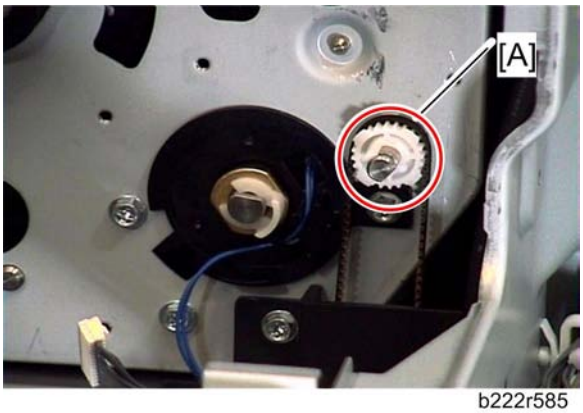
4.9.16 DEVELOPMENT CLUTCH-Y

1. Rear cover (☛Section: Rear Cover4-11)
2. PSU bracket (☛Section: PSU)
3. Open the controller box. (☛Section: Controller Box4-104).
4. Drum/development motor-Y (☛Section: Drum/Development Motors for M,C, and Y4-52)



b222r584

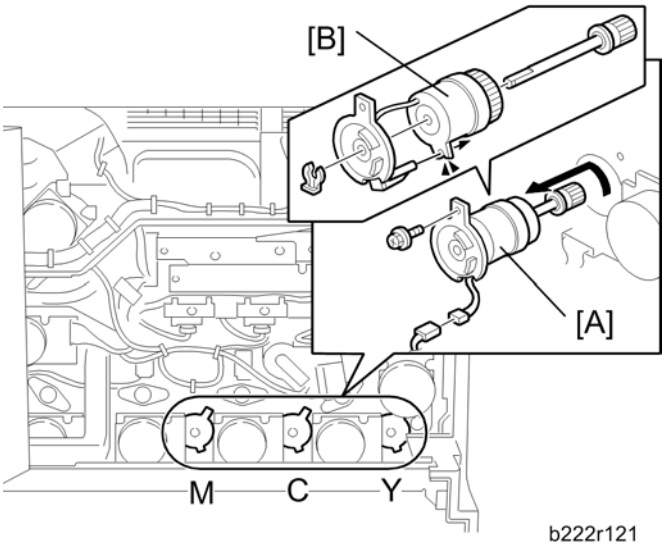
5. Disconnect the connector [A] (x 1).



b222r585

6. Remove the pulley and bushing [A].

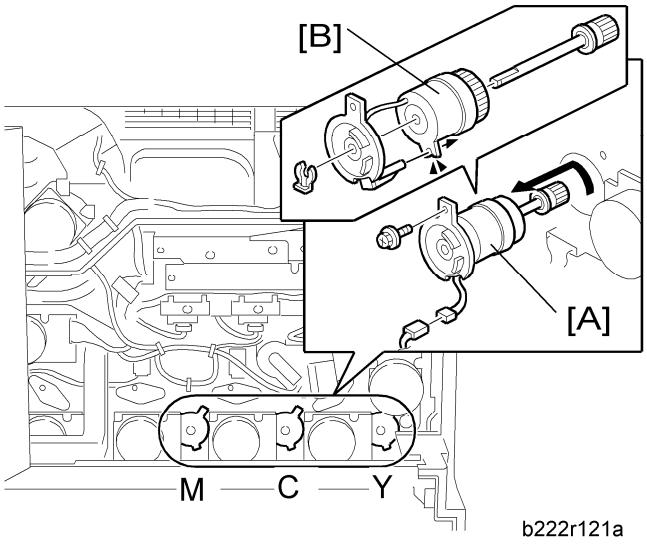
Drive Unit



7. Turn the development clutch unit [A] counter-clockwise and then pull it out (x 1).
8. Development clutch-Y [B] (x 1)

4.9.17 DEVELOPMENT CLUTCHES FOR M AND C

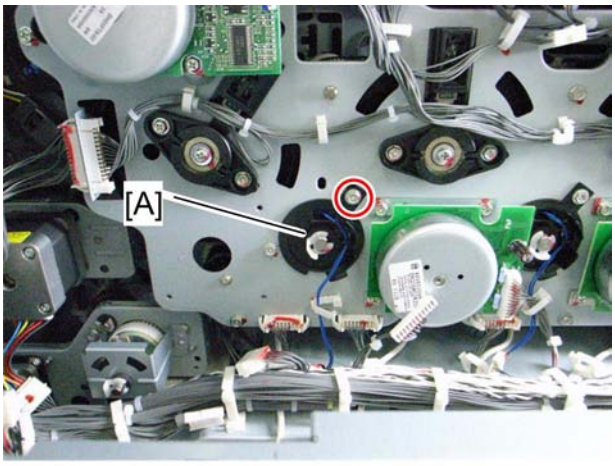
1. Rear cover (☛Section: Rear Cover4-11)
2. PSU bracket (☛Section: PSU)
3. Open the controller box. (☛Section: Controller Box4-104).
4. Drum/development motors for M and C (☛Section: Drum/Development Motors for M,C, and Y)
5. Disconnect the connector for each development clutch (x 1).



6. Turn the development clutch unit [A] counter-clockwise and then pull it out (x 1).
7. Development clutches for M and C [B] (x 1)

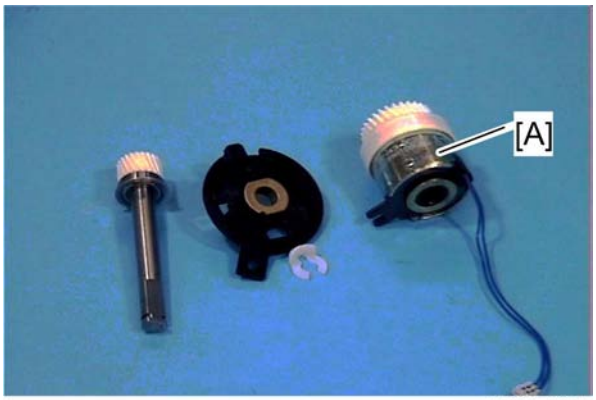
4.9.18 DEVELOPMENT CLUTCH-K

1. Rear cover (☛Section: Rear Cover)
2. PSU bracket (☛Section: PSU)
3. Controller box. (☛Section: Controller Box)
4. Drum/development motor-K (☛Section: Drum/Development Motor-K)



g133r586

5. Turn the development clutch unit [A] counter-clockwise and then pull it out (x 1).



b222r587

6. Development clutch-K [A] (x 1)

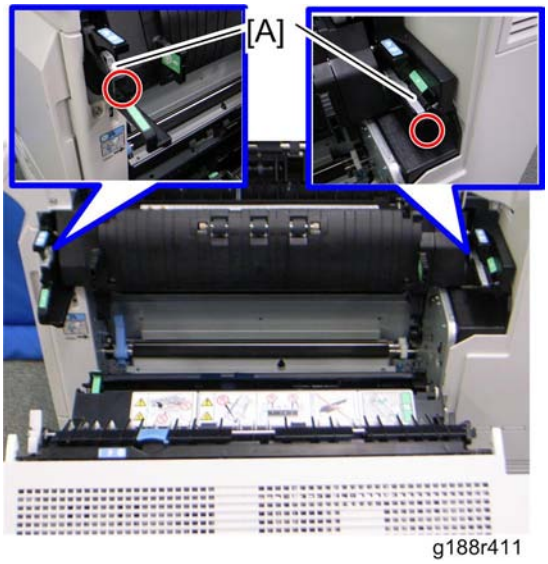
4.10 FUSING

4.10.1 FUSING UNIT

⚠CAUTION

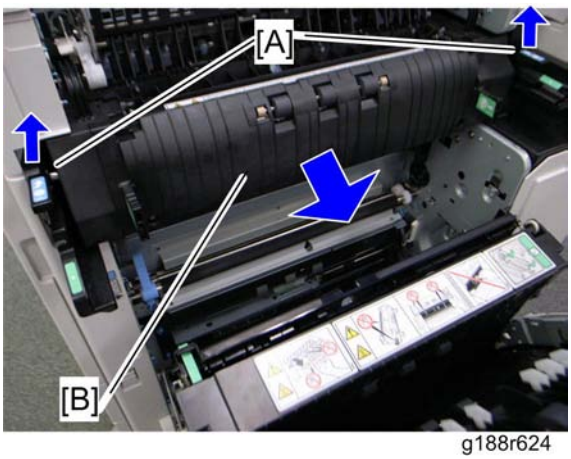
- Turn off the main switch and wait until the fusing unit cools down before beginning any of the procedures in this section. The fusing unit can cause serious burns.

1. Open the right door.



g188r411

2. Stoppers [A] (knob screw x 1 each).

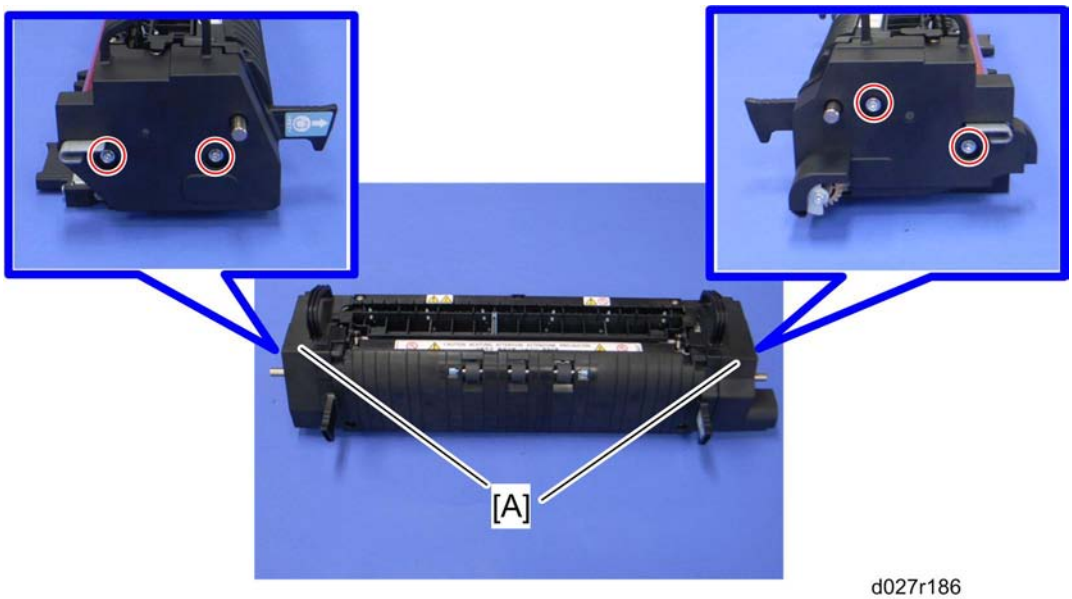


g188r624

3. Release the lock levers [A].
4. Pull out the fusing unit [B].

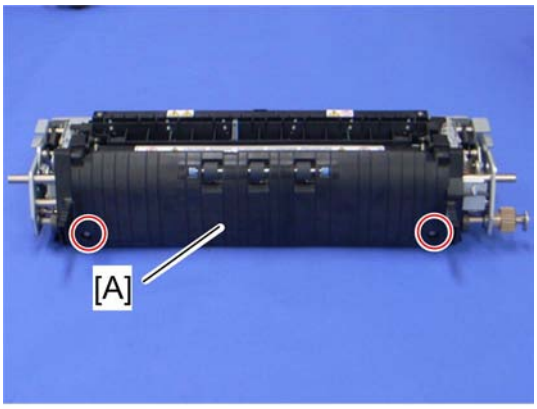
4.10.2 HEATING ROLLER AND HEATING ROLLER BEARING

1. Fusing unit (☛Section: Fusing Unit)



d027r186

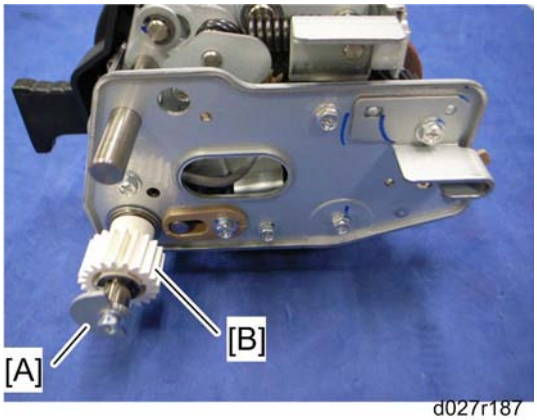
2. Front and rear fusing covers [A] (x 2 each; Stepped screws)



d027r190

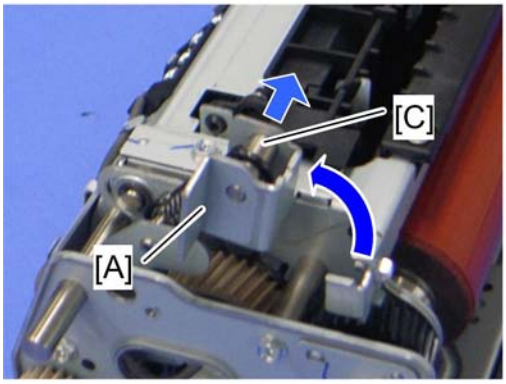
3. Fusing right cover [A] (x 2; Stepped screws)

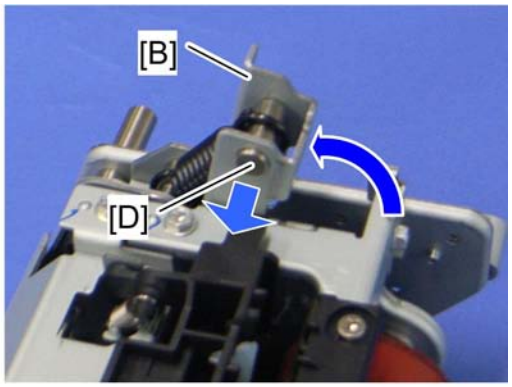
Fusing



d027r187

4. Pressure roller contact shaft actuator [A] and pressure roller contact shaft gear [B] (x 1, x 1)



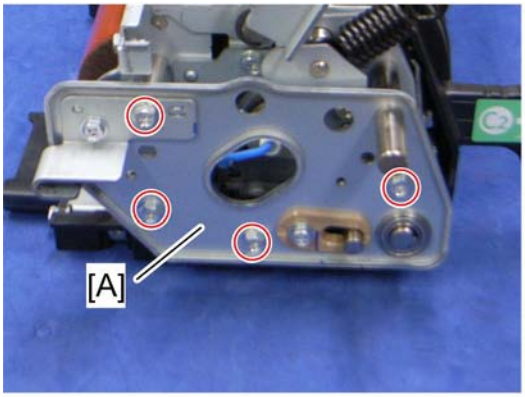


d027r191

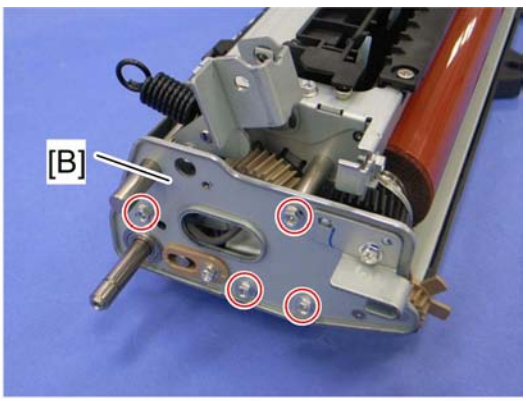
5. Turn both pressure levers [A] [B], and pull out pins [C] [D].

CAUTION

- If the pins [C] [D] are not pulled out in this step, the fusing unit frames may become bent.

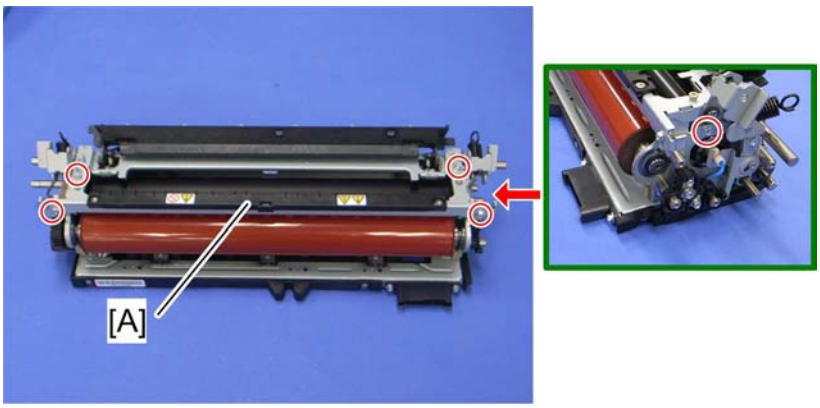


d027r188



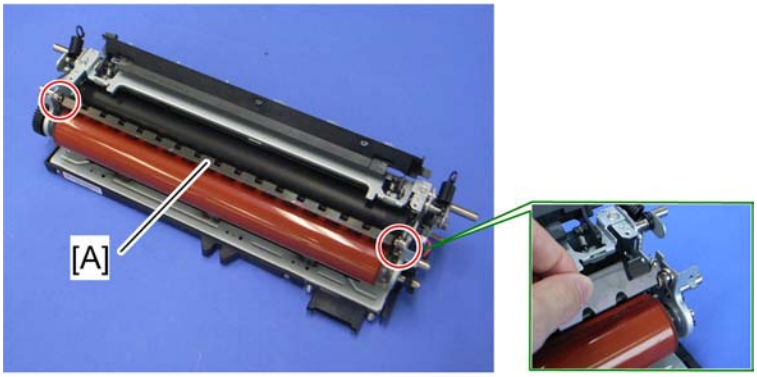
d027r189

6. Front bracket [A] (x 4)
7. Rear bracket [B] (x 4)



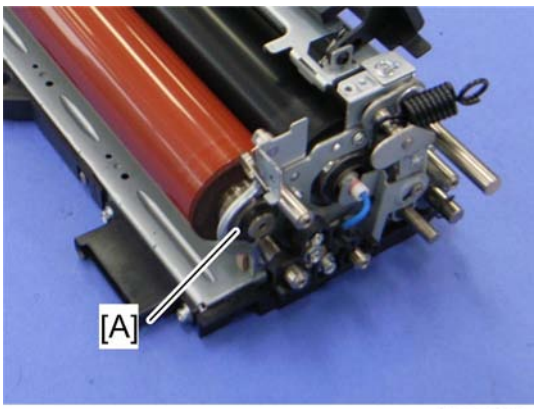
d027r195

8. Top stay [A] (x 5)



d027r197

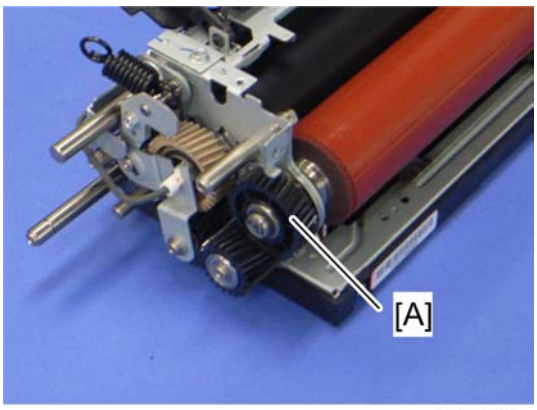
9. Stripper plate [A] (two springs)



d027r208

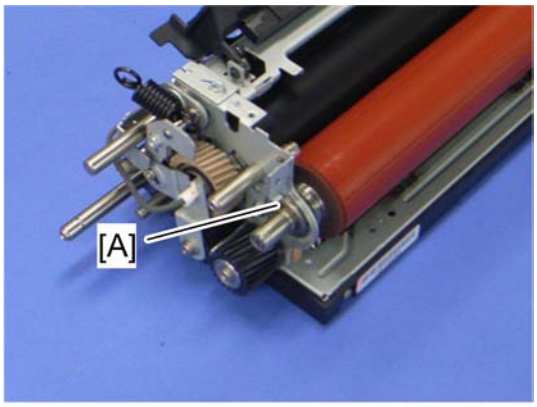
10. Heating roller bearing [A] at the front side (c-ring x 1)

Fusing



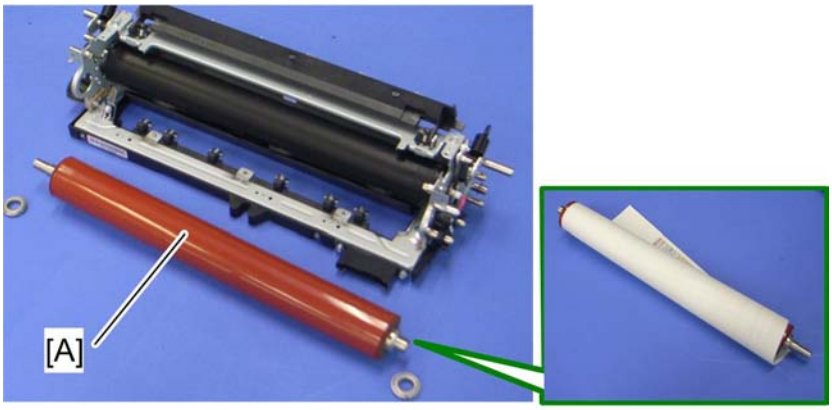
d027r209

11. Heating roller gear [A] (c-ring x 1)



d027r217

12. Heating roller bearing [A] at the rear side



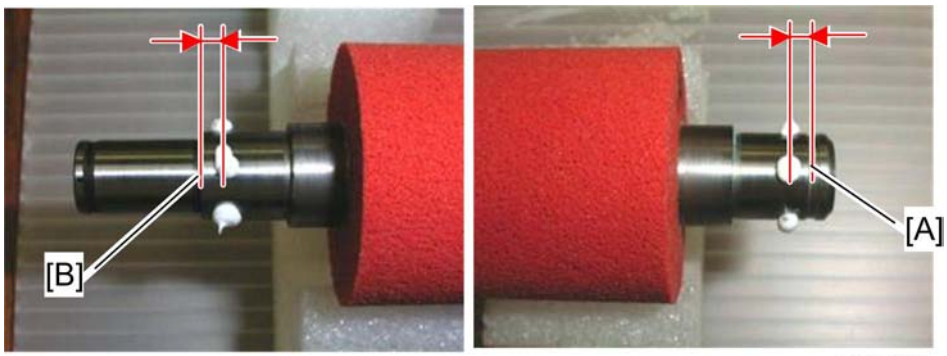
d027r210

13. Heating roller [A]

Note

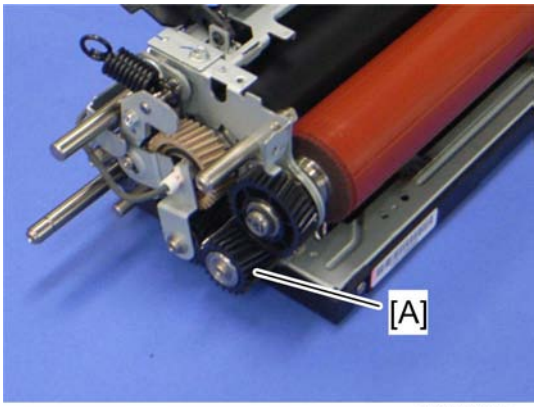
- The surface of the heating roller is fragile, so the heating roller must be covered with a sheet of paper when it is placed on a table or floor.

When re-installing the heating roller



b222r682

1. Apply three spots of "Barrierta S552R" (the diameter of each spot must be about 3 mm in diameter, and approximately 0.1 g in weight) to the front shaft of the heating roller at 2 - 3 mm from the notch [A].
2. Apply three spots of "Barrierta S552R" (the diameter of each spot must be about 3 mm in diameter, and approximately 0.1 g in weight) to the rear shaft of the heating roller at 2 - 3 mm from the edge [B] (rear side of the heating roller).



d027r209a

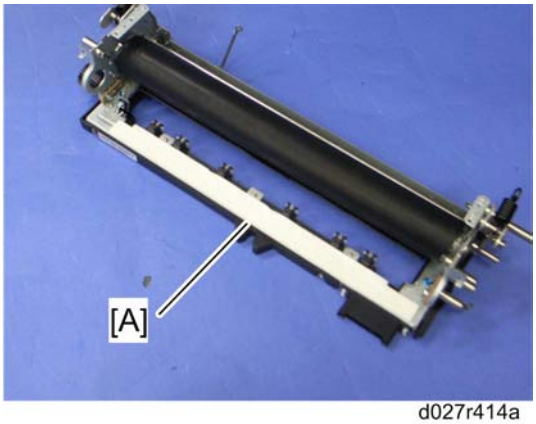
Note

- Do not wipe off the grease of the new idle gear when replacing the idle gear [A]. (The actual idle gear [A] is white.)

4.10.3 FUSING CLEANING FELT

1. Fusing unit (☛Section: Fusing Unit)
2. Heating roller (☛Section: Heating Roller and Heating Roller Bearing)

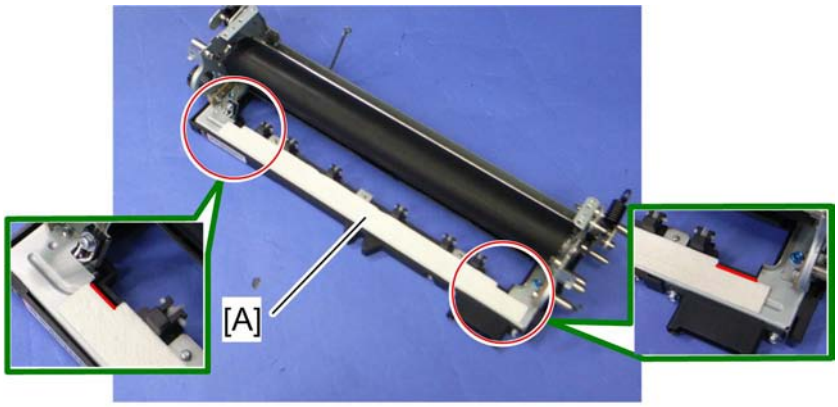
Fusing



d027r414a

3. Remove the fusing cleaning felt [A].

When attaching a new fusing cleaning felt



d027r414

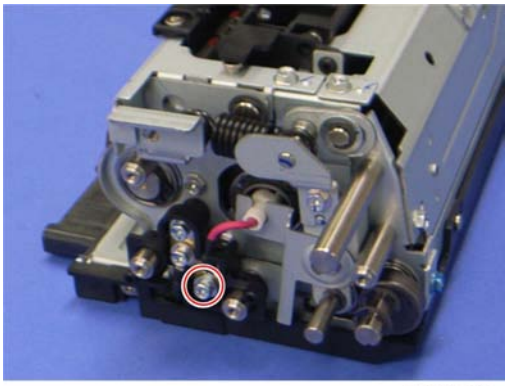
Attach the fusing cleaning felt [A], aligning both edges of the fusing cleaning felt with the red lines on the bottom cover.

Note

- Make sure that the fusing cleaning felt is correctly attached to the frame. Otherwise, dust from the IH coil unit may fall on the paper in the fusing unit and the output becomes dirty.

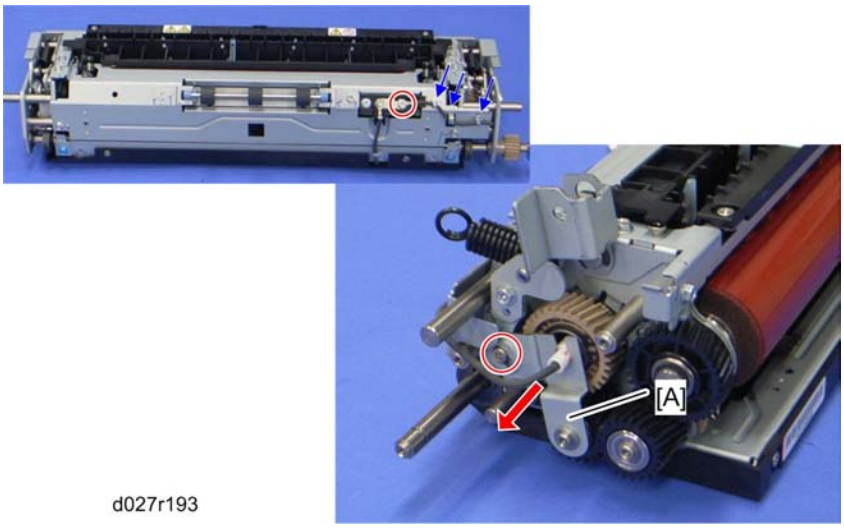
4.10.4 FUSING LAMP

1. Fusing unit (☛Section: Fusing Unit)
2. Front bracket (☛Section: Heating Roller and Heating Roller Bearing)
3. Rear bracket (☛Section: Heating Roller and Heating Roller Bearing)



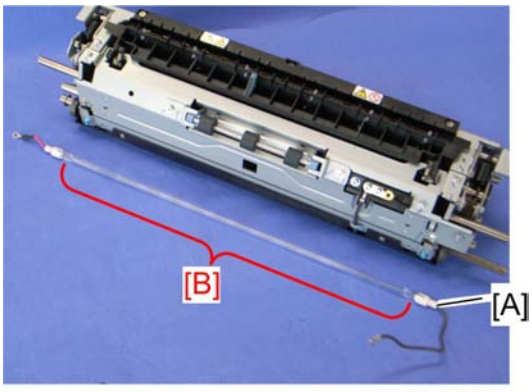
d027r192

4. Front terminal of the fusing lamp (x 1)



d027r193

5. Rear terminal of the fusing lamp (x 1, x 3)
6. Fusing lamp rear bracket [A] (x 1)



d027r193a

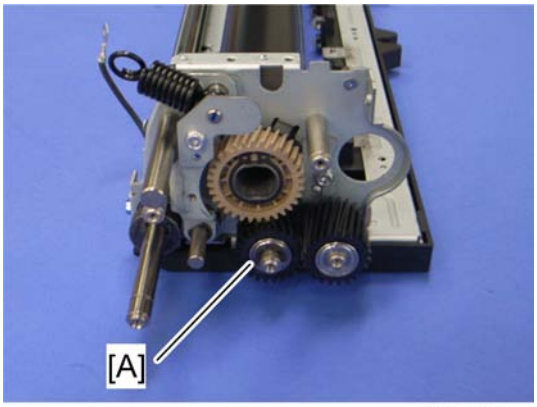
7. Fusing lamp [A]

CAUTION

- Remove the fusing lamp without touching the glass part [B].
- Pay attention to the direction of the fusing lamp during the re-installation.

4.10.5 FUSING DRIVE GEAR

1. Heating roller (☛Section: Heating Roller and Heating Roller Bearing)
2. Fusing lamp rear bracket (☛Section: Fusing Lamp)

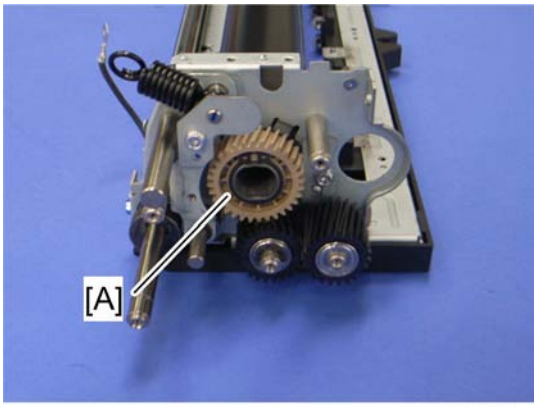


d027r201a

3. Fusing drive gear [A] (c-ring x 1)

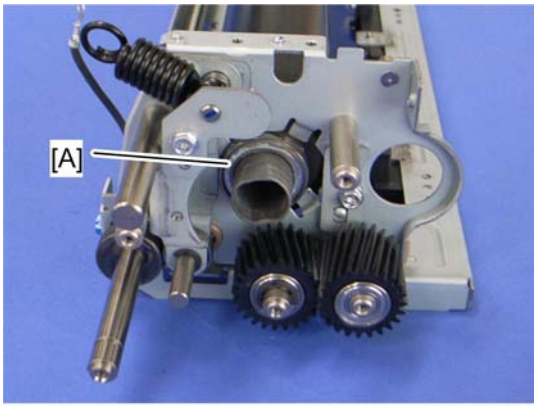
4.10.6 PRESSURE ROLLER AND PRESSURE ROLLER BEARING

1. Heating roller (☛Section: Heating Roller and Heating Roller Bearing)
2. Fusing lamp (☛Section: Fusing Lamp)



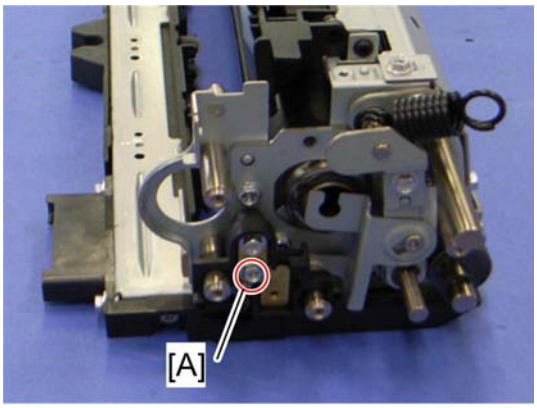
d027r201

3. Pressure roller gear [A] at the rear side (c-ring x 1)



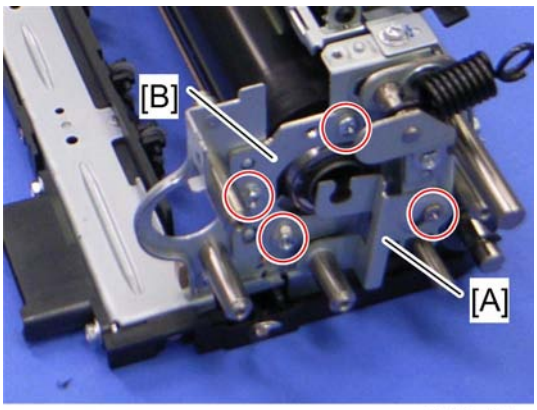
d027r216

4. Pressure roller bearing [A] at the rear side



d027r198

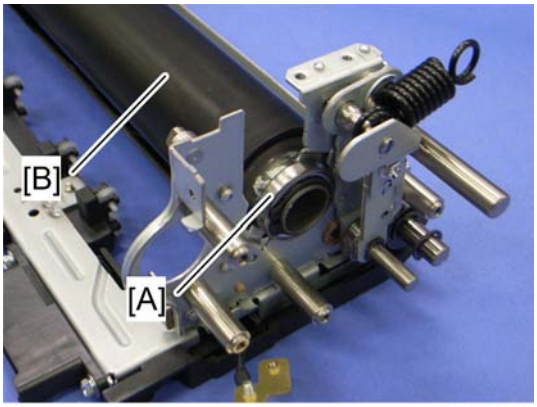
5. Front terminal [A] (x 1)



d027r199

6. Lamp holder front bracket [A] (x 1)
7. Pressure roller bracket [B] at the front side (x 2, binding screw x 1)

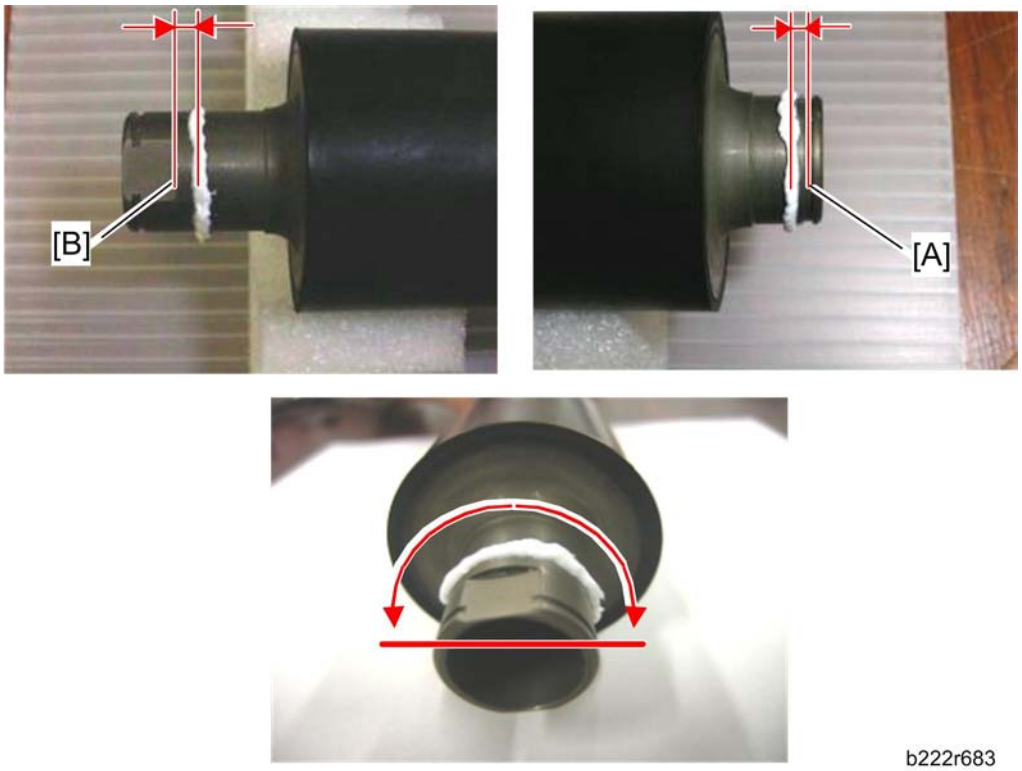
Fusing



d027r200

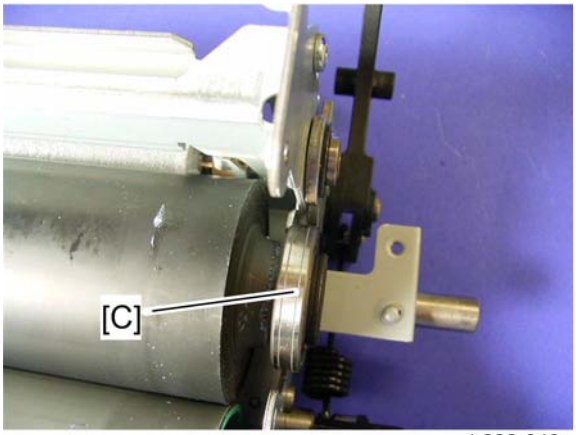
8. Pressure roller bearing [A] at the front side (c-ring x 1)
9. Pressure roller [B]

When re-installing the pressure roller



b222r683

1. Apply "Barrierta S552R" to the front shaft of the pressure roller at 2 mm from the notch [A], and to the rear shaft of the pressure roller at 2 mm from the edge [B]. (Apply the lubricant to half of the circumference of the pressure roller, as shown in the lower of the three above diagrams.)

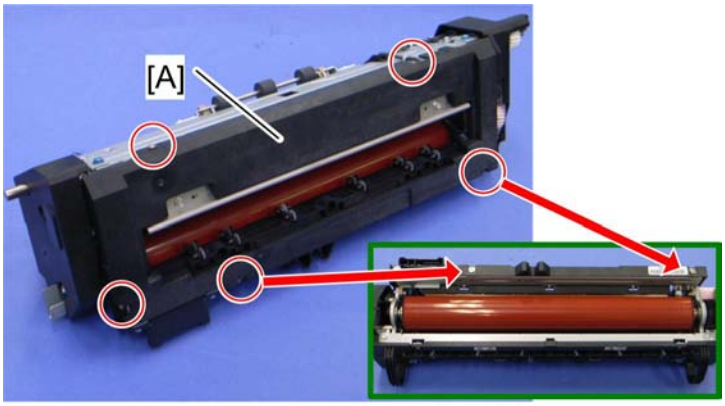


b222r648

2. Make sure that pressure roller bushing [C] at the front side is set as shown below.

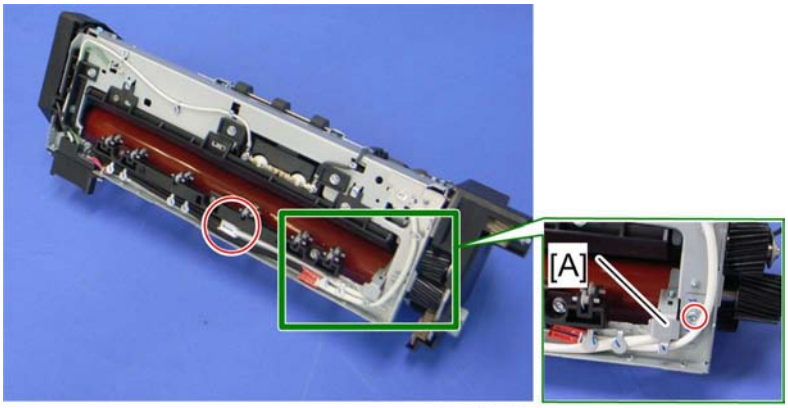
4.10.7 HEATING ROLLER THERMISTOR

1. Fusing unit (☛Section: Fusing Unit)
2. Fusing right cover (☛Section: Heating Roller and Heating Roller Bearing)



d027r211

3. Fusing bottom cover [A] (x 5)

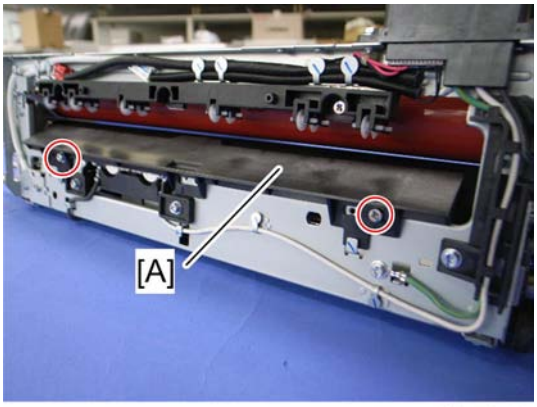


d027r212

4. Heating roller thermistor with bracket [A] (x 1, x 1)

4.10.8 PRESSURE ROLLER THERMOSTAT

1. Fusing unit (☛Section: Fusing Unit)
2. Fusing right cover (☛Section: Heating Roller and Heating Roller Bearing)
3. Fusing bottom cover (☛Section: Heating Roller Thermistor)

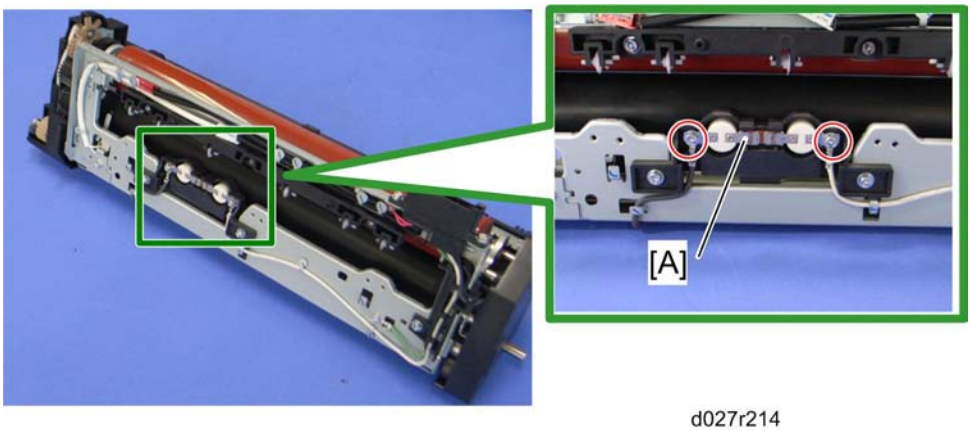


d027r213

4. Entrance guide plate [A] (x 2)

Note

- The entrance guide plate must be removed with the orientation of the fusing unit as shown above, to protect the surface of the heating roller from damage.

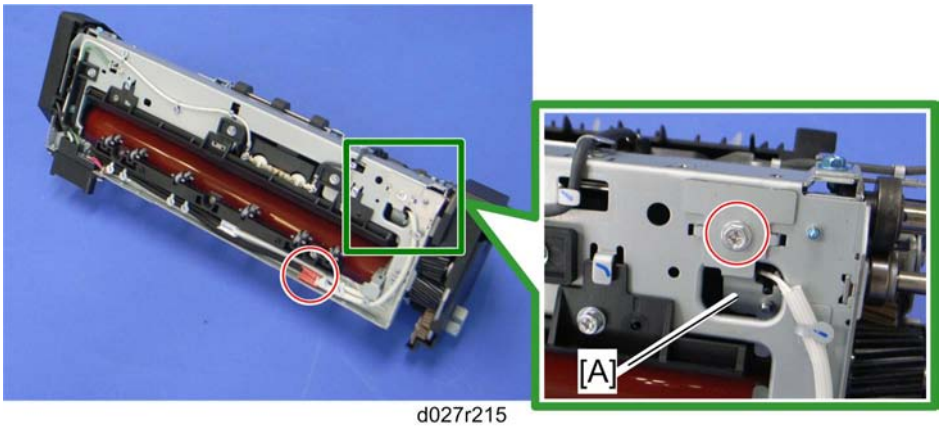


d027r214

5. Pressure roller thermostats [A] (x 4)

4.10.9 PRESSURE ROLLER THERMISTOR

1. Fusing unit (☛Section: Fusing Unit)
2. Fusing right cover (☛Section: Heating Roller and Heating Roller Bearing)
3. Fusing bottom cover (☛Section: Heating Roller Thermistor)

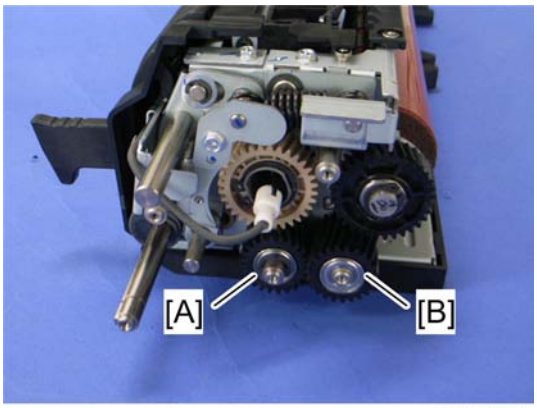


d027r215

4. Pressure roller thermistor [A] (x 1)

4.10.10 BEARING GEAR AND IDLE GEAR

1. Fusing unit (☛Section: Section:Fusing Unit)
2. Rear fusing cover (☛Section: Heating Roller and Heating Roller Bearing)
3. Pressure roller contact shaft actuator and pressure roller contact shaft gear (☛Section: Heating Roller and Heating Roller Bearing)
4. Rear bracket (☛Section: Heating Roller and Heating Roller Bearing)
5. Fusing lamp rear bracket (☛Section: Fusing Lamp)



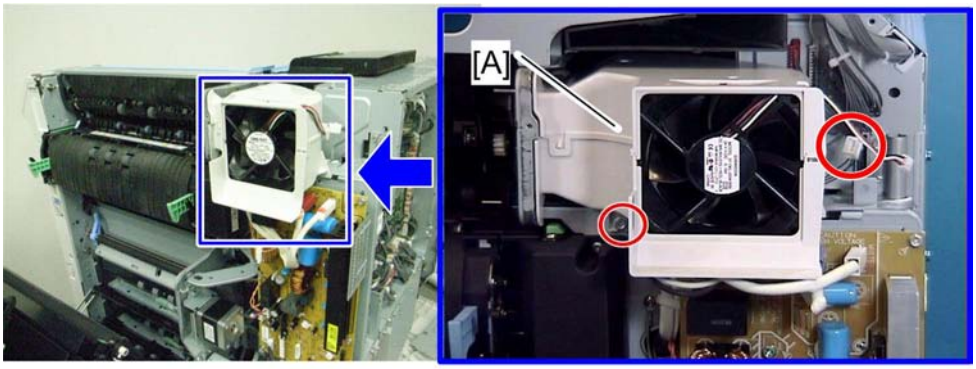
d027r218

6. Bearing gear [A] (c-ring x 1) and idle gear [B]

4.10.11 FUSING FAN

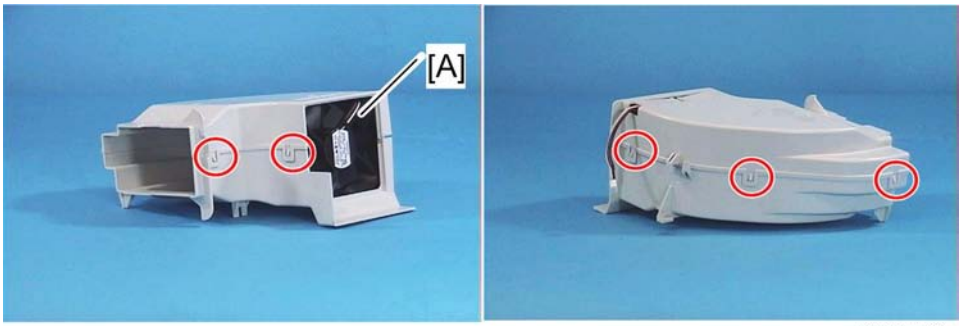
1. Rear cover (☛Section: Rear Cover)
2. Right rear cover (☛Section: Right Rear Cover)

Fusing



g133r588

3. Fusing duct [A] (x 1, x 1)



b222r589

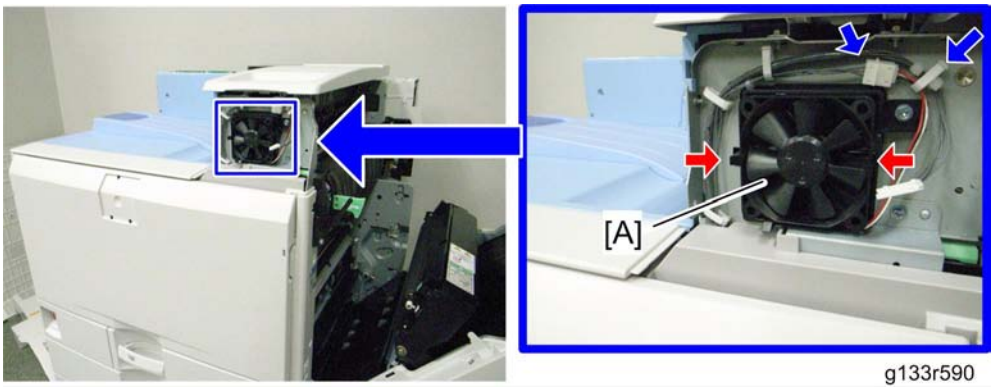
4. Fusing fan [A] (hook x 5)

When installing the fusing fan

Make sure that the fusing fan is installed with its decal facing the right side of the machine.

4.10.12 PAPER EXIT FAN

1. Open the right door.
2. Operation panel cover (☛Section: Operation Panel)



g133r590

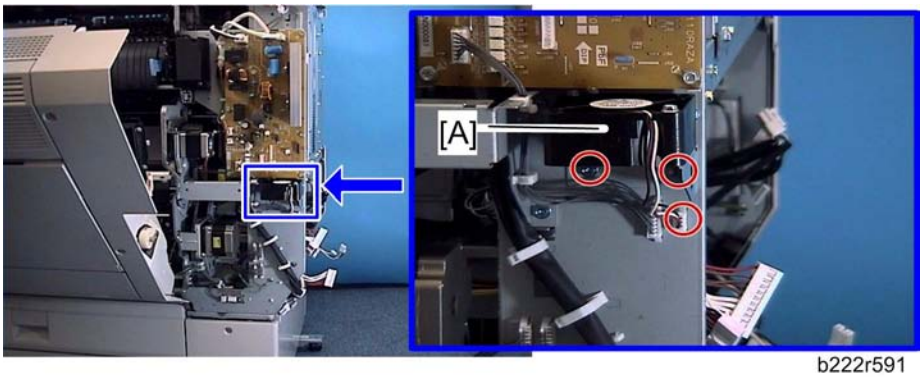
3. Paper exit fan [A] (x 1, x 1, hook x 2)

When installing the paper exit fan

Make sure that the paper exit fan is installed with its decal facing the rear of the machine.

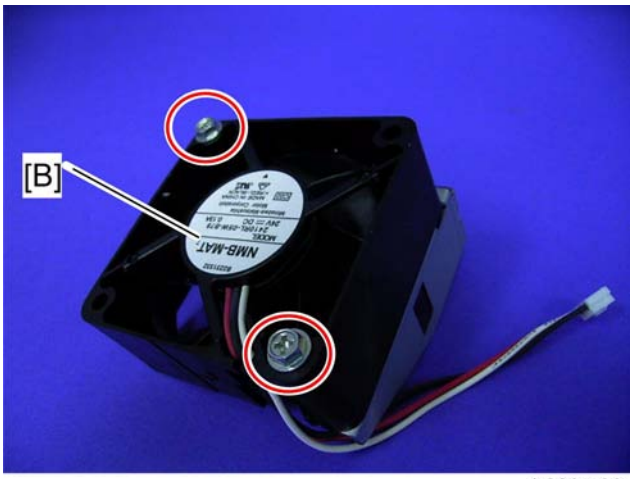
4.10.13 IH (INDUCTION HEATING) INVERTER FAN

1. Rear cover (☛Section: Rear Cover)
2. Right rear cover (☛Section: Right Rear Cover)



b222r591

3. IH inverter fan bracket [A] (x 2, x 1)



b222r592

4. IH inverter fan [B] (x 2)

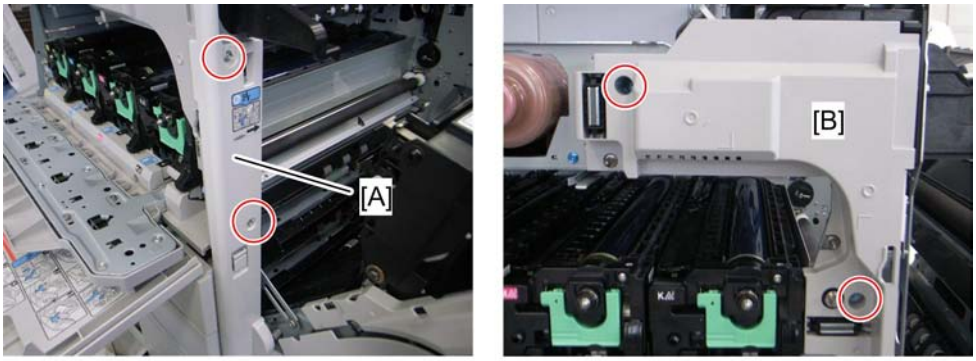
When installing the IH inverter fan

Make sure that the IH inverter fan is installed with its decal facing the upper side of the machine.

4.10.14 THERMOPILE

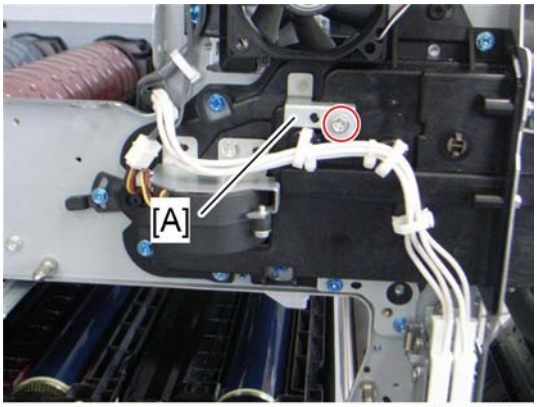
1. Open the right door.
2. Operation panel (☛Section: Operation Panel)
3. Pull out trays 1 and 2.
4. Image transfer belt unit (☛Section: Image Transfer Belt Unit)

Fusing



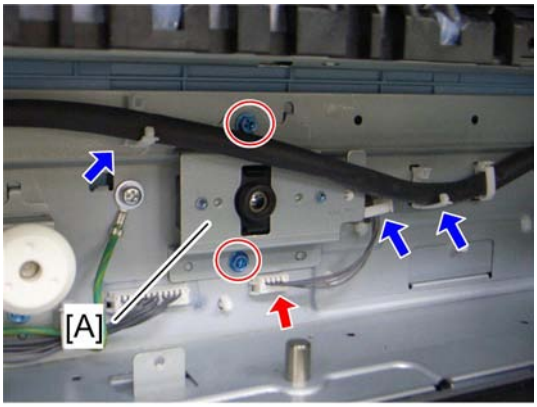
d027r219

5. Right front cover [A] and front inner cover [B]



d027r220a

6. Bracket [A] (x1)
7. Fusing unit (☛Section: Fusing Unit)
8. Paper exit unit (☛Section: Paper Exit Unit)

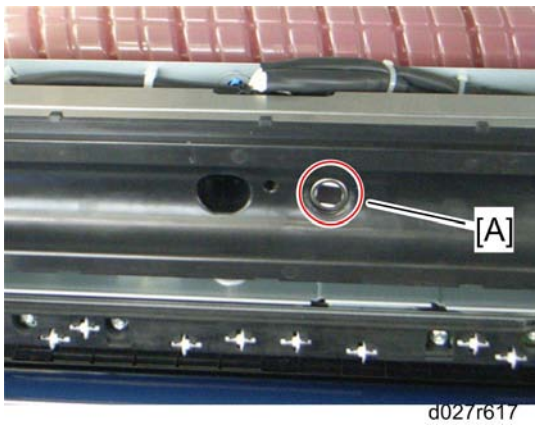


d027r224

9. Thermopile bracket [A] (x 2, x 1, x 2)
10. Thermopile (x 2)

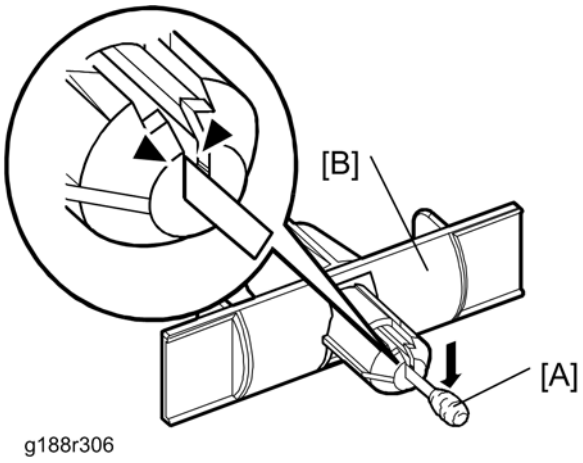
When cleaning the lens of the thermopile

CAUTION:



- Do this cleaning procedure after the fusing unit has completely cooled down. Otherwise, you may get a serious burn.
- Do not push the thermostat [A] on the IH coil unit. If you do, the thermostats will be opened. In that case, the IH coil unit must be replaced.

1. Fusing unit (☛Section: Fusing Unit)

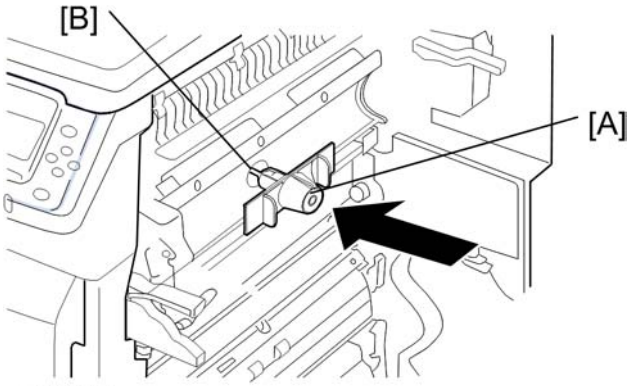


2. Push the cotton swab [A] into the special cleaning tool [B] until it clicks.

Note

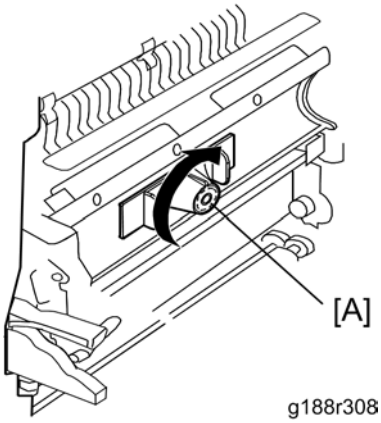
- This special cleaning tool is provided with the fusing maintenance kit.

Fusing



g188r307

3. Insert the special cleaning tool [A] into the hole [B] of the printer.

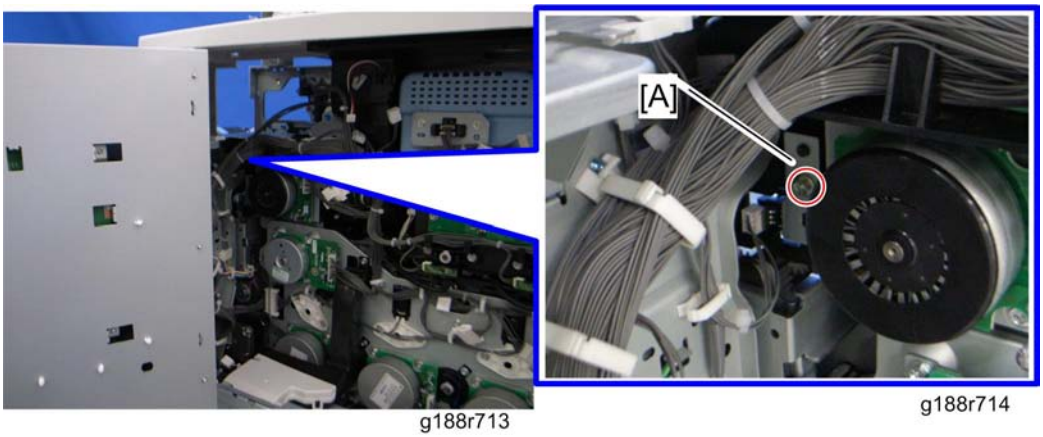


g188r308

4. Rotate the special cleaning tool [A] 10 times while pushing in to clean the lens inside of the printer.

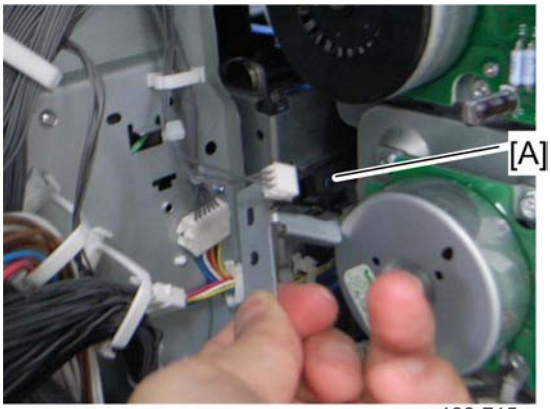
4.10.15 PRESSURE ROLLER HP SENSOR

1. Rear cover (☛Section: Rear Cover)
2. Open the controller box (☛Section: Controller Box)



g188r713 g188r714

3. Pressure roller HP sensor bracket [A] (x 1, x 1)



g188r715

4. Pressure roller HP sensor [A] (hooks)

NOTE:

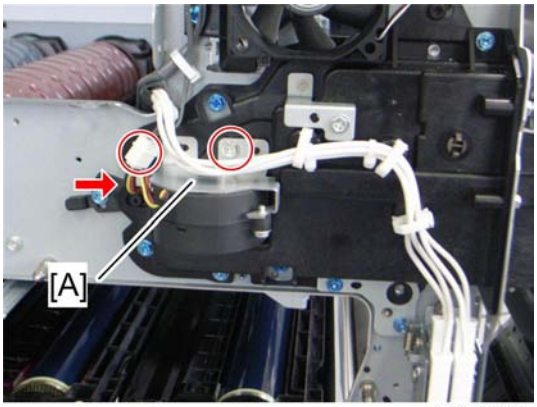
The picture below shows how to use the screwdriver to remove the screws of the pressure roller HP sensor bracket.

g188r716

4.10.16 IH COIL FAN

1. Open the right door.
2. Operation panel cover (☛Section: Operation Panel)
3. Pull out trays 1 and 2, and the image transfer belt unit.
4. Right front cover and front inner cover (☛Section: Thermopile)

Fusing



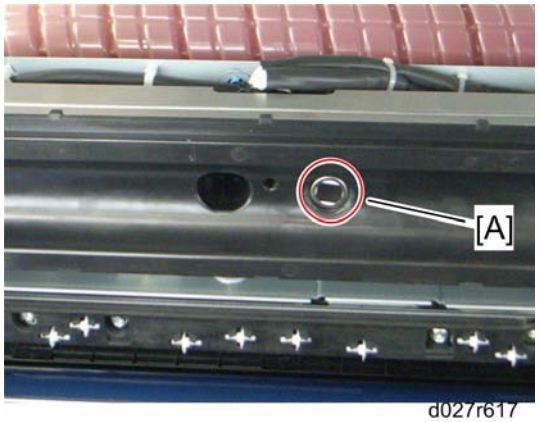
d027r220

5. IH coil fan bracket [A] (x 1, x 1, x 1)
6. IH coil fan (x 2)

4.10.17 IH COIL UNIT

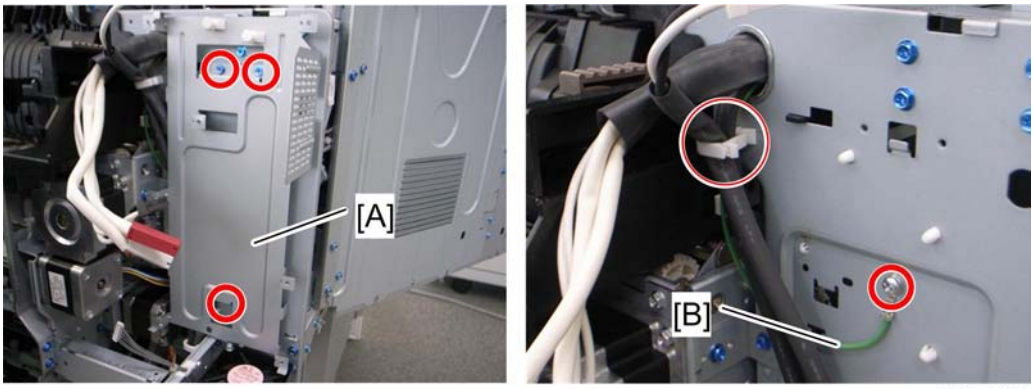
CAUTION

- Do not push the thermostat [A] on the IH coil unit. If you do, the thermostat will be opened. In that case, the IH coil unit must be replaced.



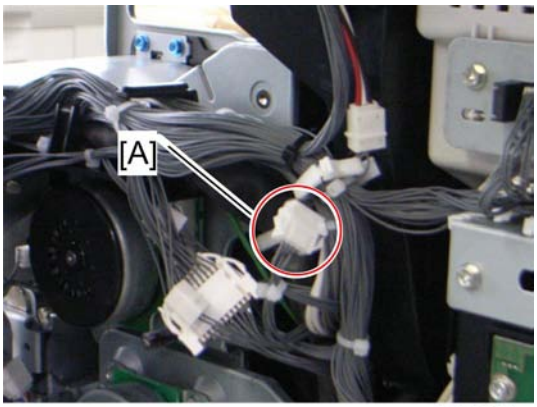
d027r617

1. Fusing unit (☛Section: Fusing Unit)
2. Rear cover (☛Section: Rear Cover)
3. Right rear cover (☛Section: Right Rear Cover)
4. Open the controller box (☛Section: Controller Box).
5. Fusing duct (☛Section: Fusing Fan)
6. IH inverter (☛Section: IH Inverter)



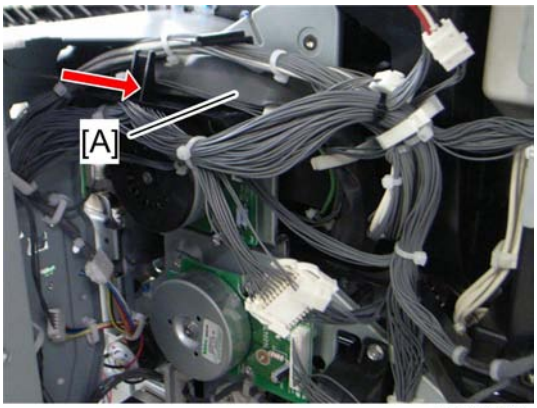
d027r618

7. IH inverter bracket [A] (x 3)
8. Ground cable [B] (x 1, x 1)



d027r221

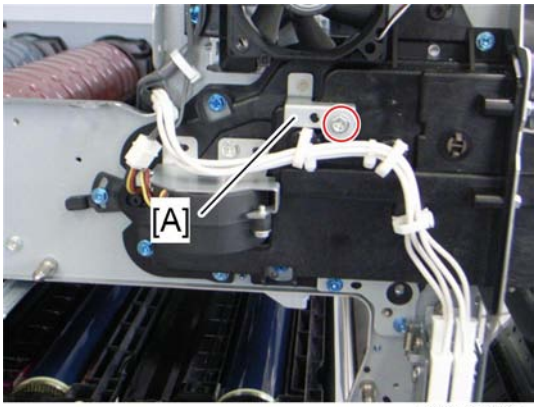
9. Disconnect the connector [A].



d027r222

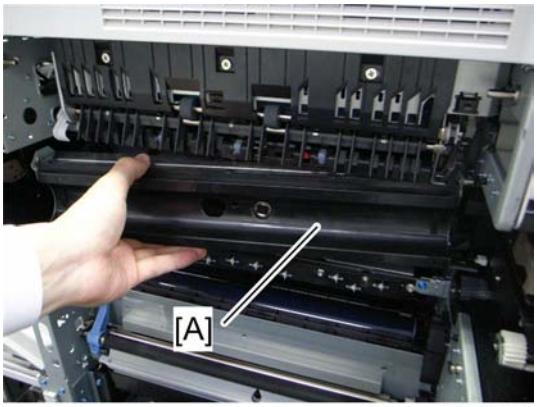
10. Pull the Harness [A] in the arrow direction.

Fusing



d027r220a

11. Bracket [A] (x 1)



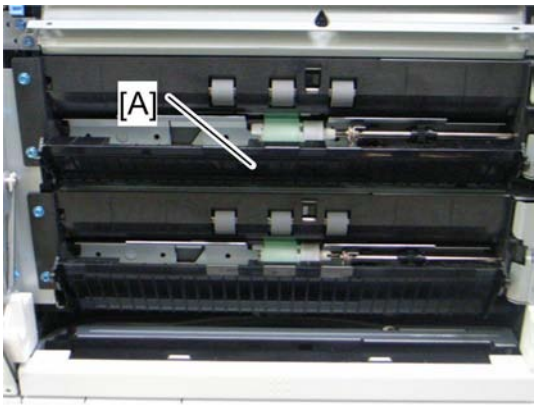
d027r223

12. IH coil unit [A] (First, release the front side of the IH coil unit.)

4.11 PAPER FEED

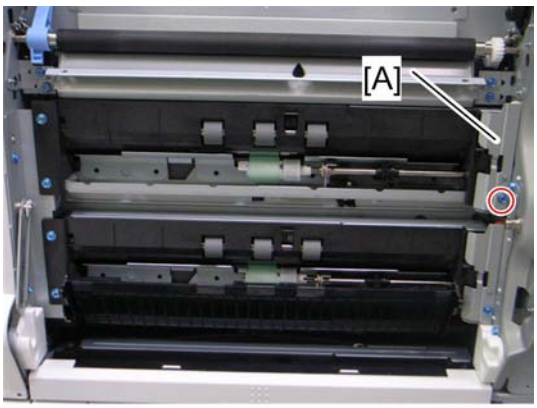
4.11.1 PAPER FEED UNIT

1. Rear cover (☛Section: Rear Cover)
2. Right rear cover (☛Section: Right Rear Cover)
3. Duplex unit (☛Section: Duplex Unit)
4. Pull out tray 1 and tray 2.



d027r168

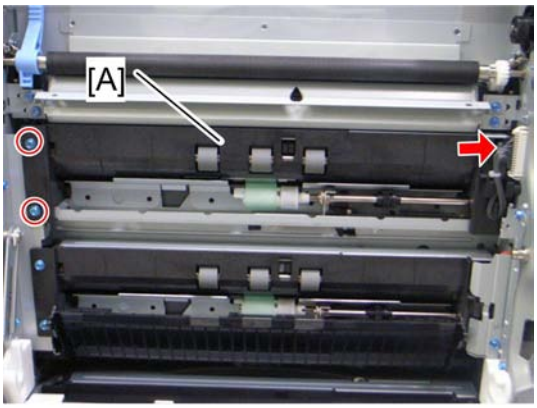
5. Paper guide plate [A] (hook x 2)



d027r169

6. Harness cover [A] (x 1)

Paper Feed



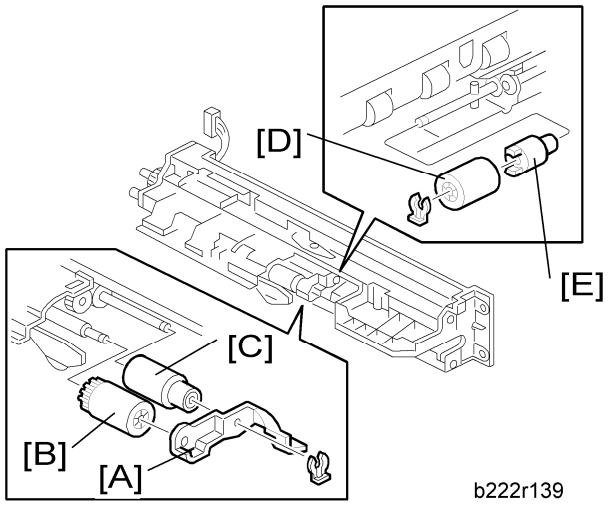
d027r170

7. Paper feed unit [A] (x 2, x 1)

4.11.2 PICK-UP, FEED AND SEPARATION ROLLERS

Tray 1 and Tray 2

1. Paper feed unit (☛Section: Paper Feed Unit)

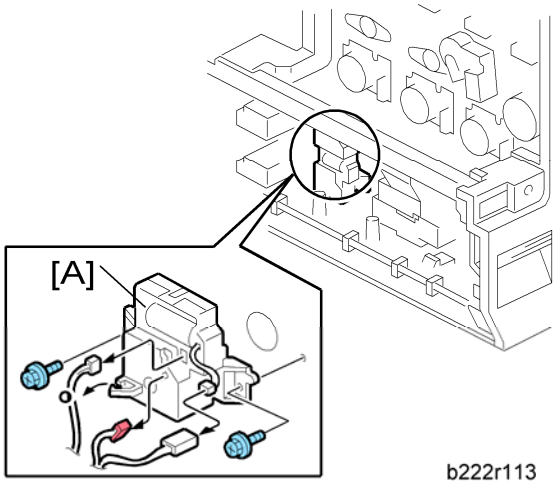


b222r139

2. Roller holder [A] (x 1)
3. Pick-up roller [B]
4. Feed roller [C]
5. Separation roller [D] and torque limiter [E] (x 1)

4.11.3 TRAY LIFT MOTOR

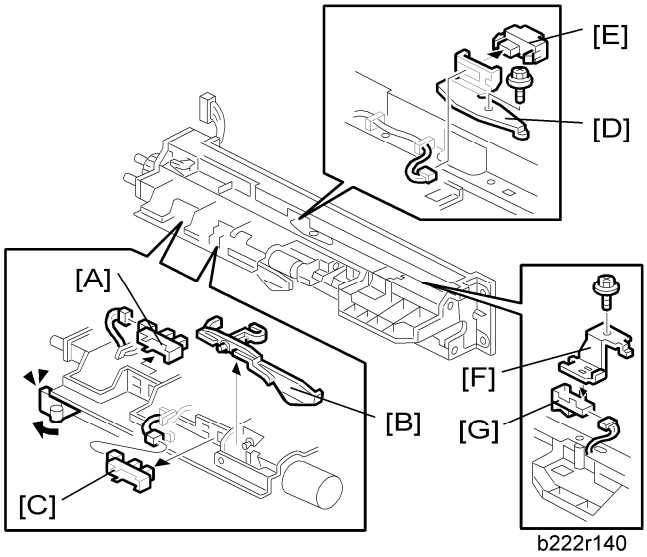
1. Rear cover (☛Section: Rear Cover)
2. PSU bracket (☛Section: PSU Bracket)
3. High voltage supply board bracket (☛Section: High Voltage Supply Board Bracket)



4. Tray lift motor 1 or 2 [A] (x 2, x 3, x 1 each)

4.11.4 VERTICAL TRANSPORT, PAPER OVERFLOW, PAPER END AND PAPER FEED SENSORS

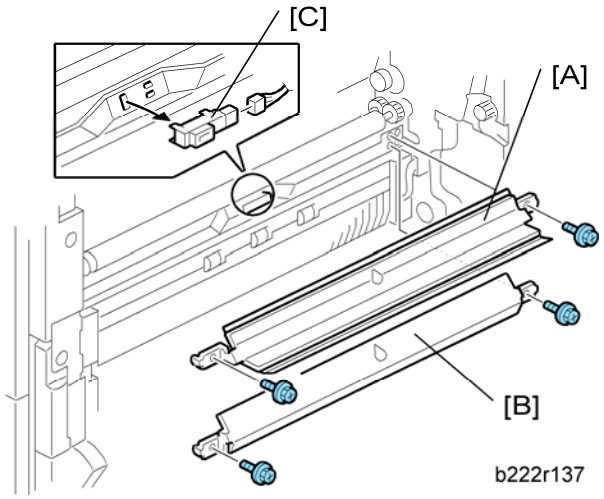
1. Rear cover (☛Section: Rear Cover)
2. Right rear cover (☛Section: Right Rear Cover)
3. Paper feed unit (☛Section: Paper Feed Unit)



4. Paper overflow sensor [A]
5. Paper end feeler [B] and paper end sensor [C] (hook, x 1 each)
6. Vertical transport sensor bracket [D] (x 1, x 1)
7. Vertical transport sensor [E] (x 1, hook)
8. Paper feed sensor bracket [F] (x 1)
9. Paper feed sensor [G] (x 1, hook)

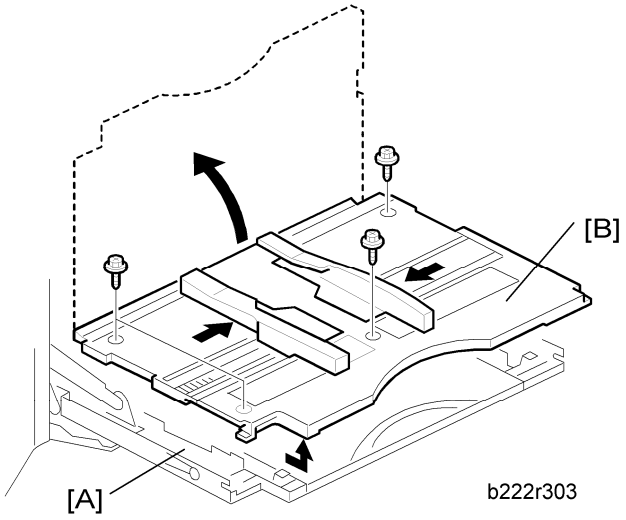
4.11.5 REGISTRATION SENSOR

1. Rear cover (☛Section: Rear Cover)
2. Right rear cover (☛Section: Right Rear Cover)

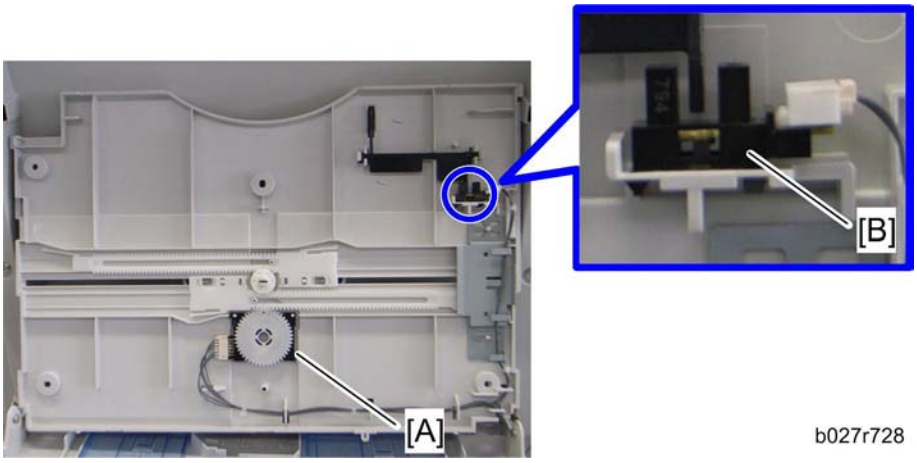


3. Paper guide plate 1 [A] and 2 [B] (x 2 each)
4. Registration sensor [C] (x 1, hook)

4.11.6 BY-PASS PAPER SIZE SENSOR AND BY-PASS PAPER LENGTH SENSOR

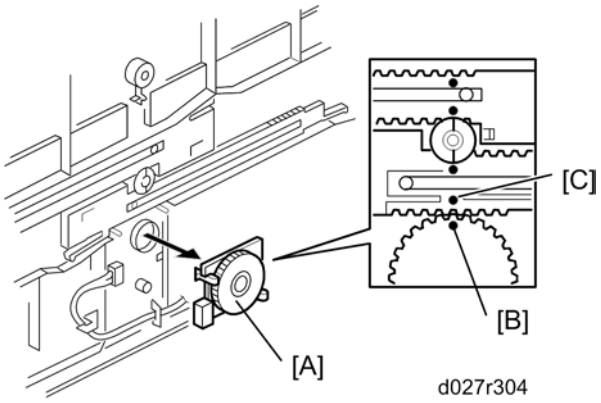


1. Open the by-pass tray [A].
2. Move the side fences to the center.
3. By-pass tray cover [B] (x 4)



4. By-pass paper size sensor [A] (x 1).
5. By-pass paper length sensor [B] (x 1)

When reinstalling this switch



1. Adjust the projection [C] of the left side fence bar (it must be centered).
2. Install the by-pass paper size detection sensor [A] so that the hole [B] in this switch faces the projection [C] of the left side fence bar.
3. Reassemble the printer.
4. Plug in and turn on the main power switch.
5. Check this sensor operation with SP5803-011 (By-pass paper size < Input Check).

- Display on the LCD -

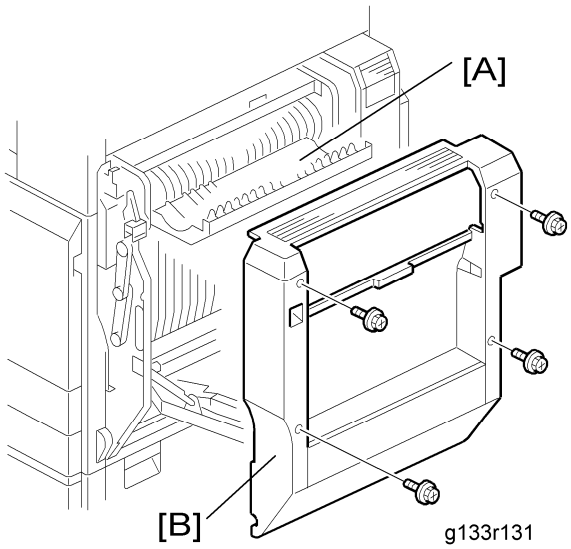
Paper Size	Display	Paper Size	Display
A3 SEF	00001110	A5 SEF	00001011
B4 SEF	00001100	B6 SEF	00000011

Paper Feed

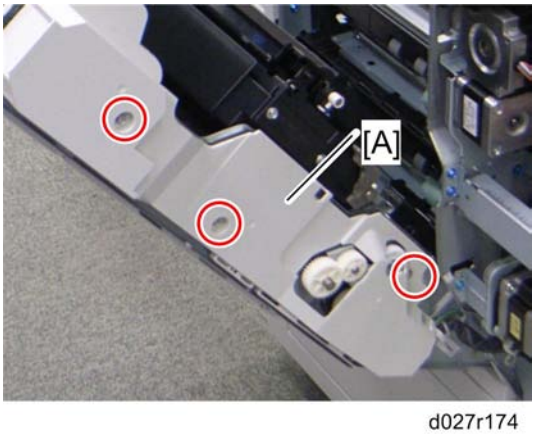
A4 SEF	00001101	A6 SEF	00000111
B5 SEF	00001001	Smaller A6 SEF	00001111

4.11.7 BY-PASS BOTTOM TRAY

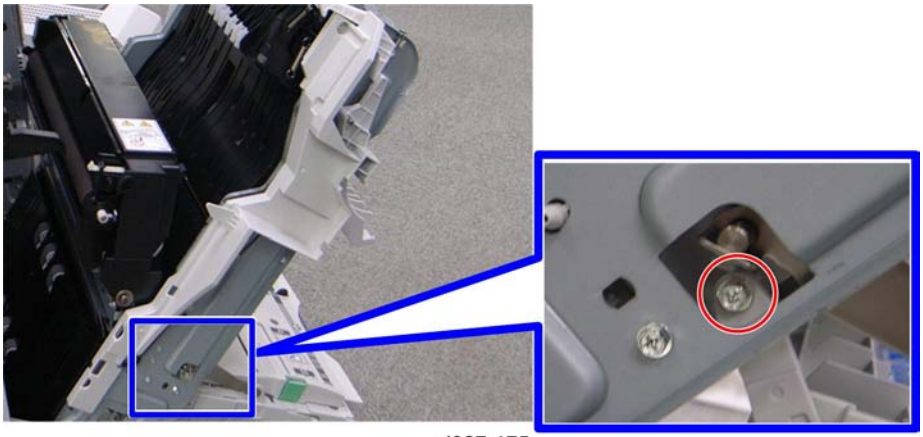
1. Open the right door.
2. By-pass tray cover (☛Section: By-pass Paper Size Sensor and By-pass Paper Length Sensor)



3. Open the duplex door [A].
4. Right door cover [B] (x 4)

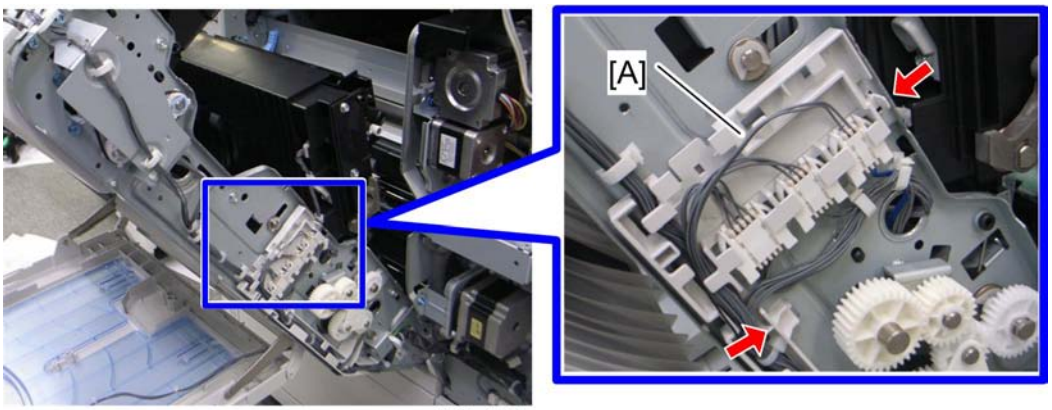


5. Right door rear cover [A] (x 3)



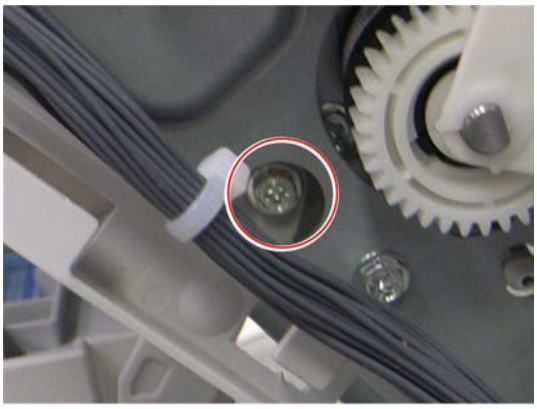
d027r175

6. Remove the screw at the front side (x 1).



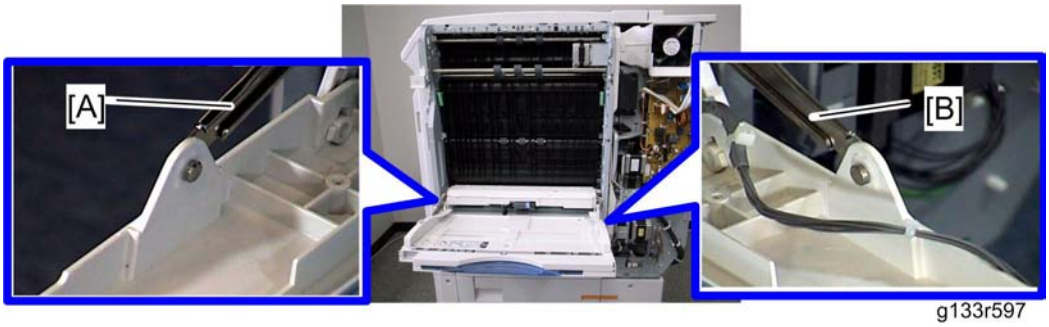
d027r177

7. Remove the cover [A] (2 hooks).



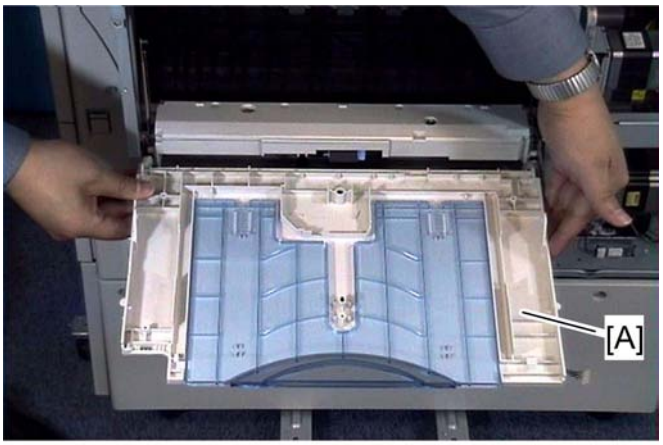
d027r178

8. Remove the screw at the rear side.



g133r597

9. Release the front [A] and rear [B] arms (x 1 each).

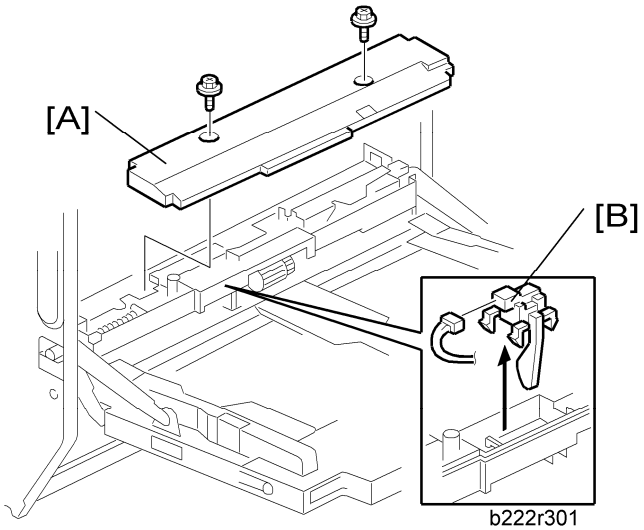


b222r598

10. By-pass Bottom Tray [A]

4.11.8 BY-PASS PAPER END SENSOR

1. Right door cover (☛Section: By-pass Bottom Tray)

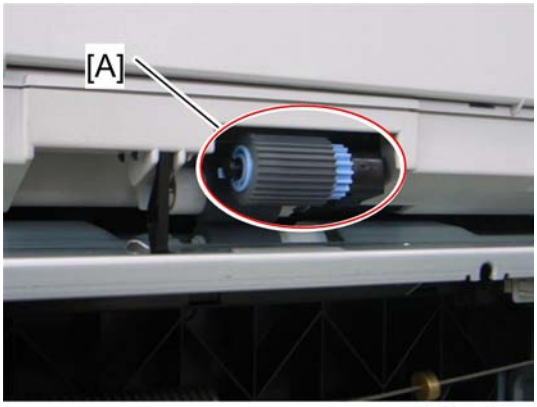


b222r301

2. By-pass feed unit cover [A] (x 2).
3. By-pass paper end sensor [B] (x 1, hook)

4.11.9 BY-PASS PICK-UP, FEED AND SEPARATION ROLLER, TORQUE LIMITER

1. Right door cover (☛Section: By-pass Bottom Tray)

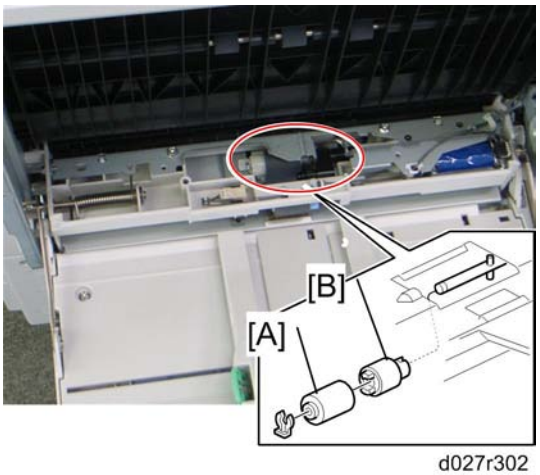


d027r179

2. By-pass pick-up roller [A] (hook)

d027r180

3. By-pass feed roller [A] (x 1)
4. By-pass feed unit cover (☛Section: By-pass Paper End Sensor)

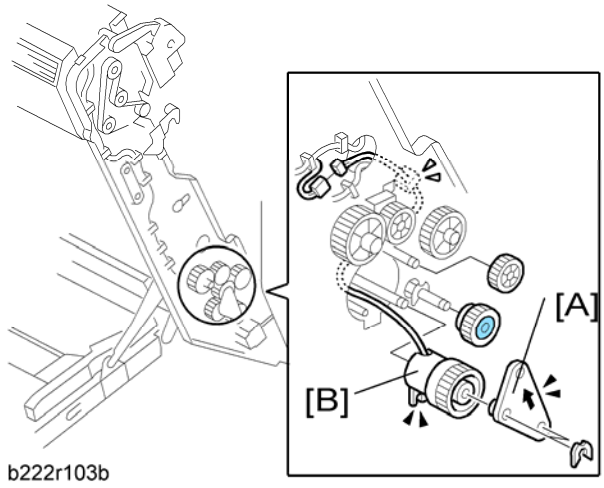


d027r302

5. By-pass separation roller [A] (x 1)
6. Torque limiter [B]

4.11.10 BY-PASS FEED CLUTCH

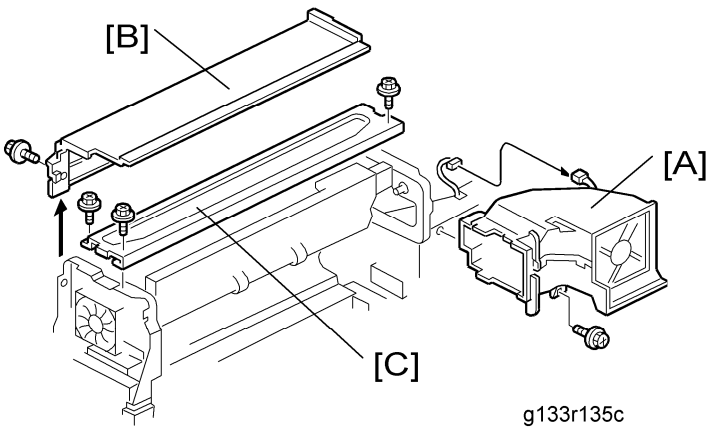
1. Open the right door.
2. Right door rear cover (☛Section: By-pass Bottom Tray)



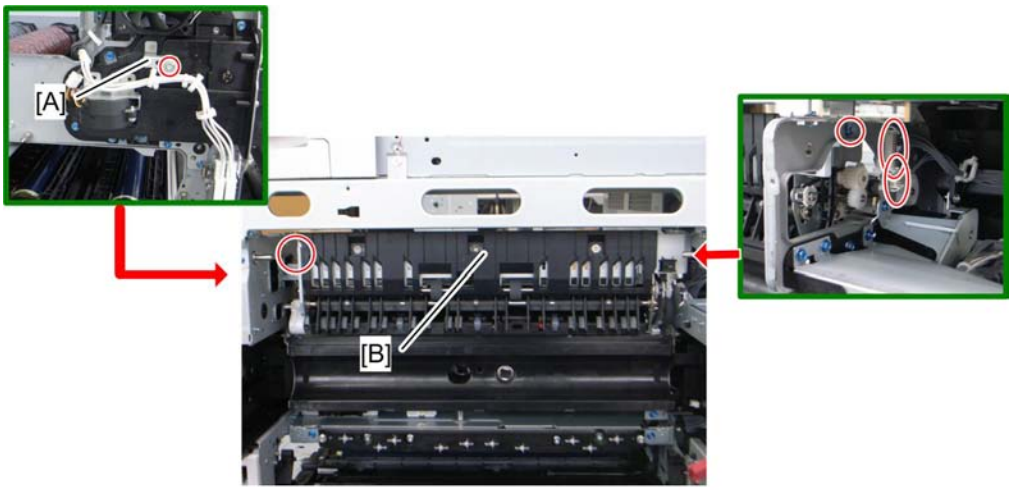
3. By-pass feed clutch holder [A] (x 2)
4. By-pass feed clutch [B] (x 1, x 1)

4.11.11 PAPER EXIT UNIT

1. Fusing Unit (☛ 4-66Section: Fusing Unit)
2. Operation panel (☛Section: Operation Panel)
3. Image transfer belt unit (☛Section: Image Transfer Belt Unit)
4. Rear cover (☛Section: Rear Cover)
5. Right rear cover (☛Section: Right Rear Cover)



6. Fusing duct [A] (x 1, x 1)
7. Paper exit cover [B] (x 1)
8. Top right stay [C] (x 3)

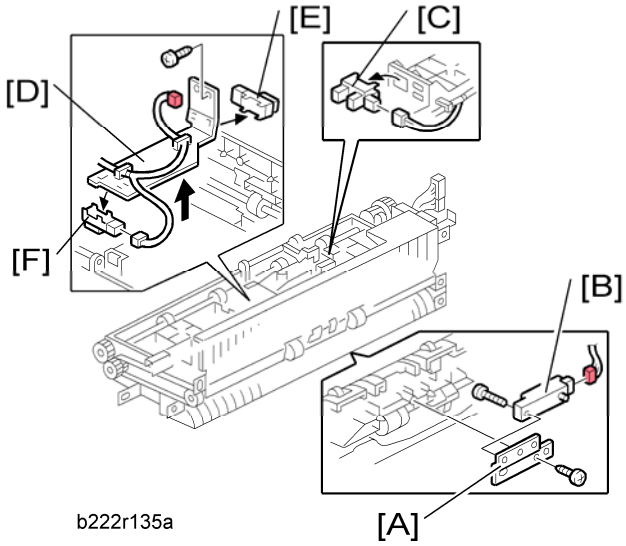


d027r181

1. Gear cover [A] (x 1)
2. Paper exit unit [B] (x 2, x 2)

4.11.12 FUSING EXIT, PAPER OVERFLOW, JUNCTION PAPER JAM AND PAPER EXIT SENSORS

1. Paper exit unit (☛ Section: Paper Exit Unit)



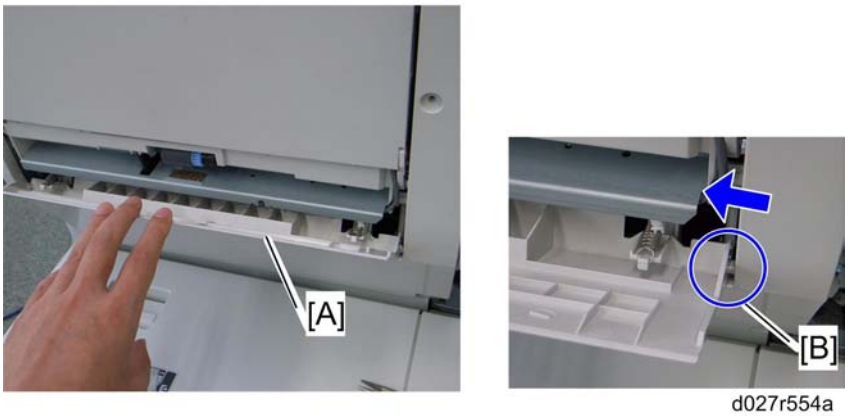
b222r135a

2. Fusing exit sensor bracket [A] (x 1, x 1)
3. Fusing exit sensor [B] (x 1)
4. Paper overflow sensor [C] (x 1, hook)
5. Sensor bracket [D] (x 1)
6. Junction paper jam sensor [E] (x 1, hook)
7. Paper exit sensor [F] (x 1, hook)

4.12 DUPLEX UNIT

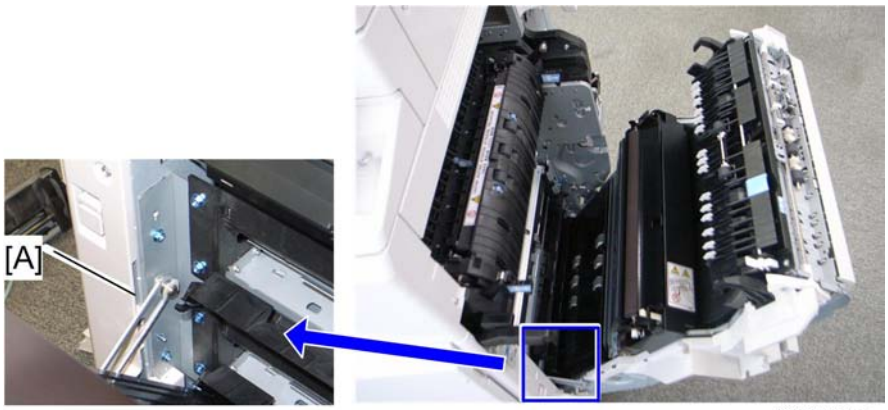
4.12.1 DUPLEX UNIT

1. Rear cover (☛Section: Rear Cover)
2. Right rear cover (☛Section: Right Rear Cover)



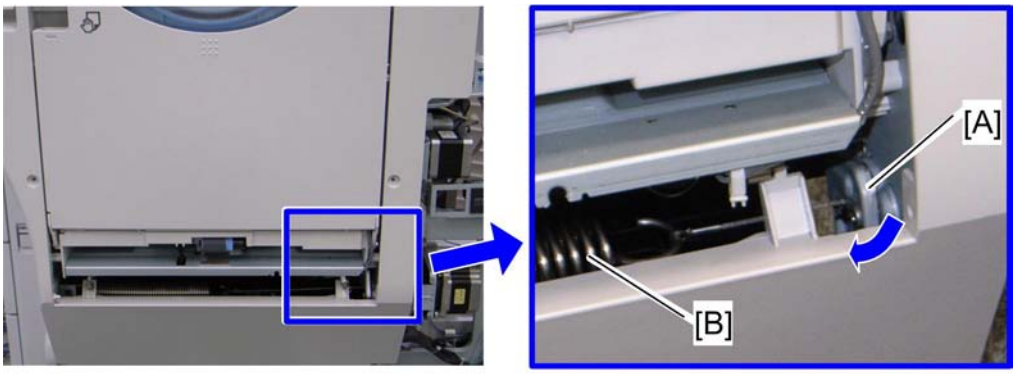
d027r554a

3. Open the lower door [A] of the duplex unit.
4. Release the tab [B] and remove the lower door (spring x 2).
5. Open the right door.



d027r555a

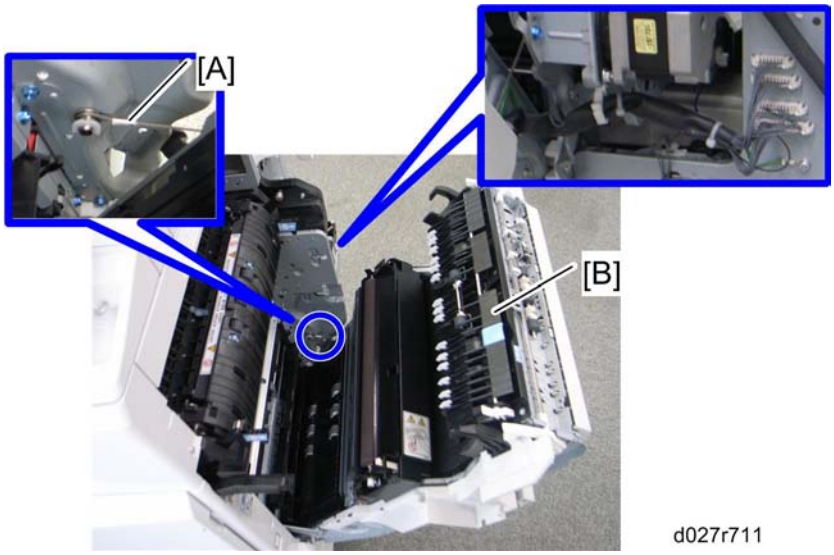
6. Release the front link [A] (x 1).
7. Keep the right door fully open.



8. Push up the duplex unit a little bit, while pressing the bracket [A] to lock the spring [B].

Note

- Do not let the duplex unit open fully before releasing the wire (step 9). Otherwise, the lock for the spring [B] is released.

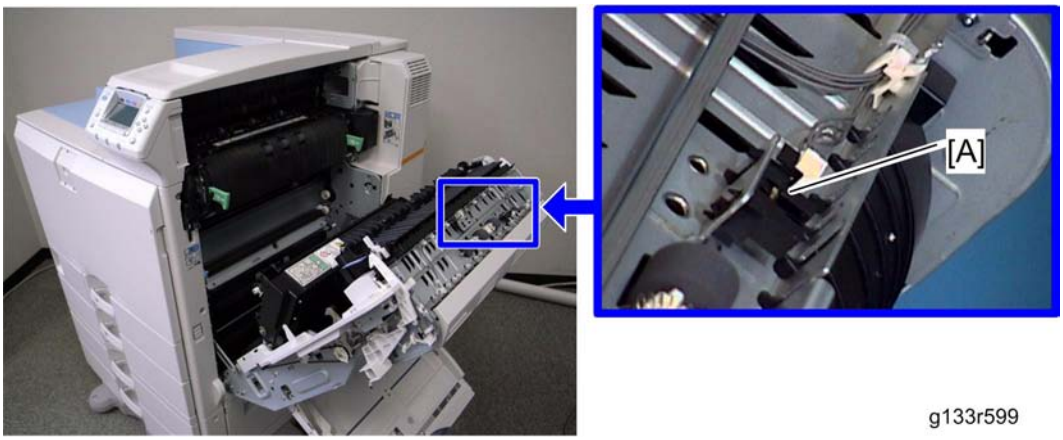


9. Wire [A] (x 1)
10. Duplex unit [B] (x 1, Stud screw x 1, x 1, x 4, ground cable x 1)

4.12.2 DUPLEX DOOR SENSOR

1. Right door cover (☛Section: Duplex Unit)
2. Open the right door.

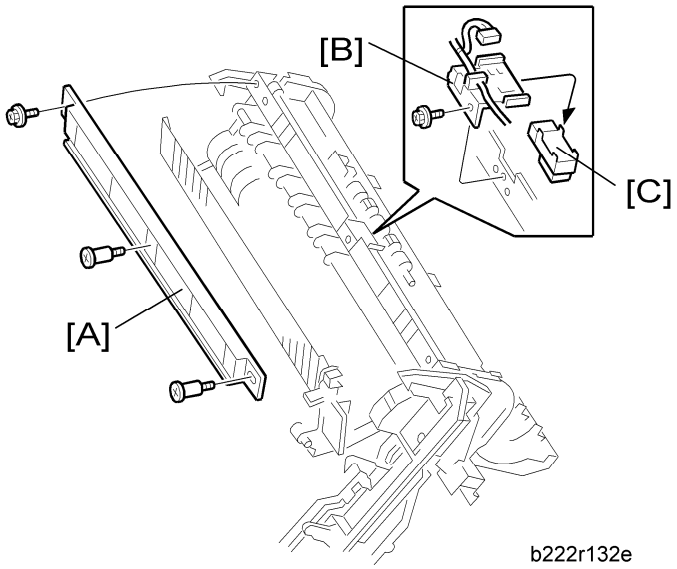
Duplex Unit



3. Duplex door sensor [A] (x 1, hook)

4.12.3 DUPLEX ENTRANCE SENSOR

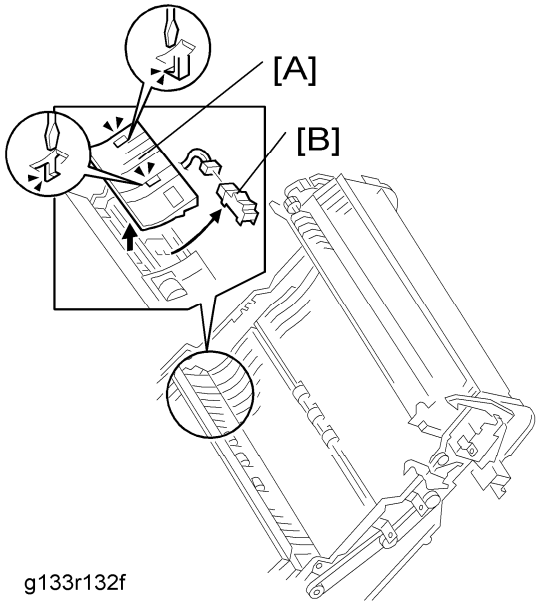
1. Right door cover (☛Section: Duplex Unit)
2. Open the right door.



3. Duplex entrance guide [A] (x1, stepped screw x 2)
4. Duplex entrance sensor bracket [B] (x 1, x 1)
5. Duplex entrance sensor [C] (hook)

4.12.4 DUPLEX EXIT SENSOR

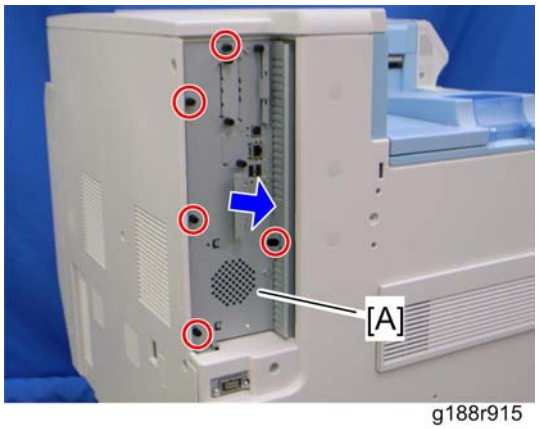
1. Paper transfer unit (☛Section:Paper Transfer Unit)



2. Guide plate [A] (two hooks)
3. Duplex exit sensor [B] (x 1, hook)

4.13 ELECTRICAL COMPONENTS

4.13.1 CONTROLLER UNIT

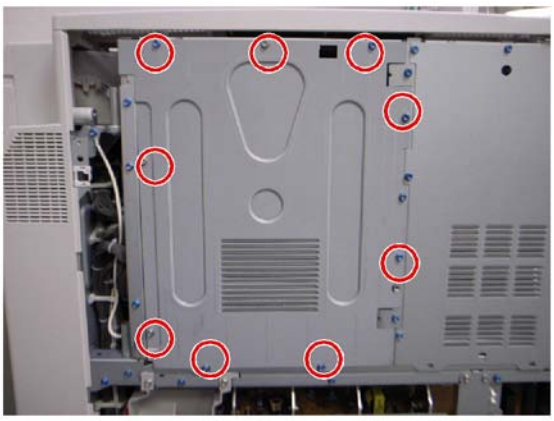


g188r915

1. Controller unit [A] (knob screw x 5)

4.13.2 CONTROLLER BOX RIGHT COVER

1. Rear cover (☛Section: Rear Cover)



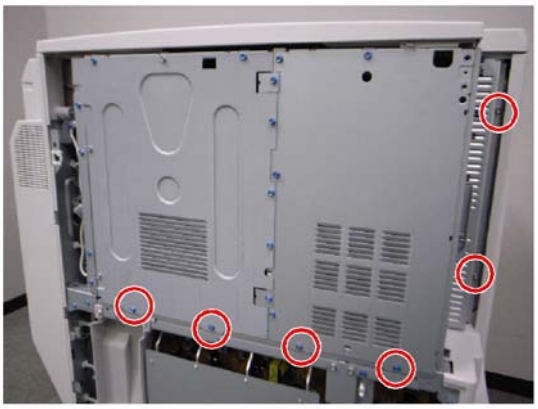
g133r916

2. Controller box right cover [A] (x 9)

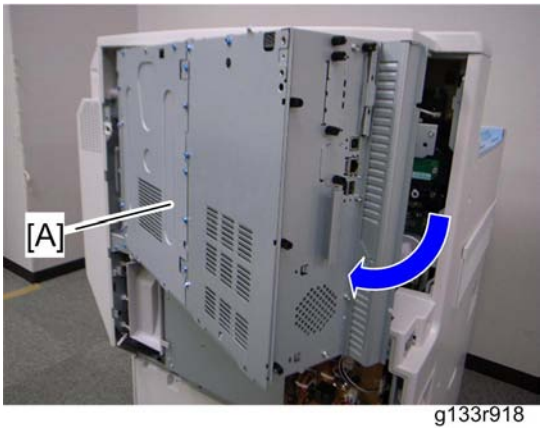
4.13.3 CONTROLLER BOX

When opening the controller box

1. Rear cover (☛Section: Rear Cover)


g133r917

2. Remove six screws (red circles).

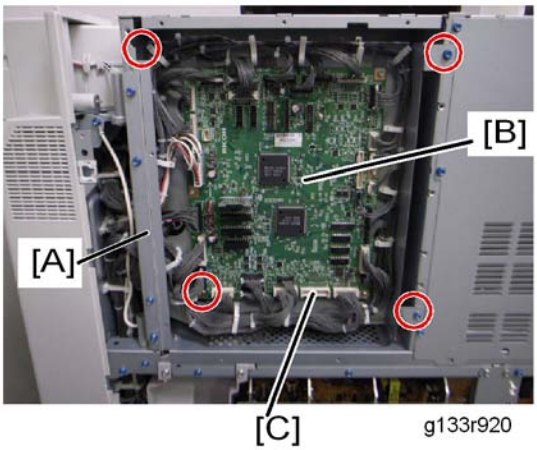


g133r918

3. Open the controller box [A].

When removing the controller box

1. Rear cover (☛Section: Rear Cover)
2. Right rear cover (☛Section: Right Rear Cover)
3. Controller box right cover (☛Section: Controller Box Right Cover)

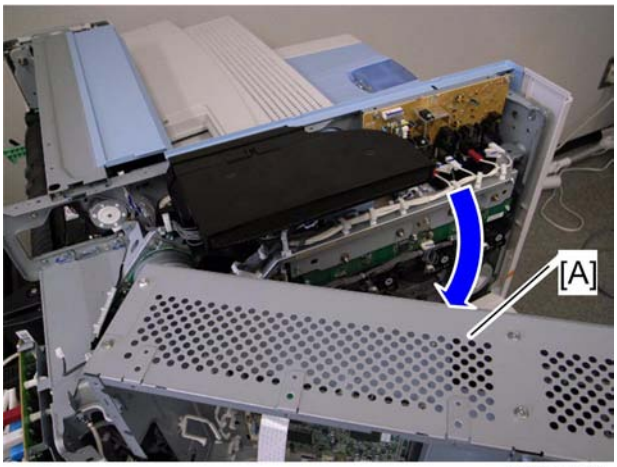


g133r920

4. Remove the controller box stay [A] (x 4).

Electrical Components

5. Take the IOB bracket [B] aside (x 4, all s, flat cable [C] x 1).
6. Release all clamps on the controller box frame.
7. Disconnect all connectors on the BCU.

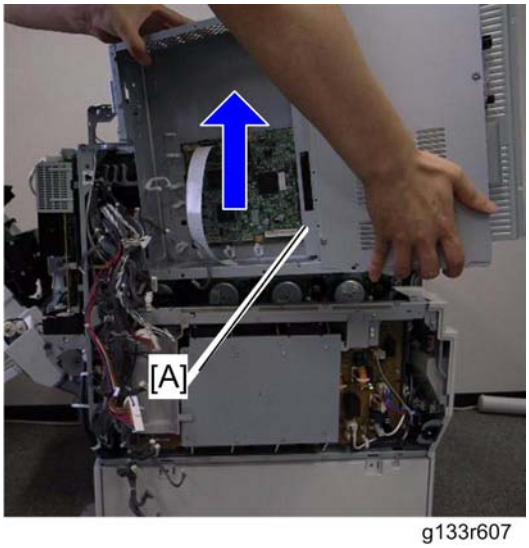


g133r712

8. Open the controller box [A] as shown.

Important

- If you do not open the controller box, the second fan duct prevents you from removing the controller box.

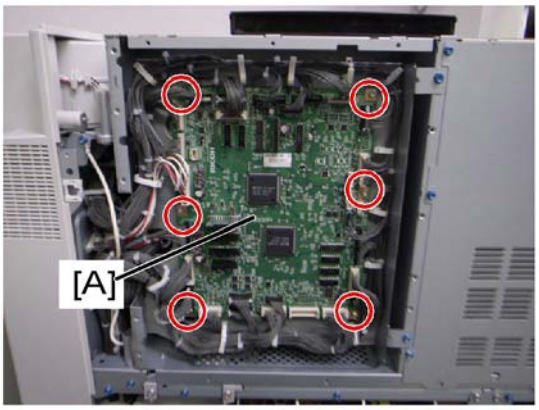


g133r607

9. Lift up the controller box [A], and then remove it.

4.13.4 IOB (IN/OUT BOARD)

1. Rear cover (☛Section: Rear Cover)
2. Controller box right cover (☛Section: Controller Box Right Cover)

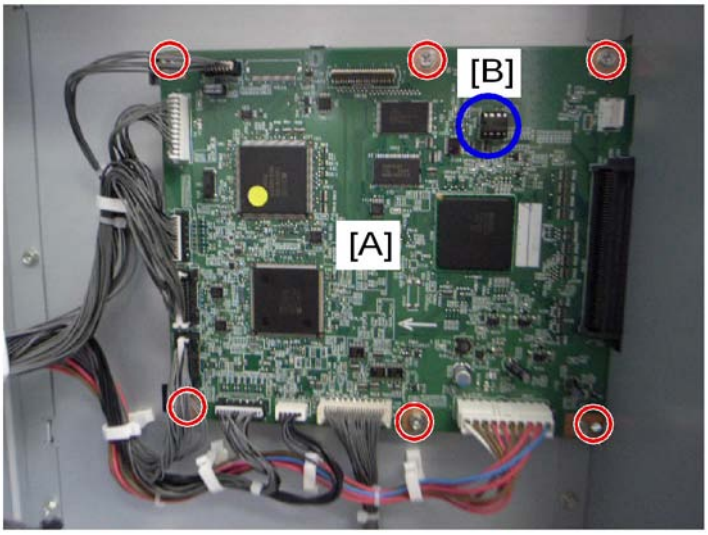


g133r921

3. IOB [A] (x 6, All s, flat cable x 1)

4.13.5 BCU

1. Rear cover (☛Section: Rear Cover)
2. Controller box right cover (☛Section: Controller Box Right Cover)
3. Disconnect the harness (CN225) on the IOB board.
4. Move the IOB bracket aside (☛Section: Controller Box)



g133r924

5. BCU [A] (x 5, x All)

Note

- Make sure the NVRAM is correctly installed on the BCU. Insert the NVRAM in the NVRAM slot with the "half-moon" pointing [B] to the upward side.

When installing the new BCU

1. Remove the NVRAM from the old BCU.

2. Install the NVRAM on the new BCU after you replace the BCU.
3. Reassemble the machine.
4. Turn on the main power of the machine.
5. "SC995-01" occurs.
6. Enter the serial number with SP5811-004.
7. Turn the main power of the machine off and on.

Note

- Make sure you print out the SMC reports (“SP Mode Data” and “Logging Data”) before you replace the NVRAM.

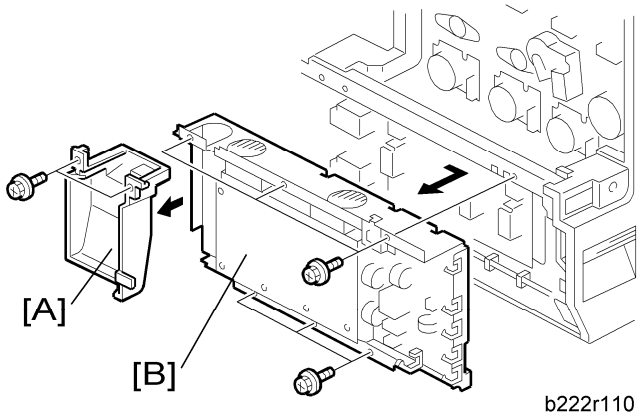
CAUTION

- Keep NVRAM away from any objects that can cause static electricity. Static electricity can damage NVRAM data.

4.13.6 PSU

PSU bracket

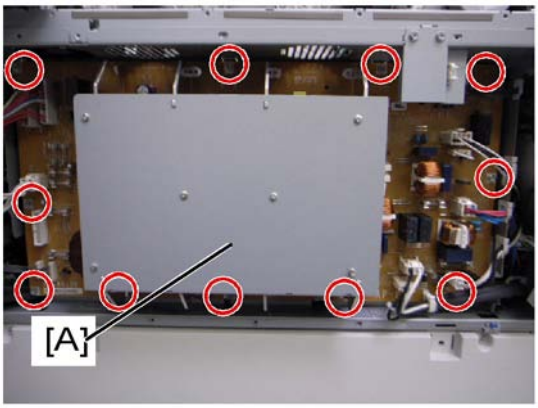
1. Rear cover (☛Section: Rear Cover)



2. Ventilation duct [A] (x 2)
3. PSU bracket [B] (x 6, all s, all s)

PSU board

1. Rear cover (☛Section: Rear Cover)
2. Ventilation duct (☛Section: PSU)

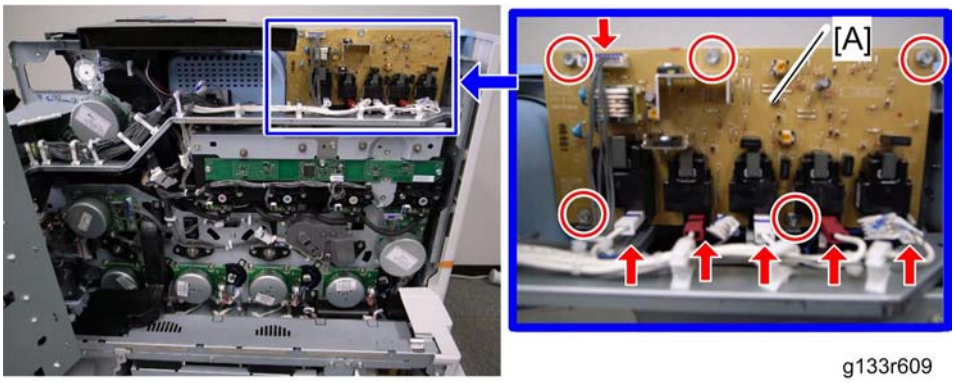


g133r927

3. PSU board [A] (x 11, all s, all s)

4.13.7 ITB POWER SUPPLY BOARD

1. Rear cover (☛Section: Rear Cover)
2. Open the controller box (☛Section: Controller Box)
3. Top right cover (☛Section: Top Right and Rear Cover)
4. Top rear cover (☛Section: Top Right and Rear Cover)



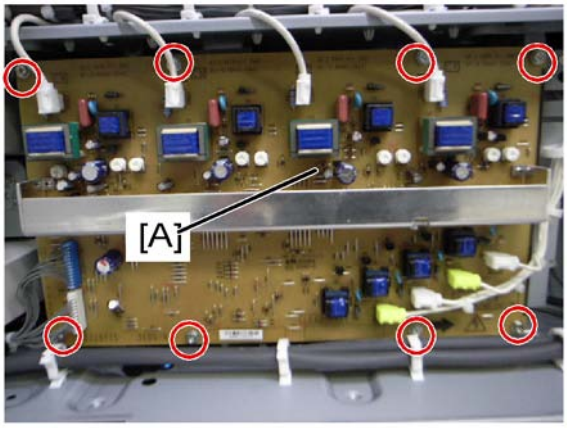
g133r609

5. ITB power supply board [A] (x 5, x 6, x 3)

4.13.8 HIGH VOLTAGE SUPPLY BOARD

1. Rear cover (☛Section: Rear Cover)
2. PSU bracket (☛Section:PSU Bracket4-108)

Electrical Components

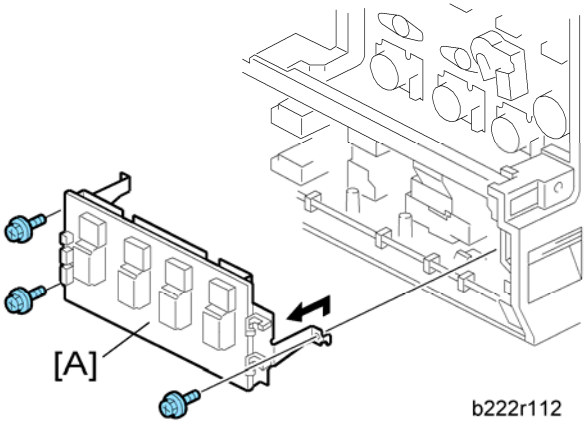


g133r928

3. High voltage supply board [A] (x 8, All s, x 2)

4.13.9 HIGH VOLTAGE SUPPLY BOARD BRACKET

1. Rear cover (☛Section: Rear Cover)
2. PSU bracket (☛Section: PSU Bracket)

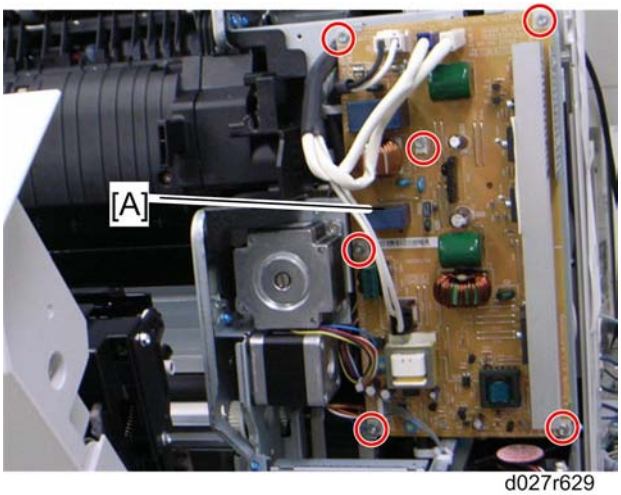


b222r112

3. High voltage supply board bracket [A] (x 3, All s, x 2)

4.13.10 IH INVERTER

1. Rear cover (☛Section: Rear Cover)
2. Right rear cover (☛Section: Right Rear Cover)
3. Fusing duct (☛Section: Fusing Fan)

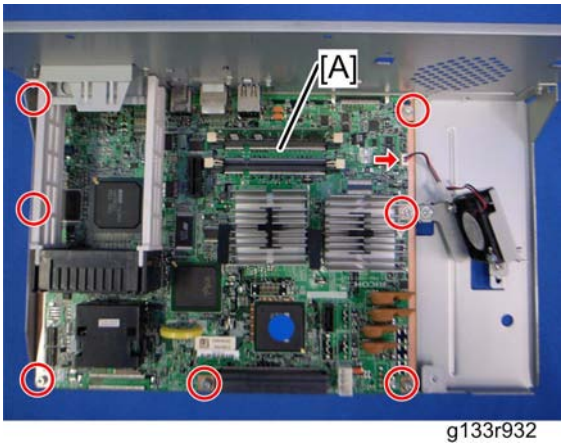


d027r629

4. IH inverter [A] (x 6, x 5)

4.13.11 CONTROLLER BOARD

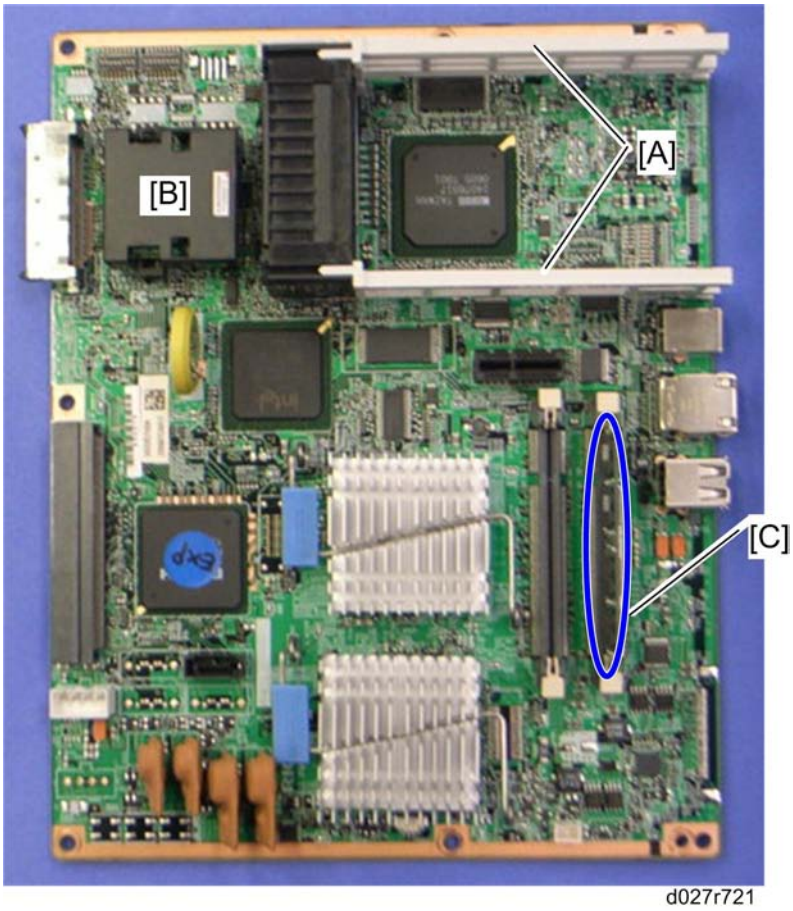
1. Controller unit (☛Section: Controller Unit)



g133r932

2. Controller board [A] (x 7, x 1)

Electrical Components



3. Interface rails [A], NV-RAM [B], RAM-DIMM [C]

When installing the new controller board

1. Remove the NVRAM from the old controller board.
2. Install the NVRAM on the new controller board after you replace the controller board.
3. Reassemble the machine.
4. Turn on the main power of the machine.

Note

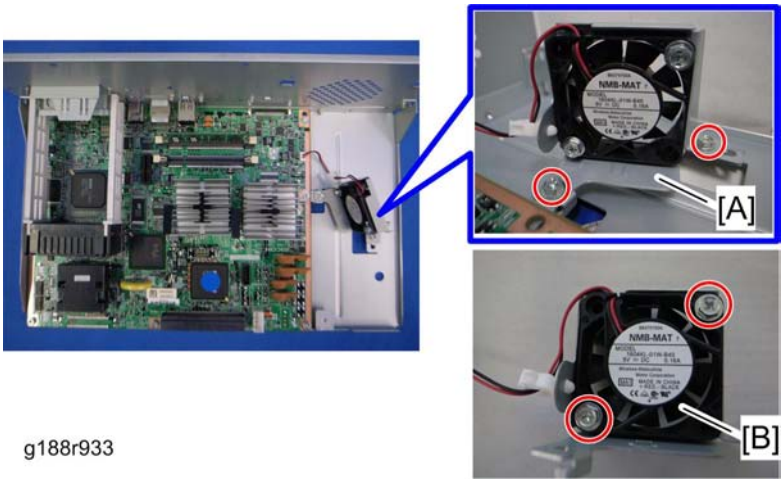
- Make sure you print out the SMC reports (“SP Mode Data” and “Logging Data”) before you replace the NVRAM.
- Re-install the NetWare option if new NVRAM is installed when replacing the controller board.

⚠CAUTION

- Keep NVRAMs away from any objects that can cause static electricity. Static electricity can damage NVRAM data.
- Make sure the NVRAM is correctly installed on the controller board.

4.13.12 HDD FAN

1. Controller unit (☛Section: Controller Unit)



g188r933

2. HDD fan bracket [A] (x 2)
3. HDD fan [B] (x 2, x 1)

When installing the HDD fan

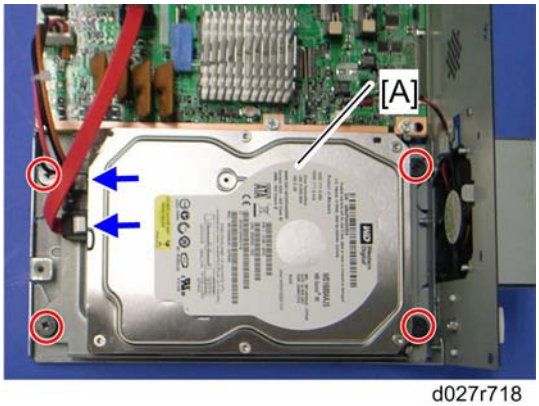
Make sure that the HDD fan is installed with its decal facing the right side of the machine.

4.13.13 HDD

Note

- The HDD is an option for G188 model.
- The HDD is a standard for G189 model.

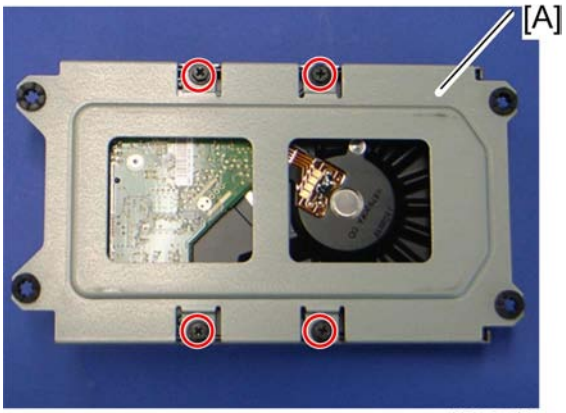
1. Controller unit (☛Section: Controller Unit)



d027r718

2. Remove the HDD [A] with the bracket (x 4, x 2).

Electrical Components



3. Remove the HDD from the bracket [A] (x 4).

Disposal of HDD Units

- Never remove an HDD unit from the work site without the consent of the client.
- If the customer has any concerns about the security of any information on the HDD, the HDD must remain with the customer for disposal or safe keeping.
- The HDD may contain proprietary or classified (Confidential, Secret) information. Specifically, the HDD contains document server documents and data stored in temporary files created automatically during copy job sorting and jam recovery. Such data is stored on the HDD in a special format so it cannot normally be read but can be recovered with illegal methods.

Reinstallation

If the customer is using the DataOverwriteSecurity feature, the DOS function must be set up again. For more, see "Hardware Guide" for this machine.

- If the customer is using the optional Browser Unit, this unit must be installed again. For more, see Section: Controller Options.

4.13.14 NVRAM REPLACEMENT PROCEDURE

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.
7. Turn the machine off and on.
8. Do the process control self-check.
9. Re-install the NetWare option if it has been installed.

4.14 USING DIP SWITCHES

4.14.1 CONTROLLER BOARD

DIP SW No.	OFF	ON
1	Boot-up from Flash Memory	Boot-up from SD card
2 to 8	Factory Use Only: Do not change the switch settings.	

4.14.2 BCU BOARD

DIP SW No.	OFF	ON
1 and 2	Factory Use Only: Do not change the switch settings.	

SYSTEM MAINTENANCE REFERENCE

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
1 ~ 18	01/18/2010	Added Entering Service Mode to Service Tables
12 13	05/21/2009	Updated NVRAM Data Upload/Download (Orig pgs 11 and 12)

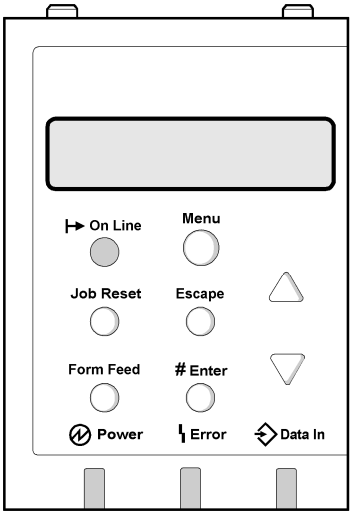
5. SYSTEM MAINTENANCE REFERENCE

5.1 SERVICE PROGRAM MODE

⚠CAUTION

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

⇒ *Entering the Service Mode*



g094s509

There are two ways to enter the service mode.

Method 1: Fast Start (Power Off)

Use this method to open the SP mode when you are turning the machine's power on. This method bypasses the warm-up time.

1. Hold down [On Line] and [Escape] together, then turn the machine on.
2. Hold down both keys until "1. Service Menu" appears on the display.

Method 2: Normal Start (Power On)

Use this method to enter the SP mode with the machine on.

3. With the machine on, press [▼] [▲] together and hold them down for about 5 sec.
4. Press [Enter]. "1. Service Menu" appears on the screen.

Setting a Service Program

5. Enter the service program mode as explained above.
6. The setting that appears on the display is the current setting.
   Select the required setting using the “Up/Down arrow” keys,
7. Press the [Enter] key. The previous value remains if the [Enter] key is not pressed.

Exiting Service Mode

Select “3. End” from the service mode main menu, then press the “Enter” key.

5.1.2 SP TABLES

See "Appendices" for the following information:

- Service SP Tables
- Engine SP Tables

5.1.3 SERVICE MODE OPERATION

Note

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

Note

- If you switch the machine off, any jobs stored on the hard disk using the sample print and protected print features will be deleted.
- Check first with the user tools to see if there are any jobs stored with these features (Menu key - Sample Print, or Protected Print).
- The machine automatically goes off line when you enter the service mode.

Accessing the Required Program

Use the “Up/Down arrow” keys to scroll through the menu listing.

1. Service: Controller service modes
2. Engine: Engine service modes
3. End: Exit service mode

To select an item, press the “OK” key. Then the sub-menu appears.

Scroll through the sub menu items using the “◄/►” keys.

To go back to a higher level, press the “Escape” key.

Inputting a Value or Setting for a Service Program

Enter the required program mode as explained above. The setting appearing on the display is the current setting.

Select the required setting using the "◄/►" keys, then press the "OK" key. The previous value remains if the "OK" key is not pressed.

Exiting Service Mode

Select "End" from the service mode main menu, then press the "OK" key.

Note

- To make the settings effective, turn the main switch off and on after exiting service mode.

5.1.4 REMARKS

Display on the Control Panel Screen

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

<table>
<tr><td colspan="2">Paper Weight
Thin paper: 60 g/m^2
Plain Paper: 60-90 g/m^2, 16-24lb.
Middle Thick: 91-105 g/m^2, 24-28lb.
Thick Paper 1: 106-169 g/m^2, 28.5-44.9lb.
Thick Paper 2: 170-220 g/m^2, 45-58lb.
Thick Paper 3: 221-256 g/m^2, 59lb-68lb</td></tr>
<tr><td>Paper Type
N: Normal paper
MTH: Middle thick paper
TH: Thick paper</td><td>Paper Feed Station
P: Paper tray (numbered from 1 to 5, top to bottom)
B: By-pass table</td></tr>
<tr><td colspan="2">Color Mode [Color]
[K]: Black in B&W mode
[Y], [M], or [C]: Yellow, Magenta, or Cyan in Full Color mode
[YMC]: Only for Yellow, Magenta, and Cyan
[FC]: Full Color mode</td></tr>
</table>

[FC, K], [FC, Y], [FC, M], or [FC, C]: Black, Yellow, Magenta, or Cyan in full color mode	
Print Mode S: Simplex D: Duplex	**Process Speed** L: Low speed (77 mm/s) M: Middle speed (154 mm/s) H: High speed (P2d: 230, P2c 205 mm/s)

Others

The following symbols are used in the SP mode tables.

FA: Factory setting

(Data may be adjusted from the default setting at the factory. Refer to the factory setting sheets enclosed. You can find it under the jammed paper removal decal.)

DFU: Design/Factory Use only

Do not touch these SP modes in the field.

A sharp (#) to the right hand side of the mode number column means that the main switch must be turned off and on to effect the setting change.

An asterisk (*) to the right hand side of the mode number column means that this mode is stored in the NVRAM. If you do a RAM clear, this SP mode will be reset to the default value.

“ENG” and “CTL” show which NVRAM contains the data.

- ENG: NVRAM on the BCU board
- CTL: NVRAM on the controller board
- NV: NVRAM on the NVRAM expansion board (user account enhancement kit)

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

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

Note

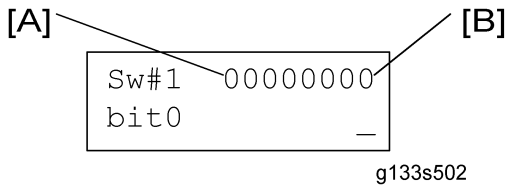
- If “Alphanumeric” is written to the right of the bracket as shown above, the setting of the SP mode shows on the screen using alphanumeric characters instead of only numbers. However, the settings in the bracket in the SP mode table are explained by using only the numbers.

SSP: This denotes a “Special Service Program” mode setting.

5.1.5 BIT SWITCH PROGRAMMING

Do not change the bit switches unless you are told to do this by the manufacturer.

1. Start the SP mode. Select the “Service” menu with "▲/▼" keys.
2. Press the "OK" key three times.
3. To select a bit switch, press the “◀/▶” keys.
4. Push the OK key.
5. Set the value with these keys:
   - [Left] [Right]: Moves the cursor to one of the adjacent bits.
   - [Up] [Down]: Changes a bit between "0" and "1".
   - [Escape]: Goes out of the program without saving changes.
   - [OK]: Goes out of the program and saves changes.



g133s502

6. Push the "Escape" key one or more times until the menu “SP mode (Service)” is shown.
7. Select “End” and push the OK key.

5.2 FIRMWARE UPDATE

To update the firmware for this machine, you must have the new version of the firmware downloaded onto an SD (Secure Digital) Card. The SD Card is inserted into SD Card Slot 2 on the left side of the controller box.

5.2.1 BEFORE YOU BEGIN

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

- Always switch the machine off before you insert an SD card. Never insert the SD card into the slot with the power on.
- Do not remove the SD card from the service slot after the power has been switched on.
- Never switch the machine off while the firmware is downloading from the SD card.
- Keep SD cards in a safe location where they are not exposed to high temperature, high humidity, or exposure to direct sunlight.
- Always handle SD cards with care. Do not bend or scratch them. Do not let the SD card get exposed to shock or vibration.
- Make sure that the write protection of an SD card is unlocked when you download an application to it. If not, downloading fails and a download error (e.g. Error Code 44) occurs during a firmware upgrade.

Keep the following points in mind when you use the firmware update software:

- “Upload” means to send data from the machine to the SD card. “Download” means to send data from the SD card to the machine.
- To select an item on the LCD, press the appropriate key on the operation panel.
- Make sure that the machine is disconnected from the network to prevent a print job for arriving while the firmware update is in progress before you start the firmware update procedure.

5.2.2 UPDATING FIRMWARE

File Arrangement

How the Program Works:

The firmware-update program for this machine searches the folder romdata for necessary firmware. When you save the firmware in an SD card, make the folder ‘romdata’. You must not make the folder ‘romdata’ in another folder.

Note

- Do not make another firmware-update program folder in the folder ‘romdata’.

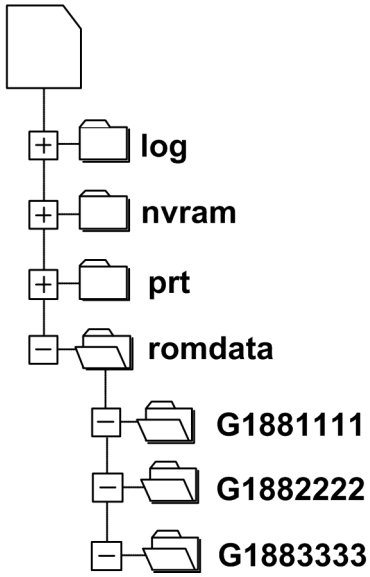
- Otherwise, it may cause a malfunction for the firmware updating. You just keep only one firmware update program folder in the folder 'romdata'.

The firmware program contains the file information. Before downloading the firmware from an SD card, the firmware-update program reads the file information. The firmware is downloaded only when the file information is correct.

Note

- The file information can identify the firmware, but this information does not guarantee that the data is not corrupted.

Example



g188s901

When you save the firmware, we recommend that you arrange folders and files as follows:

- In the folder romdata, make only one folder and use this folder for one model. Use the machine code as the name of this folder.
- When you save some files other than firmware, make a new folder outside romdata. Save the files in this folder. Do not save any file outside the folders. (The diagram shows an example. Three folders, log, nvramdata, and prt, are outside romdata. These folders can store debug logs, NVRAM data, and captured files respectively.)

Update Procedure

1. Turn off the main power switch.
2. Disconnect the printer from the network.
3. Remove the slot cover from the slot 2 (🔩 x 1).

Note

- Do not use the slot 1. The slot 1 is for customer use.

4. Turn the SD card face to the rear side of the printer, and insert it into the slot 2.

5. Slowly push the SD card into the slot until it clicks.
6. Make sure that the SD card is locked in place.

Note

- To remove the SD card, push it in until it clicks, and release it slowly. The slot pushes out the SD card.

7. Turn on the main power switch.
8. Wait until a firmware name is shown on the display (about 1 minute).

Note

- The firmware name is read from inside the firmware. The firmware name is not changed even if you change the file name on your PC.

9. If the necessary firmware name is shown on the display, check the firmware version with the left-arrow or right-arrow keys. Pressing the left or right-arrow key shows a firmware name, firmware version and serial number in order.
10. To use a different firmware, push the up-arrow key or the down-arrow key to find the necessary firmware.

Note

- Controller, engine and operation panel firmware cannot be updated at the same time. It is recommended to update firmware modules one by one.

11. To select the firmware, push the OK key. Make sure that the selected firmware is high-lighted.
12. If you update more than one firmware program at the same time, find each of them and select each of them. Make sure that the selected firmware is high-lighted.

Note

- If the customer has used all of three slots, you have to keep an empty slot for this procedure. Ask the customer to temporarily remove the SD card in the slot 2.

13. To start firmware update, push the "UpDate" key. While each firmware is downloaded, the underscores on the operation panel are replaced by stars.
14. Wait until the message “Update done” is shown.
15. Turn off the main power switch.
16. Remove the SD card from the slot 2.
17. Attach the slot cover to the SD card slot 2 (☞ x 1).
18. Connect the printer to the network physically.
19. Turn on the main power switch.
20. Print the Configuration Page to check that the every firmware is correctly updated: Menu > List/Test Print > Config. Page

Error Handling

An error code is shown if an error occurs during the download. Error codes have the letter "E" and a number. If an error occurs, the firmware is not correctly downloaded; see the error code table (☛ Handling Firmware Update Errors) and do the necessary steps. After this, download the firmware again.

Power Failure

If firmware update is interrupted by power failure, the firmware is not correctly downloaded. In this condition, machine operation is not guaranteed. You have to download the firmware again.

5.2.3 HANDLING FIRMWARE UPDATE ERRORS

An error message shows in the first line if an error occurs during a download. The error code consists of the letter "E" and a number ("E20", for example).

Error Message Table

Code	Meaning	Solution
20	Cannot map logical address	Make sure the SD card is inserted correctly.
21	Cannot access memory	HDD connection incorrect or replace hard disks.
22	Cannot decompress compressed data	Incorrect ROM data on the SD card, or data is corrupted.
23	Error occurred when ROM update program started	Controller program abnormal. If the second attempt fails, replace controller board.
24	SD card access error	Make sure SD card inserted correctly, or use another SD card.
30	No HDD available for stamp data download	HDD connection incorrect or replace hard disks.
31	Data incorrect for continuous download	Insert the SD card with the remaining data required for the download, the re-start the procedure.
32	Data incorrect after download	Execute the recovery procedure for the intended

	interrupted	module download, then repeat the installation procedure.
33	Incorrect SD card version	Incorrect ROM data on the SD card, or data is corrupted.
34	Module mismatch - Correct module is not on the SD card)	SD update data is incorrect. Acquire 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 incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.
36	Cannot write module – Cause other than E34, E35	SD update data is incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.
40	Engine module download failed	Replace the update data for the module on the SD card and try again, or replace the EGB board.
42	Operation panel module download failed	Replace the update data for the module on the SD card and try again, or replace the LCDC.
43	Stamp data module download failed	Replace the update data for the module on the SD card and try again, or replace the hard disks.
44	Controller module download failed	Replace the update data for the module on the SD card and tray again, or replace controller board.
50	Electronic confirmation check failed	SD update data is incorrect. The data on the SD card is for another machine. Acquire correct update data then install again.

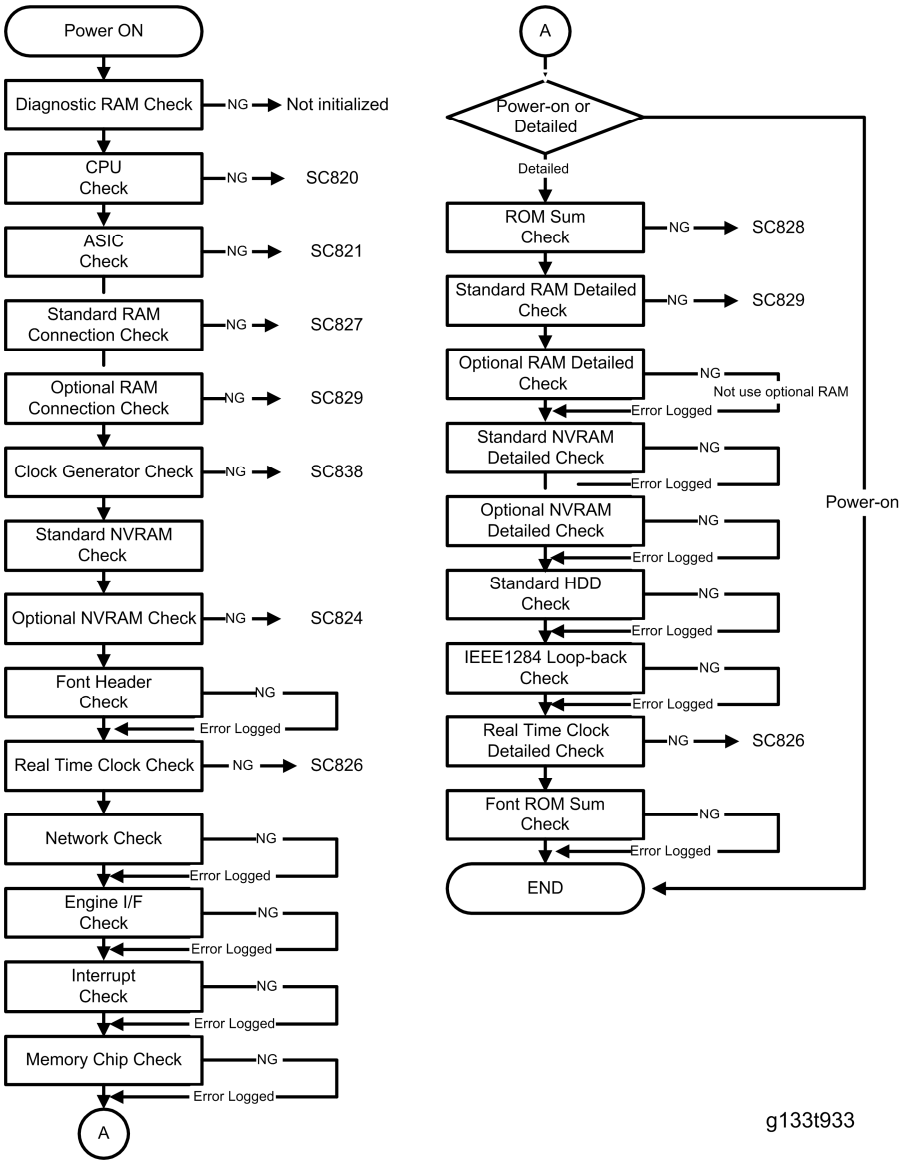
5.3 CONTROLLER SELF-DIAGNOSTICS

5.3.1 OVERVIEW

There are two types of self-diagnostics for the controller.

1. Power-on self-diagnostics: The machine automatically starts the self-diagnostics just after the power has been turned on.
2. SC detection: The machine automatically detects SC conditions at power-on or during operation.

The following shows the workflow of the power-on and detailed self-diagnostics.



5.4 NVRAM DATA UPLOAD/DOWNLOAD

The content of the NVRAM can be uploaded to and downloaded from an SD card.

⇒ **IMPORTANT NOTE:**

The following data stored in the NVRAM will **not** be saved to the SD Card when you perform an NVRAM data upload (SP5824).

- Total Counter value
- C/O, P/O Counter values
- Duplex, A3/DLT/Over 420 mm, Stapler, and Scanner Counter values
- Engine SP Data

Therefore, whenever you perform an NVRAM Upload/Download, make sure to print out the SP Data List **before** you perform SP5801-001 (Memory Clear: All Clear) or SP5801-002 (Memory Clear: Engine).

NVRAM Upload/Download Procedure:

1) Print out the SP Data List from SP5990-002.
2) Perform the NVRAM data upload (To the SD Card) according to the procedure in the Service Manual.
3) Perform the Memory Clear (SP5801-001 or -002)
4) Perform the NVRAM Data Download (from the SD Card) according to the procedure in the Service Manual.
5) Manually input the data listed above.

⚠CAUTION

- Turn off the main power switch before you insert or remove an SD card. Make sure that the controller and the BCU are correctly connected.

5.4.1 UPLOADING NVRAM DATA

Copy the data from the NVRAM to an SD card (referred to as “to upload NVRAM data” in this section) before you replace the NVRAM. If you cannot upload NVRAM data, manually input the necessary settings referring to the factory settings sheet stored inside the front door of the mainframe after replacing the NVRAM.

1. Prepare a formatted SD card.
2. Make sure that the write-protection on the SD card is off.
3. Start the SP mode.
4. Select SP5990-001 (ALL (Data List)).
5. Do the SP.
6. See if the SMC Report is correctly output.

Note

- You may need the SMC Report when the machine did not complete an NVRAM data upload or download correctly.

7. Go out of the SP mode.
8. Turn off the main power switch.
9. Insert an SD card into the SD card slot 2.
10. Turn on the main power switch.
11. Start the SP mode.
12. Select SP5-824-001(NVRAM Upload).
13. Push the "OK" key. The upload starts.

- When uploading ends correctly, the following file is made: NVRAM¥serial_number.NV where “NVRAM” is the folder name in the SD card and “serial_number.NV” is the file name with the extension “.NV”. The serial number of the printer is used as the file name. For example, if the serial number is G1880017, the file name is “G1880017.NV”.

14. Go out of the SP mode.
15. Turn off the main power switch.
16. Remove the SD card from the SD card slot 2.
17. Install the SD slot cover to the SD card slot 2.
18. Mark the SD card with, for example, the machine code. You need this SD card when you download NVRAM data.

Note

- One SD card can store the NVRAM data from two or more machines.

5.4.2 DOWNLOADING NVRAM DATA

Copy the data from the SD card to the NVRAM (referred to as “to download NVRAM data” in this section) after you replace the NVRAM. If you cannot download NVRAM data, manually input the necessary settings referring to the factory settings sheet stored inside the front door of the mainframe.

1. Make sure that the main power switch is off. If it is on, turn it off.
2. Make sure that you have the correct SD card that contains the necessary NVRAM data.
3. Insert the SD card into the SD card slot 2.
4. Turn on the main power switch.
5. Start the SP mode.
6. Select SP5-825-001 (NVRAM Download).
7. Push the "OK" key. The download starts.

Note

- The machine cannot do the download if the file name in the SD card is different from the serial number of the printer.

8. Go out of the SP mode.
9. Turn off the main power switch.
10. Remove the SD card from the SD card slot 2.
11. Install the SD slot cover to the SD card slot 2.
12. Turn on the main power switch.
13. Check that the NVRAM data is correctly downloaded.

Important

- This procedure does not download the following data to the NVRAM:
- Total Count
- Serial Number

5.5 USING THE DEBUG LOG

This machine provides a Save Debug Log feature that allows the Customer Engineer to save and retrieve error information for analysis.

Every time an error occurs, debug information is recorded in volatile memory. But this information is lost when the machine is switched off and on.

To capture this debug information, the Save Debug Log feature provides two main features:

- Switching on the debug feature so error information is saved directly to the HDD for later retrieval.
- Copying the error information from the HDD to an SD card.

Do the following procedure below to set up the machine so the error information is saved automatically to the HDD when a user has problems with the machine. Then ask the user to reproduce the problem.

5.5.1 SWITCHING ON AND SETTING UP SAVE DEBUG LOG

The debug information cannot be saved until the “Save Debug Log” function has been switched on and a target has been selected.

1. Enter the SP mode and switch the Save Debug Log feature on.
   - On the LCD panel, open SP5857.
2. Under “5857 Save Debug Log”, select “1” with the ▲ or ▼ key.
3. On the control panel keypad, press “1”. Then press "OK" key. This switches the Save Debug Log feature on.

   Note

   - The default setting is “0” (OFF). This feature must be switched on in order for the debug information to be saved.
4. Select the target destination where the debug information will be saved. Under “5857 Save Debug Log”, select “2 Target”, enter “2” with the operation panel key with the ▲ or ▼ key to select the hard disk as the target destination. Then press "OK".

   Note

   - Select “3 SD Card” to save the debug information directly to the SD card if it is inserted in the service slot.
5. Now select “SP5858” and specify the events that you want to record in the debug log. SP5858 (Debug Save When) provides the following items for selection.

1	Engine SC Error	Saves data when an engine-related SC code is generated.
2	Controller SC Error	Saves debug data when a controller-related SC Code is generated.
3	Any SC Error	Saves data only for the SC code that you specify by entering code number.
4	Jam	Saves data for jams.

Note

- More than one event can be selected.

- Example 1: To Select Items 1, 2, 4

Push the ▲ or ▼ key to select the appropriate items(s). Press the “OK” key for each selection. This example shows “Engine SC Error” selected.

- Example 2: To Specify an SC Code

Push the ▲ or ▼ key to select “3 Any SC Error”, enter the 3-digit SC code number with the ▲ or ▼ key. Then press"OK" key. This example shows an entry for SC670.

Note

- For details about SC code numbers, please refer to the SC tables in "Appendices".

6. Select one or more memory modules for reading and recording debug information.
   Select “SP5859”.
   Under “5859” press the necessary key item for the module that you want to record.
   Enter the appropriate 4-digit number with the ▲ or ▼ key. Then press"OK".

Note

- Refer to the two tables below for the 4-digit numbers to enter for each key.

The following keys can be set with the corresponding numbers. (The initials in parentheses indicate the names of the modules.)

4-Digit Entries for Keys 1 to 10

Key No.	Printer
1	2222 (SCS)
2	14000 (SRM)

3	256 (IMH)
4	1000 (ECS)
5	1025 (MCS)
6	4400 (GPS)
7	4500 (PDL)
8	4600 (GPS-PM)
9	2000 (NCS)
10	2224 (BCU)

Note

- The default settings for Keys 1 to 10 are all zero ("0").

Key to Acronyms

Acronym	Meaning	Acronym	Meaning
ECS	Engine Control Service	NFA	Net File Application
GPS	GW Print Service	PDL	Printer Design Language
GSP-PM	GW Print Service – Print Module	PTS	Print Server
IMH	Image Memory Handler	SCS	System Control Service
MCS	Memory Control Service	SRM	System Resource Management
NCS	Network Control Service	WebDB	Web Document Box (Document Server)

The machine is now set to record the debugging information automatically on the HDD (the target selected with SP5857-002) for the events that you selected with SP5858 and the memory modules selected with SP5859.

Please keep the following important points in mind when you do 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.

5.5.2 RETRIEVING THE DEBUG LOG FROM THE HDD

Retrieve the debug log by copying it from the hard disk to an SD card.

1. Insert the SD card into the service slot of the printer.
2. Enter the SP mode and execute SP5857-009 (Copy HDD to SD Card (Latest 4 MB)) to write the debugging data to the SD card.
3. Use a card reader to copy the file and send it for analysis to your local Ricoh representative by email. You can also send the SD card by regular mail if you want.

5.5.3 DEBUG LOG CODES

SP5857-015 Copy SD Card-to-SD Card: Any Desired Key

This SP copies the log on an SD card (the file that contains the information written directly from shared memory) to a log specified by key number. The copy operation is executed in the log directory of the SD card inserted in the same slot. (This function does not copy from one slot to another.) Each SD card can hold up to 4 MB of file data. Unique file names are created for the data during the copy operation to prevent overwriting files of the same name. This means that log data from more than one machine can be copied onto the same SC card. This command does not execute if there is no log on the HDD for the name of the specified key.

SP5857-016 Create a File on HDD to Store a Log

This SP creates a 32 MB file to store a log on the HDD. However, this is not a completely empty file. The created file will hold the number “2225” as the SCS key number and other non-volatile information. Even if this SP is not executed, a file is created on the HDD when the first log is stored on the HDD (it takes some time to complete this operation). 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 need to be created. To create a new log file, do SP5857-011 to delete the debug log data from the HDD. Then do SP5857-016.

SP5857-017 Create a File on SD Card to Store a Log

This SP creates a 4 MB file to store a log on an SD card. However, this is not a completely empty file. The created file will hold the number “2225” as the SCS key number and other non-volatile information. Even if this SP is not executed, a file is created on the SD card when the first log is stored on the SD card (it takes some time to complete this operation). 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, do SP5857-012 to delete the debug log data from the SD card. Then do SP5857-017.

TROUBLESHOOTING

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

6. TROUBLESHOOTING

6.1 SERVICE CALL CONDITIONS

See the "Appendices" for the following information:

- SC Tables

6.2 PROCESS CONTROL ERROR CONDITIONS

See the "Appendices" for the following information:

- Developer Initialization Result
- Process Control Self-Check Result
- Line Position Adjustment Result

6.3 TROUBLESHOOTING GUIDE

See the "Appendices" for the following information:

- Image Quality
- Line Position Adjustment

6.3.1 IMAGE PROBLEMS

Stain on the outputs

If a stain appears at the edge of the output, do the following procedure.

1. Execute the fusing cleaning mode with SP1123-002.

   Note

   - It takes 160 seconds to complete the fusing cleaning mode.
2. Print a sample page, and then check if a stain appears on the output.

6.4 JAM DETECTION

See the "Appendices" for the following information:

- Paper Jam Display
- Jam Codes and Display Codes

6.5 ELECTRICAL COMPONENT DEFECTS

See the "Appendices" for the following information:

- Sensors
- Blown Fuse Conditions

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SERVICE MANUAL APPENDICES

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TABLE OF CONTENTS

APPENDIX:
SPECIFICATIONS

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

1. APPENDIX: SPECIFICATIONS

1.1 GENERAL SPECIFICATIONS

1.1.1 MAIN FRAME

Configuration:	Desktop
Print Process:	Laser beam scanning & Dry electrostatic transfer system 4 drums tandem method
Resolution:	1200 x 1200 dpi (true, 1bit) 9000 x 600 dpi, 1800 x 600 dpi, 600 x 600 dpi
Gradation:	600dpi 4 bits/pixel, 2 bits/pixel, 1 bit/pixel
Print speed:	**P2c** Normal (LT/ A4 LEF): 40 ppm (color/black & white) Thick 1: 25 ppm (color/black & white) Thick 2: 17.5 ppm (color/black & white) Thick 3: 17.5 ppm (color/black & white) **P2d** Normal (LT/ A4 LEF): 50 ppm (color/black & white) Thick 1: 25 ppm (color/black & white) Thick 2: 17.5 ppm (color/black & white) Thick 3: 17.5 ppm (color/black & white)
First print:	**P2c** Color: 8 seconds or less (A4/LT LEF) Black & white: 9 seconds or less (A4/LT LEF) **P2d** Color: 7 seconds or less (A4/LT LEF) Black & white: 8 seconds or less (A4/LT LEF)
Warm-up time:	**P2c** EU/ASIA: 34 seconds or less (23°C, 50%) NA: 35 seconds or less (23°C, 50%)

General Specifications

<table>
<tr><td></td><td colspan="3">P2d
EU/ASIA: 48 seconds or less (23°C, 50%)
NA: 50 seconds or less (23°C, 50%)</td></tr>
<tr><td>Print Paper Capacity:
(80 g/m^2, 20 lb)</td><td colspan="3">Standard tray: 550 sheets x 2
By-pass tray: 100 sheets
Optional paper feed tray: 550 sheets x 1/ 550 sheets x 2
LCT: 2000 sheets</td></tr>
<tr><td rowspan="7">Print Paper Size:</td><td colspan="3">(Refer to “Supported Paper Sizes”.)</td></tr>
<tr><td>-</td><td>Minimum</td><td>Maximum</td></tr>
<tr><td>Tray 1</td><td colspan="2">A4/8.5" x 11" (LEF)</td></tr>
<tr><td>Tray 2</td><td>A5 (LEF)/
8.5" x 11"</td><td>A3/11" x 17"</td></tr>
<tr><td>By-pass</td><td>90 x 148 mm</td><td>305 x 600 mm</td></tr>
<tr><td>Optional Tray</td><td>A5 (LEF)/
8.5" x 11"</td><td>A3/11" x 17"</td></tr>
<tr><td>LCT</td><td colspan="2">A4/8.5" x 11" (LEF)</td></tr>
<tr><td>Printing Paper Weight:</td><td colspan="3">Standard tray: 60 to 256 g/m^2 (16 to 68 lb.)
Optional paper tray: 60 to 256 g/m^2 (16 to 68 lb.)
By-pass tray: 60 to 256 g/m^2 (16 to 68 lb.)
Duplex unit: 60 to 169 g/m^2 (16 to 45 lb.)</td></tr>
<tr><td>Output Paper Capacity:</td><td colspan="3">Standard exit tray: 500 sheets or more (face down)*1
1000-sheet booklet finisher: 150 + 1000 sheets (80 g/m^2)
3000-sheet finisher: 250 + 3000 sheets (80 g/m^2)
Mail bin unit: 125 sheets x 4
Up to 4,000 sheets total capacity
*1: T6200, A4 LEF</td></tr>
<tr><td>Memory:</td><td colspan="3">Standard: 512 MB
Maximum: 1024 MB (+ Option)</td></tr>
<tr><td>Power Source:</td><td colspan="3">120 V, 60 Hz: More than 12A (for North America)</td></tr>
</table>

<table>
<tr><td></td><td colspan="5">220 V – 240 V, 50/60 Hz: More than 7A (for Europe/ASIA)</td></tr>
<tr><td rowspan="3">Power Consumption:</td><td colspan="2">-</td><td colspan="2">120V</td><td>220 - 240V</td></tr>
<tr><td colspan="2">Maximum</td><td colspan="2">1440 W or less</td><td>1400 W or less</td></tr>
<tr><td colspan="2">Energy Saver</td><td colspan="2">19.3 W or less</td><td>19.3 W or less</td></tr>
<tr><td rowspan="5">Noise Emission:
(Sound Power Level)</td><td>Model</td><td>State</td><td colspan="2">Mainframe</td><td>Complete system (*1)</td></tr>
<tr><td rowspan="2">P2c</td><td>Standby</td><td colspan="2">40 dB(A) or Less</td><td>TBA dB(A) or Less</td></tr>
<tr><td>Operating</td><td colspan="2">BW: 65 dB(A) or Less
FC: 67 dB(A) or Less</td><td>BW: TBA dB(A) or Less
FC: TBA dB(A) or Less</td></tr>
<tr><td rowspan="2">P2d</td><td>Standby</td><td colspan="2">40 dB(A) or Less</td><td>TBA dB(A) or Less</td></tr>
<tr><td>Operating</td><td colspan="2">BW: 66 dB(A) or Less
FC: 68 dB(A) or Less</td><td>BW: TBA dB(A) or Less
FC: TBA dB(A) or Less</td></tr>
<tr><td colspan="6">Dimensions (W x D x H):
Printer: 670 x 670 x 640 mm (26.4" x 26.4" x 25.2")
Printer + PFU or LCT: 670 x 670 x 1020 mm (26.4" x26.4" x 40.2")</td></tr>
<tr><td>Weight:</td><td colspan="5">Less than 97 kg (213.4 lb.)</td></tr>
</table>

1.2 PRINTER

Printer Languages:	PCL 6/5c RPCS (Refined Printing Command Stream) Adobe PostScript 3 PDF PJL PictBridge (optional)
Resolution and Gradation:	**PCL 5c:** 300 x 300 dpi : Available only in B/W mode 600 x 600 dpi : Fast (1 bit), Standard (2 bits), Fine (4 bits) **PCL 6:** 600 x 600 dpi : Fast (1 bit), Standard (2 bits), Fine (4 bits) **RPCS:** 600 x 600 dpi, 1,800 x 600 dpi*, 9600 dpi x 600 dpi* *1,800 x 600 dpi = 600 x 600 dpi (2 bits) *9600 dpi x 600 dpi* = 600 x 600 dpi (4 bits) **PS3:** 600 x 600 dpi : Fast (1 bit), Standard (2 bits), Fine (4 bits) **PS3:** 600 x 600 dpi/ 4bit, 2bit, 1bit, 1200 x 1200 dpi 1bit
Printing speed:	**P2c:** 40 ppm (color/black and white) in Plain/Middle Thick mode 25/ 17.5 ppm in Thick/OHP mode (depending on paper type) **P2d:** 50 ppm (color/black and white) in Plain/Middle Thick mode x25/ 17.5 ppm in Thick/OHP mode (depending on paper type)
Resident Fonts:	**PCL 6/5c (Standard):** 35 Intelli fonts 10 TrueType fonts 13 International fonts **Adobe PostScript 3:**

	136 fonts (24 Type 2 fonts, 112 Type 14 fonts)
Host Interfaces:	USB 2.0: Standard USB Host I/F: Standard Ethernet (100 Base-TX/10 Base-T): Standard IEEE1284 parallel x 1: Optional IEEE802.11a/b/g (Wireless LAN): Optional Bluetooth (Wireless): Optional Gigabit Ethernet: Optional
Network Protocols:	TCP/IP (IPv4, IPv6), SMB, AppleTalk (Auto Switching): Standard IPX/SPX: Optional

1.3 SUPPORTED PAPER SIZES

1.3.1 PAPER FEED

BT: By-pass Tray, T1: Tray 1, T2/3/4: Tray 2/3/4/5, LCT: Large Capacity Tray,

DU: Duplex Unit

Paper	Size (W x L)	North America				Europe/Asia				DU
		BT	T1	T2/3/4/5	LCT	BT	T1	T2/3/4/5	LCT	
A3 W	12" x 18"	M	-	-	-	M	-	-	-	-
A3 SEF	297 x 420mm	M	-	M	-	A	-	A	-	M
A4 SEF	210 x 297mm	M	-	A	-	A	-	A	-	M
A4 LEF	297 x 210mm	M	S	M	S	M	M	A	M	M
A5 SEF	148 x 210mm	M	-	-	-	A	-	-	-	-
A5 LEF	210 x 148mm	M	S	A	-	M	S	A	-	M
A6 SEF	105 x 148mm	M	-	-	-	A	-	-	-	-
B4 SEF	257 x 364mm	M	-	M	-	M	-	A	-	M
B5 SEF	182 x 257mm	M	-	A	-	M	-	A	-	M
B5 LEF	257 x 182mm	M	S	M	-	M	S	A	-	M
B6 SEF	128 x 182mm	M	-	-	-	M	-	-	-	-
Ledger	11" x 17"	A	-	A	-	M	-	M	-	M

Supported Paper Sizes

Paper	Size (W x L)	North America				Europe/Asia				DU
		BT	T1	T2/3/4/5	LCT	BT	T1	T2/3/4/5	LCT	
Letter SEF	8.5" x 11"	A	-	A	-	M	-	A	-	M
Letter LEF	11" x 8.5"	M	M	A	M	M	S	M	S	M
Legal SEF	8.5" x 14"	M	-	A	-	M	-	M	-	M
Government Legal SEF	8.25" x 14"	M	-	M	-	M	-	M	-	M
Half Letter SEF	5.5" x 8.5"	A	-	-	-	M	-	-	-	-
Executive SEF	7.25" x 10.5"	M	-	M	-	M	-	M	-	M
Executive LEF	10.5" x 7.25"	M	-	A	-	M	-	M	-	M
F SEF	8" x 13"	M	-	M	-	M	-	M	-	M
Foolscap SEF	8.5" x 13"	M	-	M	-	M	-	M	-	M
Folio SEF	8.25" x 13"	M	-	M	-	M	-	M	-	M
	11" x 15"	M	-	M	-	M	-	M	-	M
	10" x 14"	M	-	M	-	M	-	M	-	M
	8" x 10"	M	-	M	-	M	-	M	-	M
8K	267 x 390mm	M	-	M	-	M	-	M	-	M
16K SEF	195 x 267mm	M	-	M	-	M	-	M	-	M
16K LEF	267 x 195mm	M	-	M	-	M	-	M	-	M

Supported Paper Sizes

Paper	Size (W x L)	North America				Europe/Asia				DU
		BT	T1	T2/3/4/5	LCT	BT	T1	T2/3/4/5	LCT	
Custom		M	-	M	-	M	-	M	-	-
Com10 Env.	4.125" x 9.5"	M	-	-	-	M	-	-	-	-
Monarch Env.	3.875" x 7.5"	M	-	-	-	M	-	-	-	-
C6 Env.	114 x 162mm	M	-	-	-	M	-	-	-	-
C5 Env.	162 x 229mm	M	-	-	-	M	-	-	-	-
DL Env.	110 x 220mm	M	-	-	-	M	-	-	-	-

Remarks:

A	Supported: the sensor detects the paper size.
M	Supported: the user specifies the paper size.
S	Supported: depends on a technician adjustment
-	Not supported

1.3.2 PAPER EXIT

3000 Sheet Finisher (B805)

MF: Main Frame, Prf: Proof, Clr: Clear, Shf: Shift, Stp: Staple,

2P: 2 Holes Punch, N2P: North Europe 2 Holes, 3P: 3 Holes Punch,

Punch 4 P: 4 Holes Punch, N4P: North Europe 4 Holes Punch

Supported Paper Sizes

Paper	Size (W x L)	MF	3000-sheet finisher							
			Prf	Clr	Shf	Stp	2P/ N2P	3P	4P	N4P
A3 W	12" x 18"	Y	Y	Y	Y	30	-	-	-	-
A3 SEF	297 x 420 mm	Y	Y	Y	Y	30	Y	Y	Y	Y
A4 SEF	210 x 297 mm	Y	Y	Y	Y	50	Y	-	-	Y
A4 LEF	297 x 210 mm	Y	Y	Y	Y	50	Y	Y	Y	Y
A5 SEF	148 x 210 mm	Y	Y	Y	Y	-	Y	-	-	Y
A5 LEF	210 x 148 mm	Y	Y	Y	Y	-	Y	-	-	Y
A6 SEF	105 x 148 mm	Y	Y	Y	-	-	-	-	-	-
B4 SEF	257 x 364 mm	Y	Y	Y	Y	30	Y	Y	Y*[4]	Y*[4]
B5 SEF	182 x 257 mm	Y	Y	Y	Y	50	Y	-	-	Y
B5 LEF	257 x 182 mm	Y	Y	Y	Y	50	Y	Y	Y	Y
B6 SEF	128 x 182 mm	Y	Y	Y	-	-	-	-	-	-
Ledger	11" x 17"	Y	Y	Y	Y	30	Y	Y	Y	Y
Letter SEF	8.5" x 11"	Y	Y	Y	Y	50	Y	-	-	Y
Letter LEF	11" x	Y	Y	Y	Y	50	Y	Y	Y	Y

Supported Paper Sizes

Paper	Size (W x L)	MF	3000-sheet finisher							
			Prf	Clr	Shf	Stp	2P/ N2P	3P	4P	N4P
	8.5"									
Legal SEF	8.5" x 14"	Y	Y	Y	Y	30	Y	-	-	Y
Government Legal SEF	8.25" x 14"	Y	Y	Y	Y	30	Y	-	-	Y
Half Letter SEF	5.5" x 8.5"	Y	Y	Y	Y	-	Y	-	-	Y
Executive SEF	7.25" x 10.5"	Y	Y	Y	Y	50	Y	-	-	Y
Executive LEF	10.5" x 7.25"	Y	Y	Y	Y	50	Y	Y	Y	Y
F SEF	8" x 13"	Y	Y	Y	Y	30	Y	-	-	Y
Foolscap SEF	8.5" x 13"	Y	Y	Y	Y	30	Y	-	-	Y
Folio SEF	8.25" x 13"	Y	Y	Y	Y	30	Y	-	-	Y
	11" x 15"	Y	Y	Y	Y	30	Y	Y	Y	Y
	10" x 14"	Y	Y	Y	Y	30	Y	Y	-	Y
	8" x 10"	Y	Y	Y	Y	50	Y	-	-	Y
8K	267 x 390 mm	Y	Y	Y	Y	30	Y	Y	Y	Y
16K SEF	195 x 267 mm	Y	Y	Y	Y	50	Y	-	-	Y
16K LEF	267 x	Y	Y	Y	Y	50	Y	Y	Y	Y

Supported Paper Sizes

Paper	Size (W x L)	MF	3000-sheet finisher							
			Prf	Clr	Shf	Stp	2P/ N2P	3P	4P	N4P
	195 mm									
Custom		Y	Y	Y	-	-	Y*[3]	Y*[3]	Y*[3]	Y*[3]
Com10 Env.	4.125" x 9.5"	Y	Y*[1]	Y*[2]	-	-	-	-	-	-
Monarch Env.	3.875" x 7.5"	Y	-	Y	-	-	-	-	-	-
C6 Env.	114 x 162 mm	Y	-	Y	-	-	-	-	-	-
C5 Env.	162 x 229 mm	Y	-	Y	-	-	-	-	-	-
DL Env.	110 x 220 mm	Y	-	Y	-	-	-	-	-	-

Remarks:

Y	Supported
15	Output up to 15 sheets
30	Output up to 30 sheets
50	Output up to 50 sheets
-	Not supported

*1: Minimum 100 mm or more, Maximum 600 mm or less

*2: Minimum 100 mm or more, Maximum 600 mm or less

- Longer paper (feed length) than DLT (432 mm) is not guaranteed in this mode.

*3: Minimum 100 mm for 2P, 230 mm for 3P, 255 mm for 4P, 125 mm for N4P

*4: Corner stapling is not available in this mode.

Supported Paper Sizes

1000-Sheet Booklet Finisher (B793)

MF: Main Frame, Prf: Proof, Clr: Clear, Shf: Shift, Stp: Staple, SS: Saddle Stitch, 2/3 P: 2/3 Holes Punch, 4 P: 4 Holes Punch, N4P: North Europe 4 Holes Punch

Paper	Size (W x L)	MF	1000-sheet booklet finisher							
			Prf	Clr	Shf	Stp	SS	2/3 P	4 P	N4P
A3 W	12" x 18"	Y	Y	Y	Y	-	-	-	-	-
A3 SEF	297 x 420 mm	Y	Y	Y	Y	30	10	Y	Y	Y
A4 SEF	210 x 297 mm	Y	Y	Y	Y	50	10	-	-	Y
A4 LEF	297 x 210 mm	Y	Y	Y	Y	50	-	Y	Y	Y
A5 SEF	148 x 210 mm	Y	Y	Y	Y	-	-	-	-	Y
A5 LEF	210 x 148 mm	Y	Y	Y	Y	-	-	-	-	Y
A6 SEF	105 x 148 mm	Y	Y	Y	-	-	-	-	-	-
B4 SEF	257 x 364 mm	Y	Y	Y	Y	30	10	Y	Y	Y
B5 SEF	182 x 257 mm	Y	Y	Y	Y	50	10	-	-	Y
B5 LEF	257 x 182 mm	Y	Y	Y	Y	50	-	Y	Y	Y
B6 SEF	128 x 182 mm	Y	Y	Y	-	-	-	-	-	-
Ledger	11" x 17"	Y	Y	Y	Y	30	10	Y	Y	Y
Letter SEF	8.5" x 11"	Y	Y	Y	Y	50	10	-	-	Y
Letter LEF	11" x 8.5"	Y	Y	Y	Y	50	-	Y	Y	Y
Legal SEF	8.5" x 14"	Y	Y	Y	Y	30	10	-	-	Y
Government Legal SEF	8.25" x 14"	Y	Y	Y	Y	30	10	Y	Y	Y
Half Letter SEF	5.5" x 8.5"	Y	Y	Y	Y	-	-	-	-	Y
Executive SEF	7.25" x 10.5"	Y	Y	Y	Y	50	-	-	-	Y
Executive LEF	10.5" x 7.25"	Y	Y	Y	Y	50	-	Y	Y	Y

Supported Paper Sizes

Paper	Size (W x L)	MF	1000-sheet booklet finisher							
			Prf	Clr	Shf	Stp	SS	2/3 P	4 P	N4P
F SEF	8" x 13"	Y	Y	Y	Y	30	-	-	-	Y
Foolscap SEF	8.5" x 13"	Y	Y	Y	Y	30	-	-	-	Y
Folio SEF	8.25" x 13"	Y	Y	Y	Y	30	-	-	-	Y
	11" x 15"	Y	Y	Y	Y	30	-	Y	Y	Y
	10" x 14"	Y	Y	Y	Y	30	-	Y	-	Y
	8" x 10"	Y	Y	Y	Y	50	-	-	-	Y
8K	267 x 390 mm	Y	Y	Y	Y	30	-	Y	Y	Y
16K SEF	195 x 267 mm	Y	Y	Y	Y	50	-	-	-	Y
16K LEF	267 x 195 mm	Y	Y	Y	Y	50	-	Y	Y	Y
Custom		Y	Y	Y	-	-	-	-	-	-
Com10 Env.	4.125" x 9.5"	Y	Y	-	-	-	-	-	-	-
Monarch Env.	3.875" x 7.5"	Y	Y	-	-	-	-	-	-	-
C6 Env.	114 x 162 mm	Y	Y	Y	-	-	-	-	-	-
C5 Env.	162 x 229 mm	Y	Y	Y	-	-	-	-	-	-
DL Env.	110 x 220 mm	Y	Y	Y	-	-	-	-	-	-

Remarks:

Y	Supported
10	Output up to 10 sheets
30	Output up to 30 sheets
50	Output up to 50 sheets
-	Not supported

1.4 SOFTWARE ACCESSORIES

The printer drivers and utility software are provided as following CD-ROM

- Printer Drivers and Utilities CD-ROM

An auto-run installer lets you to select the components you want to install.

1.4.1 PRINTER DRIVERS

Printer Language	Windows 95/98/ME	Windows NT4.0	Windows 2000, XP, Server 2003/Vista	MacOS8.6 to 9.x, MacOSX10.1 or later
PCL5c / PCL6	Yes	Yes	Yes	No
PS3 *2)	Yes	Yes	Yes	Yes
RPCS	Yes	Yes	Yes	No

Note

- The PCL5c/6 and RPCS drivers are provided on the printer drivers CD-ROM
- The PS drivers are provided on the Scanner/PostScript® Drivers and Utilities CD-ROM.
- The printer drivers for Windows NT 4.0 are only for the Intel x86 platform. There is no Windows NT 4.0 printer driver for the PowerPC, Alpha, or MIPS platforms.
- The PS3 drivers are all genuine Adobe PS drivers, except for Windows 2000/XP/2003/Vista. Windows 2000 uses Microsoft PS. A PPD file for each operating system is provided with the driver.
- The PS3 driver for Macintosh supports Mac OS X 10.1 or later versions.

1.4.2 UTILITY SOFTWARE

Software	Description
Font Manager 2000 (Win9x/ME, 2000/XP/2003, NT4)	A font management utility with screen fonts for the printer This is provided on the printer drivers CD-ROM
SmartDeviceMonitor for Admin	A printer management utility for network

(Win 95/98/Me, NT4, 2000/XP/Server 2003/Vista)	administrators. NIB setup utilities are also available. This is provided on the printer drivers CD-ROM
DeskTopBinder – SmartDeviceMonitor for Client (Win 95/98/Me, NT4, 2000/XP/Server 2003/Vista)	A printer management utility for client users. A utility for peer-to-peer printing over a NetBEUI or TCP/IP network. A peer-to-peer print utility over a TCP/IP network. This provides the parallel printing and recovery printing features. This is provided on the printer drivers CD-ROM
Printer Utility for Mac (Mac)	A utility for peer-to-peer printing over a NetBEUI or TCP This software provides several convenient functions for printing from Macintosh clients. This is provided on the scanner drivers CD-ROM
DeskTopBinder Lite (Win9x/ME, 2000/XP/2003, NT4)	DeskTopBinder Lite itself can be used as personal document management software and can manage both image data converted from paper documents and application files saved in each client's PC. This is provided on the scanner drivers CD-ROM

1.5 OPTIONAL EQUIPMENT

1.5.1 PAPER TRAY UNIT (ONE-TRAY)

Paper Feed System:	FRR
Paper Height Detection:	5 steps (100%, 70%, 30%, 10% (Near end), and Empty)
Capacity:	550 sheets
Paper Weight:	60 to 169 g/m^2 (16 to 45 lb.)
Paper Size:	A3 SEF to A5, DLT SEF to HLT
Power Source:	DC 24V, 5V (from the main frame)
Power Consumption:	Less than 50 W (Max.)/ Less than 35 W (Ave,)
Dimensions (W x D x H):	580 mm x 620 mm x 120 mm (22.8" x 24.4" x 4.8")
Weight:	15 kg (33.1 lb.)

1.5.2 TWO-TRAY PAPER FEED UNIT

Paper Feed System:	FRR
Paper Height Detection:	5 steps (100%, 70%, 30%, 10% (Near end), and Empty)
Capacity:	550 sheets x 2 trays
Paper Weight:	60 to 169 g/m^2 (16 to 45 lb.)
Paper Size:	A3 SEF to A5, DLT SEF to HLT
Power Source:	DC 24V, 5V (from the main frame)
Power Consumption:	Less than 50 W (Max.)/ Less than 35 W (Ave,)
Dimensions (W x D x H):	580 mm x 620 mm x 260 mm (22.8" x 24.4" x 10.2")
Weight:	25 kg (55 lb.)

1.5.3 LARGE CAPACITY TRAY

Paper Size:	A4 LEF/LT LEF
Paper Weight:	60 g/m^2 to 169 g/m^2, 16 lb. to 45 lb.
Tray Capacity:	2,000 sheets (80 g/m^2, 20lb.)
Remaining Paper Detection:	5 steps (100%, 70%, 30%, 10%, Empty): Right Tray 4 steps (100%, 70%, 30%, Empty): Left Tray
Power Source:	DC 24 V, 5 V (from copier/printer)
Power Consumption:	50 W (Max.)/30 W (Ave.)
Weight:	25 kg (55 lb.)
Size (W x D x H):	580 mm x 620 mm x 260 mm (22.8" x 24.4" x 10.2")

1.5.4 3000-SHEET FINISHER

Finisher		
Dimension (w x d x h)		657 mm x 613 mm x 960 mm (25.9” x 24.1” x 37.8”)
Weight		Less than 54 kg (119 lb.) (no punch unit) Less than 56 kg (123.5 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” x 11” or smaller 50 sheets: B4, 8.5” x 14 or larger
	Paper Size	A5-A3 SEF, B6 SEF, A6 SEF 5.5” x 8.5”-11” x 17” SEF, 12” x 18” SEF
	Paper Weight	60 g/m^2 - 163 g/m^2 (14 lb. - 43 lb.)

Optional Equipment

Shift Tray	Stack Capacity	3,000 sheets	A4 LEF, 8.5" x 11” LEF
		1,500 sheets	A3 SEF, A4 SEF, B4 SEF, B5, 11” x 17” SEF, 8.5” x 14” SEF, 8.5” x 11” SEF, 12” x 18” SEF
		500 sheets	A5 LEF
		100 sheets	A5 SEF, B6 SEF, A6 SEF, 5.5” x 8.5” SEF
	Paper Size	A5 - A3 SEF, A6 SEF, B6 SEF, 5.5” x 8.5”- 11” x 17” SEF, 12” x 18” SEF	
	Paper Weight	60 g/m^2 - 256 g/m^2 (14 lb. - 68 lb.)	
Staples			
Paper Size		B5 - A3 8.5” x 11” - 11” x 17”, 12” x 18”	
Paper Weight		64 g/m^2 - 90 g/m^2 (14 lb. - 24 lb.)	
Staple Position		Top, Bottom, 2 Staple, Top-slant	
Stapling Capacity	Same Paper Size	50 sheets	A4, 8.5" x 11” or smaller
		30 sheets	B4, 8.5" x 14" or larger
	Mixed Paper Size	30 sheets	A4 LEF + A3 SEF, B5 LEF + B4 SEF, 8.5" x11” LEF + 11” x 17” SEF

Staple Replenishment	Cartridge exchange / 5000 pins per cartridge		
Stapled Stack Capacity (same size)	Paper Size	Pages/Set	Sets
	A4 LEF, 8.5” x 11” LEF	20 - 50 pages	150 - 60 sets
		2 - 19 pages	150 sets
	A4 SEF, B5, 8.5” x 11”	15 - 50 pages	100 - 30 sets

	SEF	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” x 17” SEF	2 - 30 pages	50 set

1.5.5 PUNCH UNIT FOR 3000-SHEET FINISHER

Available Punch Units		NA	2/3 holes switchable
		EU	2/4 holes switchable
		Scandinavia	4 holes
Punch Waste Replenishment		NA 2-holes	Up to 5,000 sheets
		NA 3-holes	Up to 5,000 sheets
		EU 2-holes	Up to 14,000 sheets
		EU 4-holes	Up to 7,000 sheets
		Scandinavia 4-holes	Up to 7,000 sheets
Paper Weight		60 g/m^2 - 163 g/m^2, 14 lb Bond - 43 lb Bond	
Paper Sizes	NA 2-holes	SEF	A5 to A3, 5.5" x 8.5" to 11” x 17”
		LEF	A5 to A4, 5.5" x 8.5" , 8.5" x 11”
	NA 3-holes	SEF	A3, B4, 11” x 17”
		LEF	A4, B5, 8.5" x 11”
	EU 2-holes	SEF	A5 to A3, 5.5" x 8.5" to 11” x 17”
		LEF	A5 to A4, 5.5" x 8.5", 8.5" x 11”

Optional Equipment

	EU 4-holes	SEF	A3, B4, 11”x17”
		LEF	A4, B5, 8.5" x 11”
	Scandinavia 4-holes	SEF	A5 to A3, 5.5" x 8.5" to 11” x 17”
		LEF	A5 to A4, 5.5" x 8.5", 8.5" x 11”

1.5.6 1000-SHEET BOOKLET FINISHER & PUNCH UNIT

Print Paper Size:	**No punch mode**: A3/11" x 17" to A6/5.5" x 8.5" (SEF), A4 to A5 (LEF), 12" x 18" or 8.5" x 11" (LEF) **Punch mode**: **2 holes**: A3/11" x 17" to A6/5.5" x 8.5" (SEF), A4 to A5 (LEF) or 8.5" x 11" (LEF) **3 holes**: A3, B4, 11" x 17" (SEF) or A4, B5, 8.5" x 11" (LEF) **4 holes (North Europe)**: A3/11" x 17" to B5/8.5" x 11" (SEF), A4, A5 (LEF) or 8.5" x 11" (LEF) **Staple mode**: A3/11" x 17" to B5/8.5" x 11"
Paper Weight:	No punch mode: 60 to 256 g/m^2 (14 to 68 lb.) (Shift tray) 60 to 105 g/m^2 (14 to 28 lb.) (Proof tray) Punch mode: 60 to 163 g/m^2 (14 to 43 lb.) Staple mode: 64 to 90 g/m^2 (17 to 24 lb.) Label/Thick paper/OHP cannot be stapled
Tray Capacity:	[Proof tray] 100 sheets: A4, 8.5" x 11" or less 50 sheets: B4, 8.5" x 14" or more

	[Shift tray] 1000 sheets: A4, 8.5" x 11" (LEF) or smaller 500 sheets: B4, 8.5" x 14" or larger	
Staple capacity:	Single size: 50 sheets: A4, 8.5" x 11" or smaller 30 sheets: B4, 8.5" x 14" or larger	
Staple position:	3 positions 1-staple: 2 positions (Top Left, Top Right) 2-staples: 1 positions	
Staple replenishment:	Cartridge (5000 staples)	
Power consumption:	60 W	
Dimensions (W x D x H):	535 mm x 600 mm x 930 mm (21.1" x 23.6" x 36.6")	
Weight	Without punch unit:	48 kg (105.8 lb.)
	With punch unit:	50 Kg (110.3 lb.)

1.5.7 BRIDGE UNIT

Paper Size:	Standard sizes A6 SEF to A3, HLT to DLT Non-standard sizes Width: 90 to 305 mm Length: 148 to 600 mm
Paper Weight:	60 g/m^2 to 253 g/m^2, 16 lb. to 78 lb.
Power Source:	DC 24 V, 5 V (form the copier/printer)
Dimensions (W x D x H):	415 mm x 412 mm x 111 mm (16.3" x 16.2" x 4.4")
Weight	5 kg (11 lb.)

1.5.8 MAIL BIN

Paper size	A5(LEF)-11"x17"(SEF)/A3
Paper weight	60-128g/m^2, Bond 16-34lb
Paper capacity	More than 125 x 4 (80g/m^2)
Dimensions	435 x 475 x 375 mm (17.2"x18.7"x14.8")
Weight	Approximately 10kg (22lb)
Power consumption	Approximately 17 W

APPENDIX:
PREVENTIVE MAINTENANCE

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
1	05/15/2009	Updated – User Maintenance Items

2. APPENDIX: PREVENTIVE MAINTENANCE TABLES

2.1 USER MAINTENANCE ITEMS

The user replaces the following maintenance items.

2.1.1 MAINFRAME

Replacement Items

Item	Remarks
▪ PCU - BK, C, M, Y ▪ Waste Toner Bottle	40 KP (YMC, BK)
⇒ ▪ Paper Transfer Roller ▪ Fusing Unit ▪ Dust Filter	160 KP
⇒ ▪ Image Transfer Belt Unit	200 KP

Chart: A4 (LT), 5%

Mode: 3 pages/Job

Environment: Recommended temperature and humidity

Yield changes depend on circumstances and print conditions.

An error message shows when a maintenance counter gets to the value in the PM table when the machine's default settings are used.

It is not necessary to reset counters for each part. The machine detects new components automatically and resets the necessary counters.

2.2 SERVICE MAINTENANCE ITEMS

2.2.1 MAINFRAME

Cleaning Items

Item	EM
▪ Dust Shield Glass of the Laser Optics Housing Unit	Cleaning tool, provided with the machine (the tool is on the inside of the front cover)
▪ Paper Dust Container	-
▪ Sensors (including the ID sensors)	Dry cloth
▪ Rollers	Damp cloth

2.2.2 OPTIONAL UNITS

C: Clean

Paper Feed Unit/ LCT

This table shows the service maintenance items for the following options.

- Paper Feed Unit PB3080 (D387)
- Paper Feed Unit PB3040 (D351)
- LCIT PB3050 (D352)

Item	EM	Remarks
Feed Roller	C	Dry cloth
Separation Roller	C	Dry cloth
Pick-up Roller	C	Dry cloth
Paper Feed Sensor	C	Dry cloth
Relay Sensor	C	Dry cloth
Relay Roller	C	Damp cloth
Bottom Plate Pad	C	Damp cloth

1000/3000-Sheet (Booklet) Finisher

Items	EM	Remarks
Rollers	C	Damp cloth
Discharge Brush	C	Dry cloth
Sensors	C	Blower brush

1000/3000-Sheet (Booklet) Finisher Punch Kit

Items	EM	Remarks
Punch Chads	C	Discard chads.

APPENDIX
SERVICE CALL CONDITIONS

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
40 ~ 72	04/27/2011	Updated SC681. Altered pages 40 through 72

3. APPENDIX: SERVICE CALL CONDITIONS

3.1 SERVICE CALL CONDITIONS

3.1.1 SUMMARY

The "SC Table" section shows the SC codes for controller errors and other errors. The latter (not controller errors) are put into four types. The type is determined by their reset procedures. The table shows the classification of the SC codes.

	Key	Definition	Reset Procedure
Controller errors	CTL	The error has occurred in the controller.	See “Troubleshooting Procedure” in the table.
Other errors	A	The error involves the fusing unit. The machine operation is disabled. The user cannot reset the error.	Turn the main switch off and on. Reset the SC (set SP5-810-1). Turn the main switch off and on.
	B	The error involves one or some specific units. The machine operates as usual, excluding the related units.	Turn the main power switch off and on.
	C	The error is logged. The SC-code history is updated. The machine operates as usual.	The SC will not show. Only the SC history is updated.
	D	The machine operation is disabled. You can reset the machine by turning the main power switch or main switch off and on. If the error occurs again, the same SC code is displayed.	Turn the main power switch or main power switch off and on.

Service Call Conditions

After you turn the main power switch off, wait for one second or more before you turn the main power switch on (☛ SC 670). All SCs are logged. The print log data (SP5-990-004) in SP mode can check the latest 10 SC codes detected and total counters when the SC code is detected.

Note

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

SC Code Classification

The table shows the classification of the SC codes:

Class 1	Section	SC Code	Detailed section
1XX	Scanning	100 -	Not used in this model
		190 -	Unique for a specific model
2XX	Laser exposure	200 -	Polygon motor
		220 -	Synchronization control
		230 -	FGATE signal related
		240 -	LD control
		280 -	Unique for a specific model
		290 -	Shutter
3XX	Image development 1	300 -	Charge
		330 -	Drum potential
		350 -	Development
		380 -	Unique for a specific model
4XX	Image development 2	400 -	Image transfer
		420 -	Paper separation

Class 1	Section	SC Code	Detailed section
		430 -	Cleaning
		440 -	Around drum
		460 -	Unit
		480 -	Others
5XX	Paper feed / Fusing	500 -	Paper feed
		515 -	Duplex
		520 -	Paper transport
		530 -	Fan motor
		540 -	Fusing
		560 -	Others
		570 -	Unique for a specific model
6XX	Communication	600 -	Electrical counters
		620 -	Mechanical counters
		630 -	Account control
		640 -	CSS
		650 -	Network
		670 -	Internal data processing
		680 -	Unique for a specific model
7XX	Peripherals	700 -	Not used in this model
		720 -	Finisher: Shift/Staple
		740 -	Finisher: Staple/Punch
8XX	Controller	800 -	Error after ready condition

Service Call Conditions

Class 1	Section	SC Code	Detailed section
		820 -	Diagnostics error
		860 -	Hard disk
		880 -	Unique for a specific model
9XX	Others	900 -	Counter
		920 -	Memory
		990 -	Others

3.1.2 SERVICE CALL TABLES - 1

SC 1xx: Unique for a specific model

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
195	D	Serial Number Mismatch
		▪ Serial number stored in the memory does not have the correct code.
		▪ NVRAM defective ▪ BCU replaced without original NVRAM
		1. Reinstall the original NVRAM in the replaced BCU. 2. Turn off and on the main power switch of the copier if a new NVRAM is installed in the BCU.

3.1.3 SERVICE CALL TABLES - 2

SC 2xx: Exposure

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
202	D	Polygon motor error 1: ON timeout
		The polygon mirror motor does not reach the targeted operating speed within the specified time after turning on or changing speed

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Defective or disconnected harness to polygon motor driver board ▪ Defective polygon motor driver board ▪ Defective polygon motor.
		1. Replace the polygon motor. 2. Replace the laser optics housing unit. 3. Replace the harness. 4. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
203	D	Polygon motor error 2: OFF timeout
		The polygon mirror motor does leave the READY status within 3 seconds after the polygon motor switches off.
		▪ Disconnected or defective harness to polygon motor driver board ▪ Defective polygon motor driver board ▪ Defective polygon motor
		See SC 202 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
204	D	Polygon motor error 3: XSCRDY signal error
		The SCRDY_N signal goes HIGH (inactive) while the laser diode is firing.
		▪ Disconnected or defective harness to polygon motor driver board ▪ Defective polygon motor ▪ Defective polygon motor driver board
		See SC 202 for troubleshooting details.

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
210	C	Laser synchronizing detection error: end position [K]
211	C	Laser synchronizing detection error: end position [Y]
212	C	Laser synchronizing detection error: end position [M]
213	C	Laser synchronizing detection error: end position [C]
-	-	The laser synchronizing detection signal for the end position of LDB [K], [Y], [M], [C] is not detected for one second after the LDB unit turned on when detecting the main scan magnification.
		▪ Disconnected or defective harness to synchronizing detector for end position ▪ Defective synchronizing detector board ▪ Defective LD board or driver ▪ Defective BCU
		1. Replace the harness of the LD board. 2. Replace the laser optics housing unit. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
220	D	Laser synchronizing detection error: start position [K]: LD1
221	D	Laser synchronizing detection error: start position [K]: LD2
222	D	Laser synchronizing detection error: start position [Y]: LD1
223	D	Laser synchronizing detection error: start position [Y]: LD2
224	D	Laser synchronizing detection error: start position [M]: LD1
225	D	Laser synchronizing detection error: start position [M]: LD2
226	D	Laser synchronizing detection error: start position [C]: LD1
227	D	Laser synchronizing detection error: start position [C]: LD2

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
-	-	The laser synchronizing detection signal for the start position of the LDB [K], [Y], [M], [C] is not output for two seconds after LDB unit turns on while the polygon motor is rotating normally.
		▪ Disconnected cable from the laser synchronizing detection unit or defective connection ▪ Defective laser synchronizing detector ▪ Defective LDB ▪ Defective BCU
		1. Check the connectors. 2. Replace the laser-synchronizing detector. 3. Replace the LDB. 4. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
230	D	FGATE ON error: Bk
		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 (Lupus) ▪ Poor connection between controller and BCU. ▪ Defective BCU
		1. Check the connection between the controller board and the BCU. 2. Replace the BCU. 3. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
231	D	FGATE OFF error: Bk
		▪ 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.

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
232	D	FGATE ON error: Y
		The PFGATE ON signal does not assert within 5 seconds after processing the image in normal job or MUSIC for start position [Y].
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
233	D	FGATE OFF error: Y
		▪ The PFGATE ON signal still asserts within 5 seconds after processing the image in normal job or MUSIC for end position [Y]. ▪ The PFGATE ON signal still asserts when the next job starts.
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
234	D	FGATE ON error: M
		The PFGATE ON signal does not assert within 5 seconds after processing the image in normal job or MUSIC for start position [M].
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
235	D	FGATE OFF error: M
		▪ The PFGATE ON signal still asserts within 5 seconds after processing the image in normal job or MUSIC for end position [M]. ▪ The PFGATE ON signal still asserts when the next job starts.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
236	D	FGATE ON error: C
		The PFGATE ON signal does not assert within 5 seconds after processing the image in normal job or MUSIC for start position [C].
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
237	D	FGATE OFF error: C
		▪ The PFGATE ON signal still asserts within 5 seconds after processing the image in normal job or MUSIC for end position [C]. ▪ The PFGATE ON signal still asserts when the next job starts.
		See SC 230 for troubleshooting details.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
240	C	LD error: Bk
241	C	LD error: Y
242	C	LD error: M
243	C	LD error: C
-	-	The BCU 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
		1. Replace the harness of the LD.

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		2. Replace the laser optics housing unit. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
285	D	Line position adjustment (MUSIC) error
		Line position adjustment fails four consecutive times.
		▪ Pattern sampling error (insufficient image density) ▪ Defective ID sensors for the line position adjustment ▪ Defective image transfer belt unit ▪ Defective PCU(s) ▪ Defective laser optics housing unit
		1. Check and reinstall the image transfer belt unit and PCUs. 2. Check if each toner bottle has enough toner. 3. Replace the ID sensor. 4. Replace the image transfer belt unit. 5. Replace the PCU(s). 6. Replace the laser optics housing unit.

3.1.4 SERVICE CALL TABLES - 3

SC3xx: Image Processing – 1

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
300	D	AC charge output error [K]
301	D	AC charge output error [M]
302	D	AC charge output error [C]
303	D	AC charge output error [Y]
-	-	The measured voltage is not proper when IOB measures the charge output for each color.
		▪ Disconnected or broken high voltage cable ▪ Defective or not installed PCU ▪ Defective high voltage power supply
		1. Check or replace the connectors. 2. Replace the PCU for the affected colour. 3. Replace the high voltage power supply.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
360	D	TD sensor (Vt high) error 1: K
361	D	TD sensor (Vt high) error 1: M
362	D	TD sensor (Vt high) error 1: C
363	D	TD sensor (Vt high) error 1: Y
-	-	▪ The Vt value of the black, magenta, cyan, or yellow TD sensor exceeds the specified value (default: 4.7V) with SP3020-002 for twenty counts. ▪ The [Vt - Vtref] value of the black, magenta, cyan, or yellow TD sensor exceeds the specified value (default: 5.0V) with SP3020-001.

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Black, magenta, cyan, or yellow TD sensor disconnected ▪ Harness between TD sensor and PCU defective ▪ Defective TD sensor. ▪ Low toner density
		1. Check the black, magenta, cyan, or yellow TD sensor connector and harness between the TD sensor and PCU for damage. 2. Check the drawer connector. 3. Replace the defective PCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
364	D	TD sensor (Vt low) error 2: K
365	D	TD sensor (Vt low) error 2: M
366	D	TD sensor (Vt low) error 2: C
367	D	TD sensor (Vt low) error 2: Y
-	-	The Vt value of the black, magenta, cyan, or yellow TD sensor is below the specified value with SP3020-004 (default: 0.5V) for 10 counts.
		▪ TD sensor harness disconnected, loose, defective ▪ A drawer connector disconnected, loose, defective ▪ TD sensor defective ▪ Too much toner density
		1. Check the black, magenta, cyan, or yellow TD sensor connector and harness between the TD sensor and PCU for damage. 2. Check the drawer connector. 3. Replace the defective PCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
372	D	TD sensor adjustment error: K

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
373	D	TD sensor adjustment error: M
374	D	TD sensor adjustment error: C
375	D	TD sensor adjustment error: Y
-	-	During TD sensor initialization, the output value of the black, magenta, cyan, or yellow TD sensor is not within the range of the specified value with SP3238-001 to -004 (default: 2.7V) ± 0.2V
		▪ Heat seal not removed from a new developer pack ▪ TD harness sensor disconnected, loose or defective ▪ TD sensor defective ▪ Harness between TD sensor and drawer disconnected, defective
		1. Remove the heat seal from each PCU. 2. Replace the defective PCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
380	C	Drum gear position sensor error: K
381	C	Drum gear position sensor error: M
382	C	Drum gear position sensor error: C
383	C	Drum gear position sensor error: Y
		The machine does not detect the drum position signal for 3 seconds at the drum phase adjustment.
		▪ Dirty or defective drum gear position sensor
		1. Clean the drum gear position sensor. 2. Check the harness connection. 3. Replace the drum gear position sensor. 4. Replace the PCU.

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
396	D	Drum/Development motor error: K
397	D	Drum/Development motor error: M
398	D	Drum/Development motor error: C
399	D	Drum/Development motor error: Y
-	-	The machine detects a High signal from the drum/development motor for 2 seconds after the drum/development motor turned on.
		▪ Overload on the drum/development motor ▪ Defective drum/development motor ▪ Defective harness ▪ Shorted 24 V fuse on the PSU ▪ Defective interlock system
		1. Check or replace the harness. 2. Replace the drum/development motor. 3. Replace the 24V fuse on the PSU.

3.1.5 SERVICE CALL TABLES - 4

SC4xx: Image Processing - 2

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
400	D	ID sensor adjustment error
		When the Vsg error counter reaches "3", the machine detects "SC400". The Vsg error counter counts "1" when the Vsg detected by ID sensor is more than the value (default: 4.5V) specified with SP3324-005 or less than the value (default: 3.5V) specified with SP3324-006.
		▪ Dirty or defective ID sensor ▪ Defective ID sensor shutter
		1. Check the harness of the ID sensor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		2. Clean or replace the ID sensor. Note ▪ After replacing the ID sensor, input the ID sensor correction coefficient with SP3362-013 to -018. For details, refer to "ID sensor board" in the Replacement and Adjustment section. 3. Replace the IOB. 4. Replace the image transfer belt unit.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
441	D	Image transfer belt drive motor error
		The motor LOCK signal is not detected for more than two seconds while the motor START signal is on.
		▪ Motor overload ▪ Defective image transfer unit motor ▪ Shorted 24 V fuse on the PSU ▪ Defective interlock system
		1. Check the motor operation with SP5804-040 to -044. Replace the 24V fuse on the PSU if ITB drive motor does not operate. 2. Replace the image transfer belt unit. 3. Replace the IOB.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
442	D	Image transfer belt contact motor error
		The image transfer belt contact sensor does not detect the movement of actuator at the sensor while the polygon motor rotates.

Service Call Conditions

		▪ Dirty image transfer belt contact sensor ▪ Defective image transfer belt contact motor ▪ Disconnected connector of image transfer belt contact sensor or motor ▪ Broken harness ▪ Shorted 24 V fuse on the PSU ▪ Defective interlock system
		1. Check the motor operation with SP5804-095. Replace the 24V fuse on the PSU if ITB contact motor does not operate. 2. Replace the image transfer belt contact sensor. 3. Replace the image transfer belt contact motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
443	D	Image transfer belt unit error
		The machine detects the encoder sensor error.
		▪ Defective encoder sensor ▪ Image transfer unit installation error ▪ Defective image transfer unit motor
		1. Check if the image transfer belt unit is correctly set. 2. Replace the image transfer belt unit motor. 3. Replace the image transfer belt unit.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
452	D	Paper transfer unit contact error
		The paper transfer unit contact sensor does not detect the movement of actuator at the sensor while the polygon motor rotates.
		▪ Defective paper transfer unit contact sensor ▪ Defective paper transfer unit contact motor ▪ Broken +24V fuse on PSU ▪ Defective IOB

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		1. Check the connection between the paper transfer unit and PSU. 2. Replace the paper transfer unit contact sensor. 3. Replace the paper transfer unit contact motor. 4. Replace the +24V fuse on the PSU. 5. Replace the IOB.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
460	D	High voltage power: Separation bias output error
		The status of the power pack is checked every 20 ms. This SC is issued if the BCU detects a short in the power pack 10 times at D(ac).
		▪ Disconnected or broken cables ▪ Damaged insulation on the high-voltage supply cable ▪ Damaged insulation around the high-voltage power supply ▪ Defective high-voltage power supply unit
		1. Replace the high-voltage supply cable. 2. Replace the high-voltage power supply unit. 3. Replace the IOB.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
490	D	Toner transport motor error
		The LOCK signal is not detected for 2 seconds when the transport motor turns on.
		▪ Toner transport motor overload ▪ Disconnected or broken harness ▪ Defective toner transport motor ▪ Opened +24V fuse on the PSU ▪ Defective interlock switch
		1. Check or replace the harness. 2. Replace the toner transport motor.

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		3. Replace the +24V fuse on the PSU. 4. Replace the interlock switch.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
491	D	High voltage power: Drum/ development bias output error
		An error signal is detected for 0.2 seconds when charging the drum or development.
		▪ High voltage leak ▪ Broken harness ▪ Defective drum unit or development unit ▪ Defective high voltage supply unit
		1. Check or replace the harness. 2. Replace the drum unit or paper transfer unit. 3. Replace the high voltage supply unit.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
492	D	High voltage power: Image transfer/ paper transfer bias output error
		An error signal is detected for 0.2 seconds when charging the separation, image transfer bet or paper transfer roller.
		▪ High voltage leak ▪ Broken harness ▪ Defective image transfer belt unit or paper transfer unit ▪ Defective high voltage supply unit
		1. Check or replace the harness. 2. Replace the image transfer belt unit or paper transfer unit. 3. Replace the high voltage supply unit.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
498	C	Temperature and humidity sensor error
		▪ The thermistor output of the temperature sensor is not within the prescribed range (0.2V to 3.5V). If this is detected consecutively three times, the SC is generated and the machine defines that the temperature is "23°C". ▪ The thermistor output of the humidity sensor is not within the prescribed range (0.01V to 2.4V). If this is detected consecutively three times, the SC is generated and the machine detects that the humidity is "50%".
		▪ Temperature and humidity sensor harness disconnected, loose, defective ▪ Temperature and humidity sensor defective
		1. Check the connector and harness. 2. Replace the temperature/humidity sensor.

3.1.6 SERVICE CALL TABLES – 5

SC5xx: Paper Feed and Fusing

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
501	B	Paper Tray 1 error
502	B	Paper Tray 2 error
-	-	▪ When the tray lift motor rotates counterclockwise, (if the upper limit is not detected within 10 seconds), the machine asks the user to reset the tray. ▪ When the tray lift motor rotates clockwise, (if the upper limit is not detected within 1.5 seconds), the machine asks the user to reset the tray. If one of these conditions occurs three consecutive times, the SC is generated.
		▪ Disconnected or defective paper lift sensor ▪ Disconnected or defective tray lift motor ▪ Defective bottom plate lift mechanism ▪ Too much paper in the tray ▪ Defective IOB
		1. Check if the paper is not loaded too much. 2. Check if the bottom plate smoothly moves up and down manually. 3. Check and/or replace the tray lift motor. 4. Replace the IOB.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
503 -01	B	Tray 3 error (Paper Feed Unit or LCT)
		For the two-tray paper feed unit or one-tray paper feed unit: ▪ When the tray lift motor is turned on, the upper limit is not detected within 10 seconds **For the LCT:** ▪ SC 503-01 occurs if the upper or lower limit is not detected within 8 seconds when the tray lift motor is turned on to lift or lower the tray.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		For the two-tray paper feed unit or one-tray paper feed unit: ▪ Defective tray lift motor or connector disconnection ▪ Defective lift sensor or connector disconnection **For the LCT:** ▪ Defective stack transport clutch or connector disconnection ▪ Defective tray motor or connector disconnection ▪ Defective end fence home position sensor or connector disconnection ▪ Defective upper limit sensor or connector disconnection ▪ Defective tray lift motor or connector disconnection
		1. Check the cable connections. 2. Check and/or replace the defective component.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
503 -02	B	Tray 3 error (Paper Feed Unit or LCT)
		This SC is generated if the following condition occurs 3 consecutive times. **For the two-tray paper feed unit or one-tray paper feed unit:** ▪ When the tray lowers, the tray lift sensor does not go off within 1.5 sec. **For the LCT:** ▪ When the main switch is turned on or when the LCT is set, if the end fence is not in the home position (home position sensor ON), the tray lift motor stops. ▪ If the upper limit does not go off for 1.5 seconds even the tray lift motor turns on to lower the tray after the upper limit has been detected at power on.

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		For the two-tray paper feed unit or one-tray paper feed unit: ▪ Defective tray lift motor or connector disconnection ▪ Defective lift sensor or connector disconnection **For the LCT:** ▪ Defective stack transport clutch or connector disconnection ▪ Defective tray motor or connector disconnection ▪ Defective end fence home position sensor or connector disconnection
		1. Check the cable connections. 2. Check and/or replace the defective component.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
504 -01	B	Tray 4 error (Paper Feed Unit or LCT)
		For the two-tray paper feed unit or one-tray paper feed unit When the tray lift motor is turned on, the upper limit is not detected within 10 seconds. **For the LCT** If the upper or lower limit is not detected within 8 seconds when the tray lift motor is turned on to lift up or lower the tray
		▪ Defective tray lift motor or connector disconnection ▪ Defective lift sensor or connector disconnection
		1. Check the cable connections. 2. Check and/or replace the defective component.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
504 -02	B	Tray 4 error (Paper Feed Unit or LCT)

		This SC is generated if the following condition occurs 3 consecutive times. **For the two-tray paper feed unit or one-tray paper feed unit** ▪ When the tray lowers, the tray lift sensor does not go off within 1.5 sec. **For the LCT** ▪ If the upper limit does not go off for 1.5 seconds even the tray lift motor turns on to lower the tray after the upper limit has been detected at power on.
		For the two-tray paper feed unit or one-tray paper feed unit: ▪ Defective tray lift motor or connector disconnection ▪ Defective lift sensor or connector disconnection **For the LCT:** ▪ Defective stack transport clutch or connector disconnection ▪ Defective tray motor or connector disconnection ▪ Defective end fence home position sensor or connector disconnection
		1. Check the cable connections. 2. Check and/or replace the defective component.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
505 -01	B	Tray 5 error (Two-tray paper feed unit combined with the one-tray paper feed unit)
		When the tray lift motor is turned on, the upper limit is not detected within 10 seconds.
		▪ Defective tray lift motor or connector disconnection ▪ Defective lift sensor or connector disconnection
		1. Check the cable connections. 2. Check and/or replace the defective component.

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
505 -02	B	Tray 5 error (Two-tray paper feed unit combined with the one-tray paper feed unit)
		This SC is generated if the following condition occurs 3 consecutive times. ▪ When the tray lowers, the tray lift sensor does not go off within 1.5 sec.
		▪ Defective tray lift motor or connector disconnection ▪ Defective lift sensor or connector disconnection
		1. Check the cable connections. 2. Check and/or replace the defective component.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
530	D	Fusing fan error
		The IOB does not receive the lock signal 10 seconds after turning on the fusing fan.
		▪ Defective fusing fan motor or connector disconnection ▪ Defective IOB
		1. Check the connector and/or replace the fusing fan motor. 2. Replace the IOB.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
531	D	Ventilation fan (at the left side of the machine) motor-front/rear error
		The IOB does not receive the lock signal for 2 seconds after turning on the ventilation fan motor-front/rear.
		▪ Defective ventilation fan motor-front or rear ▪ Defective IOB

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		1. Replace the ventilation fan (at the left side of the machine) motor-front or rear. 2. Replace the IOB.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
532	D	IH coil fan error
		The machine does not detect the fan motor lock signal for 2 seconds while the IH coil fan turns on.
		▪ Disconnected harness ▪ Overload on the IH coil fan motor ▪ Defective IH coil fan motor ▪ Defective IOB
		1. Check or replace the harness. 2. Replace the IH coil fan. 3. Replace the IOB.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
533	D	IH inverter fan error
		The machine does not detect the fan motor lock signal for 2 seconds while the IH inverter fan turns on.
		▪ Disconnected harness ▪ Overload on the IH inverter fan motor ▪ Defective IH inverter fan motor ▪ Defective IOB
		1. Check or replace the harness. 2. Replace the IH inverter fan. 3. Replace the IOB.

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
534	D	Second duct fan error
		The machine does not detect the fan motor lock signal for 2 seconds while the second duct fan turns on.
		▪ Disconnected harness ▪ Overload on the second duct fan motor ▪ Defective second duct motor ▪ Defective IOB
		1. Check or replace the harness. 2. Replace the second duct fan. 3. Replace the IOB.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
535	D	Paper exit fan error
		The machine does not detect the fan motor lock signal for 2 seconds while the paper exit fan turns on.
		▪ Disconnected harness ▪ Overload on the paper exit fan motor ▪ Defective paper exit motor ▪ Defective IOB
		1. Check or replace the harness. 2. Replace the paper exit fan. 3. Replace the IOB.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
536	D	Third duct fan error
		The motor lock signal error is detected for 10 seconds after the motor lock signal was first detected.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Defective controller fan motor ▪ Defective IOB
		1. Replace the controller fan motor. 2. Replace the IOB.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
540	D	Fusing/Paper exit motor error
		The IOB does not receive the lock signal 2 seconds after turning on the fusing/paper exit motor.
		▪ Motor overload ▪ Defective fusing/paper exit motor ▪ Shorted 24 V fuse on the PSU ▪ Defective interlock system
		1. Check the motor operation with SP5804-031 to -036. Replace the 24V fuse on the PSU if fusing/paper exit motor does not operate. 2. Replace the fusing/paper exit motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
541	A	Heating roller thermopile error
		The temperature measured by the heating roller thermopile does not reach 0°C for 6 seconds.
		▪ Loose connection of the heating roller thermopile ▪ Defective heating roller thermopile ▪ Defective thermopile
		1. Check if the heating roller thermopile is firmly connected. 2. Replace the heating roller thermopile.

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
542	A	Heating roller warm-up error 1
		▪ The heating roller temperature does not reach the ready temperature for 190 seconds after the IH inverter turns on. ▪ The heating roller temperature detected by the heating roller thermopile does not reach 80°C for 20 seconds after the IH inverter on.
		▪ Dirty or defective thermopile ▪ Defective IH coil unit
		1. Check if the heating roller thermopile is firmly connected. 2. Replace the thermopile. 3. Replace the IH coil unit.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
543	A	Heating roller overheat 1 (software error)
		The detected fusing temperature detected by the heating roller thermopile stays at 245°C for 1 second.
		▪ Defective PSU ▪ Defective IOB ▪ Defective BCU
		1. Replace the PSU. 2. Replace the IOB. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
544	A	Heating roller overheat 1 (hardware error)
		During stand-by mode or a print job, the temperature detected by the heating roller thermopile reaches 250 °C.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Defective PSU ▪ Defective IOB ▪ Defective BCU ▪ Defective fusing control system
		1. Replace the PSU. 2. Replace the IOB. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
547	D	Zero cross error
		▪ The zero cross signal is detected three times even though the heater relay is off when turning on the main power. ▪ The zero cross signal is not detected for 3 seconds even though the heater relay is on after turning on the main power or closing the front door. ▪ The detection error occurs twice or more in the 11 zero cross signal detections. This error is defined when the detected zero cross signal is less than 39.
		▪ Defective fusing relay ▪ Defective fusing relay circuit ▪ Shorted +24V fuse on the PSU ▪ Unstable power supply
		1. Check the power supply source. 2. Replace the +24V fuse on the PSU. 3. Replace the PSU

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
548	A	Fusing unit rotation error
		The heating roller rotation sensor does not detect change in the

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		actuator for 0.5 seconds after the fusing/paper exit motor has turned on.
		▪ Defective fusing/paper exit motor ▪ Deformed actuator for the heating roller rotation sensor ▪ Defective heating roller rotation sensor ▪ Broken connection between IH inverter and IOB ▪ Incorrectly set fusing unit
		1. Check if the fusing unit is correctly set. 2. Check or replace the actuator for heating roller rotation sensor. 3. Replace the heating roller rotation sensor. 4. Replace the IH inverter. 5. Check the connection between IH inverter and IOB.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
551	A	Heating roller thermistor error
		The temperature detected by the heating roller thermistor does not reach 0 °C for 7 seconds.
		▪ Loose connection of heating roller thermistor ▪ Defective heating roller thermistor
		1. Check that the heating roller thermistor is firmly connected. 2. Replace the heating roller thermistor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
552	A	Heating roller warm-up error 2
		▪ The heating roller temperature does not reach the ready temperature for 90 seconds after the heating lamp on. ▪ The heating roller temperature does not reach 80°C for 20 seconds after the IH inverter on.
		▪ Defective heating roller thermistor

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Defective IH inverter
		1. Check if the heating roller thermistor is firmly connected. 2. Replace the IH inverter.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
553	A	Heating roller overheat (software error)
		The temperature detected by the heating roller thermistor stays at 245°C or more for 1 second.
		▪ Defective PSU ▪ Defective IOB ▪ Defective BCU
		1. Replace the PSU. 2. Replace the IOB. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
554	A	Heating roller overheat (hardware error)
		The heating roller thermistor detects 250°C or more.
		▪ Defective PSU ▪ Defective IOB ▪ Defective BCU ▪ Defective fusing control system
		1. Replace the PSU. 2. Replace the IOB. 3. Replace the BCU.

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No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
557	C	Zero cross frequency error
		When the zero cross signal is 66 or more and it is detected 10 times or more in 11 detections, the machine determines that input 60 Hz and SC557 occurs.
		▪ Noise (High frequency) ▪ Defective PSU
		1. Check the power supply source. 2. Replace the PSU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
559	A	Consecutive fusing jam
		The paper jam counter for the fusing unit reaches 3 times. The paper jam counter is cleared if the paper is fed correctly. This SC is activated only when SP1159-001 is set to "1" (default "0").
		▪ Paper jam in the fusing unit.
		Remove the paper that is jammed in the fusing unit. Then make sure that the fusing unit is clean and has no obstacles in the paper feed path.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
561	A	Pressure roller thermistor error
		The temperature detected by the pressure roller thermistor does not reach 0 °C for 37 seconds.
		▪ Loose connection of the pressure roller thermistor ▪ Defective pressure roller thermistor
		1. Check if the pressure roller thermistor is firmly connected. 2. Replace the pressure roller thermistor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
562	A	Pressure roller temperature error
		The temperature of the pressure roller does not reach the ready temperature for 120 seconds after the pressure roller fusing lamp has turned on.
		▪ Dirty thermopile ▪ Defective pressure roller thermistor ▪ Defective pressure roller fusing lamp
		1. Clean the thermopile. 2. Replace the thermistor for the pressure roller. 3. Replace the pressure roller fusing lamp.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
563	A	Pressure roller overheat 3 (software error)
		The temperature detected by the pressure roller thermistor stays at 215°C or more for 1 second.
		▪ Defective PSU ▪ Defective IOB ▪ Defective BCU
		1. Replace the PSU. 2. Replace the IOB. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
564	A	Pressure roller overheat 3 (hardware error)
		The pressure roller thermistor detects 220°C or more.

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Defective PSU ▪ Defective IOB ▪ Defective BCU ▪ Defective fusing control system
		1. Replace the PSU. 2. Replace the IOB. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
565	A	Pressure roller fusing lamp consecutive full power 3
		When the fusing unit is not running in the ready condition, the pressure roller fusing lamp keeps ON full power for 180 seconds or more.
		▪ Broken pressure roller fusing lamp ▪ Defective pressure roller thermistor
		1. Replace the pressure roller fusing lamp. 2. Replace the pressure roller thermistor. 3. Replace the PSU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
569	D	Pressure roller contact sensor error
		Pressure roller contact sensor does not detect the pressure roller position three times.
		▪ Broken or defective pressure roller contact sensor ▪ Deformed or broken pressure roller contact sensor feeler ▪ Defective pressure roller contact motor ▪ Defective fusing unit

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		1. Check or replace the harness of the pressure roller contact sensor. 2. Replace the pressure roller contact sensor. 3. Replace the pressure roller contact motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
581	D	IH inverter input voltage error
		The IH inverter detects 70V or less/140V or more for 10 seconds.
		▪ Unusual input voltage ▪ Disconnected CN981 on the IH inverter ▪ Defective IH inverter
		1. Check CN981 on the IH inverter. 2. Replace the IH inverter.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
582	D	IH inverter current error at power on
		The output current from the IH inverter does not reach the proper value when the IH inverter turns on.
		▪ Disconnected power input terminal 1 and 2 ▪ Defective IH inverter ▪ Defective IH coil unit ▪ Defective fusing unit
		1. Check the power input terminals 1 and 2. 2. Replace the IH inverter. 3. Replace the IH coil unit. 4. Replace the fusing unit.

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
585	A	IH coil unit full power (1250W) error
		The IH coil unit full power (1250W) continues for 220 seconds or more.
		▪ Defective IH inverter ▪ Defective BCU ▪ Defective IOB ▪ Broken connection between IH inverter and IOB ▪ Defective thermopile
		1. Replace the IH inverter. 2. Replace the BCU. 3. Replace the IOB. 4. Check the connection between IH inverter and IOB. 5. Replace the thermopile.

3.1.7 SERVICE CALL TABLES - 6

SC6xx: Device Communication

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
610	D	Mechanical counter error: K
611	D	Mechanical counter error: FC
-	-	This SC is only for NA models. The machine detects the mechanical counter error when SP5987-001 is set to "1".
		▪ Disconnected mechanical counter ▪ Defective mechanical counter
		1. Check or replace the mechanical counter.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
621	D	Finisher/ Mail Bin communication error

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
622	D	Paper feed unit communication error
-	-	While the IOB communicates with an optional unit, an SC code is displayed if one of following conditions occurs. ▪ The IOB receives the break signal which is generated by the peripherals only just after the main switch is turned on. ▪ When the IOB does not receive an OK signal from a peripheral 100ms after sending a command to it. And when the IOB does not receive an OK signal even after sending the command 3 times, the IOB resends the command.
		▪ Cable problems ▪ IOB problems ▪ BCU problems ▪ PSU problems in the machine ▪ Main board problems in the peripherals
		1. Check if the cables of peripherals are correctly connected. 2. Replace the PSU if no power is supplied to peripherals. 3. Replace the IOB or main board of peripherals. 4. Replace the BCU. 5. Replace the defective peripheral.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
623	D	2nd Paper Bank communication error
		In the case of installing two optional paper feed units (D351 + D387): ▪ The upper unit cannot communicate with the lower unit after the upper unit has detected the lower unit. ▪ The upper unit detects an error signal from the lower unit after the upper unit has detected the lower unit.
		▪ Disconnected connector
		Check and/ or connect the connector.

Service Call Conditions

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
636	CTL D	SD Card Error
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 ▪ No DESS module
		1. Install the expanded authentication module. 2. Install the SD card. 3. Install the DESS module.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
641	CTL D	BICU control data transfer abnormal
		A sampling of the control data sent from the BICU reveals an abnormality.
		▪ Defective controller board ▪ External noise ▪ Defective BCU
		1. Replace the controller board. 2. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
669	D	EEPROM error
		Retry of EEPROM communication fails three times after the machine has detected the EEPROM error.
		▪ Caused by noise
		Turn the main power switch off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
670	CTL D	No response from controller at power on
		When the main power is turned on or the machine starts warming up from energy-saving mode, the controller does not receive a command signal from the controller.
		▪ Loose connection ▪ Defective controller ▪ Defective controller board
		1. Check the connection between the BCU and controller. 2. Replace the controller. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
671	CTL D	Engine board mismatch error
		Engine board and controller mismatch detected.
		▪ Wrong engine board installed. ▪ Wrong controller board installed. ▪ Check the type of engine board and controller board.
		1. Replace the BCU. 2. Replace the controller board.

No.	Sub code	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
681	001 ~ 005	D	RFID: Communication error due to the following:
			▪ Poor connection with harness that connects RFID controller board and BCU board ▪ Defective RFID controller board. ▪ Defective BCU board ▪ Electrical noise
			▪ Check the connection of the harness that runs between the RFID controller board and BCU board. ▪ Check the connection of the GND line for the ITB unit. ▪ Check the physical condition of this harness and replace it if it is damaged. ▪ Replace the RFID controller board. ▪ Replace the BCU board
	061 ~ 064	D	RFID: Communication error due to the following:
			▪ Defective RFID reader and writer ▪ Defective RFID controller board ▪ Electrical noise
			▪ Replace the toner cartridge for the affected color (See table below). ▪ Replace the BCU board ▪ Replace the RFID controller board.
	071 ~ 074	D	RFID: Communication error due to the following:
			▪ Defective RFID reader and writer ▪ Defective RFID controller board ▪ Electrical noise
			▪ Replace the toner cartridge for the affected color (See table below). ▪ Replace the RFID controller board.
	081 ~ 164	D	RFID: Communication error due to the following:
			▪ Defective RFID reader and writer ▪ Electrical noise

No.	Sub code	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
			▪ Replace the toner cartridge for the affected color (See table below). ▪ If the SC still occurs, see note below.

- For Sub Codes 061–164:

Use the following table to determine the affected toner cartridge.

Sub code (last digit)	Affected toner cartridge
**1	BK
**2	M
**3	C
**4	Y

- For Sub Codes 081–164:

In some cases, replacing the toner cartridge may not clear the SC. If this happens, the cause is probably a board or harness defect, which affects all four colors.

In such cases:

- Check the physical condition of the harness that connects RFID controller board and BCU board. If it is damaged, replace it.
- Check the physical condition of the RFID controller board and BCU board. If they are damaged, replace them.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
682	D	Memory chip at TD sensor: Communication error
		Retry of memory chip communication fails three times after the machine has detected the memory chip communication error.
		▪ Damaged memory chip data ▪ Disconnected inter face ▪ No memory chip on the development unit ▪ Noise
		Replace the PCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
683	B	RFID: Unit check error
		The machine gets RFID communication error even the toner cartridges have not been installed in the machine.
		Caused by noise
		Turn the main power switch off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
687	D	Memory address command error
		The BCU does not receive a memory address command from the controller 120 seconds after paper is in the position for registration.
		▪ Loose connection ▪ Defective controller ▪ Defective BCU
		1. Check if the controller is firmly connected to the BCU. 2. Replace the controller. 3. Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
690	D	GAVD communication error
		▪ The I2C bus device ID is not identified during initialization. ▪ A device-status error occurs during I2C bus communication. ▪ The I2C bus communication is not established due to an error other than a buffer shortage.
		▪ Loose connection ▪ Defective BCU ▪ Defective LD controller board
		1. Turn the main switch off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		2. Check the cable connection. 3. Replace the laser optics-housing unit. 4. Replace the BCU.

3.1.8 SERVICE CALL TABLES - 7

SC7xx: Peripherals

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
721	B	Jogger motor error
		▪ Jogger HP sensor does not detect the jogger fence for 2000ms after the jogger unit has moved to its home position. ▪ Jogger HP sensor does not turn off 300 ms after the jogger unit has moved from its home position. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Defective jogger HP sensor ▪ Overload on the jogger motor ▪ Defective jogger motor ▪ Defective main board ▪ Disconnected or defective harness
		1. Check the connections and cables for the components mentioned above. 2. Replace the jogger HP sensor (if the jogger motor works correctly). 3. Replace the jogger motor (if the jogger motor does not work). 4. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
723	B	Stack feed-out motor error
		▪ Stack feed-out HP sensor does not detect the home position of the stack feed-out belt 3000ms after the stack feed-out belt has moved to its home position. ▪ Stack feed-out HP sensor does not turn off 200 ms after the stack feed-out belt has moved from its home position. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Defective stack feed-out HP sensor

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Overload on the stack feed-out motor ▪ Defective stack feed-out motor ▪ Defective main board ▪ Disconnected or defective harness
		1. Check the connections and cables for the components mentioned above. 2. Replace the stack feed-out HP sensor (if the stack feed-out motor works correctly). 3. Replace the stack feed-out motor (if the stack feed-out motor does not work). 4. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
725	B	Finisher exit guide plate motor error
		After moving away from the guide plate position sensor, the exit guide is not detected at the home position within the prescribed time. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Guide plate motor disconnected, defective ▪ Guide plate motor overloaded due to obstruction ▪ Guide plate position sensor disconnected, defective
		1. Check the connections and cables for the components mentioned above. 2. Check for blockages in the guide plate motor mechanism. 3. Replace the guide plate position sensor and/or guide plate motor. 4. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
730	B	Finisher Tray 1 shift motor error
		The shift roller HP sensor of the upper tray does not activate within the prescribed time after the shift tray starts to move toward or away from the home position. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.
		▪ Shift tray HP sensor of the upper tray disconnected, defective ▪ Shift tray motor of the upper tray is disconnected, defective ▪ Shift tray motor of the upper tray overloaded due to obstruction
		1. Check the connections and cables for the components mentioned above. 2. Check for blockages in shift motor mechanism. 3. Replace the shift tray HP sensor and/or shift motor 4. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
740	B	Finisher corner stapler motor error
		For the 3000-sheet finisher ▪ Staple movement is not finished after a certain time. **For the 1000-sheet booklet finisher** ▪ The stapler motor does not switch off within the prescribed time after operating. ▪ The HP sensor of the staple unit does not detect the home position after the staple unit moves to its home position. ▪ The HP sensor of the staple unit detects the home position after the staple unit moves from its home position. The 1st detection failure issues a jam error, and the 2nd failure issues this SC code.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Staple jam ▪ Motor overload ▪ Defective stapler motor
		1. Check the connections and cables for the components mentioned above. 2. Replace the HP sensor and/or stapler motor 3. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
741	B	Finisher corner stapler rotation motor error
		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.
		▪ Defective stapler rotation motor ▪ Overload to the stapler rotation motor ▪ Defective stapler rotation HP sensor
		1. Replace the stapler rotation motor. 2. Replace the stapler rotation HP sensor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
742	B	Finisher stapler movement motor error
		For the 3000-sheet finisher ▪ Staple movement is not finished for a certain time. **For the 1000-sheet booklet finisher** ▪ 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.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Motor overload ▪ Loose connection of the stapler home position sensor ▪ Loose connection of the stapler movement motor ▪ Defective stapler home position sensor ▪ Defective stapler movement motor
		1. Check the connection of the stapler movement motor. 2. Check the connection of the stapler home position sensor. 3. Replace the stapler home position sensor. 4. Replace the stapler movement motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
746	B	1000-sheet booklet finisher: Stack feed motor error
		▪ The stack feed HP sensor does not detect "ON" twice (once: jam error) for specified time after the stack feed motor has turned on. ▪ The stack feed HP sensor does not detect "OFF" twice (once: jam error) for specified time after the stack feed motor has turned on.
		▪ Motor overload ▪ Loose connection of the stack feed motor ▪ Defective stack feed motor
		1. Check the connections and cables for the stack feed motor and HP sensor. 2. Check for blockages in the stack feed motor mechanism. 3. Replace the stack feed HP sensor and/or stack feed motor 4. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
750	B	1000/3000-sheet (booklet) finisher: Tray lift motor error

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		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.
		1. Check the connections to the shift tray motor. 2. Defective shift tray motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
753	B	Stacking sponge roller motor
		Occurs during the operation of the stacking sponge roller motor.
		▪ Disconnected, looser or defective motor harness ▪ Motor overloaded ▪ Disconnected, loose or defective sensor harness ▪ Defective stacking sponge roller motor ▪ Defective stacking roller HP sensor
		1. Check the connections of the stacking sponge roller motor. 2. Check the connections of the stacking sponge roller HP sensor. 3. Replace the stacking sponge roller motor. 4. Replace the stacking sponge roller HP sensor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
760	B	Finisher punch motor error
		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 or defective ▪ Punch motor overload due to obstruction

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		1. Check the connections and cables for the punch motor and HP sensor. 2. Check for blockages in the punch motor mechanism. 3. Replace the punch HP sensor and/or punch motor 4. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
761	B	Finisher folder plate motor error
		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.
		1. Check the connections and cables for the folder plate motor and HP sensor. 2. Check for blockages in the folder plate motor mechanism. 3. Replace the folder plate HP sensor and/or folder plate motor 4. Replace the finisher main board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
763	B	Punch movement motor error
		The punch unit 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.
		▪ Motor harness disconnected, loose, defective ▪ Defective motor
		1. Check the connections to the punch movement motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		2. Replace the punch movement motor
764	B	Paper position sensor slide motor error
		The paper position sensor 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.
		▪ Motor harness disconnected, loose, defective ▪ Defective motor
		1. Check the connections to the paper position sensor slide motor. 2. Replace the paper position sensor slide motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
765	B	Fold unit bottom fence motor error
		The bottom fence of the fold unit 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.
		▪ Motor harness disconnected, loose, defective ▪ Defective motor
		1. Check the connections to the fold unit bottom fence motor. 2. Defective fold unit bottom fence motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
766	B	Stacking sponge roller motor error
		The sponge roller 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.
		▪ Motor harness disconnected, loose, defective

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Defective motor
		1. Check the connections to the stacking sponge roller motor. 2. Defective stacking sponge roller motor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
767	B	Stack junction gate motor error
		The stack junction gate 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.
		▪ Motor harness disconnected, loose, defective ▪ Defective motor
		1. Check the connections to the stack junction gate motor. 2. Defective stack junction gate.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
791	D	Bridge unit error
		The machine recognizes the finisher, but does not recognize the bridge unit.
		▪ Defective connector ▪ Broken harness
		1. Check the connections between the bridge unit and the machine. 2. Install a new bridge unit.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
792	B	Finisher error
		The machine does not recognize the finisher, but recognizes the bridge

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		unit.
		▪ Defective connector ▪ Defective harness ▪ Incorrect installation
		1. Check the connections between the finisher and the machine. 2. Install a new finisher.

3.1.9 SERVICE CALL TABLES - 8

SC8xx: Peripherals

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
817	CTL D	Boot loader error
		The boot loader cannot read one of the following: self-diagnostic module, kernel, or one of the files of the root file system, or the check of one of these items on the system SD card failed.
		▪ File or module on the system SD card is corrupted ▪ File or module on the system SD card is illegal ▪ Make sure that the system SD card is the one designed for the machine ▪ Replace controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
819	CTL D	Fatal error
[696E]		Process error
		System completely down

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Defective RAM DIMM ▪ Defective controller ▪ Software error
		1. Check and/or replace the RAM DIMM. 2. Replace the controller.
		Note ▪ See Note 1 at the end of the SC table
[766D]		Memory error
		Unexpected system memory size
		▪ Defective RAM DIMM ▪ Defective controller ▪ Software error
		1. Check and/or replace the RAM DIMM. 2. Replace the controller.
[4361]		Kernel stop error
		The cache error trap occurs in the CPU.
		▪ CPU cache error
		1. Replace the controller.
-		Kernel stop error
		An error in the operation system (An error message is output.)
		▪ Defective CPU ▪ Defective memory ▪ Defective flash memory ▪ Incorrect software
		1. Replace the memory. 1. Replace the controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
820	CTL D	Self-diagnostics error: CPU [XXXX]: Detailed error code
[0001] to [06FF] [0801] to [4005]		CPU error During the self-diagnostic, the controller CPU detects an error. There are 47 types of error code (0001 to 4005) depending on the cause of the error. The CPU detects an error and displays the specific error code with the program address where the error occurs.
		▪ System firmware problem ▪ Defective controller
		1. Turn the main switch off and on. 1. Reinstall the controller system firmware. 2. Replace the controller. When the problem cannot be fixed with the above procedure, the following information displayed on the screen needs to be fed back to a technical support center. ▪ SC code ▪ Detailed error code ▪ Program address
[0702] [0709] [070A]		CPU/Memory Error
		▪ System firmware problem ▪ Defective RAM-DIMM ▪ Defective controller
		1. Reinstall the controller system software. 2. Replace the RAM-DIMM. 3. Replace the controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
821	CTL D	Self-diagnostics error: ASIC [XXXX]: Detailed error code

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
[0B00]		ASIC error
		The write-&-verify check error has occurred in the ASIC.
		▪ Defective ASIC device
		Replace the controller.
[0B06]		ASIC detection error
		The I/O ASIC for system control is not detected.
		▪ Defective ASIC ▪ Defective North Bridge and PCI I/F
		Replace the controller board.
[0B10]		SHM register error ▪ The initialization of bus connection or read for SHM fails. ▪ The register of SHM is different from specified value.
		▪ Defective connection bus ▪ Defective SHM
		Replace the controller board
[0D05]		Self-diagnosis error: ASIC
		The CPU checks if the ASIC timer works correctly compared with the CPU timer. If the ASIC timer does not function in the specified range, this SC code is displayed.
		▪ System firmware problem ▪ Defective RAM-DIMM ▪ Defective controller
		1. Reinstall the controller system firmware. 1. Replace the RAM-DIMM. 2. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
822	CTL B	Self-diagnostic error: HDD (Hard Disk Drive) [XXXX]: Detailed error code
[3003]		Timeout error
[3004]		Command error
-	-	When the main switch is turned on or starting the self-diagnostic, the HDD stays busy for the specified time or more.
-	-	▪ Loose connection ▪ Defective HDD ▪ Defective controller
-	-	1. Check that the HDD is correctly connected to the controller. 2. Replace the HDD. 3. Replace the controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
824	CTL D	[1401] Self-diagnosis error: Standard NVRAM The controller cannot recognize the standard NVRAM installed or detects that the NVRAM is defective.
		▪ Loose connection ▪ Defective standard NVRAM ▪ Defective controller board ▪ Worn-out battery in the NVRAM
		1. Check the standard NVRAM is firmly inserted into the socket. 2. Replace the NVRAM. 3. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
826	CTL	[15FF]

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
	D	Self-diagnostic Error: RTC/optional NVRAM The RTC device is not detected.
		▪ RTC defective ▪ NVRAM without RTC installed ▪ Backup battery discharged
		Replace the NVRAM with another NVRAM with an RTC device.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
827	CTL D	Self-diagnostic error: Standard SDRAM DIMM [XXXX]: Detailed error code
[0201]		Verification error
		Error detected during a write/verify check for the standard RAM (SDRAM DIMM).
		▪ Loose connection ▪ Defective SDRAM DIMM ▪ Defective controller
		1. Turn the main switch off and on. 2. Replace the SDRAM DIMM. 3. Replace the controller.
[0202]		Resident memory error
		The SPD values in all RAM DIMM are incorrect or unreadable.
		▪ Defective RAM DIMM ▪ Defective SPD ROM on RAM DIMM ▪ Defective 12C bus
		Replace the RAM DIMM.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
828	CTL D	Self-diagnostic error: ROM [XXXX]: Detailed error code
[0101]		Check sum error 1 ▪ The boot monitor and OS program stored in the ROM DIMM is checked. If the check sum of the program is incorrect, this SC code is displayed.
[0104]		Check sum error 2 ▪ All areas of the ROM DIMM are checked. If the check sum of all programs stored in the ROM DIMM is incorrect, this SC code is displayed.
-	-	▪ Defective controller
-	-	1. Turn the main switch on and off. 2. Replace the controller.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
829	CTL B	Self-diagnosis error: optional RAM [XXXX]: Detailed error code
[0401]		Verification error (Slot 1) The data stored in the optional RAM in Slot 1 does not match the data when reading.
[0402]		Composition error (Slot 1) The result of checking the composition data of the optional RAM in Slot 1 on the controller is incorrect.
-	-	▪ Not specified RAM DIMM installed ▪ Defective RAM DIMM
-	-	1. Turn the main switch off and on. 2. Replace the RAM DIMM. 3. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
833	CTL C	Self-diagnostic error 8: Engine I/F ASIC
[0F30] [0F31]		▪ ASIC (Mandolin) for system control could not be detected. After the PCI configuration, the device ID for the ASIC could not be checked.
		Replace the BCU.
[0F41]		▪ ASIC (Mandolin) for system control could not be detected. After the PCI configuration, the device ID for the ASIC could not be checked.
		Replace the BCU.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
851	CTL B	IEEE1394 interface error
		The 1394 interface is unusable.
		▪ Defective IEEE1394 ▪ Defective controller board
		1. Turn the main switch off and on. 2. Replace the IEEE1394 interface board. 3. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
853	CTL B	Wireless LAN/Bluetooth card not detected
		The wireless LAN/Bluetooth card is not detected before communication is established, though the wireless LAN/Bluetooth board is detected.
		▪ Loose connection
		Check the connection.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
854	CTL B	Wireless LAN/Bluetooth card not detected
		The wireless LAN/Bluetooth card is not detected after communication is established, but the wireless LAN/Bluetooth board is detected.
		▪ Loose connection
		Check the connection.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
855 856	CTL B	Wireless LAN/Bluetooth card error
		An error is detected in the wireless LAN/Bluetooth card.
		▪ Loose connection ▪ Defective wireless LAN/Bluetooth card
		1. Check the connection. 2. Replace the wireless LAN/Bluetooth card.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
857	CTL B	USB interface error
		The USB interface cannot be used due to a driver error.
		▪ Defective USB driver ▪ Loose connection
		1. Check the connection. 2. Replace the USB board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
858	CTL C	HDD Encryption unit error 1
		A serious error occurs when data is encrypted to update an encryption

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		key with the HDD encryption unit.
	[0]	Encryption key acquisition error: The controller fails to get a new encryption key.
		▪ Defective controller board Replace the controller board.
	[1]	Encryption key setting for HDD error: The controller fails to copy a new encryption key to the HDD.
		▪ Defective SATA chip on the controller board Replace the controller board.
	[2]	Encryption key setting for HDD error: The controller fails to copy a new encryption key to the HDD.
		▪ Defective SATA chip on the controller board Replace the controller board.
	[30]	NVRAM data encryption error 2: An error occurs before the NVRAM data is encrypted.
		▪ Defective controller board Replace the controller board.
	[31]	Other error: A serious error occurs while the data is encrypted.
		Same as SC991

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
859	CTL C	HDD Encryption unit error 2
		A serious error occurs when the HDD data is encrypted to update an encryption key with the HDD encryption unit.
	[8]	HDD check error:

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		The HDD is not correctly installed.
		▪ No HDD installed ▪ Unformatted HDD ▪ The encryption key on the controller is different from the one on the HDD 1. Install the HDD correctly. 2. Initialize the HDD.
	[9]	Power failure during the data encryption: The data encryption (NVRAM and HDD) has not been completed.
		▪ Power failure during the data encryption Initialize the HDD.
	[10]	Data read/write error: The DMAC error is detected twice or more.
		▪ Same as SC863

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
860	CTL B	HDD: Initialization error
		The controller detects that the hard disk fails.
		▪ HDD not initialized ▪ Defective HDD
		1. Reformat the HDD. 2. Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
861	CTL D	HDD: Reboot error
		The HDD does not become ready within 30 seconds after the power is supplied to the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Loose connection ▪ Defective cables ▪ Defective HDD ▪ Defective controller
		1. Check the connection between the HDD and controller. 2. Check and replace the cables. 3. Replace the HDD. 4. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
863	CTL D	HDD: Read error
		The data stored in the HDD cannot be read correctly.
		▪ Defective HDD ▪ Defective controller
		1. Replace the HDD. 2. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
864	CTL D	HDD: CRC error
		While reading data from the HDD or storing data in the HDD, data transmission fails.
		▪ Defective HDD
		Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
865	CTL	HDD: Access error

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
	D	An error is detected while operating the HDD.
		Defective HDD
		Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
866	CTL B	SD card authentication error
		A correct license is not found in the SD card.
		▪ SD-card data is corrupted.
		Store correct data in the SD card.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
867	CTL D	SD card ejection error
		The SD card is ejected from the slot.
		1. Install the SD card. 2. Turn the main switch off and on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
868	CTL D	SD card access error ▪ -13 to -3: File system error ▪ Other number: Device error
		An error report is sent from the SD card reader. ▪ An error is detected in the SD card.
		1. For a file system error, format the SD card on your PC. 2. For a device error, turn the mains switch off and on. 3. Replace the SD card. 4. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
870	CTL B	Address book error
		An error is detected in the data copied to the address book over a network.
		▪ Defective software program ▪ Defective HDD ▪ Incorrect path to the server
		1. Initialize the address book data (SP5-846-050). 2. Initialize the user information (SP5-832-006). 3. Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
872	CTL B	HDD mail reception data error
		An error is detected in the HDD at machine initialization.
		▪ Defective HDD ▪ Power failure during an access to the HDD
		1. Turn the main switch off and on. 2. Initialize the HDD partition (SP5-832-007). 3. Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
873	CTL B	HDD mail transmission data error
		An error is detected in the HDD at machine initialization.
		▪ Defective HDD ▪ Power failure during an access to the HDD
		1. Initialize the HDD partition (SP5-832-008). 2. Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
874	CTL D	Delete All error 1: HDD
		An error is detected while all of the HDD or NVRAM are formatted physically by the Data Overwrite Security Unit (M354).
		▪ Data Overwrite Security Unit (SD card) not installed ▪ Defective HDD
		1. Install the Data Overwrite Security Unit (M354). 2. Replace the HDD.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
875	CTL D	Delete All error 2: Data area
		An error is detected while all of the HDD or NVRAM are formatted logically by the Data Overwrite Security Unit (M354).
		▪ The logical format for the HDD fails.
		Turn the main switch off/on and try the operation again

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
876	CTL D	Log Data Error 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.
-001		Log Data Error 1
		▪ Damaged log data file in the HDD
		Initialize the HDD with SP5832-004.
-002		Log Data Error 2
		▪ An encryption module not installed

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		1. Install the DESS module. 2. Disable the log encryption setting with the user tool.
-003		Log Data Error 3
		▪ Invalid log encryption key due to defective NVRAM data
		1. Initialize the HDD with SP5832-004. 2. Disable the log encryption setting with he user tool.
-004		Log Data Error 4
		▪ Unusual log encryption function due to defective NVRAM data
		Initialize the HDD with SP5832-004.
-005		Log Data Error 5
		▪ Installed NVRAM or HDD which is used in another machine
		1. Reinstall the previous NVRAM or HDD. 2. Initialize the HDD with SP5832-004.
-099		Log Data Error 99
		▪ Other than the above causes
		Ask your supervisor.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
877	CTL D	HDD Data Overwrite Security SD card error
		The 'all delete' function cannot be executed but the Data Overwrite Security Unit (M354) is installed and activated.
		▪ Defective SD card (M354) ▪ SD card (M354) not installed
		1. Replace the NVRAM and then install the new SD card (M354). 2. Check and reinstall the SD card (M354).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
878	CTL D	TPM system authentication error
		The system firmware is not authenticated by TPM (security chip).
		▪ Incorrect updating for the system firmware ▪ Defective flash ROM on the controller board Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
900	CTL D	Electric counter error
		Abnormal data in the counters.
		▪ Defective NVRAM ▪ Defective controller ▪ Incorrect NVRAM
		1. Check the connection between the NVRAM and controller. 2. Replace the NVRAM. 3. Replace the controller board.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
920	CTL D	Printer application error
		An error is detected in the printer application program.
		▪ Defective software ▪ Unexpected hardware resource (e.g., memory shortage)
		1. Software defective; switch off/on, or change the controller firmware if the problem is not solved 2. Install an optional memory.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
921	CTL D	Printer font error
		A necessary font is not found in the SD card.
		▪ A necessary font is not found in the SD card. ▪ The SD card data is corrupted.
		Check that the SD card has the correct data.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
990	CTL D	Software performance error
		The software makes an unexpected operation.
		▪ Defective software ▪ Defective controller ▪ Software error
		1. Turn the main switch off and on. 2. Reinstall the controller and/or engine main firmware.
		Note ▪ See Note 1 at the end of the SC table.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
991	CTL C	Software continuity error
		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).

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
992	CTL D	Undefined error
		Defective software program
		▪ An error undetectable by any other SC code occurred

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
995	D	CPM setting error
	-001	▪ Defective BICU ▪ NVRAM Replacement error
		1. Install the previous NVRAM. 2. Input the serial number with SP5811-004, and turn the main power switch off/on.
	-002	▪ Defective NVRAM ▪ Defective controller
		1. Update the controller firmware. 2. Install a new NVRAM, and turn off and on the main power switch after SC995-002 has occurred.
	-003	▪ Incorrect type controller installed ▪ Defective controller
		Replace the controller board with the correct type.
	-004	▪ Incorrect model controller installed.
		Replace the controller board with the correct model.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
998	CTL D	Application start error
		No applications start within 60 seconds after the power is turned on.

No.	Type	Details (Symptom, Possible Cause, Troubleshooting Procedures)
		▪ Loose connection of RAM-DIMM, ROM-DIMM ▪ Defective controller ▪ Software problem
		1. Check the setting of SP5875-001. If the setting is set to "1 (OFF)", change it to "0 (OFF)". 2. Check if the RAM-DIMM and ROM-DIMM are correctly connected. 3. Reinstall the controller system firmware. 4. 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 this case, the following data and information needs 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

APPENDIX:
PROCESS CONTROL ERROR CONDITIONS

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

4. APPENDIX: PROCESS CONTROL ERROR CONDITIONS

4.1 PROCESS CONTROL ERROR CONDITIONS

4.1.1 DEVELOPER INITIALIZATION RESULT

The displayed number shows the results of the TD sensor check for all 4 colors.

0000 = YCMK

SP-3-014-001 (Developer Initialization Result)

No.	Result	Description	Possible Causes/Action
1	Successfully completed	Developer initialization is successfully completed.	-
2	Forced termination	Developer initialization was forcibly terminated.	▪ A cover was opened or the main switch was turned off during the initialization. 1. Do the developer initialization again when done in SP mode. Reinstall the engine main firmware if the result is the same. 2. Turn the main switch off and on when done at unit replacement.
6	Vt error	Vt is more than 0.7V when Vcnt is 4.3V.	1. Make sure that the heat seal on the development unit is not removed. 2. Defective TD sensor
7	Vcnt error 1	Vcnt is less than 4.7V when Vcnt is Vt target ±0.2V.	1. Defective TD sensor 2. Vt target settings are not correct. 3. Toner density error

Process Control Error Conditions

No.	Result	Description	Possible Causes/Action
8	Vcnt error 2	Vt is more than 0.7V when Vcnt is 4.3V and Vcnt is less than 4.7V when Vcnt is Vt target ±0.2V.	1. Make sure that the heat seal on the development unit is not removed. 2. Defective TD sensor
9	Vcnt error 3	Vcnt is less than 4.7V.	1. Make sure that the heat seal on the development unit is not removed 2. Defective TD sensor 3. Vt target settings are not correct. 4. Toner density error

4.1.2 PROCESS CONTROL SELF-CHECK RESULT

Displayed number shows results of each color sensor check.

00000000 = YYCCMMKK

SP3-012-001 to -010 (Process Control Self-check Result)

No.	Result	Description	Possible Causes/Action
11	Successfully completed	Process control self-check successfully completed.	Check the Vsg adjustment. See the "Vsg Adjustment Result" following this table.
41	Vt error	Vt maximum or minimum error is detected.	▪ Defective development unit Vt maximum error and an image is faint: 1. Replace the toner supply pump unit. Vt maximum error and an image is O.K: 1. Replace the development unit. 2. Replace the IOB board. Vt minimum error: 1. Replace the development unit. 2. Replace the IOB board.
53	ID sensor	Not enough data can	▪ Solid image is not sufficient density:

No.	Result	Description	Possible Causes/Action
	coefficient (K5) detection error	be sampled.	1. Retry the process control. 2. Replace the ID sensors. 3. Replace the IOB board. ▪ Solid image is O.K. 1. Replace the ID sensors. 2. Replace the IOB board. ▪ ID sensor is dirty: 1. Clean the ID sensors. 2. Retry the process control.
54	ID sensor coefficient (K5) maximum/ minimum error	When the K5 is more than the value of SP3-362-003 or less than the value of SP3-362-004, the error 54 is displayed.	▪ ID sensor pattern density is too high or low. ▪ ID sensor or shutter is defective. Same as 53
55	Gamma error: Maximum	Gamma is out of range. 5.0 < Gamma	▪ ID sensor pattern density is too high. ▪ Hardware defective. Same as 53
56	Gamma error: Minimum	Gamma is out of range. Gamma < 0.15	▪ ID sensor pattern density is too low. ▪ Hardware defective. 1. Same as 53 2. Replace the toner supply pump unit.
57	Vk error: Maximum	Vk is out of range. 150 < Vk	▪ ID sensor pattern density is too low. ▪ Hardware defective. Same as 53
58	Vk error: Minimum	Vk is out of range. Vk < –150	▪ ID sensor pattern density is too high. ▪ Background dirty ▪ Hardware defective Same as 53
59	Sampling data error during	Not enough data can be sampled during the	▪ ID sensor pattern density is too high or low.

Process Control Error Conditions

No.	Result	Description	Possible Causes/Action
	gamma correction	gamma correction.	▪ Hardware defective Same as 53
99	Unexpected error	Process control fails.	▪ Power Failure Check the power source.

Vsg Adjustment Result

The displayed number shows the results of the test for each ID sensor.

0000000 = Front, K, C, Center, M, Y, Rear

SP3-325-001 to -010 (Vsg Adjustment Result)

No.	Result	Description	Possible Causes/Action
1	O.K	Vsg adjustment is correctly done.	-
2	ID sensor adjustment error	Vsg cannot be adjusted within 4.0 ±0.5V.	▪ Dirty ID sensor (toner, dust, or foreign material) ▪ Dirty transfer belt ▪ Scratched image transfer belt ▪ Defective ID sensor ▪ Poor connection ▪ Defective IOB 1. Clean the ID sensor. 2. Check the belt cleaning. Clean or replace the transfer belt. 3. Replace the image transfer belt. 4. Replace the ID sensor. 5. Check the connection. 6. Replace the IOB board.
3	ID sensor output error	ID sensor output is more than "Voffset Threshold" (SP3-324-004)	▪ Defective ID sensor ▪ Poor connection ▪ Defective IOB 1. Replace the ID sensor. 2. Check the connection.

No.	Result	Description	Possible Causes/Action
			3. Replace the IOB board.
9	Vsg Adjustment error	Vsg adjustment has not been completed.	▪ Other cases Retry SP3-321-010.

4.1.3 LINE POSITION ADJUSTMENT RESULT

SP2-194-010 to -012 (Line Position Adjustment Result: M, C, Y)

This SP shows the number as a line position adjustment result on the LCD. It shows which color has an error (M, Y or C).

No.	Result	Description	Note
0	Not done	Line position adjustment has not been done.	-
1	Completed successfully	Line position adjustment has correctly been done,	-
2	Cannot detect patterns	ID sensors have not detected the patterns for line position adjustment.	See Note
3	Fewer lines on the pattern than the target	The patterns, which ID sensors have detected, are not enough for line position adjustment.	See Note
4	More lines on the pattern than the target	Not used in this machine.	-
5	Out of the adjustment range	ID sensors have correctly detected the patterns for line position adjustment, but a shift of patterns is out of adjustable range.	See Note
6-9	Not used	-	-

Note

- For details, see the "Troubleshooting Guide - Line Position Adjustment" section.

APPENDIX:
TROUBLESHOOTING GUIDE

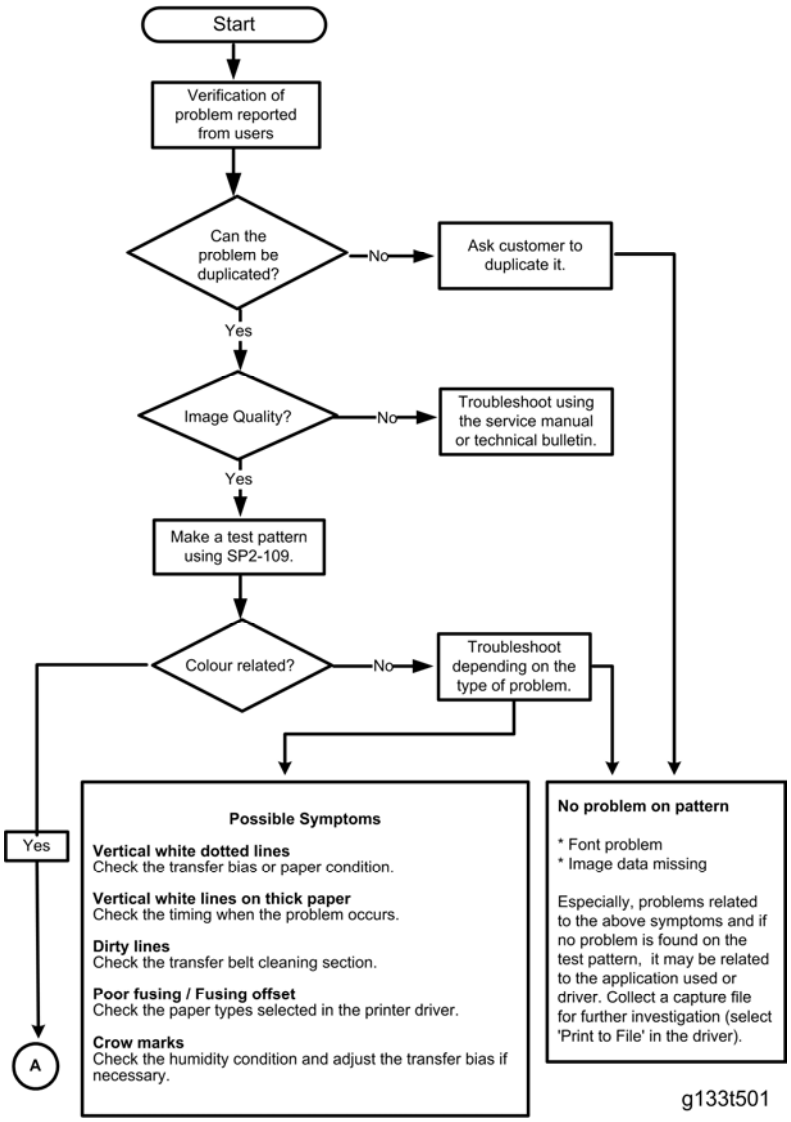
REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

5. APPENDIX: TROUBLESHOOTING GUIDE

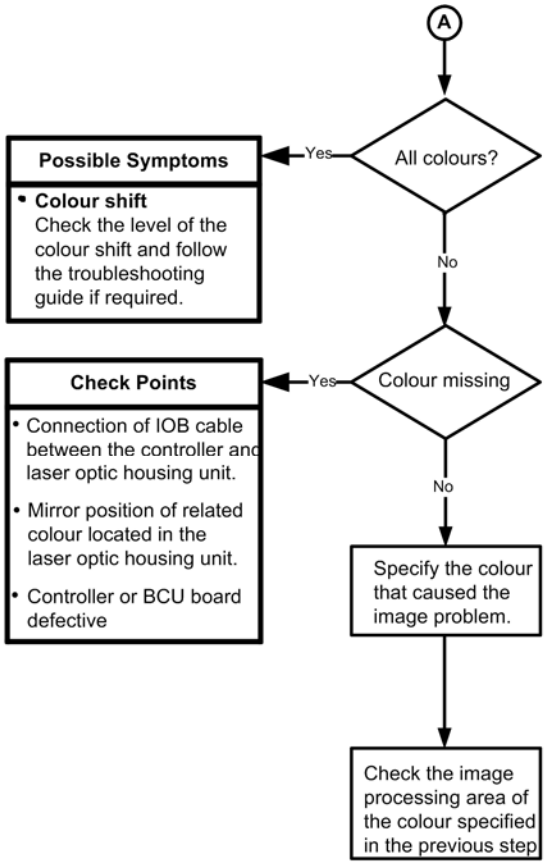
5.1 TROUBLESHOOTING GUIDE

5.1.1 IMAGE QUALITY

The following work-flow shows the basic troubleshooting steps for the image quality problems on this product.



Troubleshooting Guide



Considerable Symptoms
• **Toner blasting** Check which colour is blasting and adjust the toner limit or transfer bias. • **Image density change** Check when the problem is reported and follow the necessary steps. • **Dirty Background** Check in which condition the problem is reported, and follow the required procedure. • **Colour vertical bands/lines/dirty background** Check the OPC drum and/or development unit. • **Colour shift** Check the level of the colour shift and follow the troubleshooting guide if required. • **Colour lines/bands/dirty background** When the PCU unit is close to its life end, the developer or the cleaning blade of the PCU wears out, causing vertical colour lines, bands, or dirty background. Check the related colour unit and replace it if necessary.

g188t502

5.1.2 LINE POSITION ADJUSTMENT

When there are color registration errors on the output, do the line position adjustment as follows.

Note

- Use A3/DLT size paper for this adjustment.

Test

1. Do SP2-111-003 (Mode c: rough adjustment).
2. Use SP2-194-007 to check if the result of the line position adjustment is correct (0: Completed successfully, 1: Not completed). If the result is "1", refer to 'Countermeasure list for color registration errors'.
3. Do SP2-111-001 (Mode a: fine adjustment twice).
4. Use SP2-194-007 to check if the result of the line position adjustment is correct (0: Completed successfully, 1: Not completed). If the result is "1", refer to 'Countermeasure list for color registration errors'.
5. Put some A3/DLT paper on the by-pass tray.

Note

- When you print a test pattern, use the by-pass tray to feed the paper.

6. Print out test pattern "7" with SP2-109-003.
7. Check the printed output with a loupe.
8. If there are no color registration errors on the output, the line position adjustment is correctly done. If not, refer to the countermeasure list for color registration errors.

Countermeasure list for color registration errors

After Executing SP2-111-003

- Result: "1" in SP2-194-007
- Result: "2" or "3" (Line pattern detection failure) in SP2-194-010, -011, -012

Test pattern check	Possible cause/Countermeasure
White image, Abnormal image, Low density	▪ Defective laser optics housing unit shutter ▪ Defective image processing unit ▪ Low density of test pattern ▪ Defective BCU 1. Replace the shutter motor. 2. Replace the high voltage power supply unit. 3. Do the forced process control (SP3-011-001) or supply some toner (SP3-015-xxx). 4. Replace the BICU.
Normal image, but with color registration errors	▪ Defective ID sensor shutter ▪ Defective ID sensor ▪ Defective BCU

Troubleshooting Guide

Test pattern check	Possible cause/Countermeasure
	1. Replace the ID sensor shutter solenoid. 2. Replace the ID sensor. 3. Replace the BCU.

After Executing SP2-111-003

- Result: "1" in SP2-194-007
- One of results: "5" (Out of adjustable range) in SP2-194-010, -011, -012.

Test pattern check	Possible cause/Countermeasure
The main scan registrations of M, C, Y are shifted by more than ±15 mm from the main scan registration of K.	▪ Defective laser optics housing unit ▪ Defective BCU 1. Replace the laser optics housing unit. 2. Replace the BCU.
The sub scan registrations of M, C, Y are shifted by more than ±20 mm from the sub scan registration of K.	▪ Defective image transfer belt ▪ Defective drive units ▪ Defective BCU 1. Replace the image transfer belt. 2. Replace the drum motor. 3. Replace the BCU.
The main scan registration is shifted by more than ±0.66 mm, but only at the central area of the image on the output.	▪ Defective ID sensor at center ▪ Deformed center area on the image transfer belt ▪ Defective BCU 1. Replace the ID sensor. 2. Replace the image transfer belt. 3. Replace the BCU.
The skew for M, C, Y is more than ±0.75 mm from the main scan registration of K	▪ Defective PCU ▪ Defective laser optics housing unit ▪ Defective BCU 1. Reinstall or replace the PCU. 2. Replace the laser optics housing unit. 3. Replace the BCU.

Test pattern check	Possible cause/Countermeasure
Others	▪ Skew correction upper limit error ▪ Defective BCU ▪ Defective laser optics housing unit 1. Replace the BCU. 2. Replace the laser optics housing unit.

After Executing SP2-111-003

- Result: "1" in SP2-194-007
- Result: "0" in SP2-194-010, -011, -012.

Test pattern check	Possible cause/Countermeasure
	Do SP2-111-001 or -002.

After Executing SP2-111-001

- Result: "1" in SP2-194-007
- Result: "2" or "3" (Line pattern detection failure) in SP2-194-010, -011, -012

Test pattern check	Possible cause/Countermeasure
White image, Abnormal image, Low density	▪ Defective laser optics housing unit shutter ▪ Defective image processing unit ▪ Low density of test pattern ▪ Defective BCU 1. Replace the shutter motor. 2. Replace the high voltage power supply unit. 3. Do the forced process control (SP3-011-001) or supply some toner (SP3-015-xxx). 4. Replace the BCU.
Normal image, but with color registration errors	▪ Defective ID sensor shutter ▪ Defective ID sensor ▪ Defective BCU 1. Replace the ID sensor shutter solenoid.

Troubleshooting Guide

Test pattern check	Possible cause/Countermeasure
	2. Replace the ID sensor. 3. Replace the BCU.

After Executing SP2-111-001

- Result: "1" in SP2-194-007
- Result: "5" (Out of adjustable range) in SP2-194-010, -011, -012

Test pattern check	Possible cause/Countermeasure
Low image density on the output	▪ Low pattern density Do the forced process control (SP3-011-001) or supply some toner (SP3-015-xxx).
The main scan registrations of M, C, Y are shifted by more than ±1.4 mm from the main scan registration of K.	▪ No defective component ▪ Defective laser optics housing unit ▪ Defective BCU 1. Do SP2-111-003 again. 2. Replace the laser optics housing unit. 3. Replace the BCU.
The sub scan registrations of M, C, Y are shifted by more than ±1.4mm from the sub scan registration of K.	▪ No defective component ▪ Defective image transfer belt ▪ Defective drive units ▪ Defective BCU 1. Do SP2-111-003 again. 2. Replace the image transfer belt. 3. Replace the drum motor. 4. Replace the BCU.
The main scan registration is shifted by more than ±0.66 mm, but only at the central area of the image on the output.	▪ Defective ID sensor at center ▪ Deformed center area on the image transfer belt ▪ Defective BCU 1. Replace the ID sensor. 2. Replace the image transfer belt. 3. Replace the BCU.

Test pattern check	Possible cause/Countermeasure
The skew for M, C, Y is more than ± 0.75 mm from the main scan registration of K. – at the end of the scan line?	▪ Defective PCU ▪ Defective laser optics housing unit ▪ Defective BCU 1. Reinstall or replace the PCU. 2. Replace the laser optics housing unit. 3. Replace the BCU.
Others	▪ Skew correction upper limit error ▪ Defective BCU ▪ Defective laser optics housing unit 1. Replace the BCU. 2. Replace the laser optics housing unit.

After Executing SP2-111-001

- Result: "0" in SP2-194-007
- Result: No color registration errors in SP2-194-010, -011, -012

Test pattern check	Possible cause/Countermeasure
The main scan registration of K is shifted.	▪ Abnormal SP setting value of main scan: K Adjust the value with SP2-101-001.
The main scan length of K is shifted.	▪ Abnormal SP setting value of main scan length detection: K Adjust the value with SP2-185-001.

After Executing SP2-111-001

- Result: "0" in SP2-194-007
- Result: Color registration errors in SP2-194-010, -011, -012

Test pattern check	Possible cause/Countermeasure
Low image density on the output	▪ Low pattern density Do the forced process control (SP3-011-001) or supply some toner (SP3-015-xxx).

Troubleshooting Guide

Test pattern check	Possible cause/Countermeasure
The main scan registration is shifted, but only at the central area of the image on the output.	▪ Defective ID sensor at center ▪ Deformed center area on the image transfer belt ▪ Defective BCU 1. Replace the ID sensor. 2. Replace the image transfer belt. 3. Replace the BCU.
The main scan registrations of M, C, Y are shifted.	▪ Defective laser optics housing unit ▪ Defective ID sensor ▪ Defective BCU ▪ Incorrect SP value 1. Replace the laser optics housing unit. 2. Replace the ID sensor. 3. Replace the BCU. 4. Adjust the value with SP2-182-004 to -021.
The sub scan registrations of M, C, Y are shifted.	▪ Defective image transfer belt ▪ Defective drive units ▪ Defective ID sensor ▪ Defective BCU ▪ Incorrect SP value 1. Replace the image transfer belt. 2. Replace the ID sensor. 3. Replace the drum motor. 4. Replace the BCU. 5. Adjust the value with SP2-182-022 to -039.
The skew of M, C, Y is different.	▪ Defective PCU ▪ Defective laser optics housing unit ▪ Defective IOB 1. Reinstall or replace the PCU. 2. Replace the laser optics housing unit. 3. Replace the IOB.
The sub scan lines are shifted. Shifted lines appear cyclically.	▪ Defective PCU ▪ Defective drive unit

Test pattern check	Possible cause/Countermeasure
	▪ Drum phase adjustment error 1. Do SP1-902-001 (Drum phase adjustment); see Replacement and Adjustment – Drive Unit – Gear Unit for details. 2. Reinstall or replace the PCU. 3. Check or replace the drive unit.

APPENDIX:
JAM DETECTION

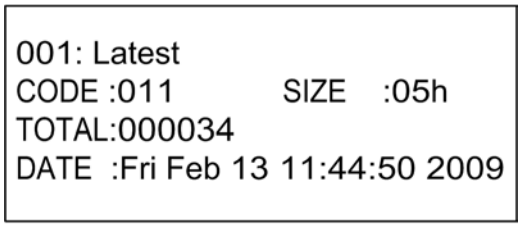
REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

6. APPENDIX: JAM DETECTION

6.1 JAM DETECTION

6.1.1 PAPER JAM DISPLAY

SP7-507 shows the paper jam history.



g188t503

CODE: indicates the jam code.

SIZE: indicates the paper size code.

Total: Indicates the total counter (SP7-502-001).

DATE: indicates the date when the jam occurred.

6.1.2 JAM CODES AND DISPLAY CODES

SP 7504 shows how many jams occurred at each location.

Jam Code SP	Display	Description	LCD Display
7504 1	At Power On	Paper has already stayed in the paper path at power on.	-
7504 3	Tray 1: ON	Paper is not fed from tray 1.	A
7504 4	Tray 2: ON	Paper is not fed from tray 2.	A
7504 5	Tray 3: ON	Paper is not fed from tray 3 (LCT).	Y
7504 6	Tray 4: ON	Paper is not fed from tray 4.	Y
7504 7	Tray 5: ON	Paper is not fed from tray 5.	Y
7504 8	Bypass: ON	Paper is not fed from the by-pass tray.	A

Jam Detection

Jam Code SP	Display	Description	LCD Display
7504 9	Duplex: ON	Paper is jammed at the duplex unit.	Z
7504 11	Vertical Transport 1: ON	Vertical transport sensor 1 does not detect paper from tray 1.	A
7504 12	Vertical Transport 2: ON	Vertical transport sensor 2 does not detect paper from tray 2.	A
7504 13	Bank Transport 1	Vertical transport sensor 2 or relay sensor does not detect paper from tray 3 (LCT).	Y
7504 14	Bank Transport 2	Vertical transport sensor 3 or relay sensor does not detect paper from tray 4 or 5 (One-tray Paper Tray Unit, Two-tray Paper Feed Unit or LCT).	Y
7504 17	Registration: ON	Registration sensor does not detect paper.	B
7504 19	Fusing Exit: ON	Fusing exit sensor does not detect paper.	B
7504 20	Paper Exit: ON	Paper exit sensor does not detect paper.	C
7504 21	Relay Exit: ON	Tray exit sensor (bridge unit) does not detect paper.	D
7504 22	Relay Transport: ON	Relay sensor (bridge unit) does not detect paper.	D
7504 24	Junction Gate Feed: ON	Junction gate jam sensor does not detect paper.	C
7504 25	Duplex Exit: ON	Duplex exit sensor does not detect paper.	Z
7504 26	Duplex Entrance: ON (In)	Duplex entrance sensor does not detect paper.	Z

Jam Code SP	Display	Description	LCD Display
7504 27	Duplex Entrance: ON (Out)	Duplex entrance sensor does not detect paper again after paper has passed this sensor.	Z
7504 51	SEF Sensor 1	Vertical transport sensor 1 does not turn off.	A
7504 52	SEF Sensor 2	Vertical transport sensor 2 does not turn off.	A
7504 53	Bank P Feed 1	Vertical transport sensor or relay sensor 1 does not turn off.	Y
7504 54	Bank P Feed 2	Vertical transport sensor 2 does not turn off.	Y
7504 55	Bank P Feed 3	Vertical transport sensor 3 does not turn off.	Y
7504 57	Regist Sensor	Registration sensor does not turn off.	B
7504 60	Exit Sensor	Paper exit sensor does not turn off.	C
7504 61	Relay Exit Sensor	Tray exit sensor (bridge unit) does not turn off.	D
7504 62	Relay Sensor	Relay sensor (bridge unit) does not turn off.	D
7504 64	Junction Gate Feed: OFF	Junction gate jam sensor does not turn off.	C
7504 65	Duplex Exit Sensor	Duplex exit sensor does not turn off.	Z
7504 66	Duplex Entrance: OFF (In)	Duplex entrance sensor does not turn off.	Z
7504 67	Duplex Entrance: OFF (Out)	Duplex entrance sensor does not turn off after paper has passed this sensor.	Z

Jam Detection

Jam Code SP	Display	Description	LCD Display
7504 130	Finisher Entrance (B793)	Entrance sensor does not detect paper after the exit sensor of the main frame has turned on or paper stays at the entrance sensor.	R1-R3
7504 131	Finisher Proof Exit (B793)	Paper does not reach to the proof tray exit sensor or stay at the proof tray exit sensor.	R1-R3
7504 132	Finisher Shift Tray Exit (B793)	Paper does not reach to the shift tray exit sensor or stay at the shift tray exit sensor.	R1-R3
7504 133	Finisher Staple Exit (B793)	Staple tray exit sensor does not turn on after the entrance sensor has turned on. Staple tray exit sensor does not turn off after it has turned on.	R4-R6
7504 134	Finisher Exit (B793)	Shift tray exit sensor does not turn on while the stack feed-out roller has turned on. Shift tray exit sensor does not turn off after the stack feed-out roller has returned to its home position.	R4-R6
7504 135	Finisher Folding (B793)	Fold unit entrance sensor does not turn on after the stopper S HP sensor has turned on.	R7-R11
7504 136	Finisher Folding Exit (B793)	Fold unit exit sensor does not turn on after the folding has been done. Fold unit exit sensor does not turn off after it has turned on.	R7-R11
7504 137	Finisher Guide Motor (B793)	Exit guide plate HP sensor does not turn off after the exit guide plate has opened.	R1-R3

Jam Code SP	Display	Description	LCD Display
		Exit guide plate HP sensor does not turn on after the exit guide plate has closed.	
7504 138	Finisher Staple Moving Motor (B793)	Staple unit HP sensor does not turn off after the staple unit has moved from its home position. Staple unit HP sensor does not turn on after the staple unit has returned to its home position.	R7-R11
7504 139	Finisher Punch Motor (B793)	Punch HP, punch movement HP or paper position slide HP sensor does not turn off after each unit has moved from its home position. Punch HP, punch movement HP or paper position slide HP sensor does not turn on after each unit has returned to its home position.	R1-R3
7504 140	Finisher Tray Lift Motor (B793)	Shift tray position sensor does not turn on after the shift tray has lifted up. Shift tray position sensor does not turn off after the shift tray has lifted down.	R1-R3
7504 141	Finisher Jogger Motor (B793)	Jogger HP sensor does not turn off after the jogger fences have moved from its home position. Jogger HP sensor does not turn on after the jogger fences have returned to its home position.	R7-R11
7504 142	Finisher Shift Roller Motor (B793)	Shift motor HP sensor does not turn off after the shift roller has moved from its home position. Shift motor HP sensor does not turn on	R1-R3

Jam Detection

Jam Code SP	Display	Description	LCD Display
		after the shift roller has returned to its home position.	
7504 143	Finisher Folding Plate Motor (B793)	Fold plate HP sensor does not turn off after the fold plate has moved from its home position. Fold plate HP sensor does not turn on after the fold plate has returned to its home position.	R7-R11
7504 144	Finisher Staple Motor (B793)	Staple HP sensor does not turn off after the staple has moved from its home position. Staple HP sensor does not turn on after the staple has returned to its home position.	R7-R11
7504 145	Finisher Exit Motor (B793)	Stack feed-out HP sensor does not turn off after the stack feed-out has moved from its home position. Stack feed-out HP sensor does not turn on after the stack feed-out has returned to its home position.	R7-R11
7504 146	Finisher Stack 1 Release Motor (B793)	Stopper S HP sensor does not turn off after the upper clamp roller has moved from its home position. Stopper S HP sensor does not turn on after the upper clamp roller has returned to its home position.	R7-R11
7504 147	Finisher Stack 2 Release Motor (B793)	Lower clamp roller HP sensor does not turn off after the lower clamp roller has moved from its home position. Lower clamp roller HP sensor does not	R7-R11

Jam Code SP	Display	Description	LCD Display
		turn on after the lower clamp roller has returned to its home position.	
7504 148	Finisher Stopper Motor (B793)	Stopper S HP sensor does not turn off after the stopper S has moved from its home position. Stopper S HP sensor does not turn on after the stopper S has returned to its home position.	R7-R11
7504 191	Finisher Entrance: EUP (B805)	Paper does not reach the finisher entrance sensor or stays at the finisher entrance sensor.	R1-R4
7504 192	Finisher Proof Exit: EUP (B805)	Paper does not reach the proof tray exit sensor or stays at the proof tray exit sensor.	R1-R4
7504 193	Finisher Shift Tray Exit: EUP (B805)	Paper does not reach the upper tray exit sensor or stays at the upper tray exit sensor.	R1-R4
7504 194	Finisher Stapler Exit: EUP (B805)	Stapling tray paper sensor does not turn on after the finisher entrance sensor has turned on. Stapling tray paper sensor does not turn off after it has turned on.	R5-R8
7504 195	Finisher Exit: EUP (B805)	Upper tray exit sensor does not turn on while the stack feed-out belt is turned on. Upper tray exit sensor does not turn off after the stack feed-out belt has returned to its home position.	R8-R12
7504 196	Finisher Staple: EUP	Not used	-

Jam Detection

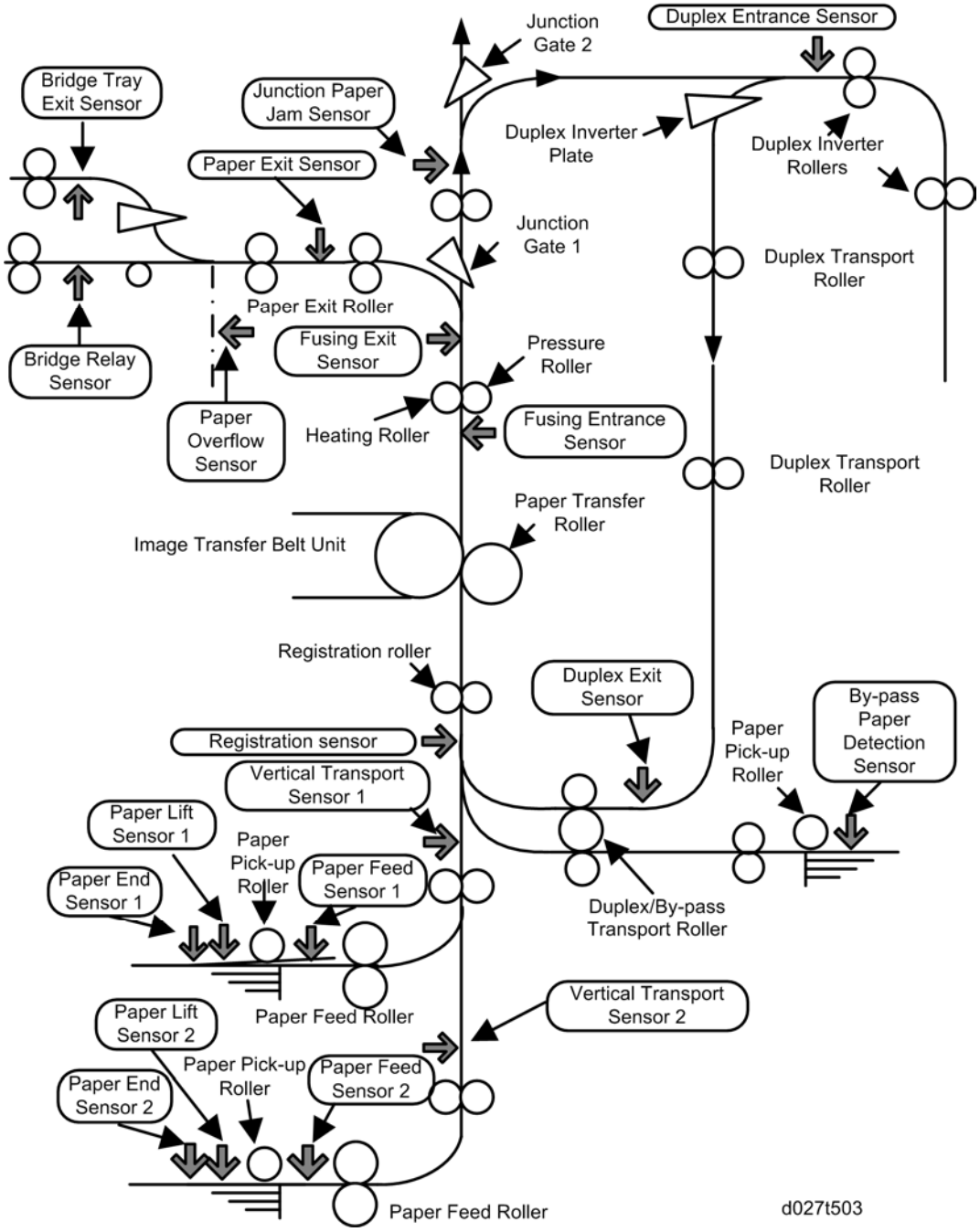
Jam Code SP	Display	Description	LCD Display
7504 197	Finisher Saddle Stitch Staple: EUP	Not used	-
7504 198	Finisher Folder: EUP	Not used	-
7504 199	Finisher Tray Motor: EUP (B805)	Upper tray limit sensor does not turn on after the upper tray has lifted up. Upper tray limit sensor does not turn off after the upper tray has moved down.	R1-R4/ R5-R8
7504 200	Finisher Jogger Motor: EUP (B805)	Jogger fence HP sensor does not turn on/off after the jogger motor has turned on. Stack feed out belt HP sensor does not turn on/off after the feed out belt motor has turned on.	R5-R8
7504 201	Finisher Shift Motor: EUP (B805)	Shift roller HP sensor does not turn on/off after the shift roller motor has turned on. Exit guide plate HP sensor does not turn on/off after the exit guide plate motor has turned on. Stacking roller HP sensor does not turn on/off after the stacking sponge roller motor has turned on.	R1-R4/ R5-R8
7504 202	Finisher Staple Moving Motor: EUP (B805)	Corner stapler HP sensor does not turn on/off after the corner stapler movement motor has turned on. Stapler rotation HP sensor does not turn on/off after the corner stapler rotation motor has turned on.	R5-R8
7504 203	Finisher Staple Motor: EUP (B805)	Corner stapler does not finish stapling after a specified time.	R5-R8

Jam Code SP	Display	Description	LCD Display
		Booklet stapler does not finish stapling after a specified time.	
7504 204	Finisher Folder Motor: EUP	Not used	-
7504 205	Finisher Exit Motor: EUP	Not used	-
7504 206	Finisher Punch Motor: EUP (B805)	Punch encoder sensor does not turn on/off after the punch drive motor has turned on. Punch movement HP sensor does not turn on/off after the punch movement motor has turned on. Paper position slide HP sensor does not turn on/off after the paper position sensor slide motor has turned on.	R1-R4
7504 220	MBX P. Feed 1: OFF	The mail bin lower relay sensor does not detect paper from the main machine.	TBA
7504 221	MBX P. Feed 1: ON	The mail bin lower relay sensor does not turn off.	TBA
7504 222	MBX P. Feed 2: OFF	The mail bin upper relay sensor does not detect paper from the main machine.	TBA
7504 223	MBX P. Feed 2: ON	The mail bin upper relay sensor does not turn off.	TBA
7504 230	Finisher Exit No Response	The machine does not get a paper exit signal from the finisher.	-
7504 231	Finisher Communication Error	The machine does not detect the finisher.	-

Paper Size Code

Size Code	Paper Size	Size Code	Paper Size
05	A4 LEF	141	B4 SEF
06	A5 LEF	142	B5 SEF
14	B5 LEF	160	DLT SEF
38	LT LEF	164	LG SEF
44	HLT LEF	166	LT SEF
132	A3 SEF	172	HLT SEF
133	A4 SEF	255	Others
134	A5 SEF	-	-

Sensor Locations



APPENDIX:
ELECTRICAL COMPONENT DEFECTS

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

7. APPENDIX: ELECTRICAL COMPONENT DEFECTS

7.1 ELECTRICAL COMPONENT DEFECTS

7.1.1 SENSORS

Note

- The CN numbers in the following table are the connector numbers on the IOB.

No.	Sensor Name/ Sensor Board Name	Active	CN	Condition	Symptom
SW1	Right Door Open Switch	L	CN204/1	Open	"Open Cover" is displayed.
				Shorted	"Open cover" cannot be detected.
S9	Duplex Door	L	CN232/B9	Open	"Open Cover" is displayed.
				Shorted	"Open cover" cannot be detected.
S1	ID Sensor: M	A	CN211/ 7, 11	Open/ Shorted	SC400
	ID Sensor: C	A	CN211/ 8, 12	Open/ Shorted	
	ID Sensor: Y	A	CN211/ 9, 13	Open/ Shorted	
	ID Sensor: Front	A	CN211/1	Open/ Shorted	SC258
	ID Sensor: Center	A	CN211/2	Open/	SC400 / SC258

Electrical Component Defects

No.	Sensor Name/ Sensor Board Name	Active	CN	Condition	Symptom
	and K			Shorted	
	ID Sensor: Rear	A	CN211/3	Open/ Shorted	SC258
S12	Registration Sensor	L	CN224/A2	Open	Jam A (Jam8, 17)
				Shorted	Jam A, B (Jam1)
S30	Drum Gear Position Sensor-K	H	CN222/A2	Open/ Shorted	SC380/SC396
S31	Drum Gear Position Sensor-M	H	CN222/ A5	Open/ Shorted	SC380/SC397
S32	Drum Gear Position Sensor-C	H	CN222/ A8	Open/ Shorted	SC380/SC398
S33	Drum Gear Position Sensor-Y	H	CN222/ A11	Open/ Shorted	SC380/SC399
S26 S27 S28 S29	Toner End Sensor - K Toner End Sensor - Y Toner End Sensor - C Toner End Sensor - M	L	CN207/A1 CN207/B9 CN207/ B12 CN207/ B15	Open	Toner end cannot be detected.
				Shorted	Toner end is detected when there is enough toner.
S34	Image Transfer Belt Rotation Sensor	H/L	CN208/11	Open/ Shorted	SC443
S19	Vertical Transport Sensor 1	L	CN230/A7	Open	Jam A (Jam3, 11)
				Shorted	Jam A, B (Jam1)
S20 S24	Paper End Sensor 1, 2	L	CN230/ A10, B10	Open	Paper end is not detected when there is no paper in the paper tray.

No.	Sensor Name/ Sensor Board Name	Active	CN	Condition	Symptom
				Shorted	Paper end is detected when there is paper in the paper tray.
S21 S25	Paper Lift Sensor 1, 2	H	CN230/ A13, B13	Open/ Shorted	SC501, SC502
S23	Vertical Transport Sensor 2	L	CN230/B7	Open	Jam A (Jam4, 12)
				Shorted	Jam A, B (Jam1)
S14 S15	Tray 1 Paper Height Sensor 1, 2	L	CN224/ B2, B5	Open/ Shorted	Remaining paper volume on the LCD is wrong.
S16 S17	Tray 2 Paper Height Sensor 1, 2	L	CN224/ B10, B13	Open/ Shorted	Remaining paper volume on the LCD is wrong.
S18	Tray 1 Paper Feed Sensor	L	CN230/A4	Open/ Shorted	Jam A, B
S22	Tray 2 Paper Feed Sensor	L	CN230/B4	Open/ Shorted	Jam A, B
SW4	Tray 1 Set Switch	L	CN224/A9	Open	Tray 1 is not detected when tray 1 is set.
				Shorted	Tray 1 is detected when tray 1 is not set.
S11	By-pass Paper Size Sensor	L	CN232/ B16, B17, B19, B20	Open/ Shorted	Paper size error
SW2	By-pass Paper Detection	L	CN232/ A15	Open	Paper on the by-pass tray is not detected when paper is set.

Electrical Component Defects

No.	Sensor Name/ Sensor Board Name	Active	CN	Condition	Symptom
				Shorted	Paper on the by-pass tray is detected when paper is not set.
S10	By-pass Paper Length Sensor	L	CN232/ B12	Open	Paper size error
				Shorted	
S8	Fusing Entrance Sensor	L	CN232/B6	Open	Jam C (Jam 18)
				Shorted	Jam C (Jam 1)
S6	Duplex Entrance Sensor	L	CN232/A8	Open	Jam Z (Jam 26/27)
				Shorted	Jam Z (Jam 1)
S7	Duplex Exit Sensor	L	CN232/ A11	Open	Jam Z (Jam 25)
				Shorted	Jam Z (Jam 1)
S39	TD Sensor - K	A	CN227/A7	Open/ Shorted	SC372
S40	TD Sensor - M	A	CN227/ A15	Open/ Shorted	SC373
S41	TD Sensor - C	A	CN227/B7	Open/ Shorted	SC374
S42	TD Sensor - Y	A	CN227/ B15	Open/ Shorted	SC375
S4	Fusing Exit Sensor	L	CN204/12	Open	Jam C (Jam 19)
				Shorted	Jam C (Jam 1)
S13	Waste Toner Sensor	H	CN224/A5	Open	Waste toner near full indicated when it is not near full.

No.	Sensor Name/ Sensor Board Name	Active	CN	Condition	Symptom
				Shorted	Waste toner near full cannot be detected when the waste toner bottle is nearly full.
SW3	Waste Toner Bottle Set Switch	L	CN224/A7	Open	Waste toner bottle is not detected when the waste toner bottle is set.
				Shorted	Waste toner bottle is detected when the waste toner bottle is not set.
SW5	Tray 2 Paper Size Switch	L	CN224/ A11, A12, A13, A15	Open/ Shorted	Paper size error
S35	Temperature/ Humidity Sensor	A	CN231/ 25, 27	Open/ Shorted	SC498 Printed image has some problems such as rough image, dirty background, weak image or poor fusing.
S36	Thermopile	A	CN209/16	Open/ Shorted	SC541
TH2	Thermistor - Heating Roller	A	CN212/22	Open/ Shorted	SC551
TH1	Thermistor - Pressure Roller	A	CN212/18	Open/ Shorted	SC561
S3	Paper Exit Sensor	L	CN204/9	Open	Jam C (Jam 20)

Electrical Component Defects

No.	Sensor Name/ Sensor Board Name	Active	CN	Condition	Symptom
				Shorted	Jam C (Jam 1)
S5	Paper Overflow Sensor	L	CN204/15	Open	Paper overflow message is not displayed when the paper overflow condition still remains.
				Shorted	Paper overflow message is displayed when the paper overflow condition does not remain.
S37	Heating Roller Rotation Sensor	H/L	CN210/2	Open/ Shorted	SC584
S38	Pressure Roller HP Sensor	L	CN210/5	Open/ Shorted	SC569
S2	Junction Paper Jam Sensor	L	CN204/6	Open/ Shorted	Jam C (Jam 24/64)

7.1.2 BLOWN FUSE CONDITIONS

Power Supply Unit

R: This means that it is possible to replace in the field (for example: Tube fuse).

Fuse	Rating		Symptom when turning on the main switch	Remark
	115V	220V - 240V		
FU1	15A/125V	8A/250V	No response. (The main power to the PSU is not supplied.)	R

Fuse	Rating		Symptom when turning on the main switch	Remark
	115V	220V - 240V		
FU2	10A/125V	6.3A/250V	No response. (The main power to the PSU is not supplied.)	R
FU3	2A/250V	1A/250V	5V power to the scanner heater and tray heater is not supplied.	-
FU4	1A/250V	1A/250V	5V power to the IOB and heater is not supplied.	-
FU5	5A/250V	5A/250V	5V power to the IOB not supplied.	-
FU6	2A/250V	2A/125V	5VS power to the BCU not supplied.	-
FU7	10A/125V	10A/125V	24VS power to the IOB not supplied.	R
FU8	10A/125V	10A/125V	24VS power to the IOB not supplied.	R
FU9	6.3A/125V	6.3A/125V	24V power to the IOB not supplied.	R
FU10	6.3A/125V	6.3A/125V	Not used	R
FU11	6.3A/125V	6.3A/125V	24V power to the BCU not supplied.	R
FU12	6.3A/125V	6.3A/125V	24V power to the PFU or LCT not supplied.	R
FU13	6.3A/125V	6.3A/125V	24V power to the finisher not supplied.	R
FU14	5A/250V	5A/250V	5V power to the BCU not supplied.	-

IH Inverter

Fuse	Rating		Symptom when turning on the main switch
	115V	220V - 240V	
FU1	15A/125V	8A/250V	15V power to the IH coil unit is not supplied. SC689 occurs.

Electrical Component Defects

Fuse	Rating		Symptom when turning on the main switch
	115V	220V - 240V	
FU2	115°C		No response
FU3	115°C		No response
FU4	1A/250V		15V power to the IH coil unit is not supplied. SC689 occurs.

⚠CAUTION

- For continued protection against risk of fire, replace only with same type and rating of fuse.

APPENDIX:
SP MODE TABLES

REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
3 ~ 5	01/15/2010	Updated Information – SP1001-005 and 008
4 ~ 10	04/25/2011	Updated Information – SP1001-006 Added Bit 6 and 7

8. APPENDIX: SP MODE TABLES

8.1 SERVICE MODE

8.1.1 SP1-XXX (SERVICE MODE)

1001	Bit Switch			
001	Bit Switch 1		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 (☛ “Card Save Function” in "System Maintenance Reference" section of the Field Service Manual).		
	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		
002	Bit Switch 2	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**			
003	Bit Switch 3		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**		
004	Bit Switch 4 **DFU**	-	-

1001	**Bit Switch**			
005	Bit Switch 5		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	DFU	-	-
	bit 6	**Method for determining the image rotation for the edge to bind on.**	Disabled	Enabled
		If enabled, 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**	Disabled	Enable (Duplex)
		Routes all pages through the duplex unit. If this is disabled, simplex pages or the last page of an odd-paged duplex job, are not routed through the duplex unit. This could result in problems with letterhead/pre-printed pages.		

⇒

1001	**Bit Switch**			
006	bit 0 to 5	**DFU**	-	-
	bit 6	**PDL Auto Detection timeout of jobs submitted via USB or Parallel Port(IEEE 1284)**	0:Disable (Immediately)	1:Enable (10 seconds)
		To be used if PDL auto- detection fails. A failure of PDL auto-detection doesn't necessarily mean that the job can't be printed. This bit switch tells the device whether to time-out immediately (default) upon failure or to wait 10 seconds.		
	bit 7	**Timing of the PJL Status ReadBack (JOB END) when printing multiple collated copies**	0:Disable	1:Enable
		This bitsw determines the timing of the PJL USTATUS JOB END sent when multiple collated copies are being printed. 0 (default): JOB END is sent by the device to the client after the first copy has completed printing. This causes the page counter to be incremented after the first copy and then again at the end of the job. 1: JOB END is sent by the device to the client after the last copy has finished printing. This causes the page counter to be incremented at the end of each job.		

1001	**Bit Switch**		
007	Bit Switch 7 **DFU**	-	-

1001	Bit Switch			
008	Bit Switch 8		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	[PS]: Orientation Auto Detect Fuction	Disable	Enable
		Automatically chooses page orientations of PostScript jobs (Landscape or Portrait) based on the content. Note Applied to PS firmware ver 1.01		
	bit 7	DFU	-	-

1003	[Clear Setting]		
1003 001	Initialize System	-	Initializes settings in the System menu of the user mode.
1003 003	Delete Program	-	**DFU**

1004	[Print Summary]		
1004 001	Service Summary	-	Prints the service summary sheet (a summary of all the controller settings).

1005	**[Display Version]**		
1005 001	Printer Version	-	Displays the version of the controller firmware.

1007	**[Supply Display]**		
	Enables or disables the display for information on each supply.		
1007 001	Development	*CTL	[0 or 1 / **1** / 1 /step] 0: OFF, 1: ON
1007 002	PCU	*CTL	
1007 003	Transfer	*CTL	
1007 004	Int. Transfer	*CTL	
1007 005	Transfer Roller	*CTL	
1007 006	Fuser	*CTL	
1007 007	Fuser Oil	*CTL	

1101	**[ToneCtlSet]**		
1101 001	Tone (Factory)	*CTL	Recalls a set of gamma settings. This can be either a) the factory setting, b) the previous setting, or c) the current setting.
1101 2	Tone (Prev.)	*CTL	
1101 3	Tone (Current)	*CTL	

1102	**[ToneCtlSet]**	*CTL	
	Sets the printing mode (resolution) for the printer gamma adjustment. The asterisk (*) shows which mode is set. ▪ 00: *1200x1200Photo ▪ 01: 600x600Text ▪ 02: 1200x1200Text ▪ 03: 1200x600Text ▪ 04: 600x600Photo ▪ 05: 1200x600Photo		

1103	**[PrnColorSheet]**		
1103 001	ToneCtlSheet	-	Prints the test page to check the color balance before and after the gamma adjustment.
1103 002	ColorChart	-	

1104	**[ToneCtlValue]**		
	Adjusts the printer gamma for the mode selected in the Mode Selection menu.		
1104 001	Set Black 1	*CTL	[0 to 255 / **16** / 1/step]
1104 021	Set Cyan 1	*CTL	
1104 041	Set Magenta 1	*CTL	
1104 061	Set Yellow 1	*CTL	
1104 002	Set Black 2	*CTL	[0 to 255 / **32** / 1/step]
1104 022	Set Cyan 2	*CTL	
1104 042	Set Magenta 2	*CTL	
1104 062	Set Yellow 2	*CTL	
1104 003	Set Black 3	*CTL	[0 to 255 / **48** / 1/step]
1104 023	Set Cyan 3	*CTL	
1104 043	Set Magenta 3	*CTL	
1104 063	Set Yellow 3	*CTL	
1104 004	Set Black 4	*CTL	[0 to 255 / **64** / 1/step]
1104 024	Set Cyan 4	*CTL	
1104 044	Set Magenta 4	*CTL	
1104 064	Set Yellow 4	*CTL	

1104 005	Set Black 5	*CTL	[0 to 255 / **80** / 1/step]
1104 025	Set Cyan 5	*CTL	
1104 045	Set Magenta 5	*CTL	
1104 065	Set Yellow 5	*CTL	
1104 006	Set Black 6	*CTL	[0 to 255 / **96** / 1/step]
1104 026	Set Cyan 6	*CTL	
1104 046	Set Magenta 6	*CTL	
1104 066	Set Yellow 6	*CTL	
1104 007	Set Black 7	*CTL	[0 to 255 / **112** / 1/step]
1104 027	Set Cyan 7	*CTL	
1104 047	Set Magenta 7	*CTL	
1104 067	Set Yellow 7	*CTL	
1104 008	Set Black 8	*CTL	[0 to 255 / **128** / 1/step]
1104 028	Set Cyan 8	*CTL	
1104 048	Set Magenta 8	*CTL	
1104 068	Set Yellow 8	*CTL	
1104 009	Set Black 9	*CTL	[0 to 255 / **144** / 1/step]
1104 029	Set Cyan 9	*CTL	
1104 049	Set Magenta 9	*CTL	
1104 069	Set Yellow 9	*CTL	
1104 010	Set Black 10	*CTL	[0 to 255 / **160** / 1/step]
1104 030	Set Cyan 10	*CTL	
1104 050	Set Magenta 10	*CTL	

1104 070	Set Yellow 10	*CTL	
1104 011	Set Black 11	*CTL	[0 to 255 / **176** / 1/step]
1104 031	Set Cyan 11	*CTL	
1104 051	Set Magenta 11	*CTL	
1104 071	Set Yellow 11	*CTL	
1104 012	Set Black 12	*CTL	[0 to 255 / **192** / 1/step]
1104 032	Set Cyan 12	*CTL	
1104 052	Set Magenta 12	*CTL	
1104 072	Set Yellow 12	*CTL	
1104 013	Set Black 13	*CTL	[0 to 255 / **208** / 1/step]
1104 033	Set Cyan 13	*CTL	
1104 053	Set Magenta 13	*CTL	
1104 073	Set Yellow 13	*CTL	
1104 014	Set Black 14	*CTL	[0 to 255 / **224** / 1/step]
1104 034	Set Cyan 14	*CTL	
1104 054	Set Magenta 14	*CTL	
1104 074	Set Yellow 14	*CTL	
1104 015	Set Black 15	*CTL	[0 to 255 / **240** / 1/step]
1104 035	Set Cyan 15	*CTL	
1104 055	Set Magenta 15	*CTL	
1104 075	Set Yellow 15	*CTL	

1105	**[ToneCtlSave]**
	Saves the print gamma (adjusted with the Gamma Adj.) as the new Current Setting. Before the machine stores the new “current setting”, it moves the data stored as the “previous setting” memory-storage location.

1106	**[Toner Limit Value]**		
	Adjusts the maximum toner amount for image development.		
1106 001	TonerLimitValue	*CTL	[100 to 400 / **260** / 1%/step]

1108	**[Ext. Toner Save]**		
1108 001	Mode 1: Text	-	**DFU**
1108 002	Mode 2: Text	-	
1108 003	Mode 1: Image	-	
1108 004	Mode 2: Image	-	
1108 005	Mode 1: Line	-	
1108 006	Mode 2: Line	-	
1108 007	Mode 1: Paint	-	
1108 008	Mode 2: Paint	-	

8.2 ENGINE SERVICE MODE

8.2.1 ENGINE SERVICE MODE TABLE

SP1-XXX (Feed)

1001	**[Leading Edge Registration]** Leading Edge Registration Adjustment (Tray Location, Paper Type, Color Mode), Paper Type -> Plain, Thick 1or Thick 2		
	Adjusts the leading edge registration by changing the registration motor operation timing for each mode.		
002	Tray: Plain	*ENG	[–9 to 9 / **0.0** / 0.1 mm/step]
003	Tray: Middle Thick	*ENG	
004	Tray: Thick 1	*ENG	
005	Tray: Thick 2	*ENG	
007	By-pass: Plain	*ENG	
008	By-pass: Middle Thick	*ENG	
009	By-pass: Thick 1	*ENG	
010	By-pass: Thick 2	*ENG	
011	By-pass: Thick 3	*ENG	
013	Duplex: Plain	*ENG	
014	Duplex: Middle Thick	*ENG	
015	Duplex: Thick 1	*ENG	
016	Tray: Thick 3	*ENG	
017	Tray: Plain:1200	*ENG	
018	Tray: Middle Thick:1200	*ENG	

019	Tray: Thick 1:1200	*ENG	
020	By-pass: Plain:1200	*ENG	
021	By-pass: Middle Thick:1200	*ENG	
022	By-pass: Thick 1:1200	*ENG	
023	Duplex: Plain:1200	*ENG	
024	Duplex: Middle Thick:1200	*ENG	
025	Duplex: Thick 1:1200	*ENG	

1002	**[Side to Side Reg.]** Side-to-Side Registration Adjustment		
	Adjusts the side-to-side registration by changing the laser main scan start position for each mode.		
001	By-pass Table	*ENG	[–4 to 4 / **0.0** / 0.1 mm/step]
002	Paper Tray 1	*ENG	
003	Paper Tray 2	*ENG	
004	Paper Tray 3	*ENG	
005	Paper Tray 4	*ENG	
006	Duplex	*ENG	
008	Large Capacity Tray	*ENG	

1003	**[Paper Buckle]** Paper Buckle Adjustment (Tray Location, Paper Type), Paper Type: N: Normal, TH: Thick		
	Adjusts the amount of paper buckle at the registration roller by changing the paper feed timing.		
002	Paper Tray1: Plain	*ENG	[–9 to 5 / **-2** / 1 mm/step]
003	Tray1: Middle Thick	*ENG	[–9 to 5 / **-1** / 1 mm/step]

004	Paper Tray1: Thick1	*ENG	[–9 to 5 / **-2** / 1 mm/step]
007	Paper Tray2/3/4/5/LCT: Plain	*ENG	
008	Tray 2/3/4/5/LCT: Middle Thick	*ENG	[–9 to 5 / **-1** / 1 mm/step]
009	Paper Tray2/3/4/5/LCT: Thick 1	*ENG	[–9 to 5 / **-2** / 1 mm/step]
012	By-pass: Plain	*ENG	[–9 to 5 / **0** / 1 mm/step]
013	By-pass: Middle Thick	*ENG	
014	By-pass: Thick 1	*ENG	[–9 to 5 / **-2** / 1 mm/step]
018	Duplex: Plain	*ENG	[–9 to 5 / **0** / 1 mm/step]
019	Duplex: Middle Thick	*ENG	
020	Duplex: Thick 1	*ENG	[–9 to 5 / **-2** / 1 mm/step]
021	Paper Tray1: Plain: 1200	*ENG	[–9 to 5 / **0** / 1 mm/step]
022	Tray1: Middle Thick: 1200	*ENG	
023	Tray 2/3/4/5LCT: Plain: 1200	*ENG	
024	Tray 2/3/4/5LCT: Mid: 1200	*ENG	
025	By-pass: Plain: 1200	*ENG	
026	By-pass: Middle Thick: 1200	*ENG	
027	Paper Tray1: Thick1: 1200	*ENG	[–9 to 5 / **-2** / 1 mm/step]
028	Paper Tray2/3/4/5/LCT: Thick 1:1200	*ENG	
029	By-pass: Thick 1: 1200	*ENG	
030	Duplex: Plain: 1200	*ENG	[–9 to 5 / **0** / 1 mm/step]
031	Duplex: Middle Thick: 1200	*ENG	
032	Duplex: Thick 1: 1200	*ENG	[–9 to 5 / **-2** / 1 mm/step]

Engine Service Mode

1007	**[By-Pass Size Detection]** By-Pass Size Detection Display		
001	LG	*ENG	[0 or 1 / **0** / -] 0: OFF, 1: ON
	Enables or disables the automatic paper size detection function of the by-pass tray. This SP determines what paper size the machine detects if the detected size is less than 8.5". 0: OFF (Letter/SEF), 1: ON (Legal/SEF)		

1103	**[Fusing Idling]** Fusing Idling Adjustment		
001	Extra Idling Time	*ENG	[0 to 60 / **0** / 1 sec/step] **Not used**
	Specifies how long the extra idling operation is executed.		
014	Minimum Idling Time	*ENG	[0 to 10 / **0** / 1 sec/step]
016	Extra Idling Time (L)	*ENG	Specifies how long the extra idling operation is executed for each environment. [0 to 250 / **70** / 1 sec/step] Each environment is determined with SP1112-001 and 002.
017	Extra Idling Time (H)	*ENG	[0 to 250 / **P2c: 20, P2d: 35** / 1 sec/step]
018	Extra Idling Time (M)	*ENG	
019	Pressure TempThreshold	*ENG	[10 to 200 / **180** / 1 deg/step]

1104	**[Idling Before Job]** Paper Type -> Plain, Thin, Thick, OHP, Middle Thick, Special Pressure Temp: Pressure Roller Temperature Feed or Fusing Temp: Heating Roller Temperature
	Specifies the threshold temperature for the paper feed waiting in each mode. The machine does not feed paper until the temperature of the pressure or heating roller reaches temperatures specified by the following SPs.

001	Feed: Pressure Temp: Plain: FC	*ENG	[10 to 150 / **20** / 1 deg/step]
002	Feed: Pressure Temp: Plain: FC:PR	*ENG	
003	Feed: Pressure Temp: Mid: BW	*ENG	[0 to 150 / **P2c: 70, P2d: 90** / 1 deg/step]
004	Feed: Pressure Temp: Mid: FC	*ENG	
005	Feed: Pressure Temp: Plain: BW: PR	*ENG	[10 to 150 / **20** / 1 deg/step]
006	Feed: Pressure Temp: Carl: M-Humidity	*ENG	[10 to 150 / **90** / 1 deg/step]
007	Feed: Pressure Temp: Carl: H-Humidity	*ENG	[10 to 150 / **100** / 1 deg/step]
010	Feed: Plain1: BW: Offset	*ENG	[0 to 100 / **100** / 1 deg/step]
011	Feed: Plain1: 2C: Offset	*ENG	
012	Feed: Plain1: 2C: Offset: P	*ENG	[0 to 100 / **10** / 1 deg/step]
013	Feed: Plain: Standby: Offset	*ENG	[0 to 100 / **5** / 1 deg/step]
014	Feed: Middle Thick: Ready: Offset	*ENG	
015	Feed: Middle Thick: Standby: Offset	*ENG	
016	Feed: Thick: Ready: Offset	*ENG	[0 to 100 / **100** / 1 deg/step]
017	Feed: Thick: Standby: Offset	*ENG	[0 to 100 / **5** / 1 deg/step]

Engine Service Mode

018	Feed: Plain1: Ready :3C: Offset	*ENG	[0 to 100 / **P2c: 20, P2d: 10** / 1 deg/step]
019	Feed: Plain1: Ready :3C: Offset:P	*ENG	[0 to 100 / **P2c: 10, P2d: 5** / 1 deg/step]
020	Fusing Temp: Plain: Ready	*ENG	[0 to 20 / **10** / 1 deg/step]
021	Fusing Temp: Mid Speed: Ready	*ENG	[0 to 20 / **20** / 1 deg/step]
022	Fusing Temp: Mid Speed: Standby	*ENG	[0 to 20 / **0** / 1 deg/step]
023	Feed: Plain2: Ready :Bw: Offset	*ENG	[0 to 100 / **100** / 1 deg/step]
024	Feed: Plain2: Ready :2C: Offset	*ENG	
025	Feed: Plain2: Ready :2C: Offset :P	*ENG	[0 to 100 / **20** / 1 deg/step]
026	Feed: Plain2: Ready :3C: Offset	*ENG	
027	Feed: Plain2: Ready :3C: Offset :P	*ENG	[0 to 100 / **10** / 1 deg/step]
030	Feed: F: Ready : U limit	*ENG	[0 to 100 / **15** / 1 deg/step]
031	Offset: Feed Start: F	*ENG	
032	Feed: Glossy: Ready : U limit	*ENG	
033	Offset: Feed Start: Glossy	*ENG	
040	1bin: Paper Feed: Pressure Temp	*ENG	[20 to 120 / **90** / 1 deg/step]
	Specifies the threshold of the pressure roller for the paper feed to the 1bin tray		

	in 600 dpi mode.		
041	F :1bin: Paper Feed: Pressure Temp	*ENG	[20 to 120 / **80** / 1 deg/step]
	Specifies the threshold of the pressure roller for the paper feed to the 1bin tray in 1200 dpi mode.		

1105	**[Fusing Temperature]** Fusing Temperature Adjustment		
	(Printing Mode, Roller Type, [Color], Simplex/Duplex) Roller Type –> Center and Ends: Heating roller, Pressure –> Pressure roller Paper Type -> Plain, Thin, Thick, OHP, Middle Thick, Special		
001	Fusing Ready Temp.	*ENG	[150 to 200 / **P2c: 165, P2d: 170** / 1 deg/step]
	Specifies the heating roller target temperature for the ready condition.		
002	Fusing Ready: Offset	*ENG	[0 to 100 / **5** / 1 deg/step]
	Sets the heating roller offset temperature for the printing ready condition. Ready temperature = (Target temperature specified in SP1-105-1) – Temperature specified in this SP mode		
007	Fusing Ready Temp: H	*ENG	[150 to 200 / **P2c: 165, P2d: 170** / 1 deg/step]
	Sets the heating roller offset temperature at the end of the heating roller. This value is one of the thresholds to determine if the machine is at the heating roller target temperature during warm-up.		
008	Ready Target Add Pressure	*ENG	[0 to 200 / **80** / 1 deg /step]
	Sets the upper limit temperature of the heating roller at the end of the heating roller. This value is one of the thresholds to determine if the machine is at the heating roller target temperature during warm-up.		
012	Stand-By: Pressure	* ENG	[60 to 130 / **90** / 1 deg/step]

Engine Service Mode

	Sets the pressure roller offset temperature. This value is one of the thresholds to determine if the machine is at the heating roller target temperature during warm-up.		
013	Panel Off Mode 2: Pressure	* ENG	[60 to 130 / **90** / 1 deg /step]
	Sets the limit temperature of the pressure roller. This value is one of the thresholds to determine if the machine is at the heating roller target temperature during the warm-up.		
014	Low Power: Pressure	* ENG	[60 to 130 / **90** / 1 deg /step]
	Specifies the stand-by temperature for the pressure roller.		
030	Plain: FC: Simplex	*ENG	[130 to 180 / **P2c: 160, P2d: 165** / 1 deg /step]
032	Plain: FC: Duplex	*ENG	
034	Plain: BW: Simplex	*ENG	
036	Plain: BW: Duplex	*ENG	
038	Thin: FC: Simplex	*ENG	[130 to 180 / **P2c: 155, P2d: 160** / 1 deg/step]
042	Thin: BW: Simplex	*ENG	
046	Thick 1: FC: Simplex	*ENG	[140 to 190 / **175** / 1 deg /step]
048	Thick 1: FC: Duplex	*ENG	
050	Thick 1: BW: Simplex	*ENG	
052	Thick 1: BW: Duplex	*ENG	
054	Thick 2: FC: Simplex	*ENG	[140 to 190 / **160** / 1 deg /step]
055	Thick 2: BW: Simplex	*ENG	
056	OHP: FC: Simplex	*ENG	
057	OHP: BW: Simplex	*ENG	
058	Special 1: FC: Simplex	*ENG	[120 to 190 / **P2c: 165, P2d: 170** / 1

060	Special 1: FC: Duplex	*ENG	deg/step]
062	Special 1: BW: Simplex	*ENG	
064	Special 1: BW: Duplex	*ENG	
066	Special 2: FC: Simplex	*ENG	
068	Special 2: FC: Duplex	*ENG	
070	Special 2: BW: Simplex	*ENG	
072	Special 2: BW: Duplex	*ENG	
074	Special 3: FC: Simplex	*ENG	
076	Special 3: FC: Duplex	*ENG	
078	Special 3: BW: Simplex	*ENG	
080	Special 3: BW: Duplex	*ENG	
083	Recovery Target Temp.	*ENG	[130 to 180 / **P2c: 165, P2d: 170** / 1 deg /step]
	Specifies the target temperature for the print mode without printing/copying job after the machine's recovery.		
089	Thick 3: FC: Simplex	*ENG	[140 to 190 / **170** / 1 deg/step]
091	Thick 3: BW: Simplex	*ENG	
093	Envelop: FC	*ENG	
094	Envelop: BW	*ENG	
095	Middle Thick: Middle Speed: FC: Simplex	*ENG	[120 to 170 / **165** / 1 deg /step]
097	Middle Thick: Middle Speed: FC: Duplex	*ENG	
099	Middle Thick: Middle Speed: BW: Simplex	*ENG	

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101	Middle Thick: Middle Speed: BW: Duplex	*ENG	
103	Middle Thick: Constant Speed: Offset	*ENG	[0 to 15 / **P2c: 5, P2d: 10** / 1 deg /step]
113	Thick 4: FC: Simplex	*ENG	[140 to 190 / **175** / 1 deg/step]
114	Thick 4: BW: Simplex	*ENG	
115	Thick 5: FC: Simplex	*ENG	[140 to 190 / **170** / 1 deg/step]
116	Thick 5: BW: Simplex	*ENG	
120	Plain2: FC: Simplex	*ENG	[130 to 180 / **P2c: 165, P2d: 170** / 1 deg/step]
122	Plain2: FC: Duplex	*ENG	
124	Plain2: BW: Simplex	*ENG	
126	Plain2: BW: Duplex	*ENG	[130 to 180 / **P2c: 165, P2d: 170** / 1 deg/step]
128	F: Plain1: FC : Simplex	*ENG	[120 to 170 / **135** / 1 deg/step]
130	F: Plain1: BW : Simplex	*ENG	
132	F: Plain2: FC: Simplex	*ENG	[120 to 170 / **140** / 1 deg /step]
134	F: Plain2: BW: Simplex	*ENG	
136	F: Middle Thick: FC: Simplex	*ENG	[120 to 170 / **145** / 1 deg /step]
138	F: Middle Thick: BW: Simplex	*ENG	
140	F: Thick1: FC: Simplex	*ENG	[120 to 170 / **150** / 1 deg/step]
141	F: Thick1: BW: Simplex	*ENG	
142	Glossy: Plain1	*ENG	[120 to 170 / **135** / 1 deg/step]
144	Glossy: Plain2	*ENG	[120 to 170 / **140** / 1 deg/step]

146	Glossy: Middle Thick	*ENG	[120 to 170 / **145** / 1 deg/step]
148	1bin: Plain	*ENG	[130 to 180 / **P2c: 150, P2d: 155** / 1 deg/step]
150	F: 1bin: Plain	*ENG	[120 to 170 / **135** / 1 deg/step]

1106	**[Fusing Temperature Display]** Fusing Temperature Display (Heating or Pressure)		
	Displays the current temperature of the heating and pressure rollers.		
001	Fusing: Center	-	[–20 to 250 / 0 / 1 deg/step] The heating roller has two lamps. One heats the center of the heating roller and the other heats both ends of the heating roller.
002	Fusing: Ends	-	[–10 to 250 / 0 / 1 deg/step] The heating roller has two lamps. One heat s the center of the heating roller and the other heats both ends of the heating roller.
003	Pressure	-	

1108	**[Forced Ready Setting]**		
	Japan use only		
001	ON/OFF	*ENG	[0 or 1 / **0** / 1] 0: OFF, 1: ON
002	Target Voltage Ratio	*ENG	[85 to 115 / **92** / 1 %/step]
003	Measured Voltage Ratio	*ENG	[70 to 120 / **100** / 1 %/step]
005	Temp: Threshold	*ENG	[10 to 32 / **17** / 1 deg/step]
006	Auto Off Timer	*ENG	[0 to 255 / **0** / 1 min/step]
007	Time	*ENG	[7 to 60 / **P2c: 14.0, P2d: 24.0** / 0.1 sec/step]

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008	10s Forced Ready ON/OFF	*ENG	[0 or 1 / **1** / 1] 0: OFF, 1: ON
009	10s Forced Ready Time	*ENG	[0 to 20 / **9.0** / 0.1 sec/step]

1109	**[Fusing Nip Band Check]**		
001	Execute	-	[0 or 1 / **0** / 1] Executes the nip band measurement between heating roller and pressure roller. If the nip band width is not 8 mm, and fusing is not good, replace the pressure roller or install a new fusing unit.
002	Pre-Idling Time	*ENG	[0 to 255 / **240** / 1 sec/step]
	Specifies the fusing rotation time before executing SP1109-001.		
003	Stop Time	* ENG	[5 to 30 / **10** / 1 sec/step]
	Specifies the time for measuring the nip.		
004	Pressure Position	* ENG	[0 to 3 / **0** / 1]
	Specifies the pressure position for measuring the nip.		

1110	**[Pressure Release]**		
001	Shift Time	*ENG	[0 to 240 / **1** / 1 min/step] **DFU**
	Adjusts the time when the pressure roller moves from the pressing position to the no-pressing positon.		
002	Feed Pressure: 1	*ENG	Not used [0 to 700 / **0** / 1 msec/step]
003	Feed Pressure: 2	* ENG	
004	Feed Pressure: 3	* ENG	
005	SC Detection	* ENG	**DFU**

			[0 or 1 / **1** / 1] 0: OFF, 1: ON

1112	**[Environmental Correction: Fusing]**		
001	Temp.: Threshold: Low	*ENG	[10 to 23 / **17** / 1 deg/step]
	Specifies the threshold temperature for low temperature condition.		
002	Temp.: Threshold: High	*ENG	[24 to 40 / **30** / 1 deg/step]
	Specifies the threshold temperature for high temperature condition.		
003	Low Temp. Correction	*ENG	[0 to 15 / **5** / 1 deg/step]
	Specifies the temperature correction for the heating roller. When the low temperature condition (specified with SP1112-001) is detected, the value of this SP is added to the heating roller temperature.		
004	High Temp. Correction	*ENG	[0 to 15 / **0** / 1 deg/step]
	Specifies the temperature correction for the heating roller. When the high temperature condition (specified with SP1112-002) is detected, the value of this SP is subtracted from the heating roller temperature.		
005	Reference Temp	*ENG	[15 to 25 / **20** / 1 deg/step]
	Specifies the temperature correction for the heating roller. When the high temperature condition (specified with SP1112-002) is detected, the value of this SP is subtracted from the heating roller temperature.		
006	Low Temp Correction a	*ENG	[0 to 15 / **5** / 1 deg/step]
007	Reference Temp Correction a	*ENG	[0 to 15 / **0** / 1 deg/step]
008	High Temp Correction a	*ENG	[0 to 15 / **0** / 1 deg/step]
009	Low Temp Correction b	*ENG	[0 to 15 / **10** / 1 deg/step]
010	Reference Temp Correction b	*ENG	[0 to 15 / **0** / 1 deg/step]
011	High Temp Correction b	*ENG	[0 to 15 / **0** / 1 deg/step]

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1113	**[Stand-by Time]**		
001	Shift Time	*ENG	[0 to 180 / **60** / 1 sec/step]
	Specifies the interval from the ready mode to the stand-by mode. If the machine does not do any printing job for the time specified with this SP after the heating roller has reached the ready temperature, the machine returns to the stand-by mode.		
003	After Recovery	*ENG	[0 to 60 / **10** / 1 sec/step]
	Specifies the time for keeping the target temperature after recovery (SP1105-083) without any jobs.		
004	Time After Paper Feed	*ENG	[0 to 10 / **0** / 1 sec/step]
006	Offset: Center and Ends	*ENG	[0 to 100 / **100** / 1 deg/step]

1115	**[Stand-by Idling]**		
001	Interval	*ENG	[1 to 240 / **60** / 1 min/step]
	Specifies the interval between idling during stand-by mode. This idling during the stand-by mode prevents the roller deformation.		
002	Idling Time	*ENG	[0 to 60 / **0.7** / 0.1 sec/step]
	Specifies the length of each idling operation during stand-by mode.		

1117	**[Idling Time After Heater OFF]**		
002	Time After Heater OFF	*ENG	[0 to 20 / **0** / 1 sec/step]
	Specifies the idling time without the lamp on after job end. This idling prevents the heating roller overheating after job end.		

1118	**[Curl Temperature Correction]**		
001	ON/OFF	*ENG	[0 or 1 / **0** / 1] 0: OFF, 1: ON

	Enables or disables the curl correction mode.		
002	Humidity 1	*ENG	[0 to 100 / **60** / 1 %]
003	Humidity 2	*ENG	[0 to 100 / **80** / 1 %]

1120	**[Continues Print Mode Switch]**		
001	Paper Feed Condition	*ENG	[0 or 2 / **0** / 1]
	Selects the paper feed timing. 0: Productivity priority, 2: Fusing quality priory		

1121	**[Idling Time After Job]**		
001	Discontinues Job	*ENG	[0 to 200 / **15** / 1 sec/step]
002	Job End: Min	*ENG	[0 to 200 / **5** / 1 sec/step]
003	Job End: Max	*ENG	[0 to 200 / **15** / 1 sec/step]

1122	**[Repeat Print temp. Correction] DFU**		
001	JOB Interval: Plain	*ENG	[0 to 120 / **30** / 1 sec/step]
002	JOB Interval: M-Thick	*ENG	
003	Shift Time a	*ENG	[0 to 1200 / **150**/ 1 sec/step]
004	Shift Time b	*ENG	[0 to 1200 / **150** / 1 sec/step]
005	Shift Time c	*ENG	[0 to 1200 / **300** / 1 sec/step]
006	Shift Time d	*ENG	[0 to 1200 / **80** / 1 sec/step]
007	Shift Time e	*ENG	[0 to 1200 / **150** / 1 sec/step]
008	Shift Time f	*ENG	[0 to 1200 /**50** / 1 sec/step]
009	Shift Time g	*ENG	[0 to 1200 / **0** / 1 sec/step]
010	Shift Time h	*ENG	[0 to 1200 / **40** / 1 sec/step]

Engine Service Mode

011	Offset Value a	*ENG	[0 to 20 / **5** / 1 deg/step]
012	Offset Value b	*ENG	[0 to 20 / **10** / 1 deg/step]
013	Offset Value c	*ENG	[0 to 20 / **5** / 1 deg/step]
014	Offset Value d	*ENG	[0 to 20 / **5** / 1 deg/step]
015	Offset Value e	*ENG	[0 to 20 / **0** / 1 deg/step]
016	Offset Value f	*ENG	[0 to 20 / **EU/NA/AA** / 1 deg/step] **EU/AA: 0, NA: 5**
017	Offset Value g	*ENG	[0 to 20 / **0** / 1 deg/step]
018	Offset Value h	*ENG	[0 to 20 / **5** / 1 deg/step]

1123	**[Fuser Cleaning]**		
001	Select Operation	*ENG	[0 or 1 / **0** / -]
	Enables or disables the fusing cleaning mode. 0: Cleaning OFF, 1: Cleaning ON		
002	Compulsion execution	-	Execute the fusing cleaning mode.
003	Control temperature	*ENG	[100 to 185 / **185** / 1°C/step]
	Adjusts the temperature for the fusing cleaning mode.		
004	Continuance time	*ENG	[1 to 300 / **160** / 1 sec/step]
	Adjusts the execution time for the fusing cleaning mode.		
005	Operation interval	*ENG	[1 to 240 / **5** / 1 K/step]
	Adjusts the execution interval for the fusing cleaning mode. 1K= 100 sheets		
006	Count when operating	*ENG	[0 to 240,000 / **-** / 1 page/step]

1159	**[Fusing Jam Detection]**

001	SC Display	*ENG	[0 or 1 / **0** / -]
	Enables or disables the fusing consecutive jam (three times) SC detection. 0: No detection, 1: Detection		

1801	**[Motor Speed Adj.] FA**		
001	Registration:Plain:Low	*ENG	[–2 to 2 / **–1.1** / 0.1 %/step]
002	Registration:Plain:High	*ENG	[–2 to 2 / **–0.1** / 0.1 %/step]
003	Registration:Middle Thick:Low	*ENG	[–2 to 2 / **–1.1** / 0.1 %/step]
004	Registration:Middle Thick:Mid	*ENG	[–2 to 2 / **–0.1** / 0.1 %/step]
005	Registration:Middle Thick:High	*ENG	
006	Registration:Thick 1:Low	*ENG	[–2 to 2 / **–1.1** / 0.1 %/step]
007	Registration:Thick1:Mid	*ENG	[–2 to 2 / **–0.1** / 0.1 %/step]
008	Registration:Thick 2:Low	*ENG	[–2 to 2 / **–1.1** / 0.1 %/step]
009	Registration:Thick 3:Low	*ENG	
010	Duplex CW:Plane:Low	*ENG	[–4 to 4 / **0.0** / 0.1 %/step]
011	Duplex CW:Normal:High	*ENG	
012	Duplex CW:Middle Thick:Low	*ENG	
013	Duplex CW:Middle Thick:Mid	*ENG	
014	Duplex CW:Middle Thick:High	*ENG	
015	Duplex CW:Thick1:Low	*ENG	
016	Duplex CW:Thick1:Mid	*ENG	
017	Duplex CW:Thick2:Low	*ENG	
018	Duplex CW:Thick3:Low	*ENG	
019	Duplex CCW:Normal:High	*ENG	[–4 to 4 / **0.0** / 0.1 %/step]

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020	Duplex CCW:Middle Thick:Mid	*ENG	
021	Duplex CCW:Middle Thick:high	*ENG	
023	Duplex CCW:Thick1:Mid	*ENG	
024	Reverse CW:Normal:High	*ENG	[–4 to 4 / **–0.5** / 0.1%/step]
025	Reverse CW:Middle Thick:Mid	*ENG	[–4 to 4 / **0** / 0.1 %/step]
026	Reverse CW:Middle Thick:High	*ENG	[–4 to 4 / **–0.5** / 0.1%/step]
028	Reverse CW:Thick1:Mid	*ENG	[–4 to 4 / **0** / 0.1 %/step]
029	Reverse CCW:Normal:High	*ENG	
030	Reverse CCW:Middle Thick:Mid	*ENG	
031	Reverse CCW:Middle Thick:High	*ENG	
033	Reverse CCW:Thick1:Mid	*ENG	
034	Feed:Plain:Low	*ENG	[–2 to 2 / –**1.1** / 0.1 %/step]
035	Feed:Plain:High	*ENG	[–2 to 2 / –**0.1** / 0.1 %/step]
036	Feed:Middle thick:Low	*ENG	[–2 to 2 / –**1.1** / 0.1 %/step]
037	Feed:Middle thick:Mid	*ENG	[–2 to 2 / –**0.1** / 0.1 %/step]
038	Feed:Middle thick:High	*ENG	
039	Feed:Thick 1:Low	*ENG	[–2 to 2 / –**1.1** / 0.1 %/step]
040	Feed:Thick 1:Mid	*ENG	[–2 to 2 / –**0.1** / 0.1 %/step]
041	Feed:Thick 2:Low	*ENG	[–2 to 2 / –**1.1** / 0.1 %/step]
042	Feed:Thick 3:Low	*ENG	
043	Bridge Motor:Low	*ENG	[–4 to 4 / **0** / 0.1 %/step]
044	Bridge Motor:Mid	*ENG	
045	Bridge Motor:High	*ENG	

047	Registration: 115: Middle Thick	*ENG	[–2 to 2 / **0** / 0.05 %/step]
060	KOpcDevMot:High	*ENG	[–4 to 4 / –**0.6** / 0.01 %/step]
061	KOpcDevMot:Low	*ENG	
062	KOpcDevMot:Mid	*ENG	
063	MOpcDevMot:High	*ENG	[–10 to 10 / 0 / 1 step/step]
064	MOpcDevMot:Mid	*ENG	[–9 to 9 / **0** / 1 step/step]
065	MOpcDevMot:Low	*ENG	[–14 to 14 / 0 / 1 step/step]
066	COpcDevMot:High	*ENG	[–10 to 10 / **0** / 1 step/step]
067	COpcDevMot:Mid	*ENG	[–9 to 9 / **0** / 1 step/step]
068	COpcDevMot:Low	*ENG	[–14 to 14 / **0** / 1 step/step]
069	YOpcDevMot:High	*ENG	[–10 to 10 / **0** / 1 step/step]
070	YOpcDevMot:Mid	*ENG	[–9 to 9 / **0** / 1 step/step]
071	YOpcDevMot:Low	*ENG	[–14 to 14 / **0** / 1 step/step]
072	Fusing: High	*ENG	[–4 to 4 / **1.9** / 0.01 %/step]
073	Fusing: Mid	*ENG	[–4 to 4 / **1.4** / 0.01 %/step]
074	Fusing: Low	*ENG	[–4 to 4 / **1.7** / 0.01 %/step]
075	TransferMot:High	*ENG	[–4 to 4 / –**0.2** / 0.01 %/step]
076	TransferMot:Mid	*ENG	
077	TransferMot:Low	*ENG	
078	TonerMot	*ENG	[–30 to 30 / **10** / 5 %/step]
079	Fusing Exit Motor: 1200	*ENG	[–4 to 4 / **2.1** / 0.01 %/step]
100	Drum Adjust	*ENG	[0 or 1 / **1** / 1] 0: Off, 1: On
	Enables or disables the drum amplitude adjustment.		

Engine Service Mode

101	230mm/s:M	*ENG	[–10 to 10 / **P2c: 0**/ 1 step/step] [–9 to 9 / **P2d: 0** / 1 step/step]
102	230mm/s:C	*ENG	
103	230mm/s:Y	*ENG	
104	205mm/s:M	*ENG	[–7 to 7 / **0** / 1 step/step]
105	205mm/s:C	*ENG	
106	205mm/s:Y	*ENG	
107	154mm/s:M	*ENG	[–14 to 14 / **0** / 1 step/step]
108	154mm/s:C	*ENG	
109	154mm/s:Y	*ENG	
110	77mm/s:M	*ENG	[– 7 to 7 / **0** / 1 step/step]
111	77mm/s:C	*ENG	
112	77mm/s:Y	*ENG	
120	Long:Regi:Plain:H	*ENG	[– 2 to 2 / **-0.1** / 0.1 %/step]
121	Long:Regi:Plain:L	*ENG	[– 2 to 2 / **-1.1** / 0.1 %/step]
122	Long:Regi:MidTh:H	*ENG	[– 2 to 2 / **-0.1** / 0.1 %/step]
123	Long:Regi:MidTh:M	*ENG	
124	Long:Regi:MidTh:L	*ENG	[– 2 to 2 / **-1.1** / 0.1 %/step]
125	Long:Regi:Thck1:M	*ENG	[– 2 to 2 / **-1** / 0.1 %/step]
126	Long:Regi:Thck1:L	*ENG	[– 2 to 2 / **-1.1** / 0.1 %/step]
127	Long:Regi:Thck2:L	*ENG	
128	Long:Regi:Thck3:L	*ENG	
129	Long:Fuse:Plain:H	*ENG	[– 2 to 2 / **1.9** / 0.01 %/step]
130	Long:Fuse:Plain:L	*ENG	[– 4 to 4 / **2.1** / 0.01 %/step]

131	Long:Fuse:MidTh:H	*ENG	[– 4 to 4 / **1.9** / 0.01 %/step]
132	Long:Fuse:MidTh:M	*ENG	[– 4 to 4 / **1.4** / 0.01 %/step]
133	Long:Fuse:MidTh:L	*ENG	[– 4 to 4 / **2.1** / 0.01 %/step]
134	Long:Fuse:Thck1:M	*ENG	[– 4 to 4 / **2** / 0.01 %/step]
135	Long:Fuse:Thck1:L	*ENG	[– 4 to 4 / **1.7** / 0.01 %/step]
136	Long:Fuse:Thck2:L	*ENG	
137	Long:Fuse:Thck3:L	*ENG	

1901	**[Recovery Temp. Ope. Time]**		
004	-	*ENG	[0 to 60 / **10** / 1 sec/step] **Not used**

1902	**[Amplitude Control]**		
001	Execute	-	Execute the drum phase adjustment.
002	Result	*ENG	[0 to 3 / **0** / 1] Displays the result of the drum phase adjustment. 0: Successfully done 2: Sampling failure 3: Insufficient detection number
003	Auto Execution	*ENG	[0 or 1 / **1** / -] Turns the automatic drum phase adjustment on or off. 0: Off, 1: On

1907	**[Paper Feed Timing Adj.] DFU**		
002	Feed Solenoid ON: Plain	*ENG	[–10 to 40 / **0** / 2.5 mm/step]
003	Feed Clutch OFF: Plain	*ENG	[–10 to 10 / **0** / 1 mm/step]

004	Feed Clutch ON: Plain	*ENG	
005	Inverter Stop Position	*ENG	
006	Reverse Stop Position	*ENG	
007	Re-Feed Stop Position	*ENG	
008	By-pass Solenoid OFF	*ENG	[0 to 40 / **0** / 1 mm/step]
009	By-pass Solenoid Re-ON	*ENG	[0 or 1 / **1** / -]
010	By-pass Feed Clutch ON	*ENG	[–10 to 10 / **0** / 1 mm/step]
012	Feed Solenoid ON: Thick	*ENG	[–10 to 40 / **0** / 2.5 mm/step]
013	Feed Clutch OFF: Thick	*ENG	[–10 to 10 / **0** / 1 mm/step]
014	Feed Clutch ON: Thick	*ENG	
015	ReFeed Stop:Small	*ENG	

1908	**[Paper Bank Feed Timing Adj.] DFU**		
008	Feed Clutch ON: Plain	*ENG	[–10 to 10 / **0** / 1 mm/step]
009	Feed Clutch ON: Thick	*ENG	
010	Bridge Junction Gate Sol-ON	*ENG	
011	Bridge Junction Gate Sol-OFF	*ENG	
012	1 Bin Junction Gate Sol-ON	*ENG	
013	1 Bin Junction Gate Sol-OFF	*ENG	
015	Junction Gate SOL1:ON:Plain	*ENG	
016	Junction Gate SOL1:ON:Thick	*ENG	
017	Junction Gate SOL1:OFF:Plain	*ENG	
018	Junction Gate SOL1:OFF:Thick	*ENG	

1910	**[Fusing Feed Start Time]**		
	Specifies the waiting time for feeding paper after the machine has entered the print ready mode.		
011	Plain FC: Ready: M	*ENG	[0 to 250 / **0** / 1 sec/step]
012	Plain FC: Standby: M	*ENG	
013	Plain FC: Ready: L	*ENG	
014	Plain FC: Standby: L	*ENG	
015	Middle Thick: Ready: M	*ENG	
016	Middle Thick: Standby: M	*ENG	
017	Middle Thick: Ready: L	*ENG	
018	Middle Thick: Standby: L	*ENG	
019	Thick Paper: Ready: M	*ENG	
020	Thick Paper: Standby: M	*ENG	
021	Thick Paper: Ready: L	*ENG	
022	Thick Paper: Standby: L	*ENG	
023	Plain FC: stb. Rcv.	*ENG	
024	Mthick FC: stb. Rcv.	*ENG	
025	Thick FC: stb. Rcv.	*ENG	

1915	**[After Ready Setting]**		
011	Offset: Plain: Ready	*ENG	[0 to 50 / **P2c: 0, P2d: 0** / 1 deg/step]
012	Offset: Plain: Standby	*ENG	[0 to 50 / **0** / 1 deg/step]
013	Offset: Middle Thick: Ready	*ENG	[0 to 50 / **20** / 1 deg/step]

014	Offset: Middle Thick: Standby	*ENG	[0 to 50 / **0** / 1 deg/step]
015	Offset: Thick: Ready	*ENG	
016	Offset: Thick: Standby	*ENG	
017	Time: Plain: Ready	*ENG	[0 to 60 / **10** / 1 sec/step]
018	Time: Plain: Standby	*ENG	
019	Time: Middle Thick: Ready	*ENG	
020	Time: Middle Thick: Standby	*ENG	
021	Time: Thick: Ready	*ENG	
022	Time: Thick: Standby	*ENG	
023	Coefficient: Plain	*ENG	[0 to 5 / **1** / 0.1 deg/sec/step]
024	Coefficient: Middle Thick	*ENG	
025	Coefficient: Thick	*ENG	

1916	**[CPM Down Setting]**		
026	Voltage Target	*ENG	[80 to 120 / **93** / 1 %/step]
031	On/Off	*ENG	[0 to 3 / **1** / 1] 0: OFF 1: ON 2: M-Thick: ON 3: Plain: ON
032	D1: Plain: BW: Offset	*ENG	[0 to 100 / **25** / 1 deg/step]
033	D2: Plain: BW: Offset	*ENG	[0 to 100 / **27** / 1 deg/step]
034	D3: Plain: BW: Offset	*ENG	[0 to 100 / **30** / 1 deg/step]

035	D1: Plain: FC: Offset	*ENG	[0 to 100 / **20** / 1 deg/step]
036	D2: Plain: FC: Offset	*ENG	[0 to 100 / **22** / 1 deg/step]
037	D3: Plain: FC: Offset	*ENG	[0 to 100 / **25** / 1 deg/step]
038	D1: Middle Thick: BW: Offset	*ENG	[0 to 100 / **30** / 1 deg/step]
039	D2: Middle Thick: BW: Offset	*ENG	[0 to 100 / **32** / 1 deg/step]
040	D3: Middle Thick: BW: Offset	*ENG	[0 to 100 / **35** / 1 deg/step]
041	D1: Middle Thick: FC: Offset	*ENG	[0 to 100 / **20** / 1 deg/step]
042	D2: Middle Thick: FC: Offset	*ENG	[0 to 100 / **22** / 1 deg/step]
043	D3: Middle Thick: FC: Offset	*ENG	[0 to 100 / **25** / 1 deg/step]
044	D1: Plain :BW : CPM	*ENG	[20 to 40 / **P2c: 35** / 1 cpm/step] [20 to 50 / **P2d: 45** / 1 cpm/step]
045	D2: Plain :BW : CPM	*ENG	[20 to 40 / **P2c: 30** / 1 cpm/step] [20 to 50 / **P2d: 40** / 1 cpm/step]
046	D3: Plain :BW : CPM	*ENG	[20 to 40 / **P2c: 25** / 1 cpm/step] [20 to 50 / **P2d: 35** / 1 cpm/step]
047	D1: Plain :FC : CPM	*ENG	[20 to 40 / **P2c: 35** / 1 cpm/step] [20 to 50 / **P2d: 45** / 1 cpm/step]
048	D2: Plain :FC : CPM	*ENG	[20 to 40 / **P2c: 30** / 1 cpm/step] [20 to 50 / **P2d: 40** / 1 cpm/step]
049	D3: Plain :FC : CPM	*ENG	[20 to 40 / **P2c: 25** / 1 cpm/step] [20 to 50 / **P2d: 35** / 1 cpm/step]
050	D1: Middle Thick: BW:	*ENG	[20 to 40 / **P2c: 35** / 1 cpm/step]

Engine Service Mode

	CPM		[20 to 50 / **P2d: 45** / 1 cpm/step]
051	D2: Middle Thick: BW: CPM	*ENG	[20 to 40 / **P2c: 30** / 1 cpm/step] [20 to 50 / **P2d: 40** / 1 cpm/step]
052	D3: Middle Thick: BW: CPM	*ENG	[20 to 40 / **P2c: 25** / 1 cpm/step] [20 to 50 / **P2d: 35** / 1 cpm/step]
053	D1: Middle Thick: FC: CPM	*ENG	[20 to 40 / **P2c: 35**/ 1 cpm/step] [20 to 50 / **P2d: 45** / 1 cpm/step]
054	D2: Middle Thick: FC: CPM	*ENG	[20 to 40 / **P2c: 30**/ 1 cpm/step] [20 to 50 / **P2d: 40** / 1 cpm/step]
055	D3: Middle Thick: FC: CPM	*ENG	[20 to 40 / **P2c: 25**/ 1 cpm/step] [20 to 50 / **P2d: 35** / 1 cpm/step]
056	Operation Time	*ENG	[0 to 120 / **5** / 1 sec/step]
057	Operation Time:D0	*ENG	[0 to 120 / **5** / 1 sec/step]
060	Ends Down ON/OFF	*ENG	[0 or 1 / **1** / 1 /step] 0: OFF, 1: ON
061	Limit Temperature	*ENG	[200 to 250 / **250** / 1 deg/step]
062	D1: Paper Width1: Offset	*ENG	[10 to 100 / **15** / 1 deg/step]
063	D2: Paper Width1: Offset	*ENG	[10 to 100 / **15** / 1 deg/step]
064	D1: Paper Width2: Offset	*ENG	[10 to 100 / **35** / 1 deg/step]
065	D2: Paper Width2: Offset	*ENG	[10 to 100 / **30** / 1 deg/step]
066	D1: Paper Width3: Offset	*ENG	[10 to 100 / **35** / 1 deg/step]
067	D2: Paper Width3: Offset	*ENG	[10 to 100 / **30** / 1 deg/step]
068	D1: Paper Width1: CPM	*ENG	[10 to 40 / **P2c: 20** / 5 cpm/step] [10 to 50 / **P2d: 20** / 5 cpm/step]
069	D2: Paper Width1: CPM	*ENG	[10 to 40 / **P2c: 20**/ 5 cpm/step] [10 to 50 / **P2d: 20** / 5 cpm/step]

070	D1: Paper Width2: CPM	*ENG	[10 to 40 / **P2c: 35**/ 5 cpm/step] [10 to 50 / **P2d: 45** / 5 cpm/step]
071	D2: Paper Width2: CPM	*ENG	[10 to 40 / **P2c: 20**/ 5 cpm/step] [10 to 50 / **P2d: 20** / 5 cpm/step]
072	D1: Paper Width3: CPM	*ENG	[10 to 40 / **P2c: 35**/ 5 cpm/step] [10 to 50 / **P2d: 45** / 5 cpm/step]
073	D2: Paper Width3: CPM	*ENG	[10 to 40 / **P2c: 20**/ 5 cpm/step] [10 to 50 / **P2d: 20** / 5 cpm/step]
074	Ends: Sustained Time	*ENG	[0 to 120 / **30** / 1 sec/step]
075	Pressure Start Temp	*ENG	[0 to 100 / **100** / 1 deg/step]
076	D1: Paper Width4: Offset	*ENG	[10 to 100 / **45** / 1 deg/step]
077	D2: Paper Width4: Offset	*ENG	[10 to 100 / **40** / 1 deg/step]
078	D1: Paper Width4: CPM	*ENG	[10 to 40 / **P2c: 35**/ 1 cpm/step] [10 to 50 / **P2d: 45** / 1 cpm/step]
079	D2: Paper Width4: CPM	*ENG	[10 to 40 / **P2c: 20** 1 cpm/step] [10 to 50 / **P2d: 20** / 1 cpm/step]

1917	**[Magnetic Field Roller HP Detection]**		
001	Position Replacement	*ENG	[5 to 100 / **40** / 1 times/step]
	Specifies the limit times of the ferrite roller rotation for initializing the home position of the ferrite roller. After the ferrite roller rotates more than 40 times, the machine starts to find the home position of the ferrite roller.		
002	Continuous Feed Page	*ENG	[100 to 1000 / **500** / 10 sheets/step]
	Specifies the limit sheets of outputs for initializing the home position of the ferrite roller. When the outputs are more than 500 sheets of paper, the machine starts to find the home position of the ferrite roller.		

1950	**[Fan Cooling Time Set] Not used**		
	Adjust the rotation time for each fan motor after a job end.		
002	Fusing Exit Fan	*ENG	[0 to 60 / **0** / 1 sec/step]
006	Main Suction Fan	*ENG	
007	Paper Exit Fan	*ENG	
008	PSU Fan	*ENG	
009	Fusing IH Coil Fan	*ENG	
010	IH Power Supply Fan	*ENG	[0 to 60 / 3**0** / 1 sec/step]
011	Second Duct Fan	*ENG	[0 to 60 / **0** / 1 sec/step]
012	Third Duct Fan	*ENG	[0 to 60 / **0** / 1 sec/step]

SP2-XXX (Drum)

2005	**[Charge DC Voltage]** Charge Roller DC Voltage Adjustment (Paper Type, Process Speed, Color) Paper Type –> Plain, Thick 1, Thick 2 Plain: 205 (P2c)/ 230 (P2d) mm/sec, Thick 1: 154 mm/sec, Thick 2&FINE: 77 mm/sec		
	Adjusts the DC component of the charge roller bias in the various print modes. Charge bias (DC component) is automatically adjusted during process control; therefore, adjusting these settings does not effect while process control mode (SP3-041-1 Default: ON) is activated. When deactivating process control mode with SP3-041-1, the values in these SP modes are used for printing.		
001	Plain: Bk	*ENG	[0 to 1000 / **690** / 10 –V/step]
002	Plain: M	*ENG	
003	Plain: C	*ENG	
004	Plain: Y	*ENG	

005	Thick 1: Bk	*ENG	
006	Thick 1: M	*ENG	
007	Thick 1: C	*ENG	
008	Thick 1: Y	*ENG	
009	Thick 2&FINE: Bk	*ENG	
010	Thick 2&FINE: M	*ENG	
011	Thick 2&FINE: C	*ENG	
012	Thick 2&FINE: Y	*ENG	
013	Plain	*ENG	[–100 to 100 / **P2c: –23, P2d: –16** / 1 –V/step]
014	Thick 1	*ENG	[–100 to 100 / **–24** / 1 –V/step]
015	Thick 2&FINE	*ENG	[–100 to 100 / **2** / 1 –V/step]

2006	**[Charge AC Voltage]** Charge Roller AC Voltage Adjustment (Paper Type, Process Speed, Color) Paper Type –> Plain, Thick 1, Thick 2 Plain: 205 (P2c)/ 230 (P2d) mm/sec, Thick 1: 154 mm/sec, Thick 2&FINE: 77 mm/sec		
	Adjusts the AC component of the charge roller bias in the various print modes. Charge bias (AC component) is adjusted by environment correction (SP2-007-xxx to SP2-011-xxx). These SPs are activated only when SP2-012-1 is set to "1: manual control".		
001	Plain: Bk	*ENG	[0 to 3 / **2.1** / 0.01 KV/step]
002	Plain: M	*ENG	
003	Plain: C	*ENG	
004	Plain: Y	*ENG	

Engine Service Mode

005	Thick 1: Bk	*ENG	
006	Thick 1: M	*ENG	
007	Thick 1: C	*ENG	
008	Thick 1: Y	*ENG	
009	Thick 2&FINE: Bk	*ENG	
010	Thick 2&FINE: M	*ENG	
011	Thick 2&FINE: C	*ENG	
012	Thick 2&FINE: Y	*ENG	

2007	**[Charge AC Current: LL]** Charge Roller AC Current Adjustment for LL (Color)		
	Displays/sets the AC current target of the charge roller for LL environment (Low temperature and Low humidity). **DFU**		
001	Environmental Target: Bk	*ENG	[0 to 3 / **P2c: 1.41, P2d: 1.59** / 0.01 mA/step]
002	Environmental Target: M	*ENG	
003	Environmental Target: C	*ENG	
004	Environmental Target: Y	*ENG	

2008	**[Charge AC Current: ML]** Charge Roller AC Current Adjustment for MM (Color)		
	Displays/sets the AC current target of the charge roller for ML environment (Meddle temperature and Low humidity). **DFU**		
001	Environmental Target: Bk	*ENG	[0 to 3 / **P2c: 1.49, P2d: 1.68** / 0.01 mA/step]
002	Environmental Target: M	*ENG	
003	Environmental Target: C	*ENG	

004	Environmental Target: Y	*ENG	

2009	**[Charge AC Current: MM]** Charge Roller AC Current Adjustment for MM (Color)		
	Displays/sets the AC current target of the charge roller for MM environment (Middle temperature and Middle humidity). **DFU**		
001	Environmental Target: Bk	*ENG	[0 to 3 / **P2c: 1.56, P2d: 1.76** / 0.01 mA/step]
002	Environmental Target: M	*ENG	
003	Environmental Target: C	*ENG	
004	Environmental Target: Y	*ENG	

2010	**[Charge AC Current: MH]** Charge Roller AC Current Adjustment for MH (Color)		
	Displays/sets the AC current target of the charge roller for MH environment (Middle temperature and High humidity). **DFU**		
001	Environmental Target: Bk	*ENG	[0 to 3 / **P2c: 1.64, P2d: 1.83** / 0.01 mA/step]
002	Environmental Target: M	*ENG	
003	Environmental Target: C	*ENG	
004	Environmental Target: Y	*ENG	

2011	**[Charge AC Current: HH]** Charge Roller AC Current Adjustment for HH (Color)		
	Displays/sets the AC current target of the charge roller for HH environment (High temperature and High humidity). **DFU**		
001	Environmental Target: Bk	*ENG	[0 to 3 / **P2c: 1. 66, P2d: 1.85** / 0.01 mA/step]
002	Environmental Target: M	*ENG	

Engine Service Mode

003	Environmental Target: C	*ENG	
004	Environmental Target: Y	*ENG	

2012	**[Charge Output Control]**		
001	AC Voltage	*ENG	Selects the AC voltage control type. [0 or 1 / **0** / 1 /step] 0: Process control 1: Manual control (AC voltages are decided with SP2006.)

2013	**[Environmental Correction: PCU]**		
001	Current Environmental: Display	*ENG	Displays the environmental condition, which is measured in absolute humidity. [1 to 5 / **–** / 1 /step] 1: LL (LL <= 4.3 g/m^3) 2: ML (4.3 < ML <= 11.3 g/m^3) 3: MM (11.3 < MM <= 18.0 g/m^3) 4: MH (18.0 < MH <= 24.0 g/m^3) 5: HH (24.0 g/m^3 < HH)
002	Forced Setting	*ENG	Selects the environmental condition manually. [0 to 5 / **0** / 1 /step] 0: The environmental condition is determined automatically. 1: LL, 2: ML, 3: MM, 4: MH, 5: HH
003	Absolute Humidity: Threshold 1	*ENG	Changes the humidity threshold between LL and ML. [0 to 100 / **4.3** / 0.01 g/m^3/step]
004	Absolute Humidity: Threshold 2	*ENG	Changes the humidity threshold between ML and MM. [0 to 100 / **11.3** / 0.01 g/m^3/step]

005	Absolute Humidity: Threshold 3	*ENG	Changes the humidity threshold between MM and MH. [0 to 100 / **18.0** / 0.01 g/m^3/step]
006	Absolute Humidity: Threshold 4	*ENG	Changes the humidity threshold between MH and HH. [0 to 100 / **24.0** / 0.01 g/m^3/step]
007	Current Temp.: Display	*ENG	Displays the current temperature. [0 to 100 / **0** / 1 deg/step]
008	Current Relative Humidity: Display	*ENG	Displays the current relative humidity. [0 to 100 / **0** / 1%RH/step]
009	Current Absolute Humidity: Display	*ENG	Displays the absolute humidity. [0 to 100 / **0** / 0.01 g/m^3/step]
010	Previous Environmental: Display	*ENG	Displays the previous environmental condition, which is measured in absolute humidity. [1 to 5 / **–** / 1 /step] 1: LL, 2: ML, 3: MM, 4: MH, 5: HH
011	Previous Temp.: Display	*ENG	Displays the previous temperature. [0 to 100 / **0** / 1 deg/step]
012	Previous Relative Humidity: Display	*ENG	Displays the previous relative humidity. [0 to 100 / **0** / 1%RH/step]
013	Previous Absolute Humidity: Display	*ENG	Displays the previous absolute humidity. [0 to 100 / **0** / 0.01 g/m^3/step]

2014	**[Charge AC Control: Setting] DFU**		
	Specifies the charge AC control interval or thresholod for each condition.		
001	Exec Interval: Power ON	*ENG	[0 to 2000 / **500** / 1 page/step]
002	Exec Interval: Print	*ENG	
003	Page Interval	*ENG	[0 to 500 / **10** / 5 page/step]

Engine Service Mode

004	Temperature	*ENG	[0 to 99 / **25** / 1 deg/step]
005	Relative Humidity	*ENG	[0 to 99 / **50** / 1 %RH/step]
006	Absolute Humidity	*ENG	[0 to 99 / **12** / 1 g/m^3/step]
007	Temp Threshold M	*ENG	[0 to 99 / **10** / 1 deg/step]
008	RH Threshold M	*ENG	[0 to 99 / **50** / 1 %RH/step]
009	AH Threshold M	*ENG	[0 to 99 / **6** / 1 g/m^3/step]
010	Temp Threshold S	*ENG	[0 to 20 / **1** / 0.1 deg/step]
011	RH Threshold S	*ENG	[0 to 50 / **5** / 1 %RH/step]
012	AH Threshold S	*ENG	[0 to 20 / **1** / 0.1 g/m^3/step]
013	Non-use Time	*ENG	[0 to 1440 / **360** / 10 min/step]

2015	**[Charge AC Adj: Result]**		
001	Bk	*ENG	[0 to 9 / **0** / 1 /step] 0: Success 1: Out of tolerance range 2: Out of adjustable range 3: Adjustment incompleted
002	M	*ENG	
003	C	*ENG	
004	Y	*ENG	

2101	**[Color Registration Correction] FA**		
	These values are the parameters for the automatic line position adjustment and are adjusted at the factory. However, you must input a value for SP2101-001 after replacing the laser optics housing unit. For details, see "Laser Optics Housing Unit" in the "Replacement and Adjustment" section. The value should be provided with the new laser optics housing unit.		
001	Main Dot: Bk	*ENG	[–512 to 511 / **0** / 1 dot/step]
002	Main Dot: M	*ENG	

003	Main Dot: C	*ENG	
004	Main Dot: Y	*ENG	
005	Sub Line: Bk	*ENG	[–16384 to 16383 / **0** / 1 line/step]
006	Sub Line: M	*ENG	
007	Sub Line: C	*ENG	
008	Sub Line: Y	*ENG	

2102	**[Magnification Adjustment] DFU**		
001	Main Mag.: High Speed: Bk	*ENG	These are results of the main scan length adjustment. [0 to 560 / **280** / 1 /step]
002	Main Mag.: Medium Speed: Bk	*ENG	
003	Main Mag.: Low Speed: Bk	*ENG	
004	Main Mag.: High Speed: M	*ENG	
005	Main Mag.: Medium Speed: M	*ENG	
006	Main Mag.: Low Speed: M	*ENG	
007	Main Mag.: High Speed: C	*ENG	
008	Main Mag.: Medium Speed: C	*ENG	
009	Main Mag.: Low Speed: C	*ENG	
010	Main Mag.: High Speed: Y	*ENG	

011	Main Mag.: Medium Speed: Y	*ENG	
012	Main Mag.: Low Speed: Y	*ENG	
013	Offset: Mag Bk1-2	*ENG	[-256 to 255 / **0** / 1 sub-dot/step]
014	Offset: Mag M1-2	*ENG	
015	Offset: Mag C1-2	*ENG	
016	Offset: Mag Y1-2	*ENG	

2103	**[Erase Margin Adjustment]** (Area, Paper Size)		
	Adjusts the erase margin by deleting image data at the margins.		
001	Lead Edge Width	*ENG	[0 to 9.9 / **4.2** / 0.1 mm/step]
002	Trail. Edge Width	*ENG	
003	Left	*ENG	[0 to 9.9 / **2** / 0.1 mm/step]
004	Right	*ENG	
005	Lead Edge Width: Thin	*ENG	[0 to 9.9 / **5** / 0.1 mm/step]
006	Duplex Trail. L Size	*ENG	[0 to 4 / **1** / 0.1 mm/step]
007	Duplex Trail. M Size	*ENG	[0 to 4 / **0.8** / 0.1 mm/step]
008	Duplex Trail. S Size	*ENG	[0 to 4 / **0.6** / 0.1 mm/step]
009	Duplex Left Edge	*ENG	[0 to 1.5 / **0.3** / 0.1 mm/step]
010	Duplex Right Edge	*ENG	
011	Duplex Trail. L Size:Thick	*ENG	[0 to 4 / **1** / 0.1 mm/step]
012	Duplex Trail. M Size:Thick	*ENG	[0 to 4 / **0.8** / 0.1 mm/step]
013	Duplex Trail. S Size:Thick	*ENG	[0 to 4 / **0.6** / 0.1 mm/step]
014	Duplex Left Edge:Thick	*ENG	[0 to 1.5 / **0.3** / 0.1 mm/step]

015	Duplex Right Edge:Thick	*ENG	

2105	**[LD Power Adj.]** (Process Speed, Color)		
	Adjusts the LD power of each color for each process speed. Each LD power setting is decided by process control. High Speed: 205 (P2c)/230 (P2d) mm/sec, Middle Speed: 154 mm/sec, Low Speed: 77 mm/sec		
001	High Speed: Bk	*ENG	[50 to 120 / **100** / 1%/step] Decreasing a value makes lines thinner on the output. Increasing a value makes lines thicker on the output.
002	High Speed: M	*ENG	
003	High Speed: C	*ENG	
004	High Speed: Y	*ENG	
005	Middle Speed: Bk	*ENG	
006	Middle Speed: M	*ENG	
007	Middle Speed: C	*ENG	
008	Middle Speed: Y	*ENG	
009	Low Speed: Bk	*ENG	
010	Low Speed: M	*ENG	
011	Low Speed: C	*ENG	
012	Low Speed: Y	*ENG	

2106	**[Polygon Rotation Time]**		
	Adjusts the time of the polygon motor rotation. **DFU**		
001	Warming-Up	*ENG	[0 to 60 / **10** / 1 sec/step]
002	Job End	*ENG	

Engine Service Mode

2107	**[Image Parameter]**		
	DFU		
001	Image Gamma Flag	*ENG	[0 or 1 / **1** / 1 /step]
002	Shading Correction Flag	*ENG	[0 or 1 / **1** / 1 /step]

2109	**[Test Pattern]**		
	Generates the test pattern using "COPY Window" tab in the LCD.		
003	Pattern Selection	-	[0 to 23 / **0** / 1/step]
	0 None 1: Vertical Line (1dot) 2: Vertical Line (2dot) 3: Horizontal (1dot) 4: Horizontal (2dot) 5: Grid Vertical Line 6: Grid Horizontal Line 7: Grid pattern Small 8: Grid pattern Large 9: Argyle Pattern Small 10: Argyle Pattern Large		11. Independent Pattern (1dot) 12. Independent Pattern (2dot) 13. Independent Pattern (4dot) 14. Trimming Area 16: Hound's Tooth Check (Horizontal) 17: Band (Horizontal) 18: Band (Vertical) 19: Checker Flag Pattern 20: Grayscale Vertical Margin 21: Grayscale Horizontal Margin 23: Full Dot Pattern
005	Color Selection	-	Specifies the color for the test pattern. [1 to 4 / **1** / 1/step] 1: All colors, 2: Magenta, 3: Yellow, 4: Cyan
006	Density: Bk	-	Specifies the color density for the test pattern. [0 to 15 / **15** / 1 /step] 0: Lightest density 15: Darkest density
007	Density: M	-	
008	Density: C	-	
009	Density: Y	-	

2111	[Forced Line Position Adj.]		
001	Mode a	-	Executes the fine line position adjustment twice. If this SP is not completed (NG is displayed), do SP2111-003 first and then try this SP again.
002	Mode b	-	Executes the fine line position adjustment once. If this SP is not completed, do SP2111-003 first and then try this SP again.
003	Mode c	-	Executes the rough line position adjustment once. After doing this SP, make sure to execute SP2111-001 or -002. Otherwise, the line position adjustment is not perfectly done.

2112	**[TM/ID Sensor Check]** ID Sensor Check **FA**		
001	Execute		[0 or 1 / **0** / 1 /step] This SP is used to check the ID sensors at the factory. The results of this SP are displayed in SP2140 to SP2145.

2117	**[Skew Adjustment]**		
	Specifies a skew adjustment value for the skew motor M, C or Y. These SPs must be used when a new laser optics housing unit is installed or when SC285 occurs. For details, see "Laser Optics Housing Unit" in the "Replacement and Adjustment" section.		
001	Pulse: M	*ENG	[–50 to 50 / **0** / 1 pulse/step]
002	Pulse: C	*ENG	
003	Pulse: Y	*ENG	

2118	**[Skew Adjustment]**		
001	Execute: M	*ENG	Changes the current skew adjustment values to the values specified with SP2117. These SPs must be used when a new laser optics housing unit is installed or when SC285 occurs. For details, see "Laser Optics Housing Unit" in the "Replacement and Adjustment" section.
002	Execute: C	*ENG	
003	Execute: Y	*ENG	

2119	**[Skew Adjustment Display]**		
	Displays the current skew adjustment value for each skew motor.		
001	M	*ENG	[–50 to 50 / **0** / 1 pulse/step]
002	C	*ENG	
003	Y	*ENG	

2120	**[Thick Paper Skew Adj] Not used**		
	Selects the skew adjustment value for thick paper.		
001	On/Off	*ENG	[0 or 1 / **1** / 1 /step] 0: Off, 1: On

2140	**[ID Sensor Check Result] DFU**		
	Displays the results of the ID sensor check. Bk, M, C, Y: ID sensors for the process control Front, Center, Rear: ID sensors for the automatic line position adjustment		
001	Bk	*ENG	[0 to 1024 / **0** / 1/step]
002	M	*ENG	
003	C	*ENG	

004	Y	*ENG	
005	Front	*ENG	
006	Center	*ENG	
007	Rear	*ENG	

2141	**[ID Sensor Check Result: Ave.] DFU**		
	Displays the average result values of the ID sensor check. Bk, M, C, Y: ID sensors for the process control Front, Center, Rear: ID sensors for the automatic line position adjustment		
001	Bk	*ENG	[0 to 5.5 / **0** / 0.01V/step]
002	M	*ENG	
003	C	*ENG	
004	Y	*ENG	
005	Front	*ENG	
006	Center	*ENG	
007	Rear	*ENG	

2142	**[ID Sensor Check Result] DFU**		
	Displays the maximum result values of the ID sensor check. Bk, M, C, Y: ID sensors for the process control Front, Center, Rear: ID sensors for the automatic line position adjustment		
001	Maximum: Bk	*ENG	[0 to 5.5 / **0** / 0.01V/step]
002	Maximum: M	*ENG	
003	Maximum: C	*ENG	
004	Maximum: Y	*ENG	

005	Maximum: Front	*ENG	
006	Maximum: Center	*ENG	
007	Maximum: Rear	*ENG	

2143	**[ID Sensor Check Result] DFU**		
	Displays the minimum result values of the ID sensor check. Bk, M, C, Y: ID sensors for the process control Front, Center, Rear: ID sensors for the automatic line position adjustment		
001	Minimum: Bk	*ENG	[0 to 5.5 / **0** / 0.01V/step]
002	Minimum: M	*ENG	
003	Minimum: C	*ENG	
004	Minimum: Y	*ENG	
005	Minimum: Front	*ENG	
006	Minimum: Center	*ENG	
007	Minimum: Rear	*ENG	

2144	**[ID Sensor Check Result] DFU**		
	Displays the maximum result 2 values of the ID sensor check. Bk, M, C, Y: ID sensors for the process control Front, Center, Rear: ID sensors for the automatic line position adjustment		
001	Maximum 2: Bk	*ENG	[0 to 5.5 / **0** / 0.01V/step]
002	Maximum 2: M	*ENG	
003	Maximum 2: C	*ENG	
004	Maximum 2: Y	*ENG	
005	Maximum 2: Front	*ENG	

006	Maximum 2: Center	*ENG	
007	Maximum 2: Rear	*ENG	

2145	**[ID Sensor Check Result] DFU**		
	Displays the minimum result 2 values of the ID sensor check. Bk, M, C, Y: ID sensors for the process control Front, Center, Rear: ID sensors for the automatic line position adjustment		
001	Minimum 2: Bk	*ENG	[0 to 5.5 / **0** / 0.01V/step]
002	Minimum 2: M	*ENG	
003	Minimum 2: C	*ENG	
004	Minimum 2: Y	*ENG	
005	Minimum 2: Front	*ENG	
006	Minimum 2: Center	*ENG	
007	Minimum 2: Rear	*ENG	

2150	**[Area Mag. Correction]** LD Pulse Area Correction (Color, Area) **FA**		
	Adjusts the magnification for each area. The main scan (297 mm) is divided into 8 areas. Area 1 is at the front side of the machine (left side of the image) and area 8 is at the rear side of the machine (right side of the image). Decreasing a value makes the image shift to the left side on the print. Increasing a value makes the image shift to the right side on the print. 1 pulse = 1/16 dot		
027	Area0: Bk	*ENG	[-256 to 255 / **0** / 1sub-dot/step]
028	Area1: Bk	*ENG	Adjusts the area magnification for LD 0. [–256 to 255 / **0** / 1 sub-dot/step]
029	Area2: Bk	*ENG	
030	Area3: Bk	*ENG	

031	Area4: Bk	*ENG	
032	Area5: Bk	*ENG	
033	Area6: Bk	*ENG	
034	Area7: Bk	*ENG	
035	Area8: Bk	*ENG	
036	Area9: Bk	*ENG	Not used
037	Area10: Bk	*ENG	
038	Area11: Bk	*ENG	
039	Area12: Bk	*ENG	
040	Area0: Bk	*ENG	Not used
041	Area1: Bk	*ENG	Adjusts the area magnification for LD 1. [–256 to 255 / **0** / 1 sub-dot/step]
042	Area2: Bk	*ENG	
043	Area3: Bk	*ENG	
044	Area4: Bk	*ENG	
045	Area5: Bk	*ENG	
046	Area6: Bk	*ENG	
047	Area7: Bk	*ENG	
048	Area8: Bk	*ENG	
049	Area9: Bk	*ENG	Not used
050	Area10: Bk	*ENG	
051	Area11: Bk	*ENG	
052	Area12: Bk	*ENG	
079	Area0: M	*ENG	Not used

080	Area1: M	*ENG	Adjusts the area magnification for LD 0. [–255to 255 / **0** / 1 sub-dot/step]
081	Area2: M	*ENG	[–256to 255 / **0** / 1 sub-dot/step]
082	Area3: M	*ENG	
083	Area4: M	*ENG	
084	Area5: M	*ENG	
085	Area6: M	*ENG	
086	Area7: M	*ENG	
087	Area8: M	*ENG	
088	Area9: M	*ENG	Not used
089	Area10: M	*ENG	
090	Area11: M	*ENG	
091	Area12: M	*ENG	
092	Area0: Bk	*ENG	Not used
093	Area1: Bk	*ENG	Adjusts the area magnification for LD 1. [–256 to 255 / **0** / 1 sub-dot/step]
094	Area2: Bk	*ENG	
095	Area3: Bk	*ENG	
096	Area4: Bk	*ENG	
097	Area5: Bk	*ENG	
098	Area6: Bk	*ENG	
099	Area7: Bk	*ENG	
100	Area8: Bk	*ENG	
101	Area9: Bk	*ENG	Not used
102	Area10: Bk	*ENG	

103	Area11: Bk	*ENG	
104	Area12: Bk	*ENG	
131	Area0: C	*ENG	Not used
132	Area1: C	*ENG	Adjusts the area magnification for LD 0. [–256 to 255 / **0** / 1 sub-dot/step]
133	Area2: C	*ENG	
134	Area3: C	*ENG	
135	Area4: C	*ENG	
136	Area5: C	*ENG	
137	Area6: C	*ENG	
138	Area7: C	*ENG	
139	Area8: C	*ENG	
140	Area9: C	*ENG	Not used
141	Area10: C	*ENG	
142	Area11: C	*ENG	
143	Area12: C	*ENG	
144	Area0: C	*ENG	Not used
145	Area1: C	*ENG	Adjusts the area magnification for LD 1. [–256 to 255 / **0** / 1 sub-dot/step]
146	Area2: C	*ENG	
147	Area3: C	*ENG	
148	Area4: C	*ENG	
149	Area5: C	*ENG	
150	Area6: C	*ENG	
151	Area7: C	*ENG	

152	Area8: C	*ENG	
153	Area9: C	*ENG	Not used
154	Area10: C	*ENG	
155	Area11: C	*ENG	
156	Area12: C	*ENG	
183	Area0: Y	*ENG	Not used
184	Area1: Y	*ENG	Adjusts the area magnification for LD 0. [–256 to 255 / **0** / 1 sub-dot/step]
185	Area2: Y	*ENG	
186	Area3: Y	*ENG	
187	Area4: Y	*ENG	
188	Area5: Y	*ENG	
189	Area6: Y	*ENG	
190	Area7: Y	*ENG	
191	Area8: Y	*ENG	
192	Area9: Y	*ENG	Not used
193	Area10: Y	*ENG	
194	Area11: Y	*ENG	
195	Area12: Y	*ENG	
196	Area0: Y	*ENG	Not used
197	Area1: Y	*ENG	Adjusts the area magnification for LD 1. [–256 to 255 / **0** / 1 sub-dot/step]
198	Area2: Y	*ENG	
199	Area3: Y	*ENG	
200	Area4: Y	*ENG	

201	Area5: Y	*ENG	
202	Area6: Y	*ENG	
203	Area7: Y	*ENG	
204	Area8: Y	*ENG	
205	Area9: Y	*ENG	Not used
206	Area10: Y	*ENG	
207	Area11: Y	*ENG	
208	Area12: Y	*ENG	

2152	**[Area Shad. Correct. Setting] FA** Adjusts the area correction value for each LD power. The main scan is divided into 16 areas. However, the image areas are limited from area 1 to area 14. For BK and Magenta, area 1 is at the rear side of the machine (left side of the image) and area 14 is at the front side of the machine (right side of the image). For Cyan and Yellow, area 1 is at the front side of the machine (right side of the image) and area 14 is at the rear side of the machine (left side of the image).		
001	Area 0: Bk	*ENG	This is for the synchronizing detection board. [50 to 150 / **100** / 1 %/step]
002	Area 1: Bk	*ENG	
003	Area 2: Bk	*ENG	
004	Area 3: Bk	*ENG	
005	Area 4: Bk	*ENG	
006	Area 5: Bk	*ENG	
007	Area 6: Bk	*ENG	
008	Area 7: Bk	*ENG	
009	Area 8: Bk	*ENG	

010	Area 9: Bk	*ENG	
011	Area 10: Bk	*ENG	
012	Area 11: Bk	*ENG	
013	Area 12: Bk	*ENG	
014	Area 13: Bk	*ENG	
015	Area 14: Bk	*ENG	
016	Area 15: Bk	*ENG	This is out of the image area. [50 to 150 / **100** / 1 %/step]
033	Area 0: M	*ENG	This is for the synchronizing detection board.
034	Area 1: M	*ENG	[50 to 150 / **100** / 1 %/step]
035	Area 2: M	*ENG	
036	Area 3: M	*ENG	
037	Area 4: M	*ENG	
038	Area 5: M	*ENG	
039	Area 6: M	*ENG	
040	Area 7: M	*ENG	
041	Area 8: M	*ENG	
042	Area 9: M	*ENG	
043	Area 10: M	*ENG	
044	Area 11: M	*ENG	
045	Area 12: M	*ENG	
046	Area 13: M	*ENG	
047	Area 14: M	*ENG	

048	Area 15: M	*ENG	This is out of the image area. [50 to 150 / **100** / 1 %/step]
065	Area 0: C	*ENG	This is for the synchronizing detection board. [50 to 150 / **100** / 1 %/step]
066	Area 1: C	*ENG	[50 to 150 / **100** / 1 %/step]
067	Area 2: C	*ENG	
068	Area 3: C	*ENG	
069	Area 4: C	*ENG	
070	Area 5: C	*ENG	
071	Area 6: C	*ENG	
072	Area 7: C	*ENG	
073	Area 8: C	*ENG	
074	Area 9: C	*ENG	
075	Area 10: C	*ENG	
076	Area 11: C	*ENG	
077	Area 12: C	*ENG	
078	Area 13: C	*ENG	
079	Area 14: C	*ENG	
080	Area 15: C	*ENG	This is out of the image area. [50 to 150 / **100** / 1 %/step]
097	Area 0: Y	*ENG	This is for the synchronizing detection board. [50 to 150 / **100** / 1 %/step]
098	Area 1: Y	*ENG	[50 to 150 / **100** / 1 %/step]

099	Area 2: Y	*ENG	
100	Area 3: Y	*ENG	
101	Area 4: Y	*ENG	
102	Area 5: Y	*ENG	
103	Area 6: Y	*ENG	
104	Area 7: Y	*ENG	
105	Area 8: Y	*ENG	
106	Area 9: Y	*ENG	
107	Area 10: Y	*ENG	
108	Area 11: Y	*ENG	
109	Area 12: Y	*ENG	
110	Area 13: Y	*ENG	
111	Area 14: Y	*ENG	
112	Area 15: Y	*ENG	This is out of the image area.

2160	**[Vertical Line Width] DFU**		
	Adjusts the width of the vertical line.		
001	600dpi:Bk	*ENG	[10 to 15 / **15** / 1 /step]
002	600dpi:Ma	*ENG	
003	600dpi:Cy	*ENG	
004	600dpi:Ye	*ENG	
005	1200dpi:Bk	*ENG	
006	1200dpi:Ma	*ENG	
007	1200dpi:Cy	*ENG	

008	1200dpi:Ye	*ENG	

2180	**[Line Position Adj. Setting Clear]**		
001	Color Regist.	-	**DFU**
002	Main Scan Length Detection	-	**DFU**
003	MUSIC Result	-	**DFU**
004	Area Magnification Correction	-	**DFU**

2181	**[Line Position Adj. Result]**		
	Displays the values for each correction. ▪ "Paper Int. Mag: Subdot" indicates the magnification correction value between two sheets of paper. ▪ "Mag.Cor. Subdot" indicates the magnification correction value. ▪ "M. Scan Erro." indicates the shift correction value in the main scan direction. ▪ "S. Scan Erro." Indicates the shift correction value in the sub scan direction. ▪ "M. Cor.: Dot" indicates the dot correction value in the main scan direction. ▪ "M. Cor.: Subdot" indicates the sub dot correction value in the main scan direction. ▪ Bk: Black, M: Magenta, C: Cyan, Y: Yellow		
001	Paper Int. Mag: Subdot: Bk	*ENG	[–32768 to 32767 / **0** / 1 pulse/step]
002	Mag.Cor. Subdot: Bk	*ENG	[–32768 to 32767 / **0** / 1 pulse/step]
003	Skew: M	*ENG	[–5000 to 5000 / **0** / 0.001 um/step]
004	Bent: M	*ENG	
005	M. Scan Erro.: Left: M	*ENG	[–5000 to 5000 / **0** / 0.001 um/step]
006	M. Scan Erro.: Center: M	*ENG	
007	M. Scan Erro.: Right: M	*ENG	

008	S. Scan Erro.: Left: M	*ENG	
009	S. Scan Erro.: Center: M	*ENG	
010	S. Scan Erro.: Right: M	*ENG	
011	M. Cor.: Dot: M	*ENG	[–512 to 511 / **0** / 1 dot/step]
012	M. Cor.: Subdot: M	*ENG	[–15 to 15 / **0** / 1 pulse/step]
013	Paper Int. Mag: Subdot: M	*ENG	[–32768 to 32767 / 0 / 1 pulse/step]
014	Mag.Cor. Subdot: M	*ENG	
015	M. Left Mag.: Subdot: M	*ENG	
016	M. Right Mag.: Subdot: M	*ENG	
017	S. Cor.: 600 Line: M	*ENG	[–16384 to 16383 / **0** / 1 line/step]
018	S. Cor.: 600 Sub: M	*ENG	[–1 to 1 / **0** / 0.001 line/step]
019	S. Cor.: 1200 Line: M	*ENG	[–16384 to 16383 / **0** / 1 line/step]
020	S. Cor.: 1200 Sub: M	*ENG	[–1 to 1 / **0** / 0.001 line/step]
021	Skew: C	*ENG	[–5000 to 5000 / **0** / 0.001 um/step]
022	Bent: C	*ENG	
023	M. Scan Erro.: Left: C	*ENG	[–5000 to 5000 / **0** / 0.001 um/step]
024	M. Scan Erro.: Center: C	*ENG	
025	M. Scan Erro.: Right: C	*ENG	
026	S. Scan Erro.: Left: C	*ENG	
027	S. Scan Erro.: Center: C	*ENG	
028	S. Scan Erro.: Right: C	*ENG	
029	M. Cor.: Dot: C	*ENG	[–512 to 511 / **0** / 1 dot/step]
030	M. Cor.: Subdot: C	*ENG	[–15 to 15 / **0** / 1 pulse/step]

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031	Paper Int. Mag: Subdot: C	*ENG	[–32768 to 32767 / **0** / 1 pulse/step]
032	Mag.Cor. Subdot: C	*ENG	
033	M. Left Mag.: Subdot: C	*ENG	
034	M. Right Mag.: Subdot: C	*ENG	
035	S. Cor.: 600 Line: C	*ENG	[–16384 to 16383 / **0** / 1 line/step]
036	S. Cor.: 600 Sub: C	*ENG	[–1 to 1 / **0** / 0.001 line/step]
037	S. Cor.: 1200 Line: C	*ENG	[–16384 to 16383 / **0** / 1 line/step]
038	S. Cor.: 1200 Sub: C	*ENG	[–1 to 1 / **0** / 0.001 line/step]
039	Skew: Y	*ENG	[–5000 to 5000 / **0** / 0.001 um/step]
040	Bent: Y	*ENG	
041	M. Scan Erro.: Left: Y	*ENG	
042	M. Scan Erro.: Center: Y	*ENG	
043	M. Scan Erro.: Right: Y	*ENG	
044	S. Scan Erro.: Left: Y	*ENG	
045	S. Scan Erro.: Center: Y	*ENG	
046	S. Scan Erro.: Right: Y	*ENG	
047	M. Cor.: Dot: Y	*ENG	[–512 to 511 / **0** / 1 dot/step]
048	M. Cor.: Subdot: Y	*ENG	[–15 to 15 / **0** / 1 pulse/step]
049	Paper Int. Mag: Subdot: Y	*ENG	[–32768 to 32767 / **0** / 1 pulse/step]
050	Mag.Cor. Subdot: Y	*ENG	
051	M. Left Mag.: Subdot: Y	*ENG	
052	M. Right Mag.: Subdot: Y	*ENG	
053	S. Cor.: 600 Line: Y	*ENG	[–16384 to 16383 / **0** / 1 line/step]

054	S. Cor.: 600 Sub: Y	*ENG	[–1 to 1 / **0** / 0.001 line/step]
055	S. Cor.: 1200 Line: Y	*ENG	[–16384 to 16383 / **0** / 1 line/step]
056	S. Cor.: 1200 Sub: Y	*ENG	[–1 to 1 / **0** / 0.001 line/step]

2182	**[Line Position Adj. Offset]** (Color) M. Scan: Main scan, S. Scan: Sub-scan High: 205 (P2c)/ 230 (P2d) mm/sec, Medium: 154 mm/sec, Low: 77 mm/sec		
001	M Magnification	*ENG	Adjusts the line position manually. [-1 to 1 / **0** / 0.001%/step] When line shifts are not corrected by the automatic line position adjustment, do this SP. Increasing a value reduces the image in the main scan direction. Decreasing a value enlarges the image in the main scan direction.
002	C Magnification	*ENG	
003	Y Magnification	*ENG	
004	M. Scan: High: Dot: M	*ENG	[-512 to 511 / **0** / 1 dot/step]
005	M. Scan: High: Subdot: M	*ENG	[-15 to 15 / **0** / 1 pulse/step]
006	M. Scan: Medium: Dot: M	*ENG	[-512 to 511 / **0** / 1 dot/step]
007	M. Scan: Medium: Subdot: M	*ENG	[-15 to 15 / **0** / 1 pulse/step]
008	M. Scan: Low: Dot: M	*ENG	[-512 to 511 / **0** / 1 dot/step]
009	M. Scan: Low: Subdot: M	*ENG	[-15 to 15 / **0** / 1 pulse/step]
010	M. Scan: High: Dot: C	*ENG	[-512 to 511 / **0** / 1 dot/step]
011	M. Scan: High: Subdot: C	*ENG	[-15 to 15 / **0** / 1 pulse/step]
012	M. Scan: Medium: Dot: C	*ENG	[-512 to 511 / **0** / 1 dot/step]
013	M. Scan: Medium: Subdot: C	*ENG	[-15 to 15 / **0** / 1 pulse/step]

014	M. Scan: Low: Dot: C	*ENG	[-512 to 511 / **0** / 1 dot/step]
015	M. Scan: Low: Subdot: C	*ENG	[-15 to 15 / **0** / 1 pulse/step]
016	M. Scan: High: Dot: Y	*ENG	[-512 to 511 / **0** / 1 dot/step]
017	M. Scan: High: Subdot: Y	*ENG	[-15 to 15 / **0** / 1 pulse/step]
018	M. Scan: Medium: Dot: Y	*ENG	[-512 to 511 / **0** / 1 dot/step]
019	M. Scan: Medium: Subdot: Y	*ENG	[-15 to 15 / **0** / 1 pulse/step]
020	M. Scan: Low: Dot: Y	*ENG	[-512 to 511 / **0** / 1 dot/step]
021	M. Scan: Low: Subdot: Y	*ENG	[-15 to 15 / **0** / 1 pulse/step]
022	S. Scan: High: Line: M	*ENG	[-16384 to 16383 / **0** / 1 line/step]
023	S. Scan: High: Subline: M	*ENG	[–1 to 1 / **0** / 0.001 /line]
024	S. Scan: Medium: Line: M	*ENG	[-16384 to 16383 / **0** / 1 line/step]
025	S. Scan: Medium: Subline: M	*ENG	[–1 to 1 / **0** / 0.001 /line]
026	S. Scan: Low: Line: M	*ENG	[-16384 to 16383 / **0** / 1 line/step]
027	S. Scan: Low: Subline: M	*ENG	Not used
028	S. Scan: High: Line: C	*ENG	[-16384 to 16383 / **0** / 1 line/step]
029	S. Scan: High: Subline: C	*ENG	[–1 to 1 / **0** / 0.001 /line]
030	S. Scan: Medium: Line: C	*ENG	[-16384 to 16383 / **0** / 1 line/step]
031	S. Scan: Medium: Subline: C	*ENG	[–1 to 1 / **0** / 0.001 /line]
032	S. Scan: Low: Line: C	*ENG	[-16384 to 16383 / **0** / 1 line/step]
033	S. Scan: Low: Subline: C	*ENG	Not used
034	S. Scan: High: Line: Y	*ENG	[-16384 to 16383 / **0** / 1 line/step]
035	S. Scan: High: Subline: Y	*ENG	[–1 to 1 / **0** / 0.001 /line]
036	S. Scan: Medium: Line: Y	*ENG	[-16384 to 16383 / **0** / 1 line/step]

037	S. Scan: Medium: Subline: Y	*ENG	[–1 to 1 / **0** / 0.001 /line]
038	S. Scan: Low: Line: Y	*ENG	[-16384 to 16383 / **0** / 1 line/step]
039	S. Scan: Low: Subline: Y	*ENG	Not used

2183	**[Main Scan Length Detection] DFU**		
001	Execute: High: Bk	-	Executes the adjustment for the main scan length detection manually.
002	Execute: Medium: Bk	-	
003	Execute: Low: Bk	-	
004	Execute: High: M	-	
005	Execute: Medium: M	-	
006	Execute: Low: M	-	
007	Execute: High: C	-	
008	Execute: Medium: C	-	
009	Execute: Low: C	-	
010	Execute: High: Y	-	
011	Execute: Medium: Y	-	
012	Execute: Low: Y	-	

2184	**[Main Scan Length Detection Target] DFU**		
001	Execute: Bk	-	Executes the target value for the main scan length detection.
002	Execute: M	-	
003	Execute: C	-	
004	Execute: Y	-	

2185	**[Main Scan Length Detection Disp.]**		
	Displays/adjusts the target value for the main scan magnification correction of the line position adjustment. After replacing the laser optics housing unit, input the standard value for Bk provided with the new unit. For details, see "Laser Optics Housing Unit" in the "Replacement Adjustment" section. It is not necessary to input the values for the other colors; these are automatically adjusted after doing the line position adjustment.		
001	Bk	*ENG	[0 to 266667 / **249449** / 1 sub-dot/step]
002	M	*ENG	
003	C	*ENG	
004	Y	*ENG	

2186	**[Main Scan Length Detection] DFU**		
001	Selection	*ENG	[0 or 1 / **1** / 1/step] 0: OFF, 1: ON
	Enables or disables the main scan length detection for the laser.		
002	Paper Interval	*ENG	[0 to 999 / **1** / 1 sec/step]
	Adjusts the interval of the main scan length detection for the laser.		

2190	**[Line Position Adj.]**		
001	Paper Int. Mag.: Subdot: Bk	*ENG	**DFU** [0 or 1 / **1** / 1/step]
002	Paper Int. Mag.: Subdot: M	*ENG	
003	Paper Int. Mag.: Subdot: C	*ENG	
004	Paper Int. Mag.: Subdot: Y	*ENG	
005	M. Scan Mag.: Subdot: M	*ENG	**DFU**

006	M. Scan Mag.: Subdot: C	*ENG	[0 or 1 / **1** / 1/step] 0: Disable correction, 1: Enable correction
007	M. Scan Mag.: Subdot: Y	*ENG	
008	Area Mag.: Subdot: M	*ENG	**DFU** [0 or 1 / **1** / 1/step]
009	Area Mag.: Subdot: C	*ENG	
010	Area Mag.: Subdot: Y	*ENG	
011	S. Scan Cor. Setting	*ENG	**DFU** [0 or 1 / **0** / 1/step] 0: Adjusted with Bk 1: Adjusted in minimum shift among four colors
012	1 Line Shift Control	*ENG	**DFU** [0 or 1 / **0** / 1/step]

2191	**[MUSIC Coefficient Setting]** Line Position Adjustment: Coefficient Setting **DFU** ch 0: ID sensor at rear, ch 1: ID sensor at center, ch 2: ID sensor at front		
001	ch 0: Filter: Front: a1	*ENG	[–131071 to 131071 / **125869** / 1 bit/step]
002	ch 0: Filter: Front: a2	*ENG	[–131071 to 131071 / **–60488** / 1 bit/step]
003	ch 0: Filter: Front: b0	*ENG	[–131071 to 131071 / **39** / 1 bit/step]
004	ch 0: Filter: Front: b1	*ENG	[–131071 to 131071 / **77** / 1 bit/step]
005	ch 0: Filter: Front: b2	*ENG	[–131071 to 131071 / **39** / 1 bit/step]
006	ch 0: Filter: Rear: a1	*ENG	[–131071 to 131071 / **128596** / 1 bit/step]
007	ch 0: Filter: Rear: a2	*ENG	[–131071 to 131071 / **–63398** / 1 bit/step]
008	ch 0: Filter: Rear: b0	*ENG	[–131071 to 131071 / **84** / 1 bit/step]
009	ch 0: Filter: Rear: b1	*ENG	[–131071 to 131071 / **168** / 1 bit/step]
010	ch 0: Filter: Rear: b2	*ENG	[–131071 to 131071 / **84** / 1 bit/step]

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011	ch 1: Filter: Front: a1	*ENG	[–131071 to 131071 / **125869** / 1 bit/step]
012	ch 1: Filter: Front: a2	*ENG	[–131071 to 131071 / **–60488** / 1 bit/step]
013	ch 1: Filter: Front: b0	*ENG	[–131071 to 131071 / **39** / 1 bit/step]
014	ch 1: Filter: Front: b1	*ENG	[–131071 to 131071 / **77** / 1 bit/step]
015	ch 1: Filter: Front: b2	*ENG	[–131071 to 131071 / **39** / 1 bit/step]
016	ch 1: Filter: Rear: a1	*ENG	[–131071 to 131071 / **128596** / 1 bit/step]
017	ch 1: Filter: Rear: a2	*ENG	[–131071 to 131071 / **–63398** / 1 bit/step]
018	ch 1: Filter: Rear: b0	*ENG	[–131071 to 131071 / **84** / 1 bit/step]
019	ch 1: Filter: Rear: b1	*ENG	[–131071 to 131071 / **168** / 1 bit/step]
020	ch 1: Filter: Rear: b2	*ENG	[–131071 to 131071 / **84** / 1 bit/step]
021	ch 2: Filter: Front: a1	*ENG	[–131071 to 131071 / **125869** / 1 bit/step]
022	ch 2: Filter: Front: a2	*ENG	[–131071 to 131071 / **–60488** / 1 bit/step]
023	ch 2: Filter: Front: b0	*ENG	[–131071 to 131071 / **39** / 1 bit/step]
024	ch 2: Filter: Front: b1	*ENG	[–131071 to 131071 / **77** / 1 bit/step]
025	ch 2: Filter: Front: b2	*ENG	[–131071 to 131071 / **39** / 1 bit/step]
026	ch 2: Filter: Rear: a1	*ENG	[–131071 to 131071 / **128596** / 1 bit/step]
027	ch 2: Filter: Rear: a2	*ENG	[–131071 to 131071 / **–63398** / 1 bit/step]
028	ch 2: Filter: Rear: b0	*ENG	[–131071 to 131071 / **84** / 1 bit/step]
029	ch 2: Filter: Rear: b1	*ENG	[–131071 to 131071 / **168** / 1 bit/step]
030	ch 2: Filter: Rear: b2	*ENG	[–131071 to 131071 / **84** / 1 bit/step]
031	Q Format Selection	*ENG	[0 to 3 / **3** / 1/step]

2192	**[MUSIC Threshold Setting]** Line Position Adjustment: Threshold Setting **DFU** ch 0: ID sensor at rear, ch 1: ID sensor at center, ch 2: ID sensor at front

001	ch 0: 1st	*ENG	[0.5 to 3 / **1.2** / 0.1 V/step]
002	ch 0: 2nd	*ENG	
003	ch 0: 3rd	*ENG	
004	ch 0: 4th	*ENG	
005	ch 1: 1st	*ENG	
006	ch 1: 2nd	*ENG	
007	ch 1: 3rd	*ENG	
008	ch 1: 4th	*ENG	
009	ch 2: 1st	*ENG	
010	ch 2: 2nd	*ENG	
011	ch 2: 3rd	*ENG	
012	ch 2: 4th	*ENG	

2193	**[MUSIC Condition Set]** Line Position Adjustment: Condition Setting		
001	Auto Execution	*ENG	[0 or 1 / **1** / 1] 0: OFF, 1: ON
	Enables/disables the automatic line position adjustment		
002	Page: Job End: BW+FC	*ENG	[0 to 999 / **500** / 1 page/step]
	Adjusts the threshold of the line position adjustment for BW and color printing mode after job end.		
003	Page: Job End: FC	*ENG	[0 to 999 / **200** / 1 page/step]
	Adjusts the threshold of the line position adjustment for color printing mode after job end.		
004	Page: Interrupt: BW+FC	*ENG	[0 to 999 / **200** / 1 page/step]
	Adjusts the threshold of the line position adjustment for BW and color printing		

	mode during job.		
005	Page: Interrupt: FC	*ENG	[0 to 999 / **200** / 1 page/step]
	Adjusts the threshold of the line position adjustment for color printing mode during jobs.		
006	Page: Stand-By: BW	*ENG	[0 to 999 / **100** / 1 page/step]
	Adjusts the threshold of the line position adjustment for BW printing mode in stand-by mode. The line position adjustment is done when the number of outputs in BW printing mode reaches the value specified with this SP and the condition of SP2-193-008 or SP2-193-009 is satisfied.		
007	Page: Stand-By: FC	*ENG	[0 to 999 / **100** / 1 page/step]
	Adjusts the threshold of the line position adjustment for FC printing mode in stand-by mode. The line position adjustment is done when the number of outputs in color printing mode reaches the value specified with this SP and the condition of SP2-193-008 or SP2-193-009 is satisfied.		
008	Temp.	*ENG	[0 to 100 / **5** / 1deg/step]
	Adjust the temperature change threshold for the line position adjustment (Mode b: adjustment once). The timing for line position adjustment depends on the combinations of several conditions.		
009	Time	*ENG	[1 to 1440 / **300** / 1 minute/step]
	Adjust the time threshold for the line position adjustment (Mode b: adjustment once). The timing for line position adjustment depends on the combinations of several conditions.		
010	Magnification	*ENG	[0 to 10 / **0.1** / 0.01%/step]
	Adjusts the magnification threshold for line position adjustment. If the length of the main scan is changed by this amount since the previous MUSIC, then MSUIC is done again.		
011	Temp. 2	*ENG	[0 to 100 / **10** / 1deg/step]
	Adjust the temperature change threshold for the line position adjustment (Mode		

	a: adjustment twice). The timing for line position adjustment depends on the combinations of several conditions.		
012	Time 2	*ENG	[1 to 9999 / **600** / 1 minute/step]
	Adjust the time threshold for the line position adjustment (Mode a: adjustment twice). The timing for line position adjustment depends on the combinations of several conditions.		
013	Page: Power ON:BW+FC	*ENG	[0 to 999 / **200** / 1 page/step]
	Adjusts the threshold of the line position adjustment for BW and FC printing mode at power-on. The line position adjustment is done when the number of outputs in BW and color printing mode reaches the value specified with this SP and the condition of SP2-193-008 or SP2-193-009 is satisfied.		

2194	**[MUSIC Execution Result]** Line Position Adjustment: Execution Result		
001	Year	*ENG	[0 to 99 / **0** / 1 year/step]
002	Month	*ENG	[1 to 12 / **1** / 1 month/step]
003	Day	*ENG	[1 to 31 / **1** / 1 day/step]
004	Hour	*ENG	[0 to 23 / **0** / 1 hour/step]
005	Minute	*ENG	[0 to 59 / **0** / 1 minute/step]
006	Temperature	*ENG	[0 to 100 / **0** / 1 deg/step]
007	Execution Result	*ENG	[0 or 1 / **0** / 1 /step] 0: Completed successfully, 1: Failed
008	Number of Execution	*ENG	[0 to 999999 / **0** / 1 times/step]
009	Number of Failure	*ENG	[0 to 999999 / **0** / 1 times/step]
010	Error Result: M	*ENG	[0 to 9 / **0** / 1 /step] 0: Not done
011	Error Result: C	*ENG	

012	Error Result: Y	*ENG	1: Completed successfully 2: Cannot detect patterns 3: Fewer lines on the pattern than the target 4: Not used 5: Out of the adjustment range 6 to 9: Not used

2197	**[MUSIC Start Time]**		
	DFU		
001	MUSIC Start Time (EDT)	*ENG	[10 to 40 / **20** / 10ms/step]
002	TM Sensor Position	*ENG	[50 to 500 / **105.5** / 0.1mm/step]

2198	**[Music A/D Interval]**		
	ADC Trigger Counter		
001	ADC Trigger Counter	*ENG	[7.5 to 20 / **10** / 0.1 μs/step]

2199	**[Music Error Time Setting]**		
	DFU		
001	Error Detection Counter	*ENG	[0.5 to 3 / **2.5** / 0.1 sec /step]

2221	**[LD Power] LD Power Control**		
	Adjusts the fixed LD power for each line speed and color. These SPs are activated only when SP3-041-002 is set to "0". Plain: 205 (P2c)/230 (P2d) mm/sec, Thick 1: 154 mm/sec, Thick 2&Fine: 77 mm/sec		
001	Plain: Bk	*ENG	[0 to 200 / **100** / 1%/step] Increasing this value makes the image
002	Plain: M	*ENG	

003	Plain: C	*ENG	density darker.
004	Plain: Y	*ENG	
005	Thick 1: Bk	*ENG	
006	Thick 1: M	*ENG	
007	Thick 1: C	*ENG	
008	Thick 1: Y	*ENG	
009	Thick 2&FINE: Bk	*ENG	
010	Thick 2&FINE: M	*ENG	
011	Thick 2&FINE: C	*ENG	
012	Thick 2&FINE: Y	*ENG	

2229	**[Development DC Vias]** Development DC Bias Adjustment		
	Adjusts the development bias. Development bias is automatically adjusted during process control; therefore, adjusting these settings has no effect while Process Control (SP3-041-001 Default: ON) is activated. After deactivating Process Control with SP3-041-001, the values in these SP modes are used for printing. Plain: 205 (P2c)/230 (P2d) mm/sec, Thick 1: 154 mm/sec, Thick 2&Fine: 77 mm/sec		
001	Plain: Bk	*ENG	[0 to 800 / **550** / 10 –V/step]
002	Plain: M	*ENG	
003	Plain: C	*ENG	
004	Plain: Y	*ENG	
005	Thick 1: Bk	*ENG	
006	Thick 1: M	*ENG	

007	Thick 1: C	*ENG	
008	Thick 1: Y	*ENG	
009	Thick 2: Bk	*ENG	
010	Thick 2: M	*ENG	
011	Thick 2: C	*ENG	
012	Thick 2: Y	*ENG	
013	Fine: Bk	*ENG	
014	Fine: M	*ENG	
015	Fine: C	*ENG	
016	Fine: Y	*ENG	

2241	**[Temperature/Humidity: Display]**		
	Displays the environment temperature and humidity.		
001	Temperature	-	[–1280 to 1270 / - / 0.1deg/step]
002	Relative Humidity	-	[0 to 1000 / - / 0.1 %RH/step]
003	Absolute Humidity	-	[0 to 100 / - / 0.01 g/m^3/step]

2302	**[Environmental Correction: Transfer]** Environmental Correction: Image Transfer Belt Unit		
002	Forced Setting	*ENG	Sets the environment condition manually. [0 to 6 / **0** / 1 /step] 0: Automatic environment control 1: LL (Low temperature/ Low humidity) 2: ML (Middle temperature/ Low humidity) 3: MM (Middle temperature/ Middle humidity) 4: MH (Middle temperature/ High humidity)

			5: HH (High temperature/ High humidity)
003	Absolute Humidity: Threshold 1	*ENG	Adjusts the threshold value between LL and ML. [0 to 100 / **4** / 0.01 g/m^3/step]
004	Absolute Humidity: Threshold 2	*ENG	Adjusts the threshold value between ML and MM. [0 to 100 / **8** / 0.01 g/m^3/step]
005	Absolute Humidity: Threshold 3	*ENG	Adjusts the threshold value between MM and MH. [0 to 100 / **16** / 0.01 g/m^3/step]
006	Absolute Humidity: Threshold 4	*ENG	Adjusts the threshold value between MH and HH. [0 to 100 / **24** / 0.01 g/m^3/step]
007	Temp Threshold	*ENG	[–5 to 30 / **5** / 1 deg/step]

2308	**[Paper Size Correction]**		
	Adjusts the threshold value for the paper size correction.		
001	Threshold 1	*ENG	[0 to 350 / **297** / 1 mm/step] Threshold 1 ≤ paper: Paper is detected as "S1" size.
002	Threshold 2	*ENG	[0 to 350 / **257** / 1 mm/step] Threshold 2 ≤ paper ≤ Threshold 1: Paper is detected as "S2" size.
003	Threshold 3	*ENG	[0 to 350 / **210** / 1 mm/step] Threshold 3 ≤ paper ≤ Threshold 2: Paper is detected as "S3" size.
004	Threshold 4	*ENG	[0 to 350 / **148** / 1 mm/step] Threshold 4 ≤ paper ≤ Threshold 3: Paper is detected as "S4" size. Paper ≤ Threshold 4:

			Paper is detected as "S5" size.

2311	**[Non Image Area: Bias]**		
001	Image Transfer	*ENG	Adjusts the bias of the image transfer belt between images. This value is added to the value of the image transfer belt bias. [10 to 250 / **100** / 5 %/step]
002	Paper Transfer	*ENG	Adjusts the bias of the paper transfer roller between images. [0 to 130 / **5** / 1 –μA/step]

2326	**[Transfer Roller CL: Bias]** Transfer Roller Cleaning: Bias Adjustment		
001	Positive	*ENG	[0 to 2100 / **500** / 100 V /step]
	Adjusts the positive voltage of the paper transfer roller for cleaning the paper transfer roller.		
002	Negative	*ENG	[10 to 400 / **300** / 10 %/step]
	Adjusts the negative current of the paper transfer roller for cleaning the paper transfer roller.		
003	Positive	*ENG	[0 to 2100 / **2000** / 100 V/step]
	Adjusts the negative current limit of the paper transfer roller for cleaning the paper transfer roller.		
004	Negative	*ENG	[10 to 400 / **100** / 10 %/step]

2351	**[Common: BW: Bias]** Image Transfer Belt: B/W: Bias Adjustment Plain: 205 (P2c)/230 (P2d) mm/sec, Thick 1: 154 mm/sec, Thick 2&Fine: 77 mm/sec		
001	ITB unit: Plain	*ENG	[0 to 80 / **P2c: 33, P2d: 37** / 1 μA]
	Adjusts the current for the image transfer belt in B/W mode for plain paper.		

002	ITB unit: Thick 1	*ENG	[0 to 80 / **25** / 1 μA]
	Adjusts the current for the image transfer belt in B/W mode for thick 1 paper.		
003	ITB unit: Thick 2 & FINE	*ENG	[0 to 80 / **12** / 1 μA]
	Adjusts the current for the image transfer belt in B/W mode for thick 2 paper or FINE mode.		

2357	**[Common: FC: Bias]** Image Transfer Belt: Full Color: Bias Adjustment Plain: 205 (P2c)/230 (P2d) mm/sec, Thick 1: 154 mm/sec, Thick 2&Fine: 77 mm/sec		
001	ITB unit: Plain: Bk	*ENG	[0 to 80 / **P2c: 30, P2d: 33** / 1 μA]
	Adjusts the current for the image transfer belt for Black in full color mode for plain paper.		
002	ITB unit: Plain: M	*ENG	[0 to 80 / **P2c: 30, P2d: 33** / 1 μA]
	Adjusts the current for the image transfer belt for Magenta in full color mode for plain paper.		
003	ITB unit: Plain: C	*ENG	[0 to 80 / **P2c: 33, P2d: 37** / 1 μA]
	Adjusts the current for the image transfer belt for Cyan in full color mode for plain paper.		
004	ITB unit: Plain: Y	*ENG	[0 to 80 / **P2c: 38, P2d: 42** / 1 μA]
	Adjusts the current for the image transfer belt for Yellow in full color mode for plain paper.		
005	ITB unit: Thick 1: Bk	*ENG	[0 to 80 / **22** / 1 μA]
	Adjusts the current for the image transfer belt for Black in full color mode for thick 1 paper.		
006	ITB unit: Thick 1: M	*ENG	[0 to 80 / **22** / 1 μA]
	Adjusts the current for the image transfer belt for Magenta in full color mode for thick 1 paper.		

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007	ITB unit: Thick 1: C	*ENG	[0 to 80 / **25** / 1 μA]
	Adjusts the current for the image transfer belt for Cyan in full color mode for thick 1 paper.		
008	ITB unit: Thick 1: Y	*ENG	[0 to 80 / **28** / 1 μA]
	Adjusts the current for the image transfer belt for Yellow in full color mode for thick 1 paper.		
009	ITB unit: Thick 2 & FINE: Bk	*ENG	[0 to 80 / **11** / 1 μA]
	Adjusts the current for the image transfer belt for Black in full color mode for Thick 2 and fine.		
010	ITB unit: Thick 2 & FINE: M	*ENG	[0 to 80 / **11** / 1 μA]
	Adjusts the current for the image transfer belt for Magenta in full color mode for Thick 2 and fine.		
011	ITB unit: Thick 2 & FINE: C	*ENG	[0 to 80 / **12** / 1 μA]
	Adjusts the current for the image transfer belt for Cyan in full color mode for Thick 2 and fine.		
012	ITB unit: Thick 2 & FINE: Y	*ENG	[0 to 80 / **14** / 1 μA]
	Adjusts the current for the image transfer belt for Yellow in full color mode for Thick 2 and fine.		

2360	**[Common: BW Environment Correction]**		
001	ITB unit: Plain	*ENG	[1 to 60 / **1** / 1 /step]
002	ITB unit: Thick 1	*ENG	
003	ITB unit: Thick 2	*ENG	
004	ITB unit: Plain: Bk	*ENG	[1 to 60 / **13**/ 1 /step]
005	ITB unit: Plain: M	*ENG	[1 to 60 / **2** / 1 /step]

006	ITB unit: Plain: C	*ENG	
007	ITB unit: Plain: Y	*ENG	
008	ITB unit: Thick 1: Bk	*ENG	[1 to 60 / **31** / 1 /step]
009	ITB unit: Thick 1: M	*ENG	[1 to 60 / **2** / 1 /step]
010	ITB unit: Thick 1: C	*ENG	
011	ITB unit: Thick 1: Y	*ENG	
012	ITB unit: Thick 2: Bk	*ENG	[1 to 60 / **31** / 1 /step]
013	ITB unit: Thick 2: M	*ENG	[1 to 60 / **2** / 1 /step]
014	ITB unit: Thick 2: C	*ENG	[1 to 60 / **1** / 1 /step]
015	ITB unit: Thick 2: Y	*ENG	

2401	**[Plain: Bias]**		
	Adjusts the DC voltage of the discharge plate for plain paper. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Separation DC: Plain: 1st Side	*ENG	[0 to 4000 / **2000** / 10 –V/step]
002	Separation DC: Plain: 2nd Side	*ENG	[0 to 4000 / **3000** / 10 –V/step]
003	Separation DC: 1200: 1st Page	*ENG	[0 to 4000 / **2000** / 10 –V/step]
004	Separation DC: 1200: 2nd side	*ENG	[0 to 4000 / **3000** / 10 –V/step]

2403	**[Plain: Bias: BW]**
	Adjusts the current for the paper transfer roller for plain paper in black-and-white mode.

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	Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 250 / **P2c: 30, P2d: 34** / 1 –μA /step]
002	Paper Transfer: Plain: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	[0 to 250 / **7** / 1 –μA /step]
004	Paper Transfer: 1200: 2nd side	*ENG	[0 to 250 / **12** / 1 –μA /step]

2407	**[Plain: Bias: FC]**		
	Adjusts the current for the paper transfer roller for plain paper in full color mode. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 250 / **P2c: 36, P2d: 40** / 1 –μA /step]
002	Paper Transfer: Plain: 2nd Side	*ENG	[0 to 250 / **P2c: 45, P2d: 50** / 1 –μA /step]
003	Paper Transfer: 1200: 1st Side	*ENG	[0 to 250 / **10** / 1 –μA /step]
004	Paper Transfer: 1200: 2nd side	*ENG	[0 to 250 / **12** / 1 –μA /step]

2411	**[Plain: Paper Size Correction]**		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2403 and SP2407 are multiplied by these SP values. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain :	*ENG	[100 to 600 / **100** / 5%/step]

	1st Side: S1		S1 size ≥ 297 mm (Paper width)
002	Paper Transfer: Plain: 2nd Side: S1	*ENG	
003	Paper Transfer: 1200: 1st Side: S1	*ENG	
004	Paper Transfer: 2nd side: 1200: S1	*ENG	
005	Paper Transfer: Plain: 1st Side: S2	*ENG	[100 to 600 / **105** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
006	Paper Transfer: Plain: 2nd Side: S2	*ENG	[100 to 600 / **120** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
007	Paper Transfer: 1200: 1st Side: S2	*ENG	[100 to 600 / **120** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
008	Paper Transfer: 2nd side: 1200: S2	*ENG	[100 to 600 / **150** / 5%/step]
009	Paper Transfer: Plain: 1st Side: S3	*ENG	[100 to 600 / **110** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
010	Paper Transfer: Plain: 2nd Side: S3	*ENG	[100 to 600 / **140** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
011	Paper Transfer: 1200: 1st Side: S3	*ENG	
012	Paper Transfer: 2nd side: 1200: S3	*ENG	[100 to 600 / **300** / 5%/step]
013	Paper Transfer: Plain: 1st Side: S4	*ENG	[100 to 600 / **115** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper

			width)
014	Paper Transfer: Plain: 2nd Side: S4	*ENG	[100 to 600 / **160** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
015	Paper Transfer: 1200: 1st Side: S4	*ENG	[100 to 600 / **240** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
016	Paper Transfer: 2nd side: 1200: S4	*ENG	[100 to 600 / **340** / 5%/step]
017	Paper Transfer: Plain: 1st Side: S5	*ENG	[100 to 600 / **120** / 5%/step] 148 mm ≥ S5 size (Paper width)
018	Paper Transfer: Plain: 2nd Side: S5	*ENG	[100 to 600 / **180** / 5%/step] 148 mm ≥ S5 size (Paper width)
019	Paper Transfer: 1200: 1st Side: S5	*ENG	[100 to 600 / **300** / 5%/step] 148 mm ≥ S5 size (Paper width)
020	Paper Transfer: 2nd side: 1200: S5	*ENG	[100 to 600 / **400** / 5%/step]

2421	**[Plain: Leading Edge Correction]** Plain Paper: Leading Edge Correction		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2403 and SP2407 are multiplied by these SP values. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec Note ▪ The paper leading edge area can be adjusted with SP2422.		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
002	Paper Transfer: Plain: 2nd Side	*ENG	[0 to 400 / **100** / 5%/step]
003	Paper Transfer: 1200:	*ENG	[0 to 400 / **100** / 5%/step]

	1st Side		
004	Paper Transfer: 1200: 2nd side	*ENG	
2421 005-008	Adjusts the correction to the discharge plate current at the paper leading edge in each mode. SP2401 is multiplied by these SPs values. Note ▪ The paper leading edge area can be adjusted with SP2422.		
005	Separation DC: Plain: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
006	Separation DC: Plain: 2nd Side	*ENG	
007	Separation DC: 1200: 1st Page	*ENG	
008	Separation DC: 1200: 2nd side	*ENG	

2422	**[Plain: Switch Timing: Lead. Edge]**		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
002	Paper Transfer: Plain: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
004	Paper Transfer: 1200: 2nd side	*ENG	

005	Separation DC: Plain: 1st Page	*ENG	
006	Separation DC: Plain: 2nd Page	*ENG	
007	Separation DC: 1200: 1st Page	*ENG	
008	Separation DC: 1200: 2nd side	*ENG	

2423	**[Plain: Trailing Edge Correction]** Plain Paper: Trailing Edge Correction		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode. SP2403 and SP2407 are multiplied by these SP values. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec Note ▪ The paper trailing edge area can be adjusted with SP2424.		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
002	Paper Transfer: Plain: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
004	Paper Transfer: 1200: 2nd side	*ENG	
005	Separation DC: Plain: 1st Page	*ENG	
006	Separation DC: Plain: 2nd Page	*ENG	
007	Separation DC: 1200: 1st	*ENG	

	Page		
008	Separation DC: 1200: 2nd side	*ENG	

2424	**[Plain: Switch Timing: Trail. Edge]**		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
002	Paper Transfer: Plain: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
004	Paper Transfer: 1200: 2nd side	*ENG	
005	Separation DC: Plain: 1st Page	*ENG	
006	Separation DC: Plain: 2nd Page	*ENG	
007	Separation DC: 1200: 1st Page	*ENG	
008	Separation DC: 1200: 2nd side	*ENG	

2430	**[Plain: Environment Correction] DFU** Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Separation DC: Plain: 1st Page	*ENG	[1 to 60 / **26** / 1 /step]
002	Separation DC: Plain: 2nd Page	*ENG	[1 to 60 / **32** / 1 /step]
003	Paper Transfer: BW: 1st Side	*ENG	[1 to 60 / **1** / 1 /step]
004	Paper Transfer: BW: 2nd Side	*ENG	[1 to 60 / **11** / 1 /step]
005	Paper Transfer: FC: 1st Side	*ENG	[1 to 60 / **39** / 1 /step]
006	Paper Transfer: FC: 2nd Side	*ENG	[1 to 60 / **14** / 1 /step]

007	Separation DC: 1200: 1st Page	*ENG	[1 to 60 / **26** / 1 /step]
008	Separation DC: 1200: 2nd side	*ENG	[1 to 60 / **32** / 1 /step]
009	Paper Transfer: 1200: BW: 1st Side	*ENG	[1 to 60 / **11** / 1 /step]
010	Paper Transfer: 1200: BW: 2	*ENG	
011	Paper Transfer: 1200: FC: 1st Side	*ENG	[1 to 60 / **49** / 1 /step]
012	Paper Transfer: 1200: FC: 2	*ENG	

2451	**[Thin: Bias]**		
	Adjusts the DC voltage of the discharge plate for thin paper. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Separation DC: Plain: 1st Side	*ENG	[0 to 4000 / **2000** / 10 –V/step]
003	Separation DC: 1200: 1st Page	*ENG	

2453	**[Thin: Bias: BW]**		
	Adjusts the current for the paper transfer roller for thin paper in black-and-white mode. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 250 / **P2c: 30, P2d: 34** / 1 –μA /step]
003	Paper Transfer: 1200: 1st Side	*ENG	[0 to 250 / **11** / 1 –μA /step]

2457	**[Thin: Bias: FC]**		
	Adjusts the current for the paper transfer roller for thin paper in full color mode. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 250 / **P2c: 40, P2d: 45** / 1 –μA /step]

003	Paper Transfer: 1200: 1st Side	*ENG	[0 to 250 / **15** / 1 –μA /step]

2461	**[Thin: Paper Size Correction]** Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2453 and SP2457 are multiplied by these SP values. Plain: 205 (P2c)/230 (P2d) mm/sec		
001	Paper Transfer: Plain: 1st Side: S1	*ENG	[100 to 600 / **100** / 5%/step] S1 size ≥ 297 mm (Paper width)
005	Paper Transfer: Plain: 1st Side: S2	*ENG	[100 to 600 / **120** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
009	Paper Transfer: Plain: 1st Side: S3	*ENG	[100 to 600 / **140** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
013	Paper Transfer: Plain: 1st Side: S4	*ENG	[100 to 600 / **160** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Pape r width)
017	Paper Transfer: Plain: 1st Side: S5	*ENG	[100 to 600 / **180** / 5%/step]

2471	**[Thin: Leading Edge Correction]** Thin Paper: Leading Edge Correction Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2453 and SP2457 are multiplied by these SP values. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec Note ▪ The paper leading edge area can be adjusted with SP2472.		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
003	Paper Transfer: 1200: 1st Side	*ENG	
005	Separation DC: Plain: 1st Side	*ENG	

2471	Adjusts the correction to the discharge plate current at the paper leading edge in each mode. SP2451 is multiplied by these SP values. Note ▪ The paper leading edge area can be adjusted with SP2472.		
007	Separation DC: 1200: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]

2472	**[Thin: Switch Timing: Lead. Edge]**		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
003	Paper Transfer: 1200: 1st Side	*ENG	
005	Separation DC: Plain: 1st Page	*ENG	
007	Separation DC: 1200: 1st Side	*ENG	

2473	**[Thin: Trailing Edge Correction]** Thin Paper: Trailing Edge Correction		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode. SP2453 and SP2457 are multiplied by these SP values. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec Note ▪ The paper trailing edge area can be adjusted with SP2474.		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
003	Paper Transfer: 1200: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
005	Separation DC: Plain: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
007	Separation DC: 1200: 1st Page	*ENG	[0 to 400 / **100** / 5%/step]

2474	**[Thin: Switch Timing: Trail. Edge]**		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
003	Paper Transfer: 1200: 1st Side	*ENG	
005	Separation DC: Plain: 1st Side	*ENG	[0 to 50 / **0** / 1 mm/step]
007	Separation DC: 1200: 1st Page	*ENG	

2480	**[Thin: Environment Correction]** Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Separation DC: Plain: 1st Side	*ENG	[1 to 60 / **26** / 1 /step]
003	Paper Transfer: Plain: BW: 1st Side	*ENG	[1 to 60 / **11** / 1 /step]
005	Paper Transfer: Plain: FC: 1st Side	*ENG	[1 to 60 / **1** / 1 /step]
007	Separation DC: 1200: 1st Side	*ENG	[1 to 60 / **26** / 1 /step]
009	Paper Transfer: 1200: BW: 1st Side	*ENG	[1 to 60 / **11** / 1 /step]
011	Paper Transfer: 1200: FC: 1st Side	*ENG	[1 to 60 / **1** / 1 /step]

2481	**[Glossy: Bias]**		
001	Separation DC: Glossy: 1st Side	*ENG	[0 to 4000 / **2000** / 10 –V/step]
	Adjusts the DC voltage of the discharge plate for glossy paper.		

Engine Service Mode

2482	**[Glossy: Bias: BW]**		
001	Paper Transfer: Glossy: 1st Side	*ENG	[0 to 250 / **12** / 1 –μA /step]
	Adjusts the current for the paper transfer roller for glossy paper in black-and-white mode.		

2483	**[Glossy: Bias: FC]**		
001	Paper Transfer: Glossy: 1st Side	*ENG	[0 to 250 / **15** / 1 –μA /step]
	Adjusts the current for the paper transfer roller for glossy paper in full color mode.		

2484	**[Glossy: Paper Size Correction]**		
001	Paper Transfer: Glossy: 1st Side: S1	*ENG	[100 to 600 / **100** / 5%/step]
005	Paper Transfer: Glossy: 1st Side: S2	*ENG	[100 to 600 / **120** / 5%/step]
009	Paper Transfer: Glossy: 1st Side: S3	*ENG	[100 to 600 / **140** / 5%/step]
013	Paper Transfer: Glossy: 1st Side: S4	*ENG	[100 to 600 / **160** / 5%/step]
017	Paper Transfer: Glossy: 1st Side: S5	*ENG	[100 to 600 / **180** / 5%/step]

2485	**[Glossy: Leading Edge Correction]**		
001	Paper Transfer: Glossy: 1st Side	*ENG	[10 to 400 / **100** / 5%/step]
005	Separation DC: Glossy: 1st	*ENG	[10 to 400 / **100** / 5%/step]]

	Page		

2486	[Glossy: Switch Timing: Lead. Edge]		
001	Paper Transfer: Glossy: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
005	Separation DC: Glossy: 1st Page	*ENG	

2487	[Glossy: Trailing Edge Correction]		
001	Paper Transfer: Glossy: 1st Side	*ENG	[0 to 400 / **100** / 5 %/step]
005	Separation DC: Glossy: 1st Page	*ENG	

2488	[Glossy: Switch Trail. Edge]		
001	Paper Transfer: Glossy: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
005	Separation DC: Glossy: 1st Page	*ENG	

2489	[Glossy: Environment Correction]		
001	Separation DC: Glossy: 1st Page	*ENG	[1 to 60 / **26** / 1 /step]
003	Paper Transfer: BW: 1st Side	*ENG	[1 to 60 / **11** / 1 /step]
005	Paper Transfer: BW: 2nd Side	*ENG	[1 to 60 / **1** / 1 /step]

Engine Service Mode

2501	**[Thick 1: Bias]**		
	Adjusts the DC voltage of the discharge plate for thick 1 paper. Thick 1: 154 mm/sec, 1200: 77 mm/sec		
001	Separation DC: Plain: 1st Side	*ENG	[0 to 4000 / **1000** / 10 –V/step]
002	Separation DC: Plain: 2nd Side	*ENG	
003	Separation DC: 1200: 1st Side	*ENG	

2502	**[Thick 1: Bias: BW]**		
	Adjusts the current for the paper transfer roller for thick 1 paper in black-and-white mode. Thick 1: 154 mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Thick 1: 1st Side	*ENG	[0 to 250 / **24** / 1 –μA /step]
002	Paper Transfer: Thick 1: 2nd Side	*ENG	
003	Separation DC: 1200: 1st Side	*ENG	[0 to 250 / **12** / 1 –μA /step]

2507	**[Thick 1: Bias: FC]**		
	Adjusts the current for the paper transfer roller for thick 1 paper in full color mode. Thick 1: 154 mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Thick 1: 1st Side	*ENG	[0 to 250 / **30** / 1 –μA /step]
002	Paper Transfer: Thick 1: 2nd Side	*ENG	
003	Separation DC: 1200: 1st Side	*ENG	[0 to 250 / **15** / –μA /step]

2511	**[Thick 1: Paper Size Correction]**		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2502 and SP2507 are multiplied by these SP values. Thick 1: 154 mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Thick 1: 1st Side: S1	*ENG	[100 to 600 / **100** / 5%/step] S1 size ≥ 297 mm (Paper width)
002	Paper Transfer: Thick 1: 2nd Side: S1	*ENG	
003	Paper Transfer: 1200: 1st Side: S1	*ENG	[100 to 600 / **100** / 5%/step] S1 size ≥ 297 mm (Paper width)
005	Paper Transfer: Thick 1: 1st Side: S2	*ENG	[100 to 600 / **105** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
006	Paper Transfer: Thick 1: 2nd Side: S2	*ENG	[100 to 600 / **130** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
007	Paper Transfer: 1200: 1st Side: S2	*ENG	[100 to 600 / **120** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
009	Paper Transfer: Thick 1: 1st Side: S3	*ENG	[100 to 600 / **110** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
010	Paper Transfer: Thick 1: 2nd Side: S3	*ENG	[100 to 600 / **160** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
011	Paper Transfer: 1200: 1st Side: S3	*ENG	[100 to 600 / **140** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
013	Paper Transfer: Thick 1: 1st Side: S4	*ENG	[100 to 600 / **115** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm

			(Paper width)
014	Paper Transfer: Thick 1: 2nd Side: S4	*ENG	[100 to 600 / **190** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
015	Paper Transfer: 1200: 1st Side: S4	*ENG	[100 to 600 / **160** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
017	Paper Transfer: Thick 1: 1st Side: S5	*ENG	[100 to 600 / **120** / 5%/step] 148 mm ≥ S5 size (Paper width)
018	Paper Transfer: Thick 1: 2nd Side: S5	*ENG	[100 to 600 / **220** / 5%/step] 148 mm ≥ S5 size (Paper width)
019	Paper Transfer: 1200: 1st Side: S5	*ENG	[100 to 600 / **180** / 5%/step] 148 mm ≥ S5 size (Paper width)

2521	**[Thick 1: Leading Edge Correction]** Thick 1 Paper: Leading Edge Correction		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2502 and SP2507 are multiplied by these SP values. Thick 1: 154 mm/sec, 1200: 77 mm/sec Note ▪ The paper leading edge area can be adjusted with SP2522.		
001	Paper Transfer: Thick 1: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
002	Paper Transfer: Thick 1: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
005	Separation DC: Thick 1: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
006	Separation DC: Thick 1: 2nd Side	*ENG	

007	Separation DC: 1200: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]

2522	**[Thick 1: Switch Timing: Lead. Edge]**		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area. Thick 1: 154 mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain 1: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
002	Paper Transfer: Plain: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
005	Separation DC: Plain 1: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
006	Separation DC: Plain 1: 2nd Side	*ENG	
007	Separation DC: 1200: 1st Side	*ENG	

2523	**[Thick 1: Trailing Edge Correction]** Thick 1 Paper: Trailing Edge Correction		
	Adjusts the correction coefficient to the paper transfer roller current for the paper trailing edge in each mode. SP2502 and SP2507 are multiplied by these SP values. Thick 1: 154 mm/sec, 1200: 77 mm/sec Note ▪ The paper trailing edge area can be adjusted with SP2524.		
001	Paper Transfer: Thick 1: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
002	Paper Transfer: Thick 1: 2nd Side	*ENG	

003	Paper Transfer: 1200: 1st Side	*ENG	
005	Paper Transfer: Thick 1: 1st Side	*ENG	
006	Paper Transfer: Thick 1: 2nd Side	*ENG	[0 to 400 / **100** / 5%/step]
007	Paper Transfer: 1200: 1st Side	*ENG	

2524	**[Thick 1: Switch Timing: Trail. Edge]**		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area. Thick 1: 154 mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Thick 1: 1st Side	*ENG	[0 to 50 / **0** / 1 mm/step]
002	Paper Transfer: Thick 1: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
005	Paper Transfer: Thick 1: 1st Side	*ENG	
006	Paper Transfer: Thick 1: 2nd Side	*ENG	
007	Paper Transfer: 1200: 1st Side	*ENG	

2530	**[Thick 1: Environment Correction]** Thick 1: 154 mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Thick 1: 1st Side	*ENG	[1 to 60 / **22** / 1 /step]
002	Paper Transfer: Thick 1: 2nd Side	*ENG	
003	Paper Transfer: Thick 1: BW: 1st Side	*ENG	[1 to 60 / **11** / 1 /step]
004	Paper Transfer: Thick 1: BW:2nd Side	*ENG	
005	Paper Transfer: Thick 1: FC: 1st Side	*ENG	[1 to 60 / **1** / 1 /step]

006	Paper Transfer: Thick 1: FC:2nd Side	*ENG	[1 to 60 / **11** / 1 /step]
007	Paper Transfer: 1200: 1st Side	*ENG	[1 to 60 / **22** / 1 /step]
009	Paper Transfer: 1200: BW: 1st Side	*ENG	[1 to 60 / **11** / 1 /step]
011	Paper Transfer: 1200: FC: 1st Side	*ENG	[1 to 60 / **1** / 1 /step]

2551	**[Thick 2: Bias]**		
	Adjusts the DC voltage of the discharge plate for thick 2 paper.		
001	Separation DC: 1st Page	*ENG	[0 to 4000 / **1000** / 10 –V/step]
002	Separation DC: 2nd Page	*ENG	

2553	**[Thick 2: Bias: BW]**		
	Adjusts the current for the paper transfer roller for thick 2 paper in black-and-white mode.		
001	Paper Transfer: 1st Side	*ENG	[0 to 250 / **7** / 1 –μA /step]
002	Paper Transfer: 2nd Side	*ENG	[0 to 250 / **12** / 1 –μA /step]

2558	**[Thick 2: Bias: FC]**		
	Adjusts the current for the paper transfer roller for thick 2 paper in full color mode.		
001	Paper Transfer: 1st Side	*ENG	[0 to 250 / **16** / 1 –μA /step]
002	Paper Transfer: 2nd Side	*ENG	[0 to 250 / **15** / 1 –μA /step]

2561	**[Thick 2: Paper Size Correction]**		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2553 and SP2558 are multiplied by these SP values.		
001	Paper Transfer: 1st Side: S1	*ENG	[100 to 600 / **100** / 5%/step]

002	Paper Transfer: 2nd Side: S1	*ENG	S1 size ≥ 297 mm (Paper width)
003	Paper Transfer: 1st Side: S2	*ENG	[100 to 600 / **105** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
004	Paper Transfer: 2nd Side: S2	*ENG	[100 to 600 / **160** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
005	Paper Transfer: 1st Side: S3	*ENG	[100 to 600 / **110** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
006	Paper Transfer: 2nd Side: S3	*ENG	[100 to 600 / **260** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
007	Paper Transfer: 1st Side: S4	*ENG	[100 to 600 / **120** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
008	Paper Transfer: 2nd Side: S4	*ENG	[100 to 600 / **430** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
009	Paper Transfer: 1st Side: S5	*ENG	[100 to 600 / **140** / 5%/step] 148 mm ≥ S5 size (Paper width)
010	Paper Transfer: 2nd Side: S5	*ENG	[100 to 600 / **600** / 5%/step] 148 mm ≥ S5 size (Paper width)

2571	**[Thick 2: Leading Edge Correction]** Thick 2 Paper: Leading Edge Correction		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2553 and SP2558 are multiplied by these SP values. Note ▪ The paper leading edge area can be adjusted with SP2572.		
001	Paper Transfer: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]

002	Paper Transfer: 2nd Side	*ENG	
2571	Adjusts the correction to the discharge plate current at the paper leading edge in each mode. SP2551 is multiplied by these SP values. Note ▪ The paper leading edge area can be adjusted with SP2572.		
003	Separation DC: 1st Page	*ENG	[0 to 400 / **100** / 5%/step]
004	Separation DC: 2nd Page	*ENG	

2572	**[Thick 2: Switch Timing: Lead. Edge]**		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
001	Paper Transfer: 1st Side	*ENG	[0 to 50 / **0** / 2mm/step]
002	Paper Transfer: 2nd Side	*ENG	
003	Separation DC: 1st Page	*ENG	
004	Separation DC: 2nd Page	*ENG	

2573	**[Thick 2: Trailing Edge Correction]** Thick 2 Paper: Trailing Edge Correction		
	Adjusts the correction to the paper transfer roller current for the paper trailing edge in each mode. SP2553 and SP2558 are multiplied by these SP values. Note ▪ The paper trailing edge area can be adjusted with SP2574.		
001	Paper Transfer: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
002	Paper Transfer: 2nd Side	*ENG	
003	Separation DC: 1st Page	*ENG	[0 to 400 / **100** / 5%/step]
004	Separation DC: 2nd Page	*ENG	[0 to 400 / **100** / 5%/step]

Engine Service Mode

2574	**[Thick 2: Switch Trailing Edge Correction]**		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area.		
001	Paper Transfer: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
002	Paper Transfer: 2nd Side	*ENG	
003	Separation DC: 1st Page	*ENG	
004	Separation DC: 2nd Page	*ENG	

2580	**[Thick 2 Environment Correction]**		
001	Separation DC: 1st Page	*ENG	[1 to 60 / **22** / 1 /step]
002	Separation DC: 2nd Page	*ENG	
003	Paper Transfer: BW: 1st Side	*ENG	[0 to 60 / **11** / 1 /step]
004	Paper Transfer: BW: 2nd Side	*ENG	
005	Paper Transfer: FC: 1st Side	*ENG	[1 to 60 / **53** / 1 /step]
006	Paper Transfer: FC: 2nd Side	*ENG	[1 to 60 / **11** / 1 /step]

2601	**[OHP: Bias]**		
	Adjusts the DC voltage of the discharge plate for OHP.		
001	Separation DC	*ENG	[0 to 4000 / **1000** / 10 –V/step]

2603	**[OHP: Bias: BW]**		
	Adjusts the current for the paper transfer roller for OHP in black-and-white mode.		
001	Paper Transfer	*ENG	[0 to 250 / **12** / 1 –μA /step]

2608	**[OHP: Bias: FC]**		
	Adjusts the current for the paper transfer roller for OHP in full color mode.		
001	Paper Transfer	*ENG	[0 to 250 / **15** / 1 –μA /step]

2611	**[OHP: Paper Size Correction]**		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2603 and SP2608 are multiplied by these SP values.		
001	Paper Transfer: S1	*ENG	[100 to 600 / **100** / 5%/step] S1 size ≥ 297 mm (Paper width)
002	Paper Transfer: S2	*ENG	[100 to 600 / **140** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
003	Paper Transfer: S3	*ENG	[100 to 600 / **200** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
004	Paper Transfer: S4	*ENG	[100 to 600 / **260** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
005	Paper Transfer: S5	*ENG	[100 to 600 / **330** / 5%/step] 148 mm ≥ S5 size (Paper width)

2621	**[OHP: Leadin Edge Correction]** OHP: Leading Edge Correction		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2603 and SP2608 are multiplied by these SP values. Note ▪ The paper leading edge area can be adjusted with SP2622.		
001	Paper Transfer	*ENG	[0 to 400 / **100** / 5%/step]
2621	Adjusts the correction to the discharge plate current at the paper leading edge in each mode. SP2601 is multiplied by these SP values. Note ▪ The paper leading edge area can be adjusted with SP2622.		

002	Separation DC	*ENG	[0 to 400 / **100** / 5%/step]

2622	**[OHP: Switch Timing: Leadn. Edge]**		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
001	Paper Transfer	*ENG	[0 to 50 / **0** / 2 mm/step]
002	Separation DC	*ENG	

2623	**[OHP: Trailing Edge Correction]** OHP: Trailing Edge Correction		
	Adjusts the correction to the paper transfer roller current for the paper trailing edge in each mode. SP2603 and SP2608 are multiplied by these SP values. Note ▪ The paper trailing edge area can be adjusted with SP2624.		
001	Paper Transfer	*ENG	[0 to 400 / **100** / 5%/step]
002	Separation DC	*ENG	

2624	**[OHP: Trailing Edge Correction]**		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area.		
001	Paper Transfer	*ENG	[–100 to 0 / **0** / 1 mm/step]
002	Separation DC	*ENG	[0 to 50 / **0** / 2 mm/step]

2630	**[OHP: Environment Correction]**		
001	Separation DC	*ENG	[1 to 60 / **22** / 1 /step]
002	Paper Transfer: BW	*ENG	[1 to 60 / **11** / 1 /step]

003	Paper Transfer: FC	*ENG	[1 to 60 / **1** / 1 /step]

2650	**[Thick3: Bias]**		
	Adjusts the DC voltage of the discharge plate for thick paper 3.		
001	Separation DC: 1st Page	*ENG	[0 to 4000 / **1000** / 10 –V/step]
002	Separation DC: 2nd Page	*ENG	

2651	**[Thick3: Bias: BW]**		
	Adjusts the current for the paper transfer roller for thick paper 3 in black-and-white mode.		
001	Paper Transfer: 1st Side	*ENG	[0 to 250 / **10** / 1 –μA /step]
002	Paper Transfer: 2nd Side	*ENG	[0 to 250 / **12** / 1 –μA /step]

2652	**[Thick3: Bias: FC]**		
	Adjusts the current for the paper transfer roller for thick paper 3 in full color mode.		
001	Paper Transfer: 1st Side	*ENG	[0 to 250 / **11** / 1 –μA /step]
002	Paper Transfer: 2nd Side	*ENG	[0 to 250 / **15** / 1 –μA /step]

2653	**[Thick3: Paper Size Correction]**		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2651 and SP2652 are multiplied by these SP values.		
001	Paper Transfer: 1st Side: S1	*ENG	[100 to 600 / **100** / 5%/step] S1 size ≥ 297 mm (Paper width)
002	Paper Transfer: 1st Side: S2	*ENG	[100 to 600 / **100** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm

			(Paper width)
003	Paper Transfer: 1st Side: S3	*ENG	[100 to 600 / **100** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
004	Paper Transfer: 1st Side: S4	*ENG	[100 to 600 / **160** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
005	Paper Transfer: 1st Side: S5	*ENG	[100 to 600 / **100** / 5%/step] 148 mm ≥ S5 size (Paper width)
006	Paper Transfer: 2nd Side: S1	*ENG	[100 to 600 / **260** / 5%/step] S1 size ≥ 297 mm (Paper width)
007	Paper Transfer: 2nd Side: S2	*ENG	[100 to 600 / **100** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
008	Paper Transfer: 2nd Side: S3	*ENG	[100 to 600 / **430** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
009	Paper Transfer: 2nd Side: S4	*ENG	[100 to 600 / **100** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
010	Paper Transfer: 2nd Side: S3	*ENG	[100 to 600 / **600** / 5%/step] 148 mm ≥ S5 size (Paper width)

2654	**[Thick 3: Leading Edge Correction]** Thick 3 Paper: Leading Edge Correction
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2651 and SP2652 are multiplied by these SP values. Note

	▪ The paper leading edge area can be adjusted with SP2655.		
001	Paper Transfer: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
002	Separation DC: 1st Page	*ENG	
2654	Adjusts the correction to the discharge plate current at the paper leading edge in each mode. SP2650 is multiplied by these SP values. Note ▪ The paper leading edge area can be adjusted with SP2655.		
003	Paper Transfer: 2nd Side	*ENG	[0 to 400 / **100** / 5%/step]
004	Separation DC: 2nd Page	*ENG	

2655	**[Thick 3: Switch Timing: Lead. Edge]**		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.		
001	Paper Transfer: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
002	Separation DC: 1st Page	*ENG	
003	Paper Transfer: 2nd Side	*ENG	
004	Separation DC: 2nd Page	*ENG	

2656	**[Thick 3: Trailing Edge Correction]** Thick 3 Paper: Trailing Edge Correction		
	Adjusts the correction to the paper transfer roller current for the paper trailing edge in each mode. SP2651 and SP2652 are multiplied by these SP values. Note ▪ The paper trailing edge area can be adjusted with SP2657.		
001	Paper Transfer: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
002	Paper Transfer: 2nd Side	*ENG	
003	Separation DC: 1st Page	*ENG	

004	Separation DC: 2st Page	*ENG	

2657	**[Thick 3: Trailing Edge Correction]**		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area.		
001	Paper Transfer: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
002	Paper Transfer: 2nd Side	*ENG	
003	Separation DC: 1st Page	*ENG	
004	Separation DC: 2nd Page	*ENG	

2660	**[Thick 3: Environment Correction]** Thick 3 Paper: MM Environment Coefficient Adjustment		
	Adjusts the environment coefficient for each mode. When the environment is detected as MM, SP2651 and SP2652 are multiplied by these SP values.		
001	Separation DC: 1st Page	*ENG	[1 to 60 / **22** / 1 /step]
002	-	*ENG	
	Adjusts the environment coefficient for each mode. When the environment is detected as MM, SP2650 is multiplied by these SP values.		
003	Paper Transfer: Thick 3: 2nd Side	*ENG	[1 to 60 / **11** / 1 /step]
004	Separation DC: Thick 3: 2nd Side:	*ENG	
005	Paper Transfer: FC: 1st Side	*ENG	[1 to 60 / **55** / 1 /step]
006	Paper Transfer: FC: 2st Side	*ENG	[1 to 60 / **11** / 1 /step]

2670	**[Thick4: Bias]**
	Adjusts the DC voltage of the discharge plate for thick paper 4.

001	SeparatDC:1stSide	*ENG	[0 to 4000 / **1000** / 10 –V/step]
003	Sep DC:FINE:1st	*ENG	[0 to 4000 / **3000** / 10 –V/step]

2671	**[Thick4: Bias: BW]**		
	Adjusts the DC voltage of the discharge plate for thick paper 4 in black-and-white mode.		
001	PTR:1st Side	*ENG	[0 to 250 / **0** / 24 –uA/step]
003	PTR:FINE:1st	*ENG	[0 to 250 / **0** / 12 –uA/step]

2672	**[Thick4: Bias: FC]**		
	Adjusts the DC voltage of the discharge plate for thick paper 4 in full color mode.		
001	PTR:1st Side	*ENG	[0 to 250 / **0** / 30 –uA/step]
003	PTR:FINE:1st	*ENG	[0 to 250 / **0** / 15 –uA/step]

2673	**[Thick4:Size Cor]**		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2671 and SP2672 are multiplied by these SP values.		
001	PTR:1st:S1	*ENG	[100 to 600 / **100** / 5%/step] S1 size ≥ 297 mm (Paper width)
003	PTR:1st:S3	*ENG	
005	PTR:1st:S5	*ENG	[100 to 600 / **120** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
007	PTR:TH4:1st:S2	*ENG	
009	PTR:TH4:1st:S3	*ENG	[100 to 600 / **140** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
011	PTR:TH4:1st:S3	*ENG	
013	PTR:TH4:1st:S4	*ENG	[100 to 600 / **160** / 5%/step]

			210 mm ≥ S4 size ≥ 148 mm (Paper width)
015	PTR:TH4:1st:S4	*ENG	[100 to 600 / **160** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
017	PTR:TH4:1st:S5	*ENG	[100 to 600 / **180** / 5%/step] 148 mm ≥ S5 size (Paper width)
019	PTR:TH4:1st:S5	*ENG	[100 to 600 / **180** / 5%/step] 148 mm ≥ S5 size (Paper width)

2674	**[Thick4:L Edge Cor]**		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2671 and SP2672 are multiplied by these SP values. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec Note ▪ The paper leading edge area can be adjusted with SP2675.		
001	PTR:1st Side	*ENG	[0 to 400 / **100** / 5%/step]
003	PTR:TH4:1st	*ENG	
2674	Adjusts the correction to the discharge plate current at the paper leading edge in each mode. SP2670 is multiplied by these SP values. Note ▪ The paper leading edge area can be adjusted with SP2675.		
005	Sep DC:TH4:1st	*ENG	[0 to 400 / **100** / 5%/step]
007	Sep DC:TH4:1st	*ENG	

2675	**[Thick 4:LE:Timing]**
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.

001	PTR:1st	*ENG	[0 to 50 / **0** / 2 mm/step]
003	PTR:TH4:1st	*ENG	
005	Sep DC:TH4:1st	*ENG	
007	Sep DC:TH4:1st	*ENG	

2676	**[Thick4:T Edge Cor]** Thick 3 Paper: Trailing Edge Correction		
	Adjusts the correction to the paper transfer roller current for the paper trailing edge in each mode. SP2671 and SP2672 are multiplied by these SP values. Note ▪ The paper trailing edge area can be adjusted with SP2675.		
001	PTR:1st Side	*ENG	[0 to 400 / **100** / 5%/step]
003	PTR:TH4:1st	*ENG	
005	Sep DC:TH4:1st	*ENG	
007	Sep DC:FINE:1st	*ENG	

2677	**[Thick4:TE:Timing]**		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area.		
001	PTR:1st Side	*ENG	[0 to 50 / **0** / 1 mm/step]
003	PTR:TH4:1st	*ENG	
005	Sep DC:TH4:1st	*ENG	
007	Sep DC:FINE:1st	*ENG	

2678	**[Thick 4:Env Cor]** Thick 4 Paper: MM Environment Coefficient Adjustment
	Adjusts the environment coefficient for each mode. When the environment is

	detected as MM, SP2671 and SP2672 are multiplied by these SP values.		
001	Sep DC:Plain:1st	*ENG	[1 to 60 / **22** / 1 %/step]
003	PTR:Plain:BW:1st	*ENG	[1 to 60 / **11** / 1 /step]
005	PTR:Plain:FC:1st	*ENG	[1 to 60 / **1** / 1 /step]
007	Sep DC:1200:1st	*ENG	[1 to 60 / **22** / 1 /step]
009	PTR:1200:BW:1st	*ENG	[1 to 60 / **11** / 1 /step]
011	PTR:1200:FC:1st	*ENG	[1 to 60 / **1** / 1 /step]

2690	**[Thick5: Bias]**		
	Adjusts the DC voltage of the discharge plate for thick paper 5.		
001	SeparatDC:1stSide	*ENG	[0 to 4000 / **1000** / 10 –V/step]

2691	**[Thick5: Bias: BW]**		
	Adjusts the DC voltage of the discharge plate for thick paper 4 in black-and-white mode.		
001	PTR:1st Side	*ENG	[0 to 250 / **12** / 1 –uA/step]

2692	**[Thick5: Bias: FC]**		
	Adjusts the DC voltage of the discharge plate for thick paper 5 in full color mode.		
001	PTR:1st Side	*ENG	[0 to 250 / **15** / 1 –uA/step]

2693	**[Thick5:Size Cor]**		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2691 and SP2692 are multiplied by these SP values.		
001	PTR:1st:S1	*ENG	[100 to 600 / **100** / 5%/step]

			S1 size ≥ 297 mm (Paper width)
003	PTR:1st:S5	*ENG	[100 to 600 / **110** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
005	PTR:TH5:1st:S3	*ENG	[100 to 600 / **130** / 5%/step] S3 size < 148 mm (Paper width)
007	PTR:TH5:2st:S4	*ENG	[100 to 600 / **160** / 5%/step] 297 mm > S4 size ≥ 275 mm (Paper width)
009	PTR:TH5:2st:S5	*ENG	[100 to 600 / **190** / 5%/step] 210 mm > S5 size ≥ 148 mm (Paper width)

2694	**[Thick5:L Edge Cor]**		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2691 and SP2692 are multiplied by these SP values. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec Note ▪ The paper leading edge area can be adjusted with SP2695.		
001	PTR:1st Side	*ENG	[0 to 400 / **100** / 5%/step]
2694	Adjusts the correction to the discharge plate current at the paper leading edge in each mode. SP2690 is multiplied by these SP values. Note ▪ The paper leading edge area can be adjusted with SP2675.		
002	SeparatDC:1stSide	*ENG	[0 to 400 / **100** / 5%/step]

2695	**[Thick 5:LE:Timing]**	
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area.	

Engine Service Mode

001	PTR:1st	*ENG	[0 to 30 / **0** / 1 mm/step]
002	SeparatDC:1stSide	*ENG	

2696	**[Thick5:T Edge Cor]** Thick 3 Paper: Trailing Edge Correction		
	Adjusts the correction to the paper transfer roller current for the paper trailing edge in each mode. SP2691 and SP2692 are multiplied by these SP values. Note ▪ The paper trailing edge area can be adjusted with SP2695.		
001	PTR:1st Side	*ENG	[0 to 400 / **100** / 5%/step]
003	SeparatDC:1stSide	*ENG	

2697	**[Thick5:TE:Timing]**		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area.		
001	PTR:1st	*ENG	[0 to 50 / **0** / 1 mm/step]
003	SeparatDC:1stSide	*ENG	[0 to 50 / **0** / 2 mm/step]

2698	**[Thick 5:Env Cor]** Thick 5 Paper: MM Environment Coefficient Adjustment		
	Adjusts the environment coefficient for each mode. When the environment is detected as MM, SP2691 and SP2692 are multiplied by these SP values.		
001	SeparatDC:1stSide	*ENG	[1 to 60 / **22** / 1 %/step]
003	PTR:TH5:BW:1st	*ENG	[1 to 60 / **11** / 1 /step]
005	PTR:TH5:FC:1st	*ENG	[1 to 60 / **1** / 1 /step]
2751	**[Special1: Bias]**		
	Adjusts the DC voltage of the discharge plate for special paper 1. Plain: 205 (P2c)/230 (P2d) mm/sec, Fine: 77 mm/sec		

001	Separation DC: Plain: 1st Side	*ENG	[0 to 4000 / **2000** / 10 –V/step]
002	Separation DC: Plain: 2nd Side	*ENG	[0 to 4000 / **3000** / 10 –V/step]
003	Paper Transfer: Thick 1: 1st Side	*ENG	[0 to 4000 / **2000** / 10 –V/step]

2753	**[Special1: Bias: BW]**		
	Adjusts the current for the paper transfer roller for special paper 1 in black-and-white mode. Plain: 205 (P2c)/230 (P2d) mm/sec, Fine: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 250 / **P2c: 30, P2d: 34** / 1 –μA /step]
002	Paper Transfer: Plain: 2nd Side	*ENG	
003	Paper Transfer: FINE: 1st Side	*ENG	[0 to 250 / **11** / 1 –μA /step]

2757	**[Special1: Bias: FC]**		
	Adjusts the current for the paper transfer roller for special paper 1 in full color mode. Plain: 205 (P2c)/230 (P2d) mm/sec, Fine: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 250 / **P2c: 40, P2d: 45** / 1 –μA /step]
002	Paper Transfer: Plain: 2nd Side	*ENG	[0 to 250 / **P2c: 45, P2d: 50** / 1 –μA /step]
003	Paper Transfer: Plain: 1st Side	*ENG	[0 to 250 / **15** / 1 –μA /step]

2761	**[Special1: Paper Size Correction]**
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2753 and SP2757 are multiplied by these SP values.

Engine Service Mode

	Plain: 205 (P2c)/230 (P2d) mm/sec, Fine: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side: S1	*ENG	[100 to 600 / **100** / 5%/step] S1 size ≥ 297 mm (Paper width)
002	Paper Transfer: Plain: 2nd Side: S1	*ENG	
005	Paper Transfer: Plain: 1st Side: S2	*ENG	[100 to 600 / **120** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
006	Paper Transfer: Plain: 2nd Side: S2	*ENG	
009	Paper Transfer: Plain: 1st Side: S3	*ENG	[100 to 600 / **140** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
010	Paper Transfer: Plain: 2nd Side: S3	*ENG	
013	Paper Transfer: Plain: 1st Side: S4	*ENG	[100 to 600 / **160** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
014	Paper Transfer: Plain: 2nd Side: S4	*ENG	[100 to 600 / **160** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
017	Paper Transfer: Plain: 1st Side: S5	*ENG	[100 to 600 / **180** / 5%/step] 148 mm ≥ S5 size (Paper width)
018	Paper Transfer: Plain: 2nd Side: S5	*ENG	[100 to 600 / **180** / 5%/step] 148 mm ≥ S5 size (Paper width)

2771	**[Special 1: Leading Edge Correction]** Special 1 Paper: Leading Edge Correction
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2753 and SP2757 are multiplied by these SP values. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec Note ▪ The paper leading edge area can be adjusted with SP2772.

001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
002	Paper Transfer: Plain: 2nd Side	*ENG	[0 to 400 / **100** / 5%/step]
003	Paper Transfer: 1200: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
2771	Adjusts the correction to the discharge plate current at the paper leading edge in each mode. SP2751 is multiplied by these SP values. Note ▪ The paper leading edge area can be adjusted with SP2772.		
005	Separation DC: Plain: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
006	Separation DC: Plain: 2nd Side	*ENG	
007	Separation DC: 1200: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]

2772	**[Special 1: Switch Timing: Lead. Edge]**		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
002	Paper Transfer: Plain: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	[0 to 50 / **0** / 1 mm/step]
005	Separation DC: Plain: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
006	Separation DC: Plain: 2nd Side	*ENG	
007	Separation DC: 1200: 1st Side	*ENG	

2773	**[Special 1: Trailing Edge Correction]** Special 1 Paper: Trailing Edge Correction
	Adjusts the correction to the paper transfer roller current for the paper trailing edge in each mode. SP2753 and SP2757 are multiplied by these SP values.

	Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec Note ▪ The paper trailing edge area can be adjusted with SP2774.		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
002	Paper Transfer: Plain: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
005	Separation DC: Plain: 1st Side	*ENG	
006	Separation DC: Plain: 2nd Side	*ENG	
007	Separation DC: 1200: 1st Side	*ENG	

2774	**[Special 1: Switch Timing: Trail. Edge]**		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
002	Paper Transfer: Plain: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
005	Separation DC: Plain: 1st Side	*ENG	
006	Separation DC: Plain: 2nd Side	*ENG	
007	Separation DC: 1200: 1st Side	*ENG	

2780	**[Special 1: Environment Correction]** Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Separation DC: Plain: 1st Side	*ENG	[1 to 60 / **26** / 1 /step]
002	Separation DC: Plain: 2nd Side	*ENG	[1 to 60 / **32** / 1 /step]

003	Paper Transfer: Plain: BW: 1st Side	*ENG	[1 to 60 / **11** / 1 /step]
004	Paper Transfer: Plain: BW:2nd Side	*ENG	
005	Paper Transfer: Plain: FC: 1st Side	*ENG	[1 to 60 / **1** / 1 /step]
006	Paper Transfer: Plain: FC:2nd Side	*ENG	[1 to 60 / **14** / 1 /step]
007	Separation DC: 1200: 1st Side	*ENG	[1 to 60 / **26** / 1 /step]
009	Paper Transfer: 1200: BW: 1st Side	*ENG	[1 to 60 / **11** / 1 /step]
011	Paper Transfer: 1200: FC: 1st Side	*ENG	[1 to 60 / **1** / 1 /step]

2801	**[Special2: Bias]**		
	Adjusts the DC voltage of the discharge plate for special paper 2. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Separation DC: Plain: 1st Side	*ENG	[0 to 4000 / **2000** / 10 –V/step]
002	Separation DC: Plain: 2nd Side	*ENG	[0 to 4000 / **3000** / 10 –V/step]
003	Separation DC: 1200: 1st Side	*ENG	[0 to 4000 / **2000** / 10 –V/step]

2803	**[Special2: Bias: BW]**		
	Adjusts the current for the paper transfer roller for special paper 2 in black-and-white mode. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 250 / **P2c: 30/ P2d: 34** / 1 –μA /step]
002	Paper Transfer: Plain: 2nd Side	*ENG	
003	Separation DC: 1200: 1st Side	*ENG	[0 to 200 / **11** / 1 –μA /step]

2807	**[Special2: Bias: FC]**	
	Adjusts the current for the paper transfer roller for special paper 2 in full color mode.	

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	Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 250 / **P2c: 40/ P2d: 45** / 1 –μA /step]
002	Paper Transfer: Plain: 2nd Side	*ENG	[0 to 250 / **P2c: 45/ P2d: 50** / 1 –μA /step]
003	Separation DC: 1200: 1st Side	*ENG	[0 to 250 / **15** / 1 –μA /step]

2811	**[Special2: Paper Size Correction]**		
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2803 and SP2807 are multiplied by these SP values. Plain: 205 (P2c)/230 (P2d) mm/sec		
001	Paper Transfer: Plain: 1st Side: S1	*ENG	[100 to 600 / **100** / 5%/step] S1 size ≥ 297 mm (Paper width)
002	Paper Transfer: Plain: 2nd Side: S1	*ENG	
005	Paper Transfer: Plain: 1st Side: S2	*ENG	[100 to 600 / **120** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
006	Paper Transfer: Plain: 2nd Side: S2	*ENG	[100 to 600 / **120** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
009	Paper Transfer: Plain: 1st Side: S3	*ENG	[100 to 600 / **140** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
010	Paper Transfer: Plain: 2nd Side: S3	*ENG	[100 to 600 / **140** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
013	Paper Transfer: Plain: 1st Side: S4	*ENG	[100 to 600 / **160** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm

			(Paper width)
014	Paper Transfer: Plain: 2nd Side: S4	*ENG	[100 to 600 / **220** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
017	Paper Transfer: Plain: 1st Side: S5	*ENG	[100 to 600 / **180** / 5%/step] 148 mm ≥ S5 size (Paper width)
018	Paper Transfer: Plain: 2nd Side: S5	*ENG	[100 to 600 / **180** / 5%/step] 148 mm ≥ S5 size (Paper width)

2821	**[Special 2: Leading Edge Correction]** Special 2 Paper: Leading Edge Correction		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2803 and SP2807 are multiplied by these SP values. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec Note ▪ The paper leading edge area can be adjusted with SP2822.		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
002	Paper Transfer: Plain: 2nd Side	*ENG	[0 to 400 / **100** / 5%/step]
003	Paper Transfer: 1200: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
2821	Adjusts the correction to the discharge plate current at the paper leading edge in each mode. SP2801 is multiplied by these SP values. Note ▪ The paper leading edge area can be adjusted with SP2822.		
005	Separation DC: Plain: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
006	Separation DC: Plain: 2nd Side	*ENG	
007	Separation DC: 12001st Side	*ENG	

2822	**[Special 2: Switch Timing: Lead. Edge]**

	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
002	Paper Transfer: Plain: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
005	Separation DC: Plain: 1st Side	*ENG	
006	Separation DC: Plain: 2nd Side	*ENG	
007	Separation DC: 1200: 1st Side	*ENG	

2823	**[Special 2: Trailing Edge Correction]** Special 2 Paper: Trailing Edge Correction		
	Adjusts the correction to the paper transfer roller current for the paper trailing edge in each mode. SP2803 and SP2807 are multiplied by these SP values. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec Note ▪ The paper trailing edge area can be adjusted with SP2824.		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
002	Paper Transfer: Plain: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
005	Separation DC: Plain: 1st Side	*ENG	
006	Separation DC: Plain: 2nd Side	*ENG	
007	Separation DC: 1200: 1st Side	*ENG	

2824	**[Special 2: Switch Timing: Trail. Edge]**
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge

	plate at the paper trailing edge between the erase margin area and the image area. Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
002	Paper Transfer: Plain: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
005	Separation DC: Plain: 1st Side	*ENG	
006	Separation DC: Plain: 2nd Side	*ENG	
007	Separation DC: 1200: 1st Side	*ENG	

2830	**[Special 2: Environment Correction]** Plain: 205 (P2c)/230 (P2d) mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Plain: 1st Side	*ENG	[1 to 60 / **26** / 1 /step]
002	Paper Transfer: Plain: 2nd Side	*ENG	[1 to 60 / **32** / 1 /step]
003	Paper Transfer: Plain: BW: 1st Side	*ENG	[1 to 60 / **1** / 1 /step]
004	Paper Transfer: Plain: BW:2nd Side	*ENG	[1 to 60 / **11** / 1 /step]
005	Paper Transfer: Plain: FC: 1st Side	*ENG	[1 to 60 / **1** / 1 /step]
006	Paper Transfer: Plain: FC:2nd Side	*ENG	[1 to 60 / **14** / 1 /step]
007	Paper Transfer: 1200: 1st Side	*ENG	[1 to 60 / **26** / 1 /step]
009	Paper Transfer: 1200: BW: 1st Side	*ENG	[1 to 60 / **11** / 1 /step]
011	Paper Transfer: 1200: FC: 1st Side	*ENG	[1 to 60 / **1** / 1 /step]

2851	**[Special 3: Bias]**
	Adjusts the DC voltage of the discharge plate for special paper 3. Thick 1: 154 mm/sec, 1200: 77 mm/sec

Engine Service Mode

001	Separation DC: Thick 1: 1st Side	*ENG	[0 to 4000 / **2000** / 10 –V/step]
002	Separation DC: Thick 1: 2nd Side	*ENG	[0 to 4000 / **3000** / 10 –V/step]
003	Separation DC: 1200: 1st Side	*ENG	[0 to 4000 / **2000** / 10 –V/step]

2852	**[Special 3: Bias: BW]**		
	Adjusts the current for the paper transfer roller for special paper 3 in black-and-white mode. Thick 1: 154 mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Thick 1: 1st Side	*ENG	[0 to 250 / **P2c: 30/ P2d: 34** / 1 –μA /step]
002	Paper Transfer: Thick 1: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	[0 to 250 / **11** / 1 –μA /step]

2857	**[Special 3: Bias: FC]**		
	Adjusts the current for the paper transfer roller for special paper 3 in full color mode. Thick 1: 154 mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Thick 1: 1st Side	*ENG	[0 to 250 / **P2c: 40/ P2d: 45** / 1 –μA /step]
002	Paper Transfer: Thick 1: 2nd Side	*ENG	[0 to 250 / **P2c: 45/ P2d: 50** / 1 –μA /step]
003	Paper Transfer: 1200: 1st Side	*ENG	[0 to 250 / **15** / 1 –μA /step]

2861	**[Special 3: Paper Size Correction]**
	Adjusts the size correction coefficient for the paper transfer roller current for each paper size. SP2852 and SP2857 are multiplied by these SP values.

	Thick 1: 154 mm/sec		
001	Paper Transfer: Thick 1: 1st Side: S1	*ENG	[100 to 600 / **100** / 5%/step] S1 size ≥ 297 mm (Paper width)
002	Paper Transfer: Thick 1: 2nd Side: S1	*ENG	
005	Paper Transfer: Thick 1: 1st Side: S2	*ENG	[100 to 600 / **120** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
006	Paper Transfer: Thick 1: 2nd Side: S2	*ENG	[100 to 600 / **120** / 5%/step] 297 mm ≥ S2 size ≥ 275 mm (Paper width)
009	Paper Transfer: Thick 1: 1st Side: S3	*ENG	[100 to 600 / **140** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
010	Paper Transfer: Thick 1: 2nd Side: S3	*ENG	[100 to 600 / **140** / 5%/step] 275 mm ≥ S3 size ≥ 210 mm (Paper width)
013	Paper Transfer: Thick 1: 1st Side: S4	*ENG	[100 to 600 / **160** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
014	Paper Transfer: Thick 1: 2nd Side: S4	*ENG	[100 to 600 / **160** / 5%/step] 210 mm ≥ S4 size ≥ 148 mm (Paper width)
017	Paper Transfer: Thick 1: 1st Side: S5	*ENG	[100 to 600 / **180** / 5%/step] 148 mm ≥ S5 size (Paper width)
018	Paper Transfer: Thick 1: 2nd Side: S5	*ENG	[100 to 600 / **180** / 5%/step] 148 mm ≥ S5 size (Paper width)

Engine Service Mode

2871	**[Special 3: Leading Edge Correction]** Special 3 Paper: Leading Edge Correction		
	Adjusts the correction to the paper transfer roller current at the paper leading edge in each mode. SP2852 and SP2857 are multiplied by these SP values. Thick 1: 154 mm/sec, 1200: 77 mm/sec Note ▪ The paper leading edge area can be adjusted with SP2872.		
001	Paper Transfer: Thick 1: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
002	Paper Transfer: Thick 1: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
2871	Adjusts the correction to the discharge plate current at the paper leading edge in each mode. SP2851 is multiplied by these SP values. Note ▪ The paper leading edge area can be adjusted with SP2872.		
005	Separation DC: Thick 1: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
006	Separation DC: Thick 1: 2nd Side	*ENG	
007	Separation DC: 1200: 1st Side	*ENG	

2872	**[Special 3: Switch Timing: Lead. Edge]**		
	Adjusts the bias/ voltage switch timing of the paper transfer roller/ discharge plate at the paper leading edge between the erase margin area and the image area. Thick 1: 154 mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Thick 1: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
002	Paper Transfer: Thick 1: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
005	Separation DC: Thick 1: 1st Side	*ENG	

006	Separation DC: Thick 1: 2nd Side	*ENG	
007	Separation DC: 1200: 1st Page	*ENG	

2873	**[Special 3: Trailing Edge Correction]** Special 3 Paper: Trailing Edge Correction		
	Adjusts the correction to the paper transfer roller current for the paper trailing edge in each mode. SP2852 and SP2857 are multiplied by these SP values. Thick 1: 154 mm/sec, 1200: 77 mm/sec Note ▪ The paper trailing edge area can be adjusted with SP2874.		
001	Paper Transfer: Thick 1: 1st Side	*ENG	[0 to 400 / **100** / 5%/step]
002	Paper Transfer: Thick 1: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
005	Separation DC: Thick 1: 1st Side	*ENG	
006	Separation DC: Thick 1: 2nd Side	*ENG	
007	Separation DC: 1200: 1st Side	*ENG	

2874	**[Special 3: Switch Timing: Trail. Edge]**		
	Adjusts the bias/voltage switch timing of the paper transfer roller/discharge plate at the paper trailing edge between the erase margin area and the image area. Thick 1: 154 mm/sec, 1200: 77 mm/sec		
001	Paper Transfer: Thick 1: 1st Side	*ENG	[0 to 50 / **0** / 2 mm/step]
002	Paper Transfer: Thick 1: 2nd Side	*ENG	
003	Paper Transfer: 1200: 1st Side	*ENG	
005	Separation DC: Thick 1: 1st Side	*ENG	
006	Separation DC: Thick 1: 2nd Side	*ENG	

007	Separation DC: 1200: 1st Side	*ENG	

2880	**[Special 3: Environment Correction]** Thick 1: 154 mm/sec, 1200: 77 mm/sec		
001	Separation DC: Thick 1: 1st Side	*ENG	[1 to 60 / **26** / 1 /step]
002	Separation DC: Thick 1: 2nd Side	*ENG	[1 to 60 / **32** / 1 /step]
003	Paper Transfer: Thick 1: BW: 1st Side	*ENG	[1 to 60 / **11** / 1 /step]
004	Paper Transfer: Thick 1: BW:2nd Side	*ENG	
005	Paper Transfer: Thick 1: FC: 1st Side	*ENG	[1 to 60 / **11** / 1 /step]
006	Paper Transfer: Thick 1: FC:2nd Side	*ENG	
007	Separation DC: 1200: 1st Side	*ENG	[1 to 60 / **26** / 1 /step]
009	Paper Transfer: 1200: BW: 1st Side	*ENG	[1 to 60 / **11** / 1 /step]
011	Paper Transfer: 1200: FC: 1st Side	*ENG	[1 to 60 / **1** / 1 /step]

2901	**[OPC Drum Brake Time]** Adjusts the time when the OPC drum motor reverses from normal rotation after job end. **DFU** Plain: 205 (P2c)/230 (P2d) mm/sec, Thick 1: 154 mm/sec, Thick 2&Fine: 77 mm/sec		
001	Plain	*ENG	[300 to 1500 / **500** / 10 msec/step]
002	Thick 1	*ENG	
003	Thick 2 & FINE	*ENG	

2902	**[OPC Drum Reverse Time]** Adjusts the time for how long the OPC drum motor reverses after job end. **DFU**		
001	All: BW	*ENG	[0 to 200 / **30** / 10 msec/step]

002	All: FC	*ENG	[0 to 200 / **30** / 10 msec/step]

2903	**[Image Transfer Roller Brake Time]**		
	Adjusts the time when the image transfer belt motor reverses from normal rotation after job end. **DFU** Plain: 205 (P2c)/230 (P2d) mm/sec, Thick 1: 154 mm/sec, Thick 2&Fine: 77 mm/sec		
003	Plain	*ENG	[300 to 1500 / **500** / 10 msec/step]
004	Thick 1	*ENG	
005	Thick 2 & FINE	*ENG	

2904	**[Image Transfer Roller Reverse Time]**		
	Adjusts the time for how long the image transfer belt motor reverses after job end. **DFU**		
003	All	*ENG	[0 to 200 / **30** / 10 msec/step]

2906	**[Phase Angle]**		
	DFU		
001	Y Drum	*ENG	[0 to 359 / **0** / 1 deg/step]
002	C Drum	*ENG	
003	M Drum	*ENG	
004	K Drum	*ENG	
2906	**[Amplitude Setting]**		
006	Y Drum	*ENG	[0 to 100 / **0.0** / 0.1 μm/step]
007	C Drum	*ENG	
008	M Drum	*ENG	

009	K Drum	*ENG	

2907	**[ACS Setting (FC to Bk)]**		
	Adjusts the threshold for moving away the image transfer belt from the color PCUs. This SP moves the image transfer belt away from the color PCUs when the number of B/W image printouts reaches the number of sheets specified with this SP after consecutive full color image printouts in the full color mode. If this SP is set to "0", the image transfer belt does not move away.		
001	Continuous Bk Pages	*ENG	[0 to 10 / **0** / 1 sheet/step]

2908	**[Gain Adjust]** Gain Adjustment of Image Transfer Belt Motor		
	DFU		
001	230 mm/sec	*ENG	[0 or 1 / **0** / 1/step] 0: High speed (Low level) 1: Low speed (High level)
002	205 mm/sec	*ENG	[0 or 1 / **1** / 1/step] 0: High speed (Low level) 1: Low speed (High level)
003	115 mm/sec	*ENG	
004	77 mm/sec	*ENG	

2911	**[Offset Angle] DFU**		
001	Y Drum	*ENG	[0 to 359 / **0** / 1 deg/step]
002	C Drum	*ENG	
003	M Drum	*ENG	
004	K Drum	*ENG	

2912	**[Offset Amplitude Setting] DFU**		
001	Y Drum	*ENG	[0 to 100 / **0.0** / 0.1 μm/step]

002	C Drum	*ENG	
003	M Drum	*ENG	
004	K Drum	*ENG	

2914	**[Shutter Motor] Not used**		
001	Delay Time Open	*ENG	**DFU** [1 to 50 / **38** / 1 msec/step]
002	Delay Time Close	*ENG	
003	Shutter Open	*ENG	Opens the shutter on the laser optics housing unit manually for test purposes.
004	Shutter Close	*ENG	Closes the shutter on the laser optics housing unit manually for test purposes.

2920	**[Transfer Motor Control]**		
001	0: Encorder 1 :FG	*ENG	[0 or 1 / **0** / 1 /step]
	Selects the speed control mode for the ITB. If SC443 occurs and machine does not recover, change this setting to "1".		
002	SC443 Count	*ENG	[0 to 3 / **0** / 1 /step]
	Displays the number of the ITB encodre error. SC443 is displayed if this counter counts to "3".		

2930	**[SecondaryFB: Threshold]** Paper Transfer Roller Feed-back: Threshold Adjustment		
	Adjusts the threshold between high resistance (division 1) and low resistance (division 2) at the paper transfer roller. This SP affects SP2931 to SP2939.		
001	Voltage	*ENG	[0 to 7000 / **6000** / 10 –V/step]

2960	**[Process Interval]**

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001	Additional Time	*ENG	[0 to 10 / **0** / 1 sec/step]
	Adjusts the additional time for ending the machine's process.		

2970	**[Cleaning After JOB]**		
001	No Refresh	*ENG	[0 or 1 / **0** / 1 /step] 0: No cleaning, 1: Cleaning
002	Refresh	*ENG	[0 or 1 / **1** / 1 /step] 0: No cleaning, 1: Cleaning

2971	**[T1 Non Image Area ON Timing]**		
001	-	*ENG	[–270 to 180 / **P2c: 10/ P2d: 20** / 10 msec/step]
	Adjusts the timing for the non-image area bias of the image transfer roller.		

SP3-XXX (Process)

3011	**[Process Cont. Manual Execution]**		
001	Normal	-	Executes the normal process control manually (potential control). Check the result with SP3-325-001 and 3-012-001 after executing this SP.
002	Density Adjustment	-	Executes the toner density adjustment manually.
003	Pre-ACC	-	Executes the process control that is normally done before ACC. The type of process control is selected with SP3-041-004.
004	Full MUSIC	-	Executes the process control that is

			normally done at the same time as MUSIC. This SP does the MUSIC (line position adjustment) twice.
005	Normal MUSIC	-	Executes the process control that is normally done at the same time as MUSIC. This SP does the MUSIC (line position adjustment) once.

3012	**[Process Cont. Check Result]** Process Control Self-check Result		
	Displays the result of the latest process control self-check. All colors are displayed. The results are displayed in the order “Y C M K” e.g., 11 (Y) 99 (C) 11 (M) 11 (K): The self-check for Cyan failed but the others were successful. See the "Error Condition Tables" in the "Appendix: Process Control Error Conditions" section for details.		
001	History: Latest	*ENG	[1111 to 99999999 / **99999999** / 1/step]
002	Result: Latest 1	*ENG	
003	Result: Latest 2	*ENG	
004	Result: Latest 3	*ENG	
005	Result: Latest 4	*ENG	
006	Result: Latest 5	*ENG	
007	Result: Latest 6	*ENG	
008	Result: Latest 7	*ENG	
009	Result: Latest 8	*ENG	
010	Result: Latest 9	*ENG	

3013	**[T Sensor Initial Set: Execution]** Developer Initialization Setting

001	Execution: ALL	-	Executes the developer initialization for each color.
002	Execution: COL	-	
003	Execution: Bk	-	
004	Execution: M	-	
005	Execution: C	-	
006	Execution: Y	-	

3014	**[T Sensor Initial Set Result: Display]** Developer Initialization Result: Display		
001	Display: YCMK	*ENG	[0 to 9999 / 9999 / 1 /step] 1: Success, 2 to 9: Failure
	Displays the developer initialization result. See section "Developer Initialization Result" in the "Appendix: Process Control Error Conditions" section for details on the meaning of each code. All colors are displayed. Values are displayed in the order Y C M Bk. e.g., 1 (Y) 2 (C) 1 (M) 1 (Bk): Initialization of Cyan failed but the others succeeded.		

3015	**[Forced Toner Supply: Execute]** Forced Toner Supply ([Color])		
001	Execution: ALL	-	Executes the manual toner supply to the development unit.
002	Execution: COL	-	
003	Execution: Bk	-	
004	Execution: M	-	
005	Execution: C	-	
006	Execution: Y	-	

3016	**[Forced Toner Supply: Setting]** Forced Toner Supply Setting ([Color])

	Specifies the manual toner supply time for each color.		
001	Supply Time: Bk	*ENG	[0 to 30 / **4** / 1 sec/step]
002	Supply Time: M	*ENG	
003	Supply Time: C	*ENG	
004	Supply Time: Y	*ENG	

3020	**[Vt Limit Error]**		
	DFU		
001	Delta Vt Threshold	*ENG	[0 to 5 / **5** / 0.01 V/step]
002	Upper Threshold	*ENG	[0 to 5 / **4.7** / 0.01 V/step]
003	Threshold Number of Upper counter	*ENG	[0 to 99 / **20** / 1 time/step]
004	Lower Threshold	*ENG	[0 to 5 / **0.5** / 0.01 V/step]
005	Threshold Number of Lower counter	*ENG	[0 to 99 / **10** / 1 times/step]
006	Upper Counter: Bk	*ENG	[0 to 99 / **0** / 1 times/step]
007	Upper Counter: M	*ENG	
008	Upper Counter: C	*ENG	
009	Upper Counter: Y	*ENG	
010	Lower Counter: Bk	*ENG	
011	Lower Counter: M	*ENG	
012	Lower Counter: C	*ENG	
013	Lower Counter: Y	*ENG	

3021	**[TD Sensor Initial Set]** Developer Initialization Setting

	Specifies the developer agitation time for each color at the developer initialization. **DFU**		
001	Agitation Time: Bk	*ENG	[0 to 200 / **30** / 1 sec/step]
002	Agitation Time: M	*ENG	
003	Agitation Time: C	*ENG	
004	Agitation Time: Y	*ENG	
005-008	Sets the execution flag of the developer initialization for each color. **DFU**		
005	Execution Flag: Bk	*ENG	[0 or 1 / **0** / 1/step] 0: Flag OFF, 1: Flag ON This flag is cleared after executing TD sensor initialization.
006	Execution Flag: M	*ENG	
007	Execution Flag: C	*ENG	
008	Execution Flag: Y	*ENG	
009	Prohibition	*ENG	Enables or disables developer initialization. **DFU** [0 or 1 / **0** / 1/step] 0: Enable, 1: Disable

3022	**[Toner Replenishment Mode] DFU**		
	Specifies the toner supply time for each color in the toner supply mode.		
001	Number: Bk	*ENG	[0 to 30 / **8** / 1 sec/step]
002	Number: M	*ENG	[0 to 30 / **6** / 1 sec/step]
003	Number: C	*ENG	
004	Number: Y	*ENG	
005-008	Sets the execution flag for the toner supply mode for each color.		
005	Execution Flag: Bk	*ENG	[0 or 1 / **0** / 1/step] 0: Flag OFF, 1: Flag ON
006	Execution Flag: M	*ENG	

007	Execution Flag: C	*ENG	This flag is cleared after executing TD sensor initialization.
008	Execution Flag: Y	*ENG	

3041	**[Process Control Type]**		
001	Voltage Control	*ENG	[0 or 1 / **1** / 1/step] Alphanumeric 0: FIXED (Use the fixed values for the charge DC bias and development DC bias set with SP2-005 and SP2-229.) 1: CONTROL
	Enables or disables potential control.		
002	LD Power Control	*ENG	[0 or 1 / **1** / 1/step] Alphanumeric 0: FIXED (at the value in SP2221-xxx) 1: CONTROL (adjusted by process control)
	Selects the LD power control mode.		
004	Pre-ACC	*ENG	[0 to 2 / **2** / 1/step] 0: Not Executed 1: Process Control 2: TC Control (TD Adjustment) 3: Not used
	Selects the process control mode that is done before ACC.		

3043	**[TD Adjustment Mode]**		
001	Repeat Number: Power ON	*ENG	[0 to 9 / **4** / 1 time/step]
	Specifies the maximum number of repeats of the toner density adjustment at power on. 0: Disabled, 1 to 3: Repeat number, 4: Repeat three times (No consumption mode) 5: Repeat three times (Toner is supplied only when the toner density is too low, and toner is consumed only when the toner density is too dark.) 6 to 9: Disabled		

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002	Repeat Number: Initialization	*ENG	[0 to 9 / **3** / 1 time/step]
	Specifies the maximum number of repeats of the toner density adjustment at the developer initialization. 0: Disabled, 1 to 3: Repeat number, 4: Repeat three times (No consumption mode) 5: Repeat three times (Toner is supplied only when the toner density is too low, and toner is consumed only when the toner density is too dark.) 6 to 9: Disabled		
003	Repeat Number: Non-use	*ENG	[0 to 9 / **0** / 1 time/step]
	Specifies the maximum number of repeats of the toner density adjustment in stand by mode. 0: Disabled, 1 to 3: Repeat number, 4: Repeat three times (No consumption mode) 5: Repeat three times (Toner is supplied only when the toner density is too low, and toner is consumed only when the toner density is too dark.) 6 to 9: Disabled		
004	Repeat Number: ACC	*ENG	[0 to 9 / **3** / 1 time/step]
	Specifies the maximum number of repeats of the toner density adjustment at ACC. 0: Disabled, 1 to 3: Repeat number, 4: Repeat three times (No consumption mode) 5: Repeat three times (Toner is supplied only when the toner density is too low, and toner is consumed only when the toner density is too dark.) 6 to 9: Disabled		
005	Repeat Number: Recovery	*ENG	[0 to 9 / **0** / 1 time/step]
	Not used		
006	Repeat Number: Job End	*ENG	[0 to 9 / **4** / 1 time/step]
	Specifies the maximum number of repeats of the toner density adjustment at job end. 0: Disabled, 1 to 3: Repeat number, 4: Repeat three times (No consumption mode)		

	5: Repeat three times (Toner is supplied only when the toner density is too low, and toner is consumed only when the toner density is too dark.) 6 to 9: Disabled		
007	Repeat: Interrupt	*ENG	[0 to 9 / **0** / 1 time/step]
	Specifies the maximum number of repeats of the toner density adjustment during printing. **DFU**		
008	Toner Supply Coefficient	*ENG	[0 to 25.5 / **10** / 0.1 sec/step]
	Adjusts the time for the toner supply mode when a toner density is detected to be low.		
009	Consumption pattern: Bk	*ENG	[0 to 255 / **5** / 1 time/step]
	Specifies the belt mark generating time for checking the black toner density when toner density is detected to be low at the toner density adjustment.		
010	Consumption pattern: M	*ENG	[0 to 255 / **5** / 1 time/step]
	Specifies the belt mark generating time for checking the magenta toner density when toner density is detected to be low at the toner density adjustment.		
011	Consumption pattern: C	*ENG	[0 to 255 / **5** / 1 time/step]
	Specifies the belt mark generating time for checking the cyan toner density when toner density is detected to be low at the toner density adjustment.		
012	Consumption pattern: Y	*ENG	[0 to 255 / **5** / 1 time/step]
	Specifies the belt mark generating time for checking the yellow toner density when toner density is detected to be low at the toner density adjustment.		
013	T1 Bias: Bk	*ENG	[0 to 80 / **P2c: 22, P2d: 30** / 1 µA/step]
	Adjusts the image transfer belt bias for Black.		
014	T2 Bias: M	*ENG	[0 to 80 / **P2c: 22, P2d: 30**/ 1 µA/step]
	Adjusts the image transfer belt bias for Magenta.		
015	T3 Bias: C	*ENG	[0 to 80 / **P2c: 25, P2d: 33**/ 1 µA/step]

	Adjusts the image transfer belt bias for Cyan.		
016	T4 Bias: Y	*ENG	[0 to 80 / **P2c: 33, P2d: 45** / 1 µA/step]
	Adjusts the image transfer belt bias for Yellow.		
017	Developer Mixing Time	*ENG	[0 to 250 / **10** / 1 sec/step]
	Specifies the developer mixing time at the toner density adjustment.		
018	Consumption Pattern: LD: DUTY: Bk	*ENG	[0 to 15 / **15** / 1 /step]
	Adjusts the LD duty for the toner consumption mode at the toner density adjustment. In toner consumption mode, toner is discharged when the detected development gamma values (SP3611-001) exceed the target values (SP3611-005) by more than the specified thresholds (SP3239-009).		
019	Consumption Pattern: LD: DUTY: M	*ENG	[0 to 15 / **15** / 1 /step]
	Adjusts the LD duty for the toner consumption mode at the toner density adjustment. In toner consumption mode, toner is discharged when the detected development gamma values (SP3611-002) exceed the target values (SP3611-006) by more than the specified thresholds (SP3239-009).		
020	Consumption Pattern: LD: DUTY: C	*ENG	[0 to 15 / **15** / 1 /step]
	Adjusts the LD duty for the toner consumption mode at the toner density adjustment. In toner consumption mode, toner is discharged when the detected development gamma values (SP3611-003) exceed the target values (SP3611-007) by more than the specified thresholds (SP3239-009).		
021	Consumption Pattern: LD: DUTY: Y	*ENG	[0 to 15 / **15** / 1 /step]
	Adjusts the LD duty for the toner consumption mode at the toner density adjustment. In toner consumption mode, toner is discharged when the detected development gamma values (SP3611-004) exceed the target values (SP3611-008) by more than the specified thresholds (SP3239-009).		

3044	**[Toner Supply Type]** Toner Supply Type ([Color])		
	Selects the toner supply method type.		
001	Bk	*ENG	[0 to 3 / **2** / 1/step] Alphanumeric 0: FIXED (with the supply rates stored with SP 3401) 1: PID (Vtref_Fixed) 2: PID (Vtref_Control) 3: Not used
002	M	*ENG	
003	C	*ENG	
004	Y	*ENG	

3045	**[Toner End Detection: Set]**		
	Enables/disables the toner alert display on the LCD.		
001	ON/OFF	*ENG	[0 or 1 / **0** / 1/step] 0: Detect, 1: Not Detect

3101	**[Toner End/Near End]**		
	Displays the amount of each color toner. **DFU**		
001	K Toner Replenishmen	*ENG	[1 to 600 / **510** / 1 g/step]
002	M Toner Replenishment	*ENG	[1 to 600 / **400** / 1 g/step]
003	C Toner Replenishment	*ENG	
004	Y Toner Replenishment	*ENG	
005-008	Displays the consumed amount of each color toner.		
005	K Toner Consumption	*ENG	[0 to 3000 / **0** / 0.001 g/step]
006	M Toner Consumption	*ENG	
007	C Toner Consumption	*ENG	
008	Y Toner Consumption	*ENG	
009-012	Displays the remaining amount of each color toner. These are calculated by		

	the operating times of the toner supply pumps.		
009	K Toner Remaining	*ENG	[–50000 to 600 / **0** / 0.001 g/step]
010	M Toner Remaining	*ENG	
011	C Toner Remaining	*ENG	
012	Y Toner Remaining	*ENG	
013-016	Adjusts the threshold of toner near end for each color. The toner near end message appears on the LCD when the remaining toner amount reaches this threshold. When one of these SPs (SP3-101-009 to 012 or -032 to -035) reaches this threshold, toner near end is detected.		
013	Near End Threshold: Bk	*ENG	[0 to 600 / **50** / 1 g/step]
014	Near End Threshold: M	*ENG	
015	Near End Threshold: C	*ENG	
016	Near End Threshold: Y	*ENG	
017-020	**DFU**		
017	Cartridge Error Threshold: Bk	*ENG	[–50000 to 0 / **–50000** / 1 g/step]
018	Cartridge Error Threshold: M	*ENG	
019	Cartridge Error Threshold: C	*ENG	
020	Cartridge Error Threshold: Y	*ENG	
021	Delta Vt Threshold	*ENG	[0 to 5 / **0.5** / 0.01 V/step]
	This SP is the threshold for toner end. Delta Vt: Vt-Vtref When both this SP and SP3-101-026 occur at same time, toner end is determined.		
022-025	Displays the total delta Vt (Vt-Vtref) value for each color.These are calculated by pixel counting.		
022	Delta Vt Sum: Bk	*ENG	[0 to 655 / **0** / 0.01 V/step]

023	Delta Vt Sum: M	*ENG	
024	Delta Vt Sum: C	*ENG	
025	Delta Vt Sum: Y	*ENG	
026	Delta Vt Sum Threshold	*ENG	[0 to 255 / 10 / 1 V/step]
027	Gamma Threshold: Coefficient	*ENG	Not used
028-031	Displays the consumed toner amount calculated with the pixel count for each color.		
028	Pixel: Consumption: Bk	*ENG	[0 to 3000 / **0** / 0.001 g/step]
029	Pixel: Consumption: M	*ENG	
030	Pixel: Consumption: C	*ENG	
031	Pixel: Consumption: Y	*ENG	
032-035	Displays the remaining toner amount for each color, using pixel count.		
032	Pixel: Remaining : Bk	*ENG	[-50000 to 600 / **0** / 0.001 g/step]
033	Pixel: Remaining : M	*ENG	
034	Pixel: Remaining : C	*ENG	
035	Pixel: Remaining : Y	*ENG	
036-039	Adjusts the threshold of toner end for each color.		
036	End Threshold: Bk	*ENG	Not used
037	End Threshold: M	*ENG	
038	End Threshold: C	*ENG	
039	End Threshold: Y	*ENG	
040-043	Displays the pixel M/A for each color.		
040	Pixel M/A: Bk	*ENG	[0 to 1 / **0.4** / 0.001 mg/cm^2/step]
041	Pixel M/A: M	*ENG	

042	Pixel M/A: C	*ENG	
043	Pixel M/A: Y	*ENG	
044	Delta Vt Threshold Before Near End	*ENG	Adjusts the delta Vt (Vt – Vtref) of toner end before toner near end is detected. [0 to 5 / **0.5** / 0.01 V/step]
045	Delta Vt Sum Threshold Before Near End	*ENG	Adjusts the total delta Vt (Vt – Vtref) of toner end before toner near end is detected. [0 to 255 / **10** / 1 V/step]
046-049	Displays the latest mohno-pump off time.		
046	Mohno Off Time	*ENG	[0 to 0 x FFFFFFFF / **-** / 1 sec/step]
047	Mohno Off Time	*ENG	
048	Mohno Off Time	*ENG	
049	Mohno Off Time	*ENG	

3102	**[Toner End Recovery]**		
	Adjusts the number of times toner supply is attempted for each color when the TD sensor continues to detect toner end during toner recovery.		
001	Repeat: Bk	*ENG	[1 to 20 / **5** / 1 time/step]
002	Repeat: M	*ENG	
003	Repeat: C	*ENG	
004	Repeat: Y	*ENG	

3131	**[TE Count m: Display]**
	Display the number of toner end detections for each color.

001	Bk	*ENG	[0 to 99 / **0** / 1 time/step]
002	M	*ENG	
003	C	*ENG	
004	Y	*ENG	

3201	**[TD Sensor: Vt Display]**		
	Display the current voltage of the TD sensor for each color.		
001	Current: Bk	*ENG	[0 to 5.5 / **0.01** / 0.01 V/step]
002	Current: M	*ENG	
003	Current: C	*ENG	
004	Current: Y	*ENG	

3211	**[Vt Shift: Display/Set]**		
	Adjusts the Vt correction value for each line speed. Thick 1: 154 mm/sec, Thick 2&Fine: 77 mm/sec		
001	Thick 1 Shift: Bk	*ENG	[0 to 5 / **P2c: 0.28, P2d: 0.39** / 0.01 V/step]
002	Thick 1 Shift: M	*ENG	
003	Thick 1 Shift: C	*ENG	
004	Thick 1 Shift: Y	*ENG	
005	Thick 2 & FINE Shift: Bk	*ENG	[0 to 5 / **P2c: 0.74, P2d: 0.85** / 0.01 V/step]
006	Thick 2 & FINE Shift: M	*ENG	
007	Thick 2 & FINE Shift: C	*ENG	
008	Thick 2 & FINE Shift: Y	*ENG	

3221	**[Vtcnt: Display/Set]**

	Displays or adjusts the current Vtcnt value for each color.		
001	Current: Bk	*ENG	[2 to 5 / **3.86** / 0.01 V/step]
002	Current: M	*ENG	
003	Current: C	*ENG	
004	Current: Y	*ENG	
005-008	Displays or adjusts the Vtcnt value for each color at developer initialization. **DFU**		
005	Initial: Bk	*ENG	[2 to 5 / **3.86** / 0.01 V/step]
006	Initial: M	*ENG	
007	Initial: C	*ENG	
008	Initial: Y	*ENG	

3222	**[Vtref: Display/Set]**		
	Displays or adjusts the current Vtref value for each color.		
001	Current: Bk	*ENG	[0 to 5.5 / **3** / 0.01 V/step]
002	Current: M	*ENG	
003	Current: C	*ENG	
004	Current: Y	*ENG	
005-008	Displays or adjusts the Vtref value for each color at developer initialization. **DFU**		
005	Initial: Bk	*ENG	[0 to 5.5 / **3** / 0.01 V/step]
006	Initial: M	*ENG	
007	Initial: C	*ENG	
008	Initial: Y	*ENG	

009-012	Displays and adjusts Vtref correction by pixel coverage for each color. **DFU**		
009	Pixel Correction: Bk	*ENG	[-5 to 5.5 / **0** / 0.01 V/step]
010	Pixel Correction: M	*ENG	
011	Pixel Correction: C	*ENG	
012	Pixel Correction: Y	*ENG	

3223	**[Vtref Upper Lower: Set] DFU**		
	Adjusts the lower or upper limit value of Vtref for each color.		
001	Lower: Bk	*ENG	[0 to 5 / **2** / 0.01 V/step]
002	Lower: M	*ENG	
003	Lower: C	*ENG	
004	Lower: Y	*ENG	
005	Upper: Bk	*ENG	[0 to 5 / **4** / 0.01 V/step]
006	Upper: M	*ENG	
007	Upper: C	*ENG	
008	Upper: Y	*ENG	
009	Initial TC	*ENG	Adjusts the initial toner concentration. [1 to 15 / **7** / 0.1 wt%/step]
010	Upper: TC	*ENG	Adjusts the upper limit of the toner concentration. [1 to 15 / **9.5** / 0.1 wt%/step]
011	Lower: TC	*ENG	Adjusts the lower limit of the toner concentration. [1 to 15 / **4** / 0.1 wt%/step]
012	Upper Sensitivity	*ENG	Adjusts the upper limit of the TD sensor sensitivity.

			[0.2 to 0.5 / **0.44** / 0.001 V/wt% /step]
013	Lower Sensitivity	*ENG	Adjusts the lower limit of the TD sensor sensitivity. [0.2 to 0.5 / **0.209** / 0.001 V/wt% /step]
014	Toner Density Between H and M	*ENG	[1 to 10 / **3.5** / 0.1 wt%/step]
015	Toner Density Between M and L	*ENG	[1 to 10 / **3.5** / 0.1 wt%/step]

3224	**[Vtref Correction: Pixel] DFU**		
	Adjusts the coefficient of Vtref correction for each coverage and color.		
001	Low Coverage Coefficient: Bk	*ENG	[0 to 5 / **1** / 0.1 /step]
002	Low Coverage Coefficient: M	*ENG	
003	Low Coverage Coefficient: C	*ENG	
004	Low Coverage Coefficient: Y	*ENG	
005	High Coverage Coefficient: Bk	*ENG	[0 to 5 / **1** / 0.01 V/step]
006	High Coverage Coefficient: M	*ENG	[0 to 5 / **0.5** / 0.01 V/step]
007	High Coverage Coefficient: C	*ENG	
008	High Coverage Coefficient: Y	*ENG	
009	Low Coverage: Threshold	*ENG	Adjusts the threshold of the low coverage. [0 to 20 / **3** / 0.1 %/step]
010	High Coverage: Threshold	*ENG	Adjusts the threshold of the high coverage. [0 to 100 / **60** / 1 %/step]
011	TC Upper Limit Correction	*ENG	[0 to 5 / **0** / 0.1 wt%/step]

012	Upper Limit TC: Display: Bk	*ENG	[1 to 15 / **10** / 0.1 wt% /step]
013	Upper Limit TC: Display: M	*ENG	
014	Upper Limit TC: Display: C	*ENG	
015	Upper Limit TC: Display: Y	*ENG	
016	Process Control Execution Threshold	*ENG	[0 to 255 / **50** / 1 time/step]

3231	**[Toner Supply: Setting]**		
	Adjusts the coefficient of the toner supply time for each color. **DFU**		
001	Replacement Coefficient:Bk	*ENG	[0.5 to 9.99 / **1.66** / 0.01 /step]
002	Replacement Coefficient: M	*ENG	[0.5 to 9.99 / **1.66**/ 0.01 /step]
003	Replacement Coefficient: C	*ENG	[0.5 to 9.99 / **1.6** / 0.01 /step]
004	Replacement Coefficient: Y	*ENG	[0.5 to 9.99 / **1.66** / 0.01 /step]

3232	**[Toner Supply Coefficient: Setting] DFU**		
001	Vt Proportion: Bk	*ENG	[0 to 2550 / **50** / 1 /step]
002	Vt Proportion: M	*ENG	
003	Vt Proportion: C	*ENG	
004	Vt Proportion: Y	*ENG	
005	Pixel Proportion: Bk	*ENG	[0 to 2.55 / **0.47** / 0.01 /step]
006	Pixel Proportion: M	*ENG	
007	Pixel Proportion: C	*ENG	
008	Pixel Proportion: Y	*ENG	
009	Vt Integral Control: Bk	*ENG	[0 to 2550 / **500** / 1 /step]
010	Vt Integral Control: M	*ENG	

011	Vt Integral Control: C	*ENG	
012	Vt Integral Control: Y	*ENG	
013	Vt Sum Times: Bk	*ENG	[1 to 255 / **20** / 1 time/step]
014	Vt Sum Times: M	*ENG	
015	Vt Sum Times: C	*ENG	
016	Vt Sum Times: Y	*ENG	

3233	**[Pixel Proportion Coefficient 2: Setting] DFU**		
001	Correction Coefficient: 1	*ENG	[0 to 2.55 / **1** / 0.01 /step]
002	Correction Coefficient: 2	*ENG	[0 to 2.55 / **0.5** / 0.01 /step]
003	Correction Coefficient: 3	*ENG	[0 to 2.55 / **0** / 0.01 /step]
004	Correction Coefficient: 4	*ENG	[0 to 2.55 / **0.25** / 0.01 /step]
005	Correction Coefficient: 5	*ENG	[0 to 2.55 / **0.5** / 0.01 /step]

3234	**[Pixel Proportion Coefficient 3: Setting] DFU**		
001	Correction Value 1	*ENG	[-0.1 to 0 / -**0.01** / 0.01 /step]
002	Correction Value 2	*ENG	[0 to 0.1 / **0.01** / 0.01 /step]

3235	**[Toner Supply Coefficient: Display] DFU**		
001	Pixel Proportion 2: Bk	*ENG	[0 to 2.55 / **1** / 0.01 /step]
002	Pixel Proportion 2: M	*ENG	
003	Pixel Proportion 2: C	*ENG	
004	Pixel Proportion 2: Y	*ENG	
005	Pixel Proportion 3: Bk	*ENG	[0.7 to 1.3 / **1** / 0.01 /step]

006	Pixel Proportion 3: M	*ENG	
007	Pixel Proportion 3: C	*ENG	
008	Pixel Proportion 3: Y	*ENG	
009	Vt Integral: Bk	*ENG	[-255 to 255 / **0** / 0.01 /step]
010	Vt Integral: M	*ENG	
011	Vt Integral: C	*ENG	
012	Vt Integral: Y	*ENG	

3236	**[Toner Supply Consumption: Display] DFU**		
	Displays the toner amount of the latest toner supply for each color.		
001	Latest: Bk	*ENG	[0 to 40000 / **0** / 0.1 mg/step]
002	Latest: M	*ENG	
003	Latest: C	*ENG	
004	Latest: Y	*ENG	

3237	**[Developer Mixing Setting]**		
	Displays the toner amount of the latest toner supply for each color. **DFU**		
001	Mixing Time	*ENG	[0 to 200 / **5** / 1 sec/step]

3238	**[Vt Target: Setting]**		
	Displays the Vt target value at developer initialization. **DFU**		
001	Bk	*ENG	[0 to 5 / **2.5** / 0.01 V/step]
002	M	*ENG	
003	C	*ENG	

004	Y	*ENG	

3239	**[Vtref Correction: Setting]**		
	Adjusts the parameter for Vtref correction at the process control.		
001	(+)Consumption: Bk	*ENG	[0 to 1 / **0.1** / 0.01 V/step]
002	(+)Consumption: M	*ENG	
003	(+)Consumption: C	*ENG	
004	(+)Consumption: Y	*ENG	
005	(-)Consumption: Bk	*ENG	
006	(-)Consumption: M	*ENG	
007	(-)Consumption: C	*ENG	
008	(-)Consumption: Y	*ENG	
009-012	Threshold for development gamma rank.		
009	P Rank 1 Threshold	*ENG	[0 to 2 / **0.2** / 0.1 /step]
010	P Rank 2 Threshold	*ENG	[0 to 2 / **0.1** / 0.1 /step]
011	P Rank 3 Threshold	*ENG	[-2 to 0 / **-0.1** / 0.1 /step]
012	P Rank 4 Threshold	*ENG	[-2 to 0 / **-0.2** / 0.1 /step]
013-014	Threshold for image density rank on the image transfer belt.		
013	T Rank 1 Threshold	*ENG	[-1 to 0 / **-0.2** / 0.01 V/step]
014	T Rank 2 Threshold	*ENG	[0 to 1 / **0.2** / 0.01 V/step]

3241	**[Background Potential Setting]**		
001	Coefficient: Bk	*ENG	These are parameters for calculating the charge bias referring to the development
002	Coefficient: M	*ENG	

003	Coefficient: C	*ENG	bias at process control. [-1000 to 1000 / **0** / 1 /step] DC charge bias = Development bias x (1 + 0.001 x these vales) + SP3-241-005 to -008
004	Coefficient: Y	*ENG	
005	Offset: Bk	*ENG	These are additional values for calculating the charge bias referring to the development bias at process control. [0 to 255 / **140** / 1 V/step] DC charge bias = Development bias x (1 + 0.001 x SP3-241-001 to -004) + these values
006	Offset: M	*ENG	
007	Offset: C	*ENG	
008	Offset: Y	*ENG	

3242	**[LD Power Setting]**		
	Adjusts the coefficient for LD power control value at the process control.		
001	Coefficient: Bk	*ENG	[-1000 to 1000 / **79** / 1 /step]
002	Coefficient: M	*ENG	
003	Coefficient: C	*ENG	
004	Coefficient: Y	*ENG	
005	Offset: Bk	*ENG	[-1000 to 1000 / **62** / 1 /step]
006	Offset: M	*ENG	
007	Offset: C	*ENG	
008	Offset: Y	*ENG	

3251	**[Coverage]**		
	These (-001 to -016) are coefficients for SP3-222-009 to -012.		
001	Latest: Bk	*ENG	Displays the latest coverage for each color.

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002	Latest: M	*ENG	[0 to 9999 / **0** / 1 cm^2/step]
003	Latest: C	*ENG	
004	Latest: Y	*ENG	
005-008	Displays the average coverage of each color for the Vtref correction. "Average S" is defined when the number of developed pages does not reach the number specified with SP3251-017.		
005	Average S: Bk	*ENG	[0 to 100 / **5** / 0.01 %/step]
006	Average S: M	*ENG	
007	Average S: C	*ENG	
008	Average S: Y	*ENG	
009-012	Displays the average coverage of each color for the Vtref correction. "Average M" is defined when the number of developed pages does not reach the number specified with SP3251-018.		
009	Average M: Bk	*ENG	[0 to 100 / **5** / 0.01 %/step]
010	Average M: M	*ENG	
011	Average M: C	*ENG	
012	Average M: Y	*ENG	
013-016	Displays the average coverage of each color for the Vtref correction. "Average L" is defined when the number of developed pages does not reach the number specified with SP3-251-019.		
013	Average L: Bk	*ENG	[0 to 100 / **5** / 0.01 %/step]
014	Average L: M	*ENG	
015	Average L: C	*ENG	
016	Average L: Y	*ENG	
017-019	Adjusts the threshold for SP3-251-005 to -016.		

017	Total Page Setting: S	*ENG	[1 to 100 / **10** / 1 sheet/step]
018	Total Page Setting: M	*ENG	[1 to 500 / **10** / 1 sheet/step]
019	Total Page Setting: L	*ENG	[1 to 999 / **50** / 1 sheet/step]
020-023	Adjusts the threshold for SP3-251-024 to -027.		
020	Total Page Setting: S2	*ENG	[1 to 100 / **20** / 1 sheet/step]
021	Total Page Setting: M2	*ENG	[1 to 500 / **10** / 1 sheet/step]
022	Total Page Setting: L2	*ENG	[1 to 999 / **50** / 1 sheet/step]
024-027	Displays the latest coverage ratio for each color.		
024	Latest Coverage: Bk	*ENG	[0 to 100 / - / 0.01 %/step]
025	Latest Coverage: M	*ENG	
026	Latest Coverage: C	*ENG	
027	Latest Coverage: Y	*ENG	
028	Displays the threshold of whether to perform developer churning or not.		
	DevMix Threshold	*ENG	[0 to 100 / **20** / 1 %/step]

3311	**[ID Sensor Detection Value: Voffset]**		
	Displays the ID sensor (regular) offset voltage for Vsg adjustments.		
001	Voffset reg: Bk	*ENG	[0 to 5 / **0** / 0.01 V/step]
002	Voffset reg: M	*ENG	[0 to 5.5 / **0** / 0.01 V/step]
003	Voffset reg: C	*ENG	
004	Voffset reg: Y	*ENG	
005-007	Displays the ID sensor (diffusion) offset voltage for Vsg adjustments.		
005	Voffset dif: M	*ENG	[0 to 5.5 / **0** / 0.01 V/step]
006	Voffset dif: C	*ENG	

007	Voffset dif: Y	*ENG	
008-010	Displays the ID sensor offset voltage for Vsg adjustments.		
008	Voffset TM (Front)	*ENG	[0 to 5.5 / **0** / 0.01 V/step]
009	Voffset TM (Center)	*ENG	
010	Voffset TM (Rear)	*ENG	

3321	**[Vsg Adjustment: Execution]**		
010	P/TM Sensor All	-	Execute the ID sensor initialization setting for all sensors

3322	**[Vsg Adjustment Result: Vsg]**		
	Displays the result value of the Vsg adjustment for each sensor.		
001	Vsg reg: Bk	*ENG	[0 to 5.5 / **0** / 0.01 V/step]
002	Vsg reg: M	*ENG	
003	Vsg reg: C	*ENG	
004	Vsg reg: Y	*ENG	
005	Vsg dif: M	*ENG	
006	Vsg dif: C	*ENG	
007	Vsg dif: Y	*ENG	
008	Vsg TM (Front)	*ENG	
009	Vsg TM (Center)	*ENG	
010	Vsg TM (Rear)	*ENG	

3323	**[Vsg Adjustment Result: Ifsg] DFU**		
001	Ifsg: Bk	*ENG	[0 to 50 / **0** / 0.1 mA/step]

002	Ifsg: M	*ENG	
003	Ifsg: C	*ENG	
004	Ifsg: Y	*ENG	
005	Ifsg TM (Front)	*ENG	[0 to 50 / **0** / 0.1 mA/step]
006	Ifsg TM (Center)	*ENG	
007	Ifsg TM (Rear)	*ENG	

3324	**[Vsg Adjustment: Set] DFU**		
003	Vofset Error Counter	*ENG	[0 to 99 / **0** / 0.1 time/step]
004	Vofset Threshold	*ENG	[0 to 5 / **1** / 0.01 V/step]
005	Vsg Upper Threshold	*ENG	[0 to 5 / **4.5** / 0.01 V/step]
006	Vsg Lower Threshold	*ENG	[0 to 5 / **3.5** / 0.01 V/step]

3325	**[Vsg Adjustment Result]**		
	Displays the result of the Vsg adjustment. The displayed numbers mean the result of each sensor (sensor for Front, sensor for Bk, sensor for Cyan, sensor for Center, sensor for Magenta, sensor for Yellow and sensor for Rear).		
001	History: Latest	*ENG	[111111 to 999999 / **999999** / 1 /step] 9: Unexpected error 3: Offset voltage error 2: Vsg adjustment value error 1: O.K
002	Result: Latest 1	*ENG	
003	Result: Latest 2	*ENG	
004	Result: Latest 3	*ENG	
005	Result: Latest 4	*ENG	
006	Result: Latest 5	*ENG	
007	Result: Latest 6	*ENG	

008	Result: Latest 7	*ENG	
009	Result: Latest 8	*ENG	
010	Result: Latest 9	*ENG	

3361	**[ID Sensor Sensitivity: Display] Not Used**		
001	K2K (Latest)	*ENG	[0 to 5 / - / 0.0001 /step]
002	K5K (Latest)	*ENG	
003	K2M (Latest)	*ENG	
004	K5M (Latest)	*ENG	
005	K2C (Latest)	*ENG	
006	K5C (Latest)	*ENG	
007	K2Y (Latest)	*ENG	
008	K5Y (Latest)	*ENG	

3362	**[ID Sensor Sensitivity: Setting] DFU**		
001	K2: Upper	*ENG	[0 to 1 / **0.32** / 0.01 /step]
002	K2: Lower	*ENG	[0 to 1 / **0.22** / 0.01 /step]
003	K5: Upper	*ENG	[0 to 10 / **5** / 0.01 /step]
004	K5: Lower	*ENG	[0 to 1 / **0.5** / 0.01 /step]
005	Kn: Upper	*ENG	[0 to 1 / **0.1** / 0.01 /step]
006	Kn: Lower	*ENG	[0 to 1 / **1** / 0.01 /step]
007	K5 Edit Point	*ENG	[0 to 1 / **0.15** / 0.01 /step]
008	K5 Target Voltage	*ENG	[0 to 5 / **1.63** / 0.01 V/step]
009	K5 Approximate Method	*ENG	[0 to 1 / **1** / 1 /step]

			0:Linear, 1: Curve
010	K2: Upper/Lower Limit Coefficient 1	*ENG	[0 to 1 / **0** / 0.01 /step]
011	K2: Upper Limit Correction	*ENG	[–0.2 to 0.4 / **0.07** / 0.01 /step]
012	K2: Lower Limit Correction	*ENG	[–0.2 to 0.4 / **–0.07** / 0.01 /step]
013	Diffusion Correction: M	*ENG	[0.75 to 1.35 / **1** / 0.01 /step]
014	Diffusion Correction: C	*ENG	
015	Diffusion Correction: Y	*ENG	
016	K2: Check: M	*ENG	[0 to 1 / **0.25** / 0.001 /step]
017	K2: Check: C	*ENG	
018	K2: Check: Y	*ENG	

3363	**[ID Pattern Timing Setting] DFU**		
001	Scan YCMBk	*ENG	Adjusts the detection timing for the process control pattern. [-500 to 500 / **13.7** / 1 mm/step]
002	Paper Transfer Release Start Time	*ENG	Adjusts the timing when the paper transfer unit is kept away from the image transfer belt. [0 to 2500 / **0** / 1 msec/step]
003	Delay Time	*ENG	Adjusts the processing timing for the process control pattern. [0 to 2500 / **880** / 1 msec/step]
004	MUSIC Delay Time	*ENG	Adjusts the processing timing for the pattern that is used for the line position adjustment. [-2500 to 2500 / **300** / 1 msec/step]

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3371	**[M/A Calculation] DFU**		
001	Correction Coefficient: Bk	*ENG	[0.5 to 2.0 / **1** / 0.01 /step]
002	Correction Coefficient: M	*ENG	[0.5 to 2.0 / **0.95** / 0.01 /step]
003	Correction Coefficient: C	*ENG	[0.5 to 2.0 / **1** / 0.01 /step]
004	Correction Coefficient: Y	*ENG	[0.5 to 2.0 / **1.02** / 0.01 /step]

3401	**[Fixed Supply Mode]**		
	Adjusts the toner supply rate in the fixed toner supply mode.		
001	Fixed Rate: Bk	*ENG	[0 to 100 / **5** / 1 %/step] These SPs are used only when SP3-044 is set to "1".
002	Fixed Rate: M	*ENG	
003	Fixed Rate: C	*ENG	
004	Fixed Rate: Y	*ENG	

3411	**[Toner Supply Rate: Display]**		
	Displays the current toner supply rate.		
001	Latest: Bk	*ENG	[0 to 100 / **-** / 1 %/step]
002	Latest: M	*ENG	
003	Latest: C	*ENG	
004	Latest: Y	*ENG	

3421	**[Toner Supply Range]**		
001	Upper Limit: Bk	*ENG	Adjusts the toner supply rate during printing. [0 to 100 / **100** / 1%/step]
002	Upper Limit: M	*ENG	
003	Upper Limit: C	*ENG	

004	Upper Limit: Y	*ENG	
005	Minimum Supply Time: Bk	*ENG	Adjusts the minimum toner supply time. [0 to 1000 / **0** / 1 msec/step]
006	Minimum Supply Time: M	*ENG	
007	Minimum Supply Time: C	*ENG	
008	Minimum Supply Time: Y	*ENG	

3451	**[Toner Supply Carry Over: Display] DFU**		
001	Bk	*ENG	[0 to 10000 / **0** / 1 msec/step]
002	M	*ENG	
003	C	*ENG	
004	Y	*ENG	

3452	**[Toner Supply Carry Over: Setting] DFU**		
001	Maximum: Bk	*ENG	[0 to 10000 / **1000** / 1 msec/step]
002	Maximum: M	*ENG	
003	Maximum: C	*ENG	
004	Maximum: Y	*ENG	

3501	**[Process Control Target M/A]**		
	Adjusts the target M/A.		
001	Maximum M/A: Bk	*ENG	[0 to 1 / **0.444** / 0.001 mg/cm^2/step]
002	Maximum M/A: M	*ENG	
003	Maximum M/A: C	*ENG	
004	Maximum M/A: Y	*ENG	

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3510	**[Pixel Adj. Sheet Counter: Display]**		
	Displays the total page counter for each adjustment mode.		
001	Potential Control: BW	*ENG	[0 to 2000 / **0** / 1 page/step]
002	Potential Control: FC	*ENG	
003	Power ON: BW	*ENG	
004	Power ON: FC	*ENG	
005	MUSIC: BW	*ENG	
006	MUSIC: FC	*ENG	
007	Vsg Adj.	*ENG	
008	Charge AC Control	*ENG	
009	MUSIC: Power ON: BW	*ENG	
010	MUSIC: Power ON: FC	*ENG	

3511	**[Execution Interval: Setting]**		
	Adjusts the threshold for each adjustment mode.		
001	Job End: Potential Control: BW	*ENG	[0 to 2000 / **250** / 1 page/step]
002	Job End: Potential Control: FC	*ENG	[0 to 2000 / **100** / 1 page/step]
003	Interrupt: Potential Control: BW	*ENG	[0 to 2000 / **500** / 1 page/step]
004	Interrupt: Potential Control: FC	*ENG	[0 to 2000 / **200** / 1 page/step]
005	Initial: Potential Control: BW	*ENG	[0 to 2000 / **250** / 1 page/step]
006	Initial: Potential Control: FC	*ENG	[0 to 2000 / **100** / 1 page/step]
007	Vsg Adj. Counter	*ENG	[0 to 2000 / **0** / 1 page/step]
008	Charge AC Control Counter	*ENG	
019	Environmental Correction	*ENG	[0 or 1 / **1** / 1 /step]

			0: Not Correct (OFF), 1: Correct (ON)
020	Gamma Correction	*ENG	[0 or 1 / **1** / 1 /step] 0: Not Correct (OFF), 1: Correct (ON)
021	Non-use Time Correction	*ENG	[0 or 1 / **1** / 1 /step] 0: Not Correct (OFF), 1: Correct (ON)
022	Correction Coefficient 1: JE: BW	*ENG	[0 to 1 / **0.2** / 0.01 page/step]
023	Correction Coefficient 2: JE: BW	*ENG	[0 to 1 / **1** / 0.01/step]
024	Correction Coefficient 1: JE: FC	*ENG	[0 to 1 / **0.5** / 0.01/step]
025	Correction Coefficient 2: JE: FC	*ENG	[0 to 1 / **1** / 0.01/step]
026	Correction Coefficient 1: Interrupt: BW	*ENG	[0 to 1 / **0.1** / 0.01/step]
027	Correction Coefficient 2: Interrupt: BW	*ENG	[0 to 1 / **1** / 0.01/step]
028	Correction Coefficient 1: Interrupt: FC	*ENG	[0 to 1 / **0.25** / 0.01/step]
029	Correction Coefficient 2: Interrupt: FC	*ENG	[0 to 1 / **1** / 0.01/step]
030	Max. Number Correction Threshold	*ENG	[0 to 99 / **5** / 1/step]
031	Max. Number Correction Counter	*ENG	[0 to 255 / **0** / 1/step]

3512	**[Image Quality Adj.: Interval]**

	Adjusts the timing for execution of process control and line position adjustment.		
001	During Job	*ENG	[0 to 100 / **30** / 1 page/step]
002	During Stand-by	*ENG	[0 to 100 / **10** / 1 minute/step]

3513	**[PCU Motor Stop Time: Bk]**		
	Displays the last time that the PCU motors stopped. These are used for process control execution timing.		
001	Year	*ENG	[0 to 99 / **0** / 1/step]
002	Month	*ENG	[1 to 12 / **1** / 1/step]
003	Date	*ENG	[1 to 31 / **1** / 1/step]
004	Hour	*ENG	[0 to 23 / **0** / 1/step]
005	Minute	*ENG	[0 to 59 / **0** / 1/step]

3514	**[Environmental Display: Job End]**		
	Displays the environmental conditions for the last job. These are used for process control execution timing.		
001	Temperature	*ENG	[-1280 to 1270 / **0** / 0.1°C/step]
002	Relative Humidity	*ENG	[0 to 1000 / **-** / 0.1%RH/step]
003	Absolute Humidity	*ENG	[0 to 1000 / **-** / 0.1 g/cm^3/step]

3515	**[Execution Interval: Display]**		
	Displays the current interval for process control execution. When the machine calculates the timing for process control, it uses a number of conditions. These are the results after considering all the conditions.		
001	Job End: Potential	*ENG	[0 to 2000 / **500** / 1 page/step]

	Control: BW		
002	Job End: Potential Control: FC	*ENG	[0 to 2000 / **200** / 1 page/step]
003	Interrupt: Potential Control: BW	*ENG	[0 to 2000 / **500** / 1 page/step]
004	Interrupt: Potential Control: FC	*ENG	[0 to 2000 / **200** / 1 page/step]

3516	**[Refresh Mode] DFU**		
	While making prints with low coverage, the developer is agitated with less toner consumption and the toner carrier attraction tends to increase. This may cause low image density or poor transfer (white dots). To prevent this, the coagulated toner or overcharged toner has to be consumed by performing the refresh mode.		
001	Dev. Motor Rotation: Display: Bk	*ENG	[0 to 1000 / **0** / 0.1 m/step]
002	Dev. Motor Rotation: Display: M	*ENG	
003	Dev. Motor Rotation: Display: C	*ENG	
004	Dev. Motor Rotation: Display: Y	*ENG	
005	Rotation Threshold	*ENG	[0 to 1000 / **1** / 1 m/step]
006	Pixel Coverage Sum: Bk	*ENG	[0 to 65535 / **0** / 1 cm^2/step]
007	Pixel Coverage Sum: M	*ENG	
008	Pixel Coverage Sum: C	*ENG	
009	Pixel Coverage Sum: Y	*ENG	
010	Required Area: Bk	*ENG	[0 to 65535 / **0** / 1 cm^2/step]
011	Required Area: M	*ENG	
012	Required Area: C	*ENG	

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013	Required Area: Y	*ENG	
014	Refresh Threshold: Bk	*ENG	[0 to 255 / **34** / 1 cm^2/m/step]
015	Refresh Threshold: M	*ENG	
016	Refresh Threshold: C	*ENG	
017	Refresh Threshold: Y	*ENG	
018	Pattern Generation Number: Bk	*ENG	[0 to 255 / **0** / 1 time/step]
019	Pattern Generation Number: M	*ENG	
020	Pattern Generation Number: C	*ENG	
021	Pattern Generation Number: Y	*ENG	
022	Pattern Generation Number: Upper limit	*ENG	[0 to 255 / **0** / 1 time/step]
023	Toner Consumption Pattern Area	*ENG	[10 to 2550 / **300** / 10 cm^2/step]
024	Supply Coefficient	*ENG	[0 to 2.55 / **1** / 0.01/step]
025	Job End Area Coefficient	*ENG	[0.1 to 25.5 / **1** / 0.1/step]
026	Job End Vb Coefficient	*ENG	[0 to 100 / **40** / 1%/step]
027	Job End Length	*ENG	[0 to 56 / **25** / 1mm/step]
028	Job End Supply	*ENG	[0 to 1 / 0.45 / 0.001 mg/cm^2/step]

3517	**[Blade damage prevention mode]**		
	Adjusts the threshold temperature for preventing the cleaning blade in the transfer belt cleaning unit from being damaged. If the temperature is above this value, toner is applied to the transfer belt at set intervals during the job to prevent the blade from flipping over.		
001	Execution Temp. Threshold	*ENG	[0 to 50/ **40** / 1°C/step]

3518	[Image Quality Adj. Execution Flag] DFU		
001	Toner End Recovery: Bk	*ENG	[0 or 1 / **0** / 1/step] 0: OFF. 1: ON
002	Toner End Recovery: M	*ENG	
003	Toner End Recovery: C	*ENG	
004	Toner End Recovery: Y	*ENG	
005	Vsg Adj.	*ENG	[0 or 1 / **0** / 1/step] 0: OFF. 1: ON
006	Developer Mixing	*ENG	[0 or 1 / **0** / 1/step] 0: OFF. 1: ON
007	Process Control	*ENG	[0 to 2 / **0** / 1/step] 0: OFF. 1: ON (once), 2: ON (twice)
008	MUSIC	*ENG	[0 to 2 / **0** / 1/step] 0: OFF. 1: ON (once), 2: ON (twice)
009	OPC Drive Control	*ENG	[0 or 1 / **0** / 1/step] 0: OFF. 1: ON
010	Charge AC Control	*ENG	[0 or 1 / **0** / 1/step] 0: OFF. 1: ON
011	Blade Damage Prevention	*ENG	[0 or 1 / **0** / 1/step] 0: OFF. 1: ON

3519	[Toner End Prohibition Setting]		
	Enables or disables each adjustment at toner near end.		
001	Process Control	*ENG	[0 or 1 / **1** / 1/step] 0: Permit (adjustment is done even toner near end condition) 1: Forbid (adjustment is not done at toner near end condition)
002	MUSIC	*ENG	
003	TC Adj.	*ENG	

3520	**[ITB Idling Number]**		
	Specifies the number of the ITB idling rotation for each condition.		
001	Temperature: H	*ENG	[0 or 3 / **0** / 1 revolution/step]
002	Temperature: M	*ENG	
003	Temperature: L	*ENG	
004	Temperature: L: Power ON	*ENG	

3521	**[Temperature Threshold]**		
	Specifies the threshold temperature for each condition. These settings affect the conditions of SP3-520. t1: Threshold between L (low temp.) and M (medium temp.) t2: Threshold between M (medium temp.) and H (high temps)		
001	Threshold: t2	*ENG	[20 or 30 / **25** / 1 deg/step]
002	Threshold: t1	*ENG	[0 or 15 / **15** / 1 deg/step]

3522	**[Initial Process Control Setting]**		
	Adjusts the threshold for the process control at power on. When the current condition has changed by more than the values of these SPs when compared with the conditions at the previous operation, the process control at power on is executed.		
002	Non-use Time Setting	*ENG	[0 to 1440 / **360** / 1 minute/step]
003	Temperature Range	*ENG	[0 to 99 / **10** / 1°C/step]
004	Relative Humidity Range	*ENG	[0 to 99 / **50** / 1 %RH/step]
005	Absolute Humidity Range	*ENG	[0 to 99 / **6** / 1 g/m^3/step]
100	[Rapi_timer]		

	Time Setting	*ENG	[0 to 255 / **30** / 1 sec/step]
	Adjusts the time-out time for the Rapi timer.		

3531	**[Non-use Time Process Control Setting]**		
	Adjusts the threshold for the process control at stand-by. When the current condition has changed by more than the values of these SPs when compared with the conditions at the previous operation, the process control at stand-by is executed.		
001	Non-use Time Setting	*ENG	[0 to 1440 / **360** / 1 minute/step]
002	Temperature Range	*ENG	[0 to 99 / **10** / 1°C/step]
003	Relative Humidity Range	*ENG	[0 to 99 / **50** / 1 %RH/step]
004	Absolute Humidity Range	*ENG	[0 to 99 / **6** / 1 g/m^3/step]
005	Maximum Execution Number	*ENG	Adjusts the maximum execution time for the process control at stand-by. [0 to 99 / **10** / 1 time/step]

3611	**[Development Gamma: Display/Set]**		
001	Bk (Current)	*ENG	Displays the current development gamma for each color. [0 to 5 / - / 0.01 mg/cm^2/kV /step]
002	M (Current)	*ENG	
003	C (Current)	*ENG	
004	Y (Current)	*ENG	
005	Bk (Target Display)	*ENG	Displays the target development gamma for each color. [0 to 5 / **0.85** / 0.01 mg/cm^2/kV /step]
006	M (Target Display)	*ENG	
007	C (Target Display)	*ENG	[0 to 5 / **0.8** / 0.01 mg/cm^2/kV /step]
008	Y (Target Display)	*ENG	[0 to 5 / **0.77** / 0.01 mg/cm^2/kV /step]

009	Bk (Standard Target Set)	*ENG	Displays the standard target development gamma for each color. [0 to 5 / **0.9** / 0.01 mg/cm^2/kV /step]
010	M (Standard Target Set)	*ENG	[0 to 5 / **0.8** / 0.01 mg/cm^2/kV /step]
011	C (Standard Target Set)	*ENG	
012	Y (Standard Target Set)	*ENG	
013	Environmental Correction	*ENG	Turns on or off the environmental correction for target development gamma. [0 or 1 / **1** / -] 0: Not Correct, 1: Correct
014	K (Max Correction)	*ENG	Adjusts the maximum correction value for each color. These SPs are effective only when the setting of SP3-611-013 is set to "1". [0 to 5 / **0.1** / 0.01 mg/cm^2/kv/step]
015	M (Max Correction)	*ENG	
016	C (Max Correction)	*ENG	
017	Y (Max Correction)	*ENG	
018	K (Max Abs Hum)	*ENG	Adjusts the maximum humidity correction value for each color. These SPs are effective only when the setting of SP3-611-013 is set to "1". [1 to 99 / **15** / 1 g/m^3/step]
019	M (Max Abs Hum)	*ENG	
020	C (Max Abs Hum)	*ENG	
021	Y (Max Abs Hum)	*ENG	

3612	**[Vk Display]**		
	Displays Vk for each color.		
001	Bk	*ENG	[-300 to 300 / - / 1 V/step]
002	M	*ENG	
003	C	*ENG	
004	Y	*ENG	

3621	**[Development DC Control: Display]** Plain: 205 (P2c)/230 (P2d) mm/sec, Thick 1: 154 mm/sec, Thick 2 & FINE: 77 mm/sec		
	Displays the development DC bias adjusted with the process control for each line speed and color.		
001	Plain: Bk	*ENG	[0 to 700 / **550** / 1 -V/step]
002	Plain: M	*ENG	
003	Plain: C	*ENG	
004	Plain: Y	*ENG	
005	Thick 1: Bk	*ENG	[0 to 700 / **550** / 1 -V/step]
006	Thick 1: M	*ENG	
007	Thick 1: C	*ENG	
008	Thick 1: Y	*ENG	
009	Thick 2 & FINE: Bk	*ENG	[0 to 700 / **550** / 1 -V/step]
010	Thick 2 & FINE: M	*ENG	
011	Thick 2 & FINE: C	*ENG	
012	Thick 2 & FINE: Y	*ENG	

3631	**[Charge DC Control: Display]** Plain: 205 (P2c)/230 (P2d) mm/sec, Thick 1: 154 mm/sec, Thick 2 & FINE: 77 mm/sec		
	Displays the charge DC voltage adjusted with the process control for each line speed and color.		
001	Plain: Bk	*ENG	[0 to 2000 / **690** / 1 -V/step]
002	Plain: M	*ENG	

003	Plain: C	*ENG	
004	Plain: Y	*ENG	
005	Thick 1 & FINE: Bk	*ENG	[0 to 2000 / **690** / 1 -V/step]
006	Thick 1 & FINE: M	*ENG	
007	Thick 1 & FINE: C	*ENG	
008	Thick 1& FINE: Y	*ENG	
009	Thick 2 & FINE: Bk	*ENG	[0 to 2000 / **690** / 1 -V/step]
010	Thick 2 & FINE: M	*ENG	
011	Thick 2 & FINE: C	*ENG	
012	Thick 2 & FINE: Y	*ENG	

3641	**[Charge AC Control: Display]** Plain: 205 (P2c)/230 (P2d) mm/sec		
	Displays the charge AC voltage adjusted with the process control for each color.		
001	Plain: Bk	*ENG	[0 to 3 / **1.75** / 0.01 kV/step]
002	Plain: M	*ENG	
003	Plain: C	*ENG	
004	Plain: Y	*ENG	

3651	**[LD Power Control: Display]** Plain: 205 (P2c)/230 (P2d) mm/sec, Thick 2 & FINE: 77 mm/sec		
	Displays the LD power adjusted for each environment.		
001	Plain: Bk	*ENG	[0 to 200 / **100** / 1 %/step]
002	Plain: M	*ENG	

003	Plain: C	*ENG	
004	Plain: Y	*ENG	
005	Thick 1: Bk	*ENG	[0 to 200 / **100** / 1 %/step]
006	Thick 1: M	*ENG	
007	Thick 1: C	*ENG	
008	Thick 1: Y	*ENG	
009	Thick 2 & FINE: Bk	*ENG	[0 to 200 / **100** / 1 %/step]
010	Thick 2 & FINE: M	*ENG	
011	Thick 2 & FINE: C	*ENG	
012	Thick 2 & FINE: Y	*ENG	

3710	**[HST Concentration Control: Set]** TD Sensor: Toner Concentration Control Setting		
	Selects the toner concentration control method by HST memory, which is in the TD sensor.		
001	Control Method: Selection	*ENG	[0 or 1 / **1** / -] 0: Not Use, 1: Use

3711	**[HST Concentration Control: Bk]**		
	Displays the factory settings of the black PCU.		
001	Vcnt	*ENG	[0 to 5 / **4** / 0.1 V/step]
002	Vt	*ENG	[0 to 5 / **2.5** / 0.1 V/step]
003	Sensitivity: HL	*ENG	[1.22 to 3.77 / **2.1** / 0.01 V/step]
004	Sensitivity: HM	*ENG	[0 to 2.55 / **1.05** / 0.01 V/step]
005	Sensitivity: ML	*ENG	
006	Set Detection	*ENG	[0 to 5 / **1** / 0.1 V/step]

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007	Without Developer	*ENG	[0 to 5 / **1.2** / 0.1 V/step]
008	With Developer	*ENG	[0 to 5 / **1.3** / 0.1 V/step]
009	Serial Number 1	*ENG	[0 to 255 / **-** / 1 V/step]
010	Serial Number 2	*ENG	
011	Adjustment: Vt	*ENG	[0 to 5 / **3** / 0.1 V/step]
012	Adjustment: Vtref	*ENG	[0 to 5 / **3** / 0.1 V/step]
013	Adjustment: Vtcnt	*ENG	[0 to 5 / **4** / 0.01 V/step]
014	Adjustment: Gamma	*ENG	[0 to 2.55 / **0** / 0.01 mg/cm^2/kV /step]
015	Adjustment: Vcnt Result	*ENG	[0 to 9 / **9** / 1 /step]

3712	**[HST Concentration Control: M]**		
	Displays the factory settings of the magenta PCU.		
001	Vcnt	*ENG	[0 to 5 / **4** / 0.1 V/step]
002	Vt	*ENG	[0 to 5 / **2.5** / 0.1 V/step]
003	Sensitivity: HL	*ENG	[1.22 to 3.77 / **2.1** / 0.01 V/step]
004	Sensitivity: HM	*ENG	[0 to 2.55 / **1.05** / 0.01 V/step]
005	Sensitivity: ML	*ENG	
006	Set Detection	*ENG	[0 to 5 / **1** / 0.1 V/step]
007	Without Developer	*ENG	[0 to 5 / **1.2** / 0.1 V/step]
008	With Developer	*ENG	[0 to 5 / **1.3** / 0.1 V/step]
009	Serial Number 1	*ENG	[0 to 255 / **-** / 1 V/step]
010	Serial Number 2	*ENG	
011	Adjustment: Vt	*ENG	[0 to 5 / **3** / 0.1 V/step]
012	Adjustment: Vtref	*ENG	[0 to 5 / **3** / 0.1 V/step]

013	Adjustment: Vtcnt	*ENG	[0 to 5 / **4** / 0.01 V/step]
014	Adjustment: Gamma	*ENG	[0 to 2.55 / **0** / 0.01 mg/cm^2/kV /step]
015	Adjustment: Vcnt Result	*ENG	[0 to 9 / **9** / 1 /step]

3713	**[HST Concentration Control: C]**		
	Displays the factory settings of the cyan PCU.		
001	Vcnt	*ENG	[0 to 5 / **4** / 0.1 V/step]
002	Vt	*ENG	[0 to 5 / **2.5** / 0.1 V/step]
003	Sensitivity: HL	*ENG	[1.22 to 3.77 / **2.1** / 0.01 V/step]
004	Sensitivity: HM	*ENG	[0 to 2.55 / **1.05** / 0.01 V/step]
005	Sensitivity: ML	*ENG	
006	Set Detection	*ENG	[0 to 5 / **1** / 0.1 V/step]
007	Without Developer	*ENG	[0 to 5 / **1.2** / 0.1 V/step]
008	With Developer	*ENG	[0 to 5 / **1.3** / 0.1 V/step]
009	Serial Number 1	*ENG	[0 to 255 / **-** / 1 V/step]
010	Serial Number 2	*ENG	
011	Adjustment: Vt	*ENG	[0 to 5 / **3** / 0.1 V/step]
012	Adjustment: Vtref	*ENG	[0 to 5 / **3** / 0.1 V/step]
013	Adjustment: Vtcnt	*ENG	[0 to 5 / **4** / 0.01 V/step]
014	Adjustment: Gamma	*ENG	[0 to 2.55 / **0** / 0.01 mg/cm^2/kV /step]
015	Adjustment: Vcnt Result	*ENG	[0 to 9 / **9** / 1 /step]

3714	**[HST Concentration Control: Y]**
	Displays the factory settings of the yellow PCU.

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001	Vcnt	*ENG	[0 to 5 / **4** / 0.1 V/step]
002	Vt	*ENG	[0 to 5 / **2.5** / 0.1 V/step]
003	Sensitivity: HL	*ENG	[1.22 to 3.77 / **2.1** / 0.01 V/step]
004	Sensitivity: HM	*ENG	[0 to 2.55 / **1.05** / 0.01 V/step]
005	Sensitivity: ML	*ENG	
006	Set Detection	*ENG	[0 to 5 / **1** / 0.1 V/step]
007	Without Developer	*ENG	[0 to 5 / **1.2** / 0.1 V/step]
008	With Developer	*ENG	[0 to 5 / **1.3** / 0.1 V/step]
009	Serial Number 1	*ENG	[0 to 255 / **-** / 1 V/step]
010	Serial Number 2	*ENG	
011	Adjustment: Vt	*ENG	[0 to 5 / **3** / 0.1 V/step]
012	Adjustment: Vtref	*ENG	[0 to 5 / **3** / 0.1 V/step]
013	Adjustment: Vtcnt	*ENG	[0 to 5 / **4** / 0.01 V/step]
014	Adjustment: Gamma	*ENG	[0 to 2.55 / **0** / 0.01 mg/cm^2/kV /step]
015	Adjustment: Vcnt Result	*ENG	[0 to 9 / **9** / 1 /step]

3800	**[Toner Collection Bottle Full Detection]**		
	Displays/ adjusts the toner collection bottle detection settings. These SPs are used for NRS.		
001	Condition	*CTL	[0 to 4 / **0** / 1 /step]
002	Detection Times	*CTL	[0 to 50 / **-** / 1 /step]
003	Print Page After Near Full	*CTL	[0 to 1000 / **0** / 1 sheet/step]
004	Pixel Count After Near Full	*CTL	[0 to 200000 / **-** / 1 cm^2/step]

005	Pixel Count After Replacement	*CTL	Displays the pixel counter after replacement of toner collection bottle. [0 to 200000 / **-** / 1 cm^2/step]
008	Coefficient	*ENG	[0.5 to 1.5 / **1** / 0.1 /step]
011	Notice Setting	*ENG	Enables or disables the calling for @Remote. [0 or 1 / **1** / -] 0: Enable @Remote calling 1: Disable @Remote calling
	NOTE: If the toner collection bottle has been replaced before the machine detects used toner near full when this setting is set to "0", the machine cannot detect toner collection bottle near full. In that case, set SP3-902-017 to "1".		
012	Day Threshold: Toner Collection bottle:NF	*ENG	[1 to 30 / **5** / 1 day/step]
	Sets the threshold days for the near-full display. The near-full of the toner collection bottle is displayed after the toner collection full sensor has detected the actuator in the toner collection bottle.		
013	Total:Toner Collection Bottle	*ENG	Displays the total amount of the used toner. [0 to 999999999 / **1** / 1]
014	Mechanism Full Detection Date	*ENG	Displays the date of the full detection fot the toner collection bottle.

3900	**[Toner Collection Bottle Full Detection]**		
	Turns toner collection bottle full detection on or off.		
001	ON/OFF Setting	*ENG	[0 or 1 / **1** / -] 0: OFF, 1: ON

3901	**[New PCU Detection]**

	Turns new PCU detection on or off.		
001	ON/OFF Setting	*ENG	[0 or 1 / **1** / -] 0: OFF, 1: ON

3902	**[Manual New Unit Set]**		
	Turns the new unit detection flag for each PM unit on or off. The use of these counters is explained in the PM section and in the relevant parts of section 3 (Replacement and Adjustment).		
001	Development Unit: Bk	*ENG	[0 or 1 / **0** / -] 0: OFF, 1: ON
002	Development Unit: Y	*ENG	
003	Development Unit: C	*ENG	
004	Development Unit: M	*ENG	
005	Developer: Bk	*ENG	[0 or 1 / **0** / -] 0: OFF, 1: ON
006	Developer: Y	*ENG	
007	Developer: C	*ENG	
008	Developer: M	*ENG	
009	PCU (Drum Unit): Bk	*ENG	[0 or 1 / **0** / -] 0: OFF, 1: ON
010	PCU (Drum Unit): Y	*ENG	
011	PCU (Drum Unit): C	*ENG	
012	PCU (Drum Unit): M	*ENG	
013	Image Transfer Unit	*ENG	[0 or 1 / **0** / -] 0: OFF, 1: ON Do not use 3902-013 if you only change the cleaning unit. 3902-015: This is for the image transfer belt cleaning unit.
014	Fusing Unit	*ENG	
015	Cleaning Unit	*ENG	
016	Paper Transfer Unit	*ENG	
017	Toner Collection Bottle	*ENG	

SP5-XXX (Mode)

5001	All Indicators On	*CTL	
	Lights the LCD and all LEDs on the operation panel to demonstrate that they are operating properly. [OFF/ON]		

5024	**[mm/inch Display Selection]**		
	Display units (mm or inch) for custom paper sizes.		
001	0:mm 1:inch	*CTL	0: mm (Europe/Asia) 1: inch (USA)

5045	**[Accounting Counter]**		
	Selects the counting method. **NOTE:** The counting method can be changed only once, regardless of whether the counter value is negative or positive.		
001	Counter Method	*CTL	[0 or 1 / **0** / -] 0: Developments 1: Prints

5047	**[Paper Display]**		
	Turns on or off the printed paper display on the LCD.		
001	-	*CTL	[0 or 1 / **0** / -] 0: OFF, 1: ON

5051	**[TonerRefillDetectionDisplay]**		
	Enables or disables the toner refill detection display.		

5051 1	Toner Refill Detection Display	*CTL	[0 or 1 / **0** / -] Alphanumeric 0: ON 1: OFF

5055	**[Display IP Address]**		
	Display or does not display the IP address on the LCD.		
001	-	*CTL	[0 or 1 / **0** / -] 0: OFF 1: ON

5056	**[Coverage Counter Display]**		
	Display or does not display the coverage counter on the LCD.		
001	-	*CTL	[0 or 1 / **0** / -] 0: Not display, 1: Display

5061	**[Toner Remaining Icon Display Change]**		
	Display or does not display the remaining toner display icon on the LCD.		
001	-	*CTL	[0 or 1 / **0** / -] 0: Not display, 1: Display

5062	**[Parts PM Display Setting]**		
	Display or does not display the PM part yield on the LCD.		
001	K Drum Unit	*CTL	[0 or 1 / **1** / -] 0: Not display, 1: Display
002	M Drum Unit	*CTL	
003	C Drum Unit	*CTL	
004	Y Drum Unit	*CTL	
005	K Dev Unit	*CTL	

006	M Dev Unit	*CTL	
007	C Dev Unit	*CTL	
008	Y Dev Unit	*CTL	
009	K Developer	*CTL	
010	M Developer	*CTL	
011	C Developer	*CTL	
012	Y Developer	*CTL	
013	ITB Unit	*CTL	
014	Belt Cleaning Unit	*CTL	
015	Fusing Unit	*CTL	
016	PTR Unit	*CTL	
017	Waster Toner Bottle	*CTL	

5066	**[Parts PM Menu Display Setting]** Display or does not display the “PM parts” buttonn on the LCD.		
001	-	*CTL	[0 or 1 / **1** / -] 0: Not display, 1: Display

5067	**[Parts PM System Setting]**		
	Selects the service maintenance or user maintenance for each PM parts. If the user service is selected, PM alart is displayed on the LCD.		
001	PCU (Drum Unit):Bk	*CTL	**[0: Service]** or [1: User]
002	PCU (Drum Unit):M	*CTL	
003	PCU (Drum Unit):C	*CTL	
004	PCU (Drum Unit):Y	*CTL	

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005	Dev Unit:Bk	*CTL	**[0: Service]** or [1: User]
006	Dev Unit:M	*CTL	
007	Dev Unit:C	*CTL	
008	Dev Unit:Y	*CTL	
009	Developer:Bk	*CTL	**[0: Service]** or [1: User]
010	Developer:M	*CTL	
011	Developer:C	*CTL	
012	Developer:Y	*CTL	
013	Int Trans Unit	*CTL	**[0: Service]** or [1: User]
014	Belt Cleaning Unit	*CTL	**[0: Service]** or [1: User]
015	Fusing Unit	*CTL	**[0: Service]** or [1: User]
016	Transfer Roller	*CTL	**[0: Service]** or [1: User]
017	WasteToner Bottle	*CTL	**[0: Service]** or [1: User]

5104*	A3/DLT Double Count **(SSP)**
	Specifies whether the counter is doubled for A3/DLT. “Yes” counts except from the bypass tray. When “Yes” is selected, A3 and DLT paper are counted twice, that is A4 x2 and LT x2 respectively.

5112	**[Non-Std. Paper Sel.]** Non-Standard Paper Selection
001	Determines whether a non-standard paper size can be input for the universal cassette trays (Tray 2, and Optional paper tray unit trays 1 and 2) [0 or 1/ **0** / -] 0: OFF 1: ON, If “1” is selected, the customer will be able to input a non-standard paper size using the UP mode.

5113	**[Optional Counter Type]**		
001	Default Optional Counter Type	*CTL	This program specifies the counter type. **0**: **None**, 1: Key card (RK 3, 4) 2: Key card (down), 3: Prepaid card 4: Coin rack, 5: MF key card 8: Key counter + Vendor 9: Bar-code Printer
002	External Optional Counter Type	*CTL	This program specifies the external counter type. **0**: **None** 1: Expansion Device 1 2: Expansion Device 2 3: Expansion Device 3

5114	**[Optional Counter I/F]**		
001	MF Key Card Extension	*CTL	[**0: Not installed/** 1: Installed (scanning accounting)]

5118	**[Disable Copying]**	*CTL	[**0**: Not disabled/ 1: Disabled]
001	This program disables copying.		

5120	**[Mode Clear Opt. Counter Removal]**	*CTL	[**0**: **Yes (removed)**/ 1: Standby (installed but not used)/ 2: No (not removed)]
001	This program updates the information on the optional counter. When you install or remove an optional counter, check the settings.		

5121	**[Counter Up Timing]**	*CTL	[**0: Feed**/ 1: Exit]
001	This program specifies when the counter goes up. The settings refer to “paper feed” and “paper exit” respectively.		

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5126	**[F Size Original Setting]**	*ENG	[0 to 2 / **0** / 1 /step] 0: 8 1/2" x 13" (Foolscap) 1: 8 1/4" x 13" (Folio) 2: 8" x 13" (F)
001	Selects F size original setting.		

5127	**[APS Mode]**	*CTL	[**0**: Not disabled/ 1: Disabled]
001	This program disables the APS.		

5128	**[Code Mode With Key/Card Option]**	*CTL	-
001	**DFU**		

5131	**[Paper Size Type Selection]**	*ENG	[0: JP (Japan)/ 1: NA / 2: EU]
001	The program selects a paper size system from the following alternatives: the AB system (0), the LT system (1), and the AF system (2).		

5148	**Size Detection Off**	*CTL	[**0**: OFF/ 1: ON]
	0: Detecte 1: Not Detecte		

5150	**[By-Pass Length Setting]**	*CTL	[**0**: OFF/ 1: ON]
001	Determines whether the transfer sheet from the by-pass tray is used or not. Normally the paper length for sub scanning paper from the by-pass tray is limited to 600 mm, but this can be extended with this SP to 1260 mm.		

5162	**[App. Switch Method]**	*CTL	[**0**: Soft Key Set/ 1: Hard Key Set]

001	This program specifies the switch that selects an application program.

5167	**[Fax Printing Mode at Optional]**		
	Enables or disables the automatic print out without an accounting device. This SP is used when the receiving fax is accounted by an external accounting device.		
001	Fax Printing Mode at Optional Counter Off	*CTL	[0 or 1 / **0** / -] 0: Automatic printing 1: No automatic printing

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.		
001	CE Login	*CTL	[0 or 1 / **0** / -] 0: Disabled 1: Enabled

5179	**[By-pass Size Error Detection]**		
	Turns on or off the by-pass tray size error message.		
001	-	*ENG	[0 or 1 / **0** / 1/step] 0: OFF 1: ON (Paper size error message is displayed when the paper jam occurs due to the wrong direction of set paper in by-pass mode.)

5181	**[Size Adjust]**		
	Adjusts the paper size for each tray.		
001	Paper TRAY 1	*ENG	[0 to 3 / **0 (EU/ASIA), 1 (NA)** / 1 /step]

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			0: A4 LEF, 1: LT LEF, 2: B5 LEF, 3: A5 LEF
002	TRAY 2: 1	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A4 LEF, 1: LT LEF
003	TRAY 2: 2	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A3, 1: DLT
004	TRAY 2: 3	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B4, 1: LG
005	TRAY 2: 4	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B5 LEF, 1: Exe LEF
006	TRAY 3/T-LCT: 1	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A4 LEF, 1: LT LEF
007	TRAY 3: 2	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A3, 1: DLT
008	TRAY 3: 3	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B4, 1: LG
009	TRAY 3: 4	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B5 LEF, 1: Exe LEF
010	TRAY 4: 1	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A4 LEF, 1: LT LEF
011	TRAY 4: 2	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A3, 1: DLT
012	TRAY 4: 3	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B4, 1: LG
013	TRAY 4: 4	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B5 LEF, 1: Exe LEF
014	TRAY 5: 1	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: A4 LEF, 1: LT LEF
015	TRAY 5: 2	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -]

			0: A3, 1: DLT
016	TRAY 5: 2	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B4, 1: LG
017	TRAY 5: 4	*ENG	[0 or 1 / **0 (EU/ASIA), 1 (NA)** / -] 0: B5 LEF, 1: Exe LEF
018	LCT	*ENG	[0 to 2 / **0 (EU/ASIA), 1 (NA)** / -] 0: A4LEF, 1: LTLEF, 2: B5LEF

5186	**[RK 4]**		
	Enables or disables the prevention for RK4 (accounting device) disconnection. If the RK4 is disconnected for 10 seconds when this SP is set to "1 (Enable)", the machine automatically jams a sheet of paper and stops.		
001	-	*ENG	[0 or 1 / **0** / 1/step] 0: Disable 1: Enable

5188	**[Copy NvVersion]**		
	Displays the version number of the NVRAM on the controller board.		
001	-	-	-

5191	**[Mode Set] DFU**		
001	-	*CTL	[0 or 1 / **1** / -] 0: Off, 1: On
	Enables or disables the STR (Suspend to RAM) mode.		

5195	**[Limitless SW] DFU**		
001	-	*CTL	[0 or 1 / **1** / -] 0: Productivity priority 1: Tray priority
	Selects the paper feed mode. **Productivity priority:** This changes the feeding tray as soon as the machine detects the priority tray even the paper still remains in the feeding tray. **Tray priority**: This changes the feeding tray after the paper in the tray where the machine has been feeding paper has been run out of. This SP is activated only when a customer selects the "Auto Paper Selsct".		

5199	**[Paper Exit After Staple End.]**		
001	-	*CTL	[0 or 1 / **0** / -] 0: OFF, 1: ON
	Enables or disables the paper feeding out from the finisher without stapling. ▪ If this setting is "1: ON", paper is fed out without stapling at the maximum number of the finisher stapling when the machine gets a multiple printing job (over maximum number). ▪ If this setting is "0: OFF", paper is fed out with stapling at the maximum number of the finisher stapling when the machine gets a multiple printing job (over maximum number).		

5302	**[Set Time]**
	Adjusts the RTC (real time clock) time setting for the local time zone. Examples: For Japan (+9 GMT), enter 540 (9 hours x 60 min.) DOM: +540 (Tokyo) NA: -300 (New York) EU: + 60 (Paris) CH: +480 (Peking)

	TW: +480 (Taipei) AS: +480 (Hong Kong)		
002	Time Difference	*CTL # [-1440 to 1440 / **Area** / 1 min./step]	

5307	**[Summer Time]**		
001	Setting		[0 to 1 / **NA, EU, ASIA** / 1 /step] 0: Disabled 1: Enabled NA and EUR: 1, ASIA: 0
	Enables or disables the summer time mode. Note ▪ Make sure that both SP5-307-3 and -4 are correctly set. Otherwise, this SP is not activated even if this SP is set to "1".		
003	Rule Set (Start)		
	Specifies the start setting for the summer time mode. There are 8 digits in this SP. For months 1 to 9, the "0" cannot be input in the first digit, so the eight-digit setting for -2 or -3 becomes a seven-digit setting. 1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [1 to 5] 4th digit: The day of the week. [0 to 6 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] 7th digit: The length of the advanced time. [0 to 9 / 1 hour /step] 8th digit: The length of the advanced time. [0 to 5 / 10 minutes /step] ▪ The digits are counted from the left. ▪ Make sure that SP5-307-1 is set to "1".		
	For example: 3500010 (EU default) The timer is advanced by 1 hour at am 0:00 on the 5th Sunday in March		
004	Rule Set (End)	-	-
	Specifies the end setting for the summer time mode. There are 8 digits in this SP.		

	1st and 2nd digits: The month. [1 to 12] 3rd digit: The week of the month. [0 to 5] 4th digit: The day of the week. [0 to 7 = Sunday to Saturday] 5th and 6th digits: The hour. [00 to 23] The 7th and 8 digits must be set to "00". ▪ The digits are counted from the left. ▪ Make sure that SP5-307-1 is set to "1".

5401	**[Access Control]**		
	When installing the SDK application, SAS (VAS) adjusts the following settings. **DFU**		
162	Extend Certification Detail	*CTL	Bit 0: Log-out without an IC card **0: Not allowed (default)** 1: Allowed
	Selects the log out type for the extend authentication device.		
200	SDK1 UniqueID	*CTL	"SDK" is the "Software Development Kit". This data can be converted from SAS (VAS) when installed or uninstalled. **(DFU)**
201	SDK1 Certification Method	*CTL	
210	SDK2 UniqueID	*CTL	
211	SDK2 Certification Method	*CTL	
220	SDK3 UniqueID	*CTL	
221	SDK3 Certification Method	*CTL	
230	SDK certification device	*CTL	
240	Detail Option	*CTL	-
	Enalbes or disables the log out confirmation option. ▪ Bit 0: Log out confirmation option **0: Enable (default)**, 1: Disable		

	Selects the automatic log out time. ▪ Bit 1 and 2: Automatic log out timer reduction **00: 60 seconds (default)**, 01: 10 seconds, 10: 20 seconds, 11: 30 seconds

5404	**[User Code Count Clear]**		
001	UCodeCtrClr		Clears all counters for users.

5411	**[LDAP Certification]**		
004	Easy Certification	*CTL	Determines whether easy LDAP certification is done. [0 or 1 / **1** / -] 1: On, 0: Off
005	Password Null Not Permit	*CTL	This SP is referenced only when SP5411-4 is set to "1" (On). [0 or 1 / **0** / -] 0: Password NULL not permitted. 1: Password NULL permitted.

5413	**[Lockout Setting]**		
001	Lockout On/Off	*CTL	Switches on/off the lock on the local address book account. [0 or 1 / **0** / -] 0: Off, 1: On
002	Lockout Threshold	*CTL	Sets a limit on the frequency of lockouts for account lockouts. [1 to 10 / **5** / 1/step]
003	Cancellation On/Off	*CTL	Determines whether the system waits the prescribed time for input of a correct user ID and password after an account lockout has occurred. [0 or 1 / **0** / -]

			0: Off (no wait time, lockout not cancelled) 1: On (system waits, cancels lockout if correct user ID and password are entered.
004	Cancellation Time	*CTL	Determines the length of time that the system waits for correct input of the user ID and password after a lockout has occurred. This setting is used only if SP5413-3 is set to "1" (on). [1 to 999 / **60** / 1 min./step]
005	Counter Clear Time	*CTL	Not Used

5414	**[Access Mitigation]**		
001	Mitigation On/Off	*CTL	Switches on/off masking of continuously used IDs and passwords that are identical. [0 or 1 / **0** / -] 0: Off, 1: On
002	Mitigation Time	*CTL	Sets the length of time for excluding continuous access for identical user IDs and passwords. [0 to 60 / **15** / 1 min./step]

5415	**[Password Attack]**		
001	Permissible Number	*CTL	Sets the number of attempts to attack the system with random passwords to gain illegal access to the system. [0 to 100 / **30** / 1 attempt/step]
002	Detect Time	*CTL	Sets the time limit to stop a password attack once such an attack has been detected. [1 to 10 / **5** / 1 sec./step]

5416	[Access Information]		
001	Access User Max Num	*CTL	Limits the number of users used by the access exclusion and password attack detection functions. [50 to 200 / **200** / 1 users/step]
002	Access Password Max Num	*CTL	Limits the number of passwords used by the access exclusion and password attack detection functions. [50 to 200 / **200** / 1 password/step]
003	Monitor Interval	*CTL	Sets the processing time interval for referencing user ID and password information. [1 to 10 / **3** / 1 sec./step]

5417	[Access Attack]		
001	Access Permissible Number	*CTL	Sets a limit on access attempts when an excessive number of attempts are detected for MFP features. [0 to 500 / **100** / 1/step]
002	Attack Detect Time	*CTL	Sets the length of time for monitoring the frequency of access to MFP features. [10 to 30 / **10** / 1 sec./step]
003	Productivity Fall Wait	*CTL	Sets the wait time to slow down the speed of certification when an excessive number of access attempts have been detected. [0 to 9 / **3** / 1 sec./step]
004	Attack Max Num	*CTL	Sets a limit on the number of requests received for certification in order to slow down the certification speed when an excessive number of access attempts have been detected.

			[50 to 200 / **200** / 1 attempt/step]

5420	**[User Authentication]**		
	These settings should be done with the System Administrator. **Note**: These functions are enabled only after the user access feature has been enabled.		
041	Printer	*CTL	Determines whether certification is required before a user can use the printer applications. [0 or 1/ **0** /1] 0: On, 1: Off
051	SDK1	*CTL	[0 or 1 / **0** / 1] 0: ON. 1: OFF Determines whether certification is required before a user can use the SDK application.
061	SDK2		
071	SDK3		

5481	**[Authentication Error Code]**		
	These SP codes determine how the authentication failures are displayed.		
001	System Log Disp	*CTL	Determines whether an error code appears in the system log after a user authentication failure occurs. [0 or 1/ **0** /1] 0: Off, 1: On
002	Panel Disp	*CTL	Determines whether an error code appears on the operation panel after a user authentication failure occurs. [0 or 1/ **1** /1] 1: On, 0: Off

5501	**[PM Alarm]**	*CTL	-
001	PM Alarm Level	[0 to 9999 / **0** / 1 /step] 0: Alarm off 1 to 9999: Alarm goes off when **Value (1 to 9999) x 1000** ≥ **PM counter**	

5504	**[Jam Alarm]**	*CTL	-
001	Sets the alarm to sound for the specified jam level (document misfeeds are not included). [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. The error alarm counter counts "1" when any SC is detected. However, the error alarm counter decreases by "1" when an SC is not detected during a set number of copied sheets (for example, default 1500 sheets). The error alarm occurs when the SC error alarm counter reaches "5".		
001	-	*CTL	[0 to 255 / **P2c: 50, P2d: 100** / 100 copies /step]

5507	**[Supply Alarm]**	*CTL	-
001	Paper Supply Alarm	**0**: Off, 1: On, **DFU**	
002	Staple Supply Alarm	**0**: Off, 1: On, **Japan only**	
003	Toner Supply Alarm	**0**: Off, 1: On, **DFU**	
080	Toner Call Timing	Changes the timing of the “Toner Supply Call” via	

		the NRS, when the following conditions occur. **0: Toner is replaced (default)** 1: Toner near end or End
128	Interval :Others	[250 to 10000 / **1000** / 1 /step] **DFU**
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]**	*CTL	-
001*	Jam Remains	0: Disable, **1**: Enable	
	Enables/disables initiating a call for an unattended paper jam.		
002*	Continuous Jams	0: Disable, **1**: Enable	
	Enables/disables initiating a call for consecutive paper jams.		
003*	Continuous Door Open	0: Disable, **1**: Enable	
	Enables/disables initiating a call when the front door remains open.		
011*	Jam Detection: Time Length	[3 to 30 / **10** / 1 minute /step]	
	Sets the time a jam must remain before it becomes an “unattended paper jam”. This setting is enabled only when SP5508-004 is set to "1".		
012*	Jam Detection: Continuous	[2 to 10 / **5** / 1 /step]	

	Count	
	Sets the number of consecutive paper jams required to initiate a call. This setting is enabled only when SP5508-004 is set to "1".	
013*	Door Open: Time Length	[3 to 30 / **10** / 1 /step]
	Sets the length of time the door remains open before the machine initiates a call. This setting is enabled only when SP5-508-004 is set to "1".	

5515	**[SC/Alarm Setting]**	*CTL	-
	With NRS (New Remote Service) in use, these SP codes can be set to issue an SC call when an SC error occurs. If this SP is switched off, the SC call is not issued when an SC error occurs.		
001	SC Call		[0 or 1 / **1** / -] 0: Off 1: On
002	Service Parts Near End Call		
003	Service Parts End Call		
004	User Call		
006	Communication Test Call		[0 or 1 / **1** / -] 0: Off 1: On
007	Machine Information Notice		
008	Alarm Notice		
009	Non Genuine Tonner Alarm		
010	Supply Automatic Ordering Call		
011	Supply Management Report Call		
012	Jam/Door Open Call		

⇒	**5801**	**[Memory Clear]** (Refer to **IMPORTANT NOTE** in Sect. 5.4)	
	001	All Clear	Resets all correction data for process control and

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		all software counters, and returns all modes and adjustments to their default values.
002	Engine	Clears the engine settings.
003	SCS	Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information.
004	IMH Memory Clr	Initializes the IMH settings.
005	Mcs	Initializes the Mcs settings.
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	The following service settings: ▪ Bit switches ▪ Gamma settings (User & Service) ▪ Toner Limit The following user settings: ▪ Tray Priority ▪ Menu Protect ▪ System Setting except for setting of Energy Saver ▪ I/F Setup (I/O Buffer and I/O Timeout) ▪ PCL Menu
010	Web Service	Deletes the network file application management files and thumbnails, and initializes the job login ID.
011	NCS	All setting of Network Setup (User Menu) (NCS: Network Control Service)
014	Clear DCS Setting	Initializes the DCS (Delivery Control Service) settings.
015	Clear UCS Setting	Initializes the UCS (User Information Control

		Service) settings.
016	MIRS Setting	Initializes the MIRS (Machine Information Report Service) settings.
017	CCS	Initializes the CCS (Certification and Charge-control Service) settings.
018	SRM Memory Clr	Initializes the SRM (System Resource Manager) settings.
019	LCS	Initializes the LCS settings.
020	Web Uapli	Initializes the web user application settings.
021	ECS	Initializes the ECS settings.

5802	**[FreeRun]**		
	Performs a free run on the copier engine. Note ▪ The machine starts free run in the same condition as the sequence of A4/LT, A3 or A4 SEF printing from the 1st or 2nd tray. Therefore, the correct paper should be loaded in the 1st tray or 2nd tray, but paper is not fed. ▪ The main switch has to be turned off and on after using the free run mode for a test.		
001	TRAY1: A4LEF: FC	-	-
002	TRAY2: A3: FC	-	
003	TRAY2: A4SEF: FC	-	

5803	**[Input Check]**	-	See "Input Check Table" in this section.
5804	**[Output Check]**	-	See "Output Check Table" in this section.

5805	**[Anti-Condensation Heater]**

002	0:OFF / 1:ON	*ENG	-

5810	**[SC Reset]**		
	Resets a type A service call condition. Note ▪ Turn the main switch off and on after resetting the SC code.		
001	Fusing SC Reset	-	-

5811	**[MachineSerial]** Machine Serial Number Display		
002	Display	*CTL	Displays the machine serial number.
004	Set:BICU		Inputs

5812	**[Service Tel. No. Setting]**		
001	Service	*CTL	-
	Sets the telephone number for a service representative. This number is printed on the Counter List, which can be printed with the user's "Counter" menu. This can be up to 20 characters (both numbers and alphabetic characters can be input).		
002	Facsimile	*CTL	-
	Sets the fax or telephone number for a service representative. This number is printed on the Counter List. This can be up to 20 characters (both numbers and alphabetic characters can be input).		

5816	**[Remote Service]**	*CTL	**-**
001	I/F Setting		
	Selects the remote service setting.		

	[0 to 2 / **2** / 1 /step] 0: Remote service off 1: CSS remote service on 2: @Remote service on
002	CE Call
	Performs the CE Call at the start or end of the service. [0 or 1 / **0** / 1 /step] 0: Start of the service 1: End of the service **NOTE:** This SP is activated only when SP 5816-001 is set to “2”.
003	Function Flag
	Enables or disables the remote service function. [0 to 1 / **0** / 1 /step] 0: Disabled, 1: Enabled **NOTE:** This SP setting is changed to "1" after @Remote registor has been completed.
007	SSL Disable
	Uses or does not use the RCG certification by SSL when calling the RCG. [0 to 1 / **0** / 1 /step] 0: Uses the RCG certification 1: Does no use the RCG certification
008	RCG Connect Timeout
	Specifies the connect timeout interval when calling the RCG. [1 to 90 / **10** / 1 second /step]
009	RCG Write Timeout
	Specifies the write timeout interval when calling the RCG. [1 to 100 / **60** / 1 second /step]
010	RCG Read Timeout
	Specifies the read timeout interval when calling the RCG.

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	[1 to 100 / **60** / 1 second /step]
011	Port 80 Enable
	Enables/disables access via port 80 to the SOAP method. [0 or 1 / **0** / –] 0: Disabled, 1: Enabled
013	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.
021	RCG – C Registed
	This SP displays the Embedded RC Gate installation end flag. 0: Installation not completed 1: Installation completed
022	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
023	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
061	Cert. Expire Timing **DFU**
	Proximity of the expiration of the certification.
062	Use Proxy
	This SP setting determines if the proxy server is used when the machine

	communicates with the service center.
063	Proxy Host
	This SP sets the address of the proxy server used for communication between 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.
064	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.
065	Proxy User Name
	This SP sets the HTTP proxy certification user name. Note ▪ The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored. ▪ This name is customer information and is not printed in the SMC report.
066	Proxy Password
	This SP sets the HTTP proxy certification password. Note ▪ The length of the password is limited to 31 characters. Any character beyond the 31st character is ignored. ▪ This name is customer information and is not printed in the SMC

	report.	
067	CERT: Up State	
	Displays the status of the certification update.	
	0	The certification used by 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.
068	CERT: Error	
	Displays a number code that describes the reason for the request for update of the certification.	
	0	Normal. There is no request for certification update in progress.
	1	Request for certification update in progress. The current certification has expired.
	2	An SSL error notification has been issued. Issued after the certification has expired.
	3	Notification of shift from a common authentication to an individual certification.
	4	Notification of a common certification without ID2.
	5	Notification that no certification was issued.
	6	Notification that GW URL does not exist.
069	CERT: Up ID	The ID of the request for certification.
083	Firmware Up Status	Displays the status of the firmware update.
084	Non-HDD Firm Up	This setting determines if the firmware can be updated, even without the HDD installed. 0: Not allowed update 1: Allowed update
085	Firm Up User Check	This SP setting determines if the operator can confirm the previous version of the firmware before the firmware update execution. If the

		option to confirm the previous version is selected, a notification is sent to the system manager and the firmware update is done with the firmware files from the URL.
086	Firmware Size	Allows the service technician to confirm the size of the firmware data files during the firmware update execution.
087	CERT: Macro Ver.	Displays the macro version of the @Remote certification.
088	CERT: PAC Ver.	Displays the PAC version of the @Remote certification.
089	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".
090	CERT: Subject	Displays the common name of the @Remote certification subject. CN = the following 17 bytes. Spaces are displayed as underscores (_). Asterisks (*) indicate that no @Remote certification exists. "000000_____" indicates "Common certification".
091	CERT: Serial No.	Displays serial number for the @Remote certification. Asterisks (*) indicate that no @Remote certification exists.
092	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.
093	CERT: Valid Start	Displays the start time of the period for which the current @Remote certification is enabled.

094	CERT: Valid End	Displays the end time of the period for which the current @Remote certification is enabled.
150	Selection Country	
	Not used	
151	Line Type Automatic Judgment	
	Not used	
152	Line Type Judgment Result	
	Not used	
153	Selection Dial/Push	
	Not used	
154	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		
187	FAX TX Priority	-	
	Not used		
200	Manual Polling	-	**Not used**
201	Regist: Status		
	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 machine from its Embedded RCG Gate setup. **NOTE:** Turn off and on the main power switch after this setting has been changed.	
250	CommLog Print	Prints the communication log.	

5821	**[Remote Service Address]**		
002	RCG IP Address	*CTL	Sets the IP address of the RCG (Remote Communication Gate) destination for call processing at the remote service center.

⇒

5824	**[NV-RAM Data Upload]** (Refer to **IMPORTANT NOTE** in Sect. 5.4)		
	Uploads the UP and SP mode data (except for counters and the serial number) from the NVRAM to an SD card. For details, see the "NVRAM Data Upload/Download" in Sect. 5.4).		
001	NV-RAM Data Upload	#	-

⇒

5825	**[NV-RAM Data Download]**		
	Downloads the UP and SP mode data from an SD card to the NVRAM. For details, see the "NVRAM Data Upload/Download" in Sect. 5.4).		
001	NV-RAM Download	#	-

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5828	**[Network Setting]**	*CTL	**-**
001	IPv4 Address (Ethernet/IEEE 802.11)	This SP allows you to confirm and reset the IPv4 address for Ethernet and wireless LAN (802.11): aaa.bbb.ccc.ddd	
050	1284 Compatibility (Centro)	Enables or disables 1284 Compatibility. [0 or 1 / **1** / 1 / step] 0: Disabled, 1: Enabled	
052	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".	
065	Job Spooling	Enables/disables Job Spooling. [0 or 1 / **0** / 1 / step] 0: Disabled, 1: Enabled	
066	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)	
069	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)	

090	TELNET (0: OFF 1: ON)	Enables or disables the Telnet protocol. [0 or 1 / **1** / –] 0: Disable, 1: Enable
091	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 (802.11b) in the format: "Link Local Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
147	Active IPv6 Stateless Address 1	These SPs are the IPv6 status addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11b) in the format: "Status Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
149	Active IPv6 Stateless Address 2	
151	Active IPv6 Stateless Address 3	
153	Active IPv6 Stateless Address 4	
155	Active IPv6 Stateless Address 5	
156	IPv6 Manual Address	This SP is the IPv6 manually set address referenced on the Ethernet or wireless LAN (802.11b) in the format: "Manual Set Address" + "Prefix Length" The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.
158	IPv6 Gateway Address	This SP is the IPv6 gateway address referenced on the Ethernet or wireless LAN (802.11b). The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.

Engine Service Mode

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 Link1 Name	This SP confirms or changes the URL1 name on the link page of the web system. The maximum characters for the URL name are 31 characters.
240	Web Link1 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 Link1 visible	Displays or does not display the link to URL1 on the top page of the web system. [0 to 1 / **1** / 1] 0: Not display, 1:Display
242	Web Link2 Name	Same as "-239"
243	Web Link2 URL	Same as "-240"

244	Web Link2 visible	Same as "-241"

5832	**[HDD]** HDD Initialization	*CTL	**-**
001	HDD Formatting (ALL)	Initializes the hard disk. Use this SP mode only if there is a hard disk error.	
002	HDD Formatting (IMH)		
003	HDD Formatting (Thumbnail)		
004	HDD Formatting (Job Log)		
005	HDD Formatting (Printer Fonts)		
006	HDD Formatting (User Info)		
007	Mail RX Data		
008	Mail TX Data		
009	HDD Formatting (Data for a Design)		
010	HDD Formatting (Log)		
011	HDD Formatting (Ridoc I/F)		

5840	**[IEEE 802.11]**		
006	Channel Max	*CTL	[1 to 11 or 13 / **11 or 13** / 1 /step] Europe/Asia: 1 to 13 NA/ Asia: 1 to 11
	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.		

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<table>
<tr><td rowspan="2">007</td><td>Channel Min</td><td>*CTL</td><td>[1 to 11 or 13 / 1 / 1 /step]
Europe: 1 to 13
NA/ Asia: 1 to 11</td></tr>
<tr><td colspan="3">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.</td></tr>
<tr><td>008</td><td>Transmission Speed</td><td>*CTL</td><td>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)</td></tr>
<tr><td>011</td><td>WEP key Select</td><td>*CTL</td><td>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)</td></tr>
<tr><td>042</td><td>Fragment Thresh</td><td>*CTL</td><td>Adjusts the fragment threshold for the IEEE802.11 card.
[256 to 2346 / 2346 / 1]</td></tr>
</table>

			This SP is displayed only when the IEEE802.11 card is installed.
043	11g CTS to Self	*CTL	Determines whether the CTS self function is turned on or off. [0 to 1 / **1** / 1] 0: Off, 1: On This SP is displayed only when the IEEE802.11 card is installed.
044	11g Slot Time	*CTL	Selects the slot time for IEEE802.11. [0 to 1 / **0** / 1] 0: 20 μm, 1: 9 μm
045	WPA Debug Lvl	*CTL	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.

5842	**[GWWS Analysis] DFU**		
001	Setting 1	*CTL	Default: **00000000** – do not change Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software
002	Setting 2	*CTL	Adjusts the debug program modesetting. Bit7: 5682 mmseg-log setting 0: Date/Hour/Minute/Second 1: Minute/Second/Msec. 0 to 6: Not used

5844	**[USB]**		
001	Transfer Rate	*CTL	0x01: Full speed **0x04: Auto Change**
	Adjusts the USB transfer rate.		

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002	Vendor ID	*CTL	Displays the vendor ID. **DFU**
003	Product ID	*CTL	Displays the product ID. **DFU**
004	Device Release Number	*CTL	Displays the development release version number. **DFU**

5845	**[Delivery Server Setting]**	*CTL	-
	Provides items for delivery server settings.		
003	Retry Interval		
	Sets the time interval before the machine tries again when it goes back to standby after an error occurs during an image transfer with the SMTP server. [60 to 900 / **300** / 1]		
004	No. of Retries		
	Sets the number of times the machine tries again before it returns to standby after an error occurs during an image transfer with the delivery or SMTP server. [0 to 99 / **3** / 1]		
022	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	-
010	LDAP Search Timeout		[1 to 255 / **60** / 1 /step]
	Sets the length of the timeout for the search of the LDAP server.		
041	Fill Addr Acl Info.		

041	This SP must be executed immediately after installation of an HDD unit in a basic machine that previously had no HDD. The first time the machine is powered on with the new HDD installed, the system automatically takes the address book from the NVRAM and writes it onto the new HDD. However, the new address book on the HDD can be accessed only by the system administrator at this stage. Executing this SP by the service technician immediately after power on grants full address book access to all users. Procedure 1. Turn the machine off. 2. Install the new HDD. 3. Turn the machine on. 4. The address book and its initial data are created on the HDD automatically. 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.	
043	Addr Book Media	Displays the slot number where an address book data is in. [0 to 30 / - /1] 0: Unconfirmed 1: SD Slot 1 2: SD Slot 2 4: USB Flash ROM 20: HDD 30: Nothing
047	Initialize Local Addr Book	Clears the local address book information, including the user code.
048	Initialize Delivery Addr Book	Clears the distribution address book information, except the user code.
049	Initialize LDAP Addr Book	Clears the LDAP address book information, except the user code.
050	Initialize All Addr Book	Clears all directory information managed by UCS, including all user codes.

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051	Backup All Addr Book	Uploads all directory information to the SD card.
052	Restore All Addr Book	Downloads all directory information from the SD card.
053	Clear Backup Info	Deletes the address book 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.
060	Search option	
	This SP uses bit switches to set up the fuzzy search options for the UCS local address book. Bit: Meaning 0: Checks both upper/lower case characters 1: Japan Only 2: Japan Only 3: Japan Only 4 to 7: Not Used	
062	Complexity option 1	
	Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to **upper case** and sets the length of the password. [0 to 32 / **0** / 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.	

063	Complexity Option 2 **DFU**	
064	Complexity Option 3 **DFU**	
065	Complexity Option 4 **DFU**	
094	Encryption Stat	Shows the status of the encryption function for the address book data.

5848	**[Web Service]**	*CTL	-
	5848 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. 5848 100 sets the maximum size allowed for downloaded images. The default is equal to 1 gigabyte.		
004	Access Control: User Directory (Lower 4 bits)	Switches access control on and off. **0000**: No access control 0001: Denies access to DeskTop Binder.	
009	Access Ctrl: Job Ctrl (Lower 4 bits)		
011	Access Ctrl: Device management		
022	Access Ctrl: uAdministration (Lower 4bits)		
210	Setting: LogType: Job1		
211	Setting: LogType: Job2		
212	Setting: LogType: Access		
213	Setting: Primary Srv	**DFU**	
214	Setting: Secondary Srv	Specifies the max size of the image data that the machine can download. [1 to 1024 / **1024** / 1 MB /step]	
215	Setting: Start Time	NIA	

216	Setting: Interval Time	
217	Setting: Timing	

5849	**[Installation Date]**	*CTL	-
5849 1	Display	The “Counter Clear Day” has been changed to “Installation Date” or “Inst. Date”.	
5849 2	Switch to Print	Determines whether the installation date is printed on the printout for the total counter. [0 or 1 / **1** / -] 0: OFF (No Print) 1: ON (Print)	
003	Total Counter	-	

5851	**[Bluetooth]**		
	Sets the operation mode for the Bluetooth Unit. Press either key. **[0:Public]** [1: Private]		

5856	**[Remote ROM Update]**		
	Allows the technician to upgrade the firmware using a local port (IEEE1284) when updating the remote ROM.		
002	Local Port	*CTL	[0 to 1 / **0** / 1/step] 0: Disable 1: Enable

5857	**[Save Debug Log]**	*CTL	-
001	On/Off (1:ON 0:OFF)	**0**: OFF, 1: ON	
	Switches the debug log feature on and off. The debug log cannot be captured until this feature is switched on.		

002	Target (2: HDD 3: SD)	**2**: HDD, 3: SD Card
	Selects the storage device to save debug logs information when the conditions set with SP5-858 are satisfied. [2 to 3 / **2** / 1 /step]	
005	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.	
006	Save to SD Card	
	Saves the debug log of the input SC number in memory to the SD card.	
009	Copy HDD to SD Card (Latest 4 MB)	
010	Copy HDD to SD Card (Latest 4 MB Any Key)	
011	Erase HDD Debug Data	
012	Erase SD Card Debug Data	
013	Free Space on SD Card	
014	Copy SD to SD (Latest 4 MB)	
015	Copy SD to SD (Latest 4 MB Any Key)	
016	Make HDD Debug	
017	Make SD Debug	

5858	**[Debug Save When]**	*CTL	-
	These SPs select the content of the debugging information to be saved to the destination selected by SP5857-002. SP5858-3 stores one SC specified by number. Refer to Section 4 for a list of SC error codes.		

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001	Engine SC Error (0: OFF, 1: ON)	Turns on/off the debug save for SC codes generated by copier engine errors. [0 or 1 / **0** / 1/ step]
002	Controller SC Error (0: OFF, 1: ON)	Turns on/off the debug save for SC codes generated by GW controller errors. [0 or 1 / **0** / 1/ step]
003	Any SC Error	[0 to 65535 / **0** / 1 /step]
004	Jam (0: OFF, 1: ON)	Turns on/off the debug save for jam errors.

5859	**[Debug Save Key No.]**	*CTL	**-**
001	Key 1	These SPs allow you to set up to 10 keys for log files for functions that use common memory on the controller board. [–9999999 to 9999999 / **0** / –]	
002	Key 2		
003	Key 3		
004	Key 4		
005	Key 5		
006	Key 6		
007	Key 7		
008	Key 8		
009	Key 9		
010	Key 10		

5860	**[SMTP/POP3/IMAP4]**	*CTL	**-**
002	SMTP Svr Port No.		[1 to 65535 / **25** / 1]
	This SP sets the number of the SMTP server port.		
003	SMTP Authentication		[0 or 1 / **0** / -] 0: Off, 1: On

	This setting switches SMTP certification on and off for mail sending.	
006	SMTP Auth Encryption	[0 to 2/ **0** / 1] 0: Automatic, 1: No encryption done, 2: Encryption done
	This setting determines whether the password for SMTP certification is encrypted.	
007	POP Before SMTP	[0 or 1 / **0** / -] 0: No connection to POP server 1: Connection to POP server
	This setting determines whether the transmission connects with the POP server first for certification before it connects to the SMTP server for sending.	
008	POP to SMTP Waiting	[0 to 10000 / **300** / 1]
	This SP sets the amount of time to allow for the connection to the SMTP server after the transmission has connected to the POP server and been certified during the execution of POP Before SMTP.	
009	Mail Receive Protocol	[1 to 3 / **1** / 1] 0: No receiving, 1: POP3 protocol 2: IMAP4 protocol, 3: SMTP protocol
	This SP specifies a protocol for the mail reception or switches off receiving.	
013	POP3/IMAP4 Auth.	[0 to 2 / **0** / 1] 0: Automatic, 1: No encryption done, 2: Encryption done
	This SP specifies whether password encryption is done for POP3/IMAP4 certification.	
014	POP3 Srv Port No	[1 to 65535 / **110** / 1]
	This SP sets the number of the POP3 server port.	
015	IMAP4 Srv Port No	[1 to 65535 / **143** / 1]
	This SP sets the number of the IMAP4 server port.	

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016	SMTP5 Rcv Port No	[1 to 65535 / **25** / 1]
	This SP sets the number of the port that receives SMTP mail.	
017	Mail Rx Interval	[2 to 1440 / **15** / 1 min.]
	This SP sets the timing for mail received at regular intervals. **Note:** Setting this SP to "0" switches off receiving mail at timed intervals.	
019	Mail Keep Setting.	[0 to 2 / **0** / 1] 0: Received mail not stored 1: All received mail stored 2: Stores only mail that generated errors during receiving
	This SP setting determines whether received mail is stored on the server.	
020	Partial Mail Receive Timeout	[1 to 168 / **72** / 1 hour/step]
	Sets the amount of time to wait before saving a mail that breaks up during reception. The received mail is discarded if the remaining portion of the mail is not received during this prescribed time.	
021	MDN Response RFC2298 Compliance	[0 to 1 / **1** / –]
	Determines whether RFC2298 compliance is switched on for MDN reply mail. 0: No **1**: Yes	
022	SMTP Auth. From Field Replacement	[0 to 1 / **0** / –]
	Determines whether the FROM item of the mail header is switched to the validated account after the SMTP server is validated. **0**: No. “From” item not switched. 1: Yes. “From item switched.	
025	SMTP Auth. Direct Setting	[0 or 1 / **0** / –]
	Selects the authentication method for SMPT. **Bit switch:** ▪ Bit 0: LOGIN ▪ Bit 1: PLAIN	

	▪ Bit 2: CRAM MD5 ▪ Bit 3: DIGEST MD5 ▪ Bit 4 to 7: Not used Note ▪ This SP is activated only when SMTP authorization is enabled by UP mode.		
026	S/MIME: MIME Header Setting	-	Selects the MIME header type of an E-mail sent by S/MIME. [0 to 2 / **0** / 1] 0: Microsoft Outlook Express standard 1: Internet Draft standard 2: RFC standard

5866	**[E-mail Report] Not Used**		
005	Add Date Field	*CTL	Adds or does not add the date field to the header of the alert mail. [0 or 1 / **0** / –] 0: Not added, 1: Added

5869	**[RAM Disk Setting]**		
001	Mail Function	*CTL#	[0 to 1 / 0 / 1/step] 0: ON, 1: OFF
	Enables or disables the e-mail transfer function. This SP sets the RAM disk size for the e-mail transfer function.		

5870	**[Common Key Info Writing]**		
001	Writing	*CTL	Writes to flash ROM the common proof for validating the device for @Remote specifications.
003	Initialize	*CTL	Initializes the data area of the common proof for validating.

5873	**[SD Card Appli Move]**	
001	Move Exec	This SP copies the application programs from the original SD card in SD card slot 2 to an SD card in SD card slot 1.
002	Undo Exec	This SP copies back the application programs from an SD card in SD Card Slot 2 to the original SD card in SD card slot 1. Use this menu when you have mistakenly copied some programs by using "Move Exec" (SP5873-1).

5878	**[Option Setup]**		
001	Data Overwrite Security	-	Enables the Data Overwrite Security unit. Press "EXECUTE" on the operation panel. Then turn the machine off and on.
002	HDD Encryption	-	Installs the HDD Encryption unit.

5883	**[Line Speed Selection]**		
	Selects the line speed for middle thick paper.		
001	Middle Thick	*ENG	[0 or 1 / **1** / 1 /step] 0: MID CARD: Half Speed (115 mm/sec) 1: MID CARD: Normal Speed (P2c: 154, P2d: 205 mm/sec)

5887	**[**SD Get Counter**]**		
	This SP determines whether the ROM can be updated.		
001	-	*CTL	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]. Touch [Execute] in the message when you are prompted.

5888	**[Personal Information Protect]**		
001	-	*CTL	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]**	*CTL	-
	Displays the counter name of each SDK application.		
001	SDK-1		
002	SDK-2		
003	SDK-3		
004	SDK-4		
005	SDK-5		
006	SDK-5		

5894	**[External Charge Unit Setting]**
	-

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001	Switch Charge Mode	*ENG	[0 to 2 / **0** / 1/step]

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.

5930	**[Meter Click Ch.]** Meter Click Charge		
5930 001	Meter Click Ch.	*EGB	Enables or disables the Meter Charge mode. When enabling the Meter Charge mode, the “Counter” menu is added to the user menu. [0 or 1 / **0** / -] 0: OFF, 1: ON
5930 010	PCU	*EGB	Displays or does not display the end display for the PCU. This SP is activated only when the SP5930-001 is set to "1". [0 or 1 / **1** / -] 0: OFF, 1: ON
5930 014	Mid Trans Unit	*EGB	Displays or does not display the end display for the image transfer belt unit. This SP is activated only when the SP5930-001 is set to "1". [0 or 1 / **1** / -] 0: OFF, 1: ON
5930 016	Fusing Unit.	*EGB	Displays or does not display the end display for the fusing unit. This SP is activated only when the SP5930-001 is set to "1". [0 or 1 / **1** / -]

			0: OFF, 1: ON

5990	**[SP print mode]**		
	Prints out the SMC sheets.		
001	All (Data List)	-	-
002	SP (Mode Data List)	-	
003	User Program	-	
004	Logging Data	-	
005	Diagnostic Report	-	
006	Non-Default	-	
007	NIB Summary	-	
008	Capture Log	-	
021	Copier User Program	-	
022	Scanner SP	-	
023	Scanner User Program	-	

5996	**[Print Area]**		
	Selects the print area mode. When you selects "1 (Enlarge)", the edge-to-edge print mode can be available.		
001	Normal/Enlarge	*CTL	[0 or 1 / **0** / 1/step] 0: Normal, 1: Enlarge

5998	**[Fusing Cont mode]** Fusing Control Mode		
	Turns the silent fusing warm-up mode on or off.		
001	fast/silent	*ENG	[0 or 1 / **1** / -]

			0: Silent (less noise) 1: Fast (less time)

SP6-XXX (Peripherals)

6128	**[Punch Position: Sub Scan]**		
	Adjusts the punching position in the sub scan direction.		
001	1.Domestic 2Hole (Europe 2Hole)	*ENG	[-7.5 to 7.5 / **0** / 0.5 mm/step]
002	2.North America 3Hole	*ENG	
003	3.Europe 4Hole	*ENG	
004	4.North Europe 4Hole	*ENG	
005	5.North Europe 2Hole	*ENG	

6129	**[Punch Position: Main Scan]**		
	Adjusts the punching position in the main scan direction.		
001	1.Domestic 2Hole (Europe 2Hole)	*ENG	[-2.0 to 2.0 / **0** / 0.4 mm/step]
002	2.North America 3Hole	*ENG	
003	3.Europe 4Hole	*ENG	
004	4.North Europe 4Hole	*ENG	
005	5.North Europe 2Hole	*ENG	

6130	**[Skew Correction: Buckle Adj.]**		
	Adjusts the paper buckle for each paper size.		
001	A3T	*ENG	[-5.0 to 5.0 / **0** / 0.25 mm/step]

002	B4T	*ENG	
003	A4T	*ENG	
004	A4Y	*ENG	
005	B5T	*ENG	
006	B5Y	*ENG	
007	DLT-T	*ENG	
008	LG-T	*ENG	
009	LT-T	*ENG	
010	LT-Y	*ENG	
011	12" x 18"	*ENG	
012	Other	*ENG	

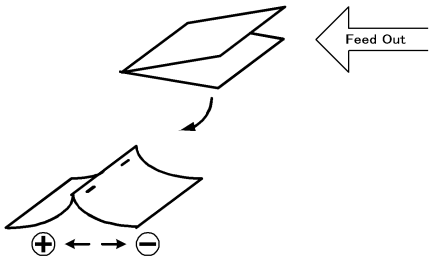
6131	**[Skew Correction Control]**		
	Selects the skew correction control for each paper size. These are only activated for B793/B805.		
001	A3T	*ENG	[0 or 1 / **1** / 1/step] 0: No (No skew correction) 1: Roller Stop Skew Correction
002	B4T	*ENG	
003	A4T	*ENG	
004	A4Y	*ENG	
005	B5T	*ENG	
006	B5Y	*ENG	
007	DLT-T	*ENG	
008	LG-T	*ENG	
009	LT-T	*ENG	

010	LT-Y	*ENG	
011	12" x 18"	*ENG	
012	Other	*ENG	

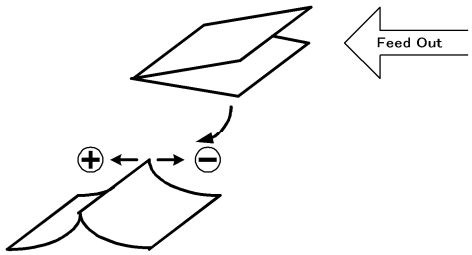
6132	**[Jogger Fence Fine Adj]**		
	This SP adjusts the distance between the jogger fences and the sides of the stack on the finisher stapling tray in the (Booklet) Finisher B793/B805. The adjustment is done perpendicular to the direction of paper feed.		
001	A3T	*ENG	[-1.5 to 1.5 / **0** / 0.5 mm/step] + Value: Increases distance between jogger fences and the sides of the stack. - Value: Decreases the distance between the jogger fences and the sides of the stack.
002	B4T	*ENG	
003	A4T	*ENG	
004	A4Y	*ENG	
005	B5T	*ENG	
006	B5Y	*ENG	
007	DLT-T	*ENG	
008	LG-T	*ENG	
009	LT-T	*ENG	
010	LT-Y	*ENG	
011	12" x 18"	*ENG	
012	Other	*ENG	

6133	**[Staple Position Adjustment]**
	Adjusts the staple position for each finisher (B793/B805). + Value: Moves the staple position to the rear side. - Value: Moves the staple position to the front side.

001	Staple Position Adju (B793/B805)	*ENG	[-3.5 to 3.5 / **0** / 1/step]

6134	**[Saddle Stitch Position Adjustment]**	
	Use this SP to adjust the stapling position of the booklet stapler when paper is stapled and folded in the Booklet Finisher B793.	
001	A3T	[-3.0 to 3.0 / **0** / 0.2 mm/step] + Value: Shifts staple position toward the crease. - Value: Shifts staple position away from the crease. 
002	B4T	
003	A4T	
004	B5T	
005	DLT-T	
006	LG-T	
007	LT-T	
008	12" x 18"	
009	Other	

6135	**[Folder Position Adj.]**	
	This SP corrects the folding position when paper is stapled and folded in the Booklet Finisher B793.	
001	A3T	[-3.0 to 3.0 / 0 / 0.2 mm/step] + Value: Shifts staple position toward the crease. - Value: Shifts staple position away from the crease.
002	B4T	
003	A4T	
004	B5T	
005	DLT-T	
006	LG-T	

007	LT-T	
008	12" x 18"	
009	Other	

6136	**[Folding Number]**	
	Sets the number of times that folding is done in the Booklet Finisher B793.	
001	-	[2 to 30 / **2** / 1 time/step]

6137	**[Fin. Free Run] Not used**	
	These SPs are used only for B793 finisher.	
001	Free Run 1	Free run for paper edge stapling.
002	Free Run 2	Free run for booklet stapling.
003	Free Run 3	Shipping free run. Simulates standby conditions during shipping.
004	Free Run 4	**DFU**

6138	**[FIN (TIG) INPUT Check]** Finisher (B793) Input Check
	Displays the signals received from sensors and switches of the booklet finisher. (☛ Input Check Table)

6139	**[FIN (KIN) INPUT Check]** Finisher (B408) Input Check
	Not used in this machine.

6140	**[FIN (EUP) INPUT Check]** Finisher (B805) Input Check

	Displays the signals received from sensors and switches of the finisher. (☛ "Input Check Table" in this section)

6142	**[FIN (JAK) INPUT Check]**
	Displays the signals received from sensors and switches of the finisher. (☛ "Input Check Table" in this section)

6143	**[FIN (TIG) OUPUT Check]** Finisher (B793) Output Check
	Activates each devices in the finisher. (☛ "Output Check Table" in this section)

6144	**[FIN (KIN) OUPUT Check]** Finisher (B408) Output Check
	Not Used in this machine.

6145	**[FIN (EUP) OUPUT Check]** Finisher (B805) Output Check
	Displays the signals received from sensors and switches of the finisher. (☛"Output Check Table" in this section)

6147	**[FIN (JAK) OUPUT Check]**
	Activates each device in the mail bin unit. (☛"Output Check Table" in this section)

6148	**[Jogger Fine Adj]**	*ENG	Fine Adjust Output Jogger Unit Fences
001	A3T	This SP corrects the distance between the jogger fences and the sides of the stack when the output jogger unit attached to the side of the machine jogs sheets as they exit the finisher. + Value: Increases distance between jogger fences and the sides of the stack.	
002	B4T		
003	A4T		
004	A4Y		
005	B5Y		

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006	A5Y	- Value: Decreases the distance between the jogger fences and the sides of the stack. [-1.5 to 1.5 / **0** / 0.5 mm/step]
007	DLT-T	
008	LG-T	
009	LT-T	
010	LT-Y	
011	HLT-Y	
012	Other	

6149	**[Max. Pre-Stack Sheet]**	*ENG	Number of Pre-Stack Sheets
	This SP sets the number of sheets sent to the pre-stack tray. **Note**: You may need to adjust this setting or switch it off when feeding thick or slick paper.		
001	-	[0 to 3 / **3** / 1 sheet/step]	

6150	**[INPUT Check]**
	Displays the signals received from sensors and switches of the bridge unit (D386) (☛ "Input Check Table" in this section).

6151	**[OUTPUT Check]**
	Activates each device in the brisge unit (D386). (☛ "Output Check Table" in this section).

6152	**[INPUT Check]**
	Not used in this machine.

6153	**[OUTPUT Check]**

	Not used in this machine.

6157	**[OUTPUT Check]**
	Displays the signals received from sensors and switches of the mail bin unit (G835). (☛ "Input Check Table" in this section).

6160	**[INPUT Check]**
	Displays the signals received from sensors and switches of the one tray paper feed unit (D387), two-tray paper feed unit (D351) and LCT 2000 (D352). (☛ "Input Check Table" in this section)

6161	**[OUTPUT Check]**
	Activates each device in the one tray paper feed unit (D387), two-tray paper feed unit (D351) and LCT 2000 (D352). (☛ "Output Check Table" in this section)

SP7-XXX (Data Log)

7401	**[Total SC Counter]**		
	Displays the number of SC codes detected.		
001	SC Counter	*CTL	[0 to 9999 / **0** / 1/step]

7403	**[SC History]**		
	Logs the SC codes detected. The 10 most recently detected SC Codes are not displayed on the screen, but can be seen on the SMC (logging) outputs.		
001	Latest	*CTL	-
002	Latest 1		

003	Latest 2		
004	Latest 3		
005	Latest 4		
006	Latest 5		
007	Latest 6		
008	Latest 7		
009	Latest 8		
010	Latest 9		

7502	**[Total Paper Jam Counter]**		
	Displays the total number of jams detected.		
001	Total Jam	* CTL	[0 to 9999 / **0** / 1 sheet/step]

7503	**[Total Original Jam Counter]**		
	Displays the total number of original jams.		
001	Original Jam counter	*CTL	[0 to 9999 / **0** / 1 original/step]

7504	**[Paper Jam Location]** ON: On check, OFF: Off Check		
	Displays the number of jams according to the location where jams were detected. **NOTE:** The LCT is counted as the 3rd feed station.		
001	At Power On	*CTL	For details, see "Jam Detection" in the "Appendix: Jam Detection" section.
003	Tray 1: ON	*CTL	
004	Tray 2: ON	*CTL	

005	Tray 3: ON	*CTL	
006	Tray 4: ON	*CTL	
007	LCT : ON	*CTL	
008	Bypass: ON	*CTL	
009	Duplex: ON	*CTL	
011	Vertical Transport 1: ON	*CTL	
012	Vertical Transport 2: ON	*CTL	
013	Bank: Transport Sn1	*CTL	
014	Bank: Transport Sn2	*CTL	
017	Registration: ON	*CTL	
018	Fusing Entrance: ON	*CTL	
019	Fusing Exit: ON	*CTL	
020	Paper Exit: ON	*CTL	
021	Bridge Exit: ON	*CTL	
022	Bridge Transport: ON	*CTL	
024	Junction Gate Sensor : On	*CTL	
025	Duplex Exit: ON	*CTL	
026	Duplex Entrance: ON (Out)	*CTL	
027	Duplex Entrance: ON (Out)	*CTL	
051	Vertical Transport 1: Off	*CTL	
052	Vertical Transport 2: Off	*CTL	
053	Bank Transport 1: Off	*CTL	For details, see "Jam Detection" in the "Appendix: Jam Detection"
054	Bank Transport 2: Off	*CTL	

057	Registration Sensor: Off	*CTL	section.
058	LCT Feed Sensor : Off	*CTL	
060	Paper Exit Off	*CTL	
061	Bridge Exit: Off	*CTL	
062	Bridge Transport: Off	*CTL	
064	Junction Gate Sensor : Off	*CTL	
065	Duplex Exit: Off	*CTL	
066	Duplex Entrance: Off (In)	*CTL	
067	Duplex entrance : Off (Out)	*CTL	
100	Finisher Entrance: KIN	*CTL	
101	Finisher Shift Tray Exit: KIN	*CTL	
102	Finisher Staple: KIN	*CTL	
103	Finisher Exit: KIN	*CTL	
105	Finisher Tray Lift Motor: KIN	*CTL	
106	Finisher Jogger Motor: KIN	*CTL	
107	Finisher Shift Motor: KIN	*CTL	
108	Finisher Staple Motor: KIN	*CTL	
109	Finisher Exit Motor: KIN	*CTL	
191	Finisher Entrance: EUP	*CTL	For details, see "Jam Detection" in the "Appendix: Jam Detection" section.
192	Finisher Proof Exit: EUP	*CTL	
193	Finisher Shift Tray Exit: EUP	*CTL	
194	Finisher Stapler Exit: EUP	*CTL	
195	Finisher Exit: EUP	*CTL	

198	Finisher Folder: EUP	*CTL	
199	Finisher Tray Motor: EUP	*CTL	
200	Finisher Jogger Motor: EUP	*CTL	
201	Finisher Shift Motor: EUP	*CTL	
202	Finisher Staple Moving Motor: EUP	*CTL	
203	Finisher Staple Motor: EUP	*CTL	
204	Finisher Folder Motor: EUP	*CTL	
206	Finisher Punch Motor: EUP	*CTL	
220	Transport 1: On	*CTL	
221	Transport 1: Off	*CTL	
222	Transport 2: On	*CTL	
223	Transport 2: Off	*CTL	

7506	**[Jam Count by Paper Size]**		
	Displays the number of jams according to the paper size.		
005	A4 LEF	*CTL	[0 to 9999 / **0** / 1 sheet/step]
006	A5 LEF		
014	B5 LEF		
038	LT LEF		
044	HLT LEF		
132	A3 SEF		
133	A4 SEF		
134	A5 SEF		

141	B4 SEF		
142	B5 SEF		
160	DLT SEF		
164	LG SEF		
166	LT SEF		
172	HLT SEF		
255	Others		

7507	**[Plotter Jam History]**		
	Displays the 10 most recently detected paper jams.		
001	Latest	*CTL	-
002	Latest 1		
003	Latest 2		
004	Latest 3		
005	Latest 4		
006	Latest 5		
007	Latest 6		
008	Latest 7		
009	Latest 8		
010	Latest 9		

7801	**[Memory/Version/PN]**		
255	Engine	*CTL	Displays all versions and ROM numbers in the machine.

7803	**[PM Counter Display]** (Page, Unit, [Color])		
	Displays the number of sheets printed for each current maintenance unit. PM counters click up based on the number of A4 (LT) LEF size sheets printed. Therefore, the A3 (DLT) Double Count is activated. The Double Count cannot be deactivated. When a unit is replaced, the machine automatically detects that the new unit is installed. Then, the current PM counter value is automatically moved to the PM Counter - Previous (SP7-906-1 to 10) and is reset to “0”. The total number of sheets printed with the last unit replaced can be checked with SP7-906-1 to 10. NOTE: The LCT is counted as the 3rd feed station.		
001	Paper	*CTL	-
002	Page: K Drum Unit	*ENG	-
003	Page: M Drum Unit		
004	Page: C Drum Unit		
005	Page: Y Drum Unit		
006	Page: K Dev Unit		
007	Page: M Dev Unit		
008	Page: C Dev Unit		
009	Page: Y Dev Unit		
010	Page: K Developer		
011	Page: M Developer		
012	Page: C Developer		
013	Page: Y Developer		
014	Page: ITB Unit		
015	Page: Belt Cleaning Unit		

016	Page: Fusing Unit		
017	Page: PTR Unit		
018	Page: Toner Collection Bottle		
	Displays the number of revolutions of motors or clutches for each current maintenance unit. [0 to 9999999 / **0** / 1 revolution/step] When a unit is replaced, the machine automatically detects that the new unit is installed. Then, the current PM counter value is automatically moved to the PM Counter - Previous (SP7-906-11 to 20) and is reset to “0”. The total number of revolutions made with the last unit replaced can be checked with SP7-906-11 to 20.		
031	Rotation: K Drum Unit	*ENG	[0 to 999999999 / - / 1 mm/step]
032	Rotation: M Drum Unit		
033	Rotation: C Drum Unit		
034	Rotation: Y Drum Unit		
035	Rotation: K Dev Unit		
036	Rotation: M Dev Unit		
037	Rotation: C Dev Unit		
038	Rotation: Y Dev Unit		
039	Rotation: K Developer		
040	Rotation: M Developer		
041	Rotation: C Developer		
042	Rotation: Y Developer		
043	Rotation: ITB Unit		
044	Rotation: Cleaning Unit		
045	Rotation: Fusing Unit		

046	Rotation: PTR Unit		
047	Measurement: Toner Collection bottle		
	Displays the value given by the following formula: (Current revolution ÷ Target revolution) × 100. This shows how much of the unit's expected lifetime has been used up. The Rotation% counter is based on rotations, not prints. If the number of rotations reaches the limit, the machine enters the end condition for that unit. If the print count lifetime is reached first, the machine also enters the end condition, even though the R% counter is still less than 100%.		
061	Rotation (%): K Drum Unit	*ENG	[0 to 255 / - / 1 %/step]
062	Rotation (%): M Drum Unit		
063	Rotation (%): C Drum Unit		
064	Rotation (%): Y Drum Unit		
065	Rotation (%): K Dev Unit		
066	Rotation (%): M Dev Unit		
067	Rotation (%): C Dev Unit		
068	Rotation (%): Y Dev Unit		
069	Rotation (%): K Developer		
070	Rotation (%): M Developer		
071	Rotation (%): C Developer		
072	Rotation (%): Y Developer		
073	Rotation (%): ITB Unit		
074	Rotation (%): Cleaning Unit		
075	Rotation (%): Fusing Unit		
076	Rotation (%): PTR Unit		

077	Measurement (%): Toner Collection bottle		
	Displays the value given by the following formula: (Current printouts ÷ Target printouts) × 100. This shows how much of the unit's expected lifetime has been used up. The Page% counter is based on printouts, not revolutions. If the number of printouts reaches the limit, the machine enters the end condition for that unit. If the revolution count lifetime is reached first, the machine also enters the end condition, even though the Page% counter is still less than 100%.		
091	Page (%): K PCU (Drum Unit)	*ENG	[0 to 255 / - / 1 %/step]
092	Page (%): M PCU (Drum Unit)		
093	Page (%): C PCU (Drum Unit)		
094	Page (%): Y PCU (Drum Unit)		
095	Page (%): K Dev Unit		
096	Page (%): M Dev Unit		
097	Page (%): C Dev Unit		
098	Page (%): Y Dev Unit		
099	Page (%): K Developer		
100	Page (%): M Developer		
101	Page (%): C Developer		
102	Page (%): Y Developer		
103	Page (%): ITB Unit		
104	Page (%): Cleaning Unit		
105	Page (%): Fusing Unit		
106	Page (%): PTR Unit		
111	Yield(%):PCU:K	*ENG	[-999 to 999 / **100** / 1% / step]

112	Yield(%):PCU:Col		
113	Reserved		
114	Yield(%):PTR Unit		
115	Yield(%):ITB		
116	Yield(%):Fusing		

7804	**[PM Counter Reset]** PM Counter Clear (Unit, [Color])		
	Clears the PM counter. Press the Enter key after the machine asks “Execute?”, which will store the PM counter value in SP7-906 (PM Counter - Previous) and reset the value of the current PM counter (SP7-803) to “0”.		
002	PCU (Drum Unit): Bk		
003	PCU (Drum Unit): M		
004	PCU (Drum Unit): C		
005	PCU (Drum Unit): Y		
006	PCU (Drum Unit): All		
007	Development Unit: Bk		
008	Development Unit: M		
009	Development Unit: C		
010	Development Unit: Y		
011	Development Unit: All		
012	Developer: Bk		
013	Developer: M		
014	Developer: C		

015	Developer: Y		
016	Developer: All		
017	ITB Unit		
018	Cleaning Unit		
019	Fusing Unit		
020	PTR Unit		
021	Toner Collection Bottle		
100	All		

7807	**[SC/Jam Counter Reset]**		
	Clears the counters related to SC codes and paper jams.		
001	SC/Jam Clear	-	-

7832	**[Self-Diagnose Result Display]**		
	Displays the result of the diagnostics.		
001	Diag. Result	*CTL	-

7835	**[ACC Counter]**		
001	Copy ACC	*CTL	Displays the ACC exectuion times for each mode.
002	Printer ACC	*CTL	

7836	**Total Memory Size**
	Displays the memory capacity of the controller system.

7855	**[Coverage Range]**

	Sets the color coverage threshold. Coverage rate = Coverage per page / A4 full coverage (dots) x 100 There are three coverage counters: Color 1, Color 2, and Color 3 ▪ [A] 5% (default) is adjustable with SP7855-001. ▪ [B] 20% (default) is adjustable with SP7855-002.  Note ▪ The setting value [B] must be set larger than [A]. The total numbers of printouts (BW printing plus color printing) for each coverage range are displayed with the following SPs. ▪ Color1 counter: SP8601-021 ▪ Color2 counter: SP8601-022 ▪ Color3 counter: SP8601-023		
001	Coverage Range 1	*CTL	[1 to 200 / **5** /1]
002	Coverage Range 2	*CTL	[1 to 200 / **20** /1]

7901	**[Assert Info]**		
	Records the location where a problem is detected in the program. The data stored in this SP is used for problem analysis. **DFU**		
001	File Name	*CTL	-
002	Number of Lines		
003	Location		

7906	**[Prev. Unit PM Counter]**		
	(Page or Rotations, Unit, [Color]), Dev.: Development Unit		
	Displays the number of sheets printed with the previous maintenance units.		
001	Page: K Drum Unit	*ENG	[0 to 9999999 / **0** / 1 page/step]

002	Page: M Drum Unit		
003	Page: C Drum Unit		
004	Page: Y Drum Unit		
005	Page: K Dev Unit		
006	Page: M Dev Unit		
007	Page: C Dev Unit		
008	Page: Y Dev Unit		
009	Page: K Developer		
010	Page: M Developer		
011	Page: C Developer		
012	Page: Y Developer		
013	Page: ITB Unit		
014	Page: Cleaning Unit		
015	Page: Fusing Unit		
016	Page: PTR Unit		
017	Page: Toner Collection Bottle		
	Displays the number of revolutions for motors or clutches in the previous maintenance units.		
031	Rotation: K Drum Unit	*ENG	[0 to 9999999 / **0** / 1 mm/step]
032	Rotation: M Drum Unit		
033	Rotation: C Drum Unit		
034	Rotation: Y Drum Unit		
035	Rotation: K Dev Unit		
036	Rotation: M Dev Unit		

037	Rotation: C Dev Unit		
038	Rotation: Y Dev Unit		
039	Rotation: K Developer		
040	Rotation: M Developer		
041	Rotation: C Developer		
042	Rotation: Y Developer		
043	Rotation: ITB Unit		
044	Rotation: Cleaning Unit		
045	Rotation: Fusing Unit		
046	Rotation: PTR Unit		
047	Measurement: Toner Collection bottle		
	Displays the number of sheets printed with the previous maintenance unit or toner cartridge.		
061	Rotation (%): K Drum Unit	*ENG	[0 to 255 / **0** / 1 %/step]
062	Rotation (%): M Drum Unit		
063	Rotation (%): C Drum Unit		
064	Rotation (%): Y Drum Unit		
065	Rotation (%): K Dev Unit		
066	Rotation (%): M Dev Unit		
067	Rotation (%): C Dev Unit		
068	Rotation (%): Y Dev Unit		
069	Rotation (%): K Developer		
070	Rotation (%): M Developer		

071	Rotation (%): C Developer		
072	Rotation (%): Y Developer		
073	Rotation (%): ITB Unit		
074	Rotation (%): Cleaning Unit		
075	Rotation (%): Fusing Unit		
076	Rotation (%): PTR Unit		
077	Measurement (%): Toner Collection bottle		
	Displays the value given by the following formula: (Current count ÷ Yield count) x 100, where “Current count” is the current values in the counter for the part, and “Yield count” is the recommended yield.		
091	Page (%): K Drum Unit	*ENG	[0 to 255 / **0** / 1 %/step]
092	Page (%): M Drum Unit		
093	Page (%): C Drum Unit		
094	Page (%): Y Drum Unit		
095	Page (%): K Dev Unit		
096	Page (%): M Dev Unit		
097	Page (%): C Dev Unit		
098	Page (%): Y Dev Unit		
099	Page (%): K Developer		
100	Page (%): M Developer		
101	Page (%): C Developer		
102	Page (%): Y Developer		
103	Page (%): ITB Unit		

104	Page (%): Cleaning Unit		
105	Page (%): Fusing Unit		
106	Page (%): PTR Unit		

7931	**[Toner Bottle Bk]**		
	Displays the toner bottle information for Bk.		
001	Machine Serial ID	*ENG	
002	Cartridge Ver		
003	Brand ID		
004	Area ID		
005	Product ID		
006	Color ID		
007	Maintenance ID		
008	New Product Information		
009	Recycle Counter		
010	Date		
011	Serial No.		
012	Toner Remaining		
013	EDP Code		
014	End History		
015	Refill Information		
016	Attachment: Total Counter		
017	Attachment: Color Counter		
018	End: Total Counter		

019	End: Color Counter		
020	Attachment Date		
021	End Date		

7932	**[Toner Bottle M]**		
	Displays the toner bottle information for M.		
001	Machine Serial ID	*ENG	
002	Cartridge Ver		
003	Brand ID		
004	Area ID		
005	Product ID		
006	Color ID		
007	Maintenance ID		
008	New Product Information		
009	Recycle Counter		
010	Date		
011	Serial No.		
012	Toner Remaining		
013	EDP Code		
014	End History		
015	Refill Information		
016	Attachment: Total Counter		
017	Attachment: Color Counter		
018	End: Total Counter		

019	End: Color Counter		
020	Attachment Date		
021	End Date		

7933	**[Toner Bottle C]**		
	Displays the toner bottle information for C.		
001	Machine Serial ID	*ENG	
002	Cartridge Ver		
003	Brand ID		
004	Area ID		
005	Product ID		
006	Color ID		
007	Maintenance ID		
008	New Product Information		
009	Recycle Counter		
010	Date		
011	Serial No.		
012	Toner Remaining		
013	EDP Code		
014	End History		
015	Refill Information		
016	Attachment: Total Counter		
017	Attachment: Color Counter		
018	End: Total Counter		

019	End: Color Counter		
020	Attachment Date		
021	End Date		

7934	**[Toner Bottle Y]**		
	Displays the toner bottle information for Y.		
001	Machine Serial ID	*ENG	
002	Cartridge Ver		
003	Brand ID		
004	Area ID		
005	Product ID		
006	Color ID		
007	Maintenance ID		
008	New Product Information		
009	Recycle Counter		
010	Date		
011	Serial No.		
012	Toner Remaining		
013	EDP Code		
014	End History		
015	Refill Information		
016	Attachment: Total Counter		
017	Attachment: Color Counter		
018	End: Total Counter		

019	End: Color Counter		
020	Attachment Date		
021	End Date		

7935	**[Toner Bottle Log 1: Bk]**		
001	Serial No.	*ENG	Displays the toner bottle information log 1 for Bk.
002	Attachment Date		
003	Attachment: Total Counter		
004	Refill Information		
011	Serial No.	*ENG	Displays the toner bottle information log 2 for Bk.
012	Attachment Date		
013	Attachment: Total Counter		
014	Refill Information		
021	Serial No.	*ENG	Displays the toner bottle information log 3 for Bk.
022	Attachment Date		
023	Attachment: Total Counter		
024	Refill Information		
031	Serial No.	*ENG	Displays the toner bottle information log 4 for Bk.
032	Attachment Date		
033	Attachment: Total Counter		
034	Refill Information		
041	Serial No.	*ENG	Displays the toner bottle information log 5 for Bk.
042	Attachment Date		
043	Attachment: Total Counter		

044	Refill Information		

7936	**[Toner Bottle Log 1: M]**		
001	Serial No.	*ENG	Displays the toner bottle information log 1 for M.
002	Attachment Date		
003	Attachment: Total Counter		
004	Refill Information		
011	Serial No.	*ENG	Displays the toner bottle information log 2 for M.
012	Attachment Date		
013	Attachment: Total Counter		
014	Refill Information		
021	Serial No.	*ENG	Displays the toner bottle information log 3 for M.
022	Attachment Date		
023	Attachment: Total Counter		
024	Refill Information		
031	Serial No.	*ENG	Displays the toner bottle information log 4 for M.
032	Attachment Date		
033	Attachment: Total Counter		
034	Refill Information		
041	Serial No.	*ENG	Displays the toner bottle information log 5 for M.
042	Attachment Date		
043	Attachment: Total Counter		
044	Refill Information		

7937	[Toner Bottle Log 1: C]		
001	Serial No.	*ENG	Displays the toner bottle information log 1 for C.
002	Attachment Date		
003	Attachment: Total Counter		
004	Refill Information		
011	Serial No.	*ENG	Displays the toner bottle information log 2 for C.
012	Attachment Date		
013	Attachment: Total Counter		
014	Refill Information		
021	Serial No.	*ENG	Displays the toner bottle information log 3 for C.
022	Attachment Date		
023	Attachment: Total Counter		
024	Refill Information		
031	Serial No.	*ENG	Displays the toner bottle information log 4 for C.
032	Attachment Date		
033	Attachment: Total Counter		
034	Refill Information		
041	Serial No.	*ENG	Displays the toner bottle information log 5 for C.
042	Attachment Date		
043	Attachment: Total Counter		
044	Refill Information		

7938	[Toner Bottle Log 1: Y]		
001	Serial No.	*ENG	Displays the toner bottle

002	Attachment Date		information log 1 for Y.
003	Attachment: Total Counter		
004	Refill Information		
011	Serial No.	*ENG	Displays the toner bottle information log 2 for Y.
012	Attachment Date		
013	Attachment: Total Counter		
014	Refill Information		
021	Serial No.	*ENG	Displays the toner bottle information log 3 for Y.
022	Attachment Date		
023	Attachment: Total Counter		
024	Refill Information		
031	Serial No.	*ENG	Displays the toner bottle information log 4 for Y.
032	Attachment Date		
033	Attachment: Total Counter		
034	Refill Information		
041	Serial No.	*ENG	Displays the toner bottle information log 5 for Y.
042	Attachment Date		
043	Attachment: Total Counter		
044	Refill Information		

7950	**[Unit Replacement Date]**		
	Displays the replacement date of each PM unit.		
001	Image Transfer Belt	*ENG	
002	Cleaning Unit		

003	Paper Transfer Unit		
004	Fusing Unit		
005	Toner Collection Bottle		
006	K PCU (Drum Unit)		
007	M PCU (Drum Unit)		
008	C PCU (Drum Unit)		
009	Y PCU (Drum Unit)		

7951	**[Remaining Day Counter]**		
	Displays the remaining unit life of each PM unit.		
001	Page: K Drum Unit	*ENG	[0 to 255 / **255** / 1 day/step]
002	Page: M Drum Unit		
003	Page: C Drum Unit		
004	Page: Y Drum Unit		
005	Page: K Dev Unit		
006	Page: M Dev Unit		
007	Page: C Dev Unit		
008	Page: Y Dev Unit		
009	Page: K Developer		
010	Page: M Developer		
011	Page: C Developer		
012	Page: Y Developer		
013	Page: ITB Unit		
014	Page: Cleaning Unit		

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015	Page: Fusing Unit		
016	Page: PTR Unit		
031	Rotation: K Drum Unit	*ENG	[0 to 255 / **255** / 1 day/step]
032	Rotation: M Drum Unit		
033	Rotation: C Drum Unit		
034	Rotation: Y Drum Unit		
035	Rotation: K Dev Unit		
036	Rotation: M Dev Unit		
037	Rotation: C Dev Unit		
038	Rotation: Y Dev Unit		
039	Rotation: K Developer		
040	Rotation: M Developer		
041	Rotation: C Developer		
042	Rotation: Y Developer		
043	Rotation: ITB Unit		
044	Rotation: Cleaning Unit		
045	Rotation: Fusing Unit		
046	Rotation: PTR Unit		
047	Measurement: Toner Collection bottle		

7952	**[PM Yield Setting]**		
	Adjusts the unit yield of each PM unit.		
001	Rotation: ITB Unit	*CTL	[0 to 999999999 / **256597000** / 1 mm/step]

002	Rotation: Cleaning Unit	*CTL	[0 to 999999999 / **128299000** / 1 mm/step]
003	Rotation: Fusing Unit	*CTL	[0 to 999999999 / **155595000** / 1 mm/step]
004	Rotation: Paper Transfer Unit	*CTL	[0 to 999999999 / **192448000**/ 1 mm/step]
011	Page: ITB Unit	*CTL	[0 to 999999 / **320000** / 1 sheet/step]
012	Page: Cleaning Unit	*CTL	[0 to 999999 / **160000** / 1 sheet/step]
013	Page: Fusing Unit	*CTL	[0 to 999999 / **160000** / 1 sheet/step]
014	Page: Paper Transfer Unit	*CTL	[0 to 999999 / **240000**/ 1 sheet/step]
021	Day: K Drum Unit	*CTL	Adjusts the threshold day for the near end fro each PM unit. [1 to 30 / **15** / 1 day/step] These threshold days are used for @Remote alarms.
022	Day: M Drum Unit		
023	Day: C Drum Unit		
024	Day: Y Drum Unit		
025	Day: K Dev Unit		
026	Day: M Dev Unit		
027	Day: C Dev Unit		
028	Day: Y Dev Unit		
029	Day: K Developer		
030	Day: M Developer		
031	Day: C Developer		
032	Day: Y Developer		
033	Day: ITB Unit		
034	Day:Cleaning Unit		
035	Day: Fusing Unit		
036	Day: PTR Unit		

037	Day: Toner Collection Botte		
038	Rotation: PCU (Drum Unit): Bk		[0 to 999999999 / **0** / 1 mm/step]
039	Rotation: PCU (Drum Unit): M		
040	Rotation: PCU (Drum Unit): C		
041	Rotation: PCU (Drum Unit): Y		
042	Rotation: Development Unit: Bk		[0 to 999999999 / **0** / 1 mm/step]
043	Rotation: Development Unit: M		
044	Rotation: Development Unit: C		
045	Rotation: Development Unit: Y		
046	Rotation: Developer: Bk		[0 to 999999999 / **0** / 1 mm/step]
047	Rotation: Developer: M		
048	Rotation: Developer: C		
049	Rotation: Developer: Y		
050	Page: PCU (Drum Unit): Bk		[0 to 999999 / **0** / 1 sheet/step]
051	Page: PCU (Drum Unit): M		
052	Page: PCU (Drum Unit): C		
053	Page: PCU (Drum Unit): Y		

054	Page: Development Unit: Bk		[0 to 999999 / **0** / 1 sheet/step]
055	Page: Development Unit: M		
056	Page: Development Unit: C		
057	Page: Development Unit: Y		
058	Page: Developer: Bk		[0 to 999999 / **0** / 1 sheet/step]
059	Page: Developer: M		
060	Page: Developer: C		
061	Page: Developer: Y		

7953	**[Operation Env. Log: PCU: Bk]**		
	Displays the PCU rotation distance in each specified operation environment. T: Temperature (°C), H: Relative Humidity (%)		
001	T<=0	*CTL	[0 to 99999999 / - / 1 mm/step]
002	0<T<=5:0<=H<30		
003	0<T<=5: 30<=H<70		
004	0<T<=5: 70<=H<=100		
005	5<T<15: 0<=H<30		
006	5<T<15: 30<=H<55		
007	5<T<15: 55<=H<80		
008	5<T<15: 80<=H<=100		
009	15<=T<25: 0<=H<30		

010	15<=T<25: 30<=H<55		
011	15<=T<25: 55<=H<80		
012	15<=T<25: 80<=H<=100		
013	25<=T<30: 0<=H<30		
014	25<=T<30: 55<=H<55		
015	25<=T<30: 55<=H<80		
016	25<=T<30: 80<=H<=100		
017	30<=T: 0<=H<30		
018	30<=T: 30<=H<55		
019	30<=T: 55<=H<80		
020	30<=T: 80<=H<=100		

7954	**[Operation Env. Log Clear]**		
	Clears the operation environment log.		
001			

SP8-xxx: Data Log2

Many of these counters are provided for features that are currently not available, such as sending color faxes, and so on. However, here are some Group 8 codes that when used in combination with others, can provide useful information.

SP Numbers	What They Do
SP8211 to SP8216	The number of pages scanned to the document server.
SP8401 to SP8406	The number of pages printed from the document server
SP8691 to SP8696	The number of pages sent from the document server

Specifically, the following questions can be answered:

- How is the document server actually being used?
- What application is using the document server most frequently?
- What data in the document server is being reused?

Most of the SPs in this group are prefixed with a letter that indicates the mode of operation (the mode of operation is referred to as an “application”). Before reading the Group 8 Service Table, make sure that you understand what these prefixes mean.

Prefixes	What it means	
T:	Total: (Grand Total).	Grand total of the items counted for all applications (C, F, P, etc.).
C:	Copy application.	Totals (pages, jobs, etc.) executed for each application when the job was not stored on the document server.
F:	Fax application.	
P:	Print application.	
S:	Scan application.	
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.)

Abbreviation	What it means
Full Bleed	No Margins
GenCopy	Generation Copy Mode
GPC	Get Print Counter. For jobs 10 pages or less, this counter does not count up. For jobs larger than 10 pages, this counter counts up by the number that is in excess of 10 (e.g., for an 11-page job, the counter counts up 11-10 =1)
IFax	Internet Fax
ImgEdt	Image Edit performed on the original with the copier GUI, e.g. border removal, adding stamps, page numbers, etc.
K	Black (YMCK)
LS	Local Storage. Refers to the document server.
LSize	Large (paper) Size
Mag	Magnification
MC	One color (monochrome)
NRS	New Remote Service (@Remote), which allows a service center to monitor machines remotely. “(@Remote)” 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

Engine Service Mode

Abbreviation	What it means
	pages if the A3/DLT counter SP is switched ON.
PJob	Print Jobs
Ppr	Paper
PrtJam	Printer (plotter) Jam
PrtPGS	Print Pages
R	Red (Toner Remaining). Applies to the wide format model A2 only. This machine is under development and currently not available.
RCG	Remote Communication Gate
Rez	Resolution
SC	Service Code (Error SC code displayed)
Scn	Scan
Sim, Simplex	Simplex, printing on 1 side.
S-to-Email	Scan-to-E-mail
SMC	SMC report printed with SP5990. All of the Group 8 counters are recorded in the SMC report.
Svr	Server
TonEnd	Toner End
TonSave	Toner Save
TXJob	Send, Transmission
YMC	Yellow, Magenta, Cyan
YMCK	Yellow, Magenta, Cyan, Black

Note

- All of the Group 8 SPs are reset with SP5 801 1 Memory All Clear.

8 001	T:Total Jobs	*CTL	These SPs count the number of times each application is used to do a job. [0 to 9999999/ **0** / 1]
8 004	P:Total Jobs	*CTL	

- These SPs reveal the number of times an application is used, not the number of pages processed.
- When an application is opened for image input or output, this counts as one job.
- Interrupted jobs (paper jams, etc.) are counted, even though they do not finish.
- Only jobs executed by the customer are counted. Jobs executed by the customer engineer using the SP modes are not counted.
- When using secure printing (when a password is required to start the print job), the job is counted at the time when either “Delete Data” or “Specify Output” is specified.
- A job is counted as a fax job when the job is stored for sending.
- When a fax is received to fax memory, the F: counter increments but the L: counter does not (the document server is not used).
- A fax broadcast counts as one job for the F: counter (the fax destinations in the broadcast are not counted separately).
- A fax broadcast is counted only after all the faxes have been sent to their destinations. If one transmission generates an error, then the broadcast will not be counted until the transmission has been completed.
- A printed fax report counts as one job for the F: counter.
- The F: counter does not distinguish between fax sending or receiving.
- When a copy job on the document server is printed, SP8022 also increments, and when a print job stored on the document server is printed, SP8024 also increments.
- When an original is both copied and stored on the document server, the C: and L: counters both increment.
- When a print job is stored on the document server, only the L: counter increments.
- When the user presses the Document Server button to store the job on the document server, only the L: counter increments.
- When the user enters document server mode and prints data stored on the document server, only the L: counter increments.
- When an image received from Palm 2 is received and stored, the L: counter increments.
- When the customer prints a report (user code list, for example), the O: counter increments. However, for fax reports and reports executed from the fax application, the

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F: counter increments.

8 011	T:Jobs/LS	*CTL	These SPs count the number of jobs stored to the document server by each application, to reveal how local storage is being used for input. [0 to 9999999/ **0** / 1]
8 014	P:Jobs/LS	*CTL	
8 017	O:Jobs/LS	*CTL	

- When a scan job is sent to the document server, the S: counter increments. When you enter document server mode and then scan an original, the L: counter increments.
- When a print job is sent to the document server, the P: counter increments.
- When a network application sends data to the document server, the O: counter increments.
- When an image from Palm 2 is stored on the document server, the O: counter increments.
- When a fax is sent to the document server, the F: counter increments.

8 021	T:Pjob/LS	*CTL	These SPs reveal how files printed from the document server were stored on the document server originally. [0 to 9999999/ **0** / 1]
8 024	P:Pjob/LS	*CTL	
8 027	O:Pjob/LS	*CTL	

- When a copy job stored on the document server is printed with another application, the C: counter increments.
- When an application like DeskTopBinder merges a copy job that was stored on the document server with a print job that was stored on the document server, the C: and P: counters both increment.
- When a job already on the document server is printed with another application, the L: counter increments.
- When a scanner job stored on the document server is printed with another application, the S: counter increments. If the original was scanned from within document server mode, then the L: counter increments.
- When images stored on the document server by a network application (including Palm 2), are printed with another application, the O: counter increments.
- When a copy job stored on the document server is printed with a network application (Web Image Monitor, for example), the C: counter increments.

- When a fax on the document server is printed, the F: counter increments.

8 031	T:Pjob/DesApl	*CTL	These SPs reveal what applications were used to output documents from the document server. [0 to 9999999/ **0** / 1]
8 034	P:Pjob/DesApl	*CTL	
8 037	O:Pjob/DesApl	*CTL	

- When documents already stored on the document server are printed, the count for the application that started the print job is incremented.
- When the print job is started from a network application (Desk Top Binder, Web Image Monitor, etc.) the L: counter increments.

8 061	T:FIN Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs total the finishing methods. The finishing method is specified by the application.		
8 064	P:FIN Jobs	*CTL	[0 to 9999999/ **0** / 1]
	These SPs total finishing methods for print jobs only. The finishing method is specified by the application.		
8 067	O:FIN Jobs	*CTL	[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.		
8 06x 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 SP8 066 1)	
8 06x 2	Stack	Number of jobs started out of Sort mode.	
8 06x 3	Staple	Number of jobs started in Staple mode.	
8 06x 4	Booklet	Number of jobs started in Booklet mode. If the machine is in staple mode, the Staple counter also increments.	
8 06x 5	Z-Fold	Number of jobs started In any mode other than the Booklet mode	

		and set for folding (Z-fold).
8 06x 6	Punch	Number of jobs started in Punch mode. When Punch is set for a print job, the P: counter increments. (See SP8 064 6.)
8 06x 7	Other	Reserved. Not used.

8 071	T:Jobs/PGS	*CTL	[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.		
8 074	P:Jobs/PGS	*CTL	[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.		
8 077	O:Jobs/PGS	*CTL	[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.		

8 07x 1	1 Page	8 07x 8	21 to 50 Pages
8 07x 2	2 Pages	8 07x 9	51 to 100 Pages
8 07x 3	3 Pages	8 07x 10	101 to 300 Pages
8 07x 4	4 Pages	8 07x 11	301 to 500 Pages
8 07x 5	5 Pages	8 07x 12	501 to 700 Pages
8 07x 6	6 to 10 Pages	8 07x 13	701 to 1000 Pages
8 07x 7	11 to 20 Pages	8 07x 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.
- Printing a fax report counts as a job and increments the F: counter (SP 8073).
- Interrupted jobs (paper jam, etc.) are counted, even though they do not finish.
- If a job is paused and re-started, it counts as one job.

- If the finisher runs out of staples during a print and staple job, then the job is counted at the time the error occurs.
- For copy jobs (SP 8072) and scan jobs (SP 8075), the total is calculated by multiplying the number of sets of copies by the number of pages scanned. (One duplex page counts as 2.)
- The first test print and subsequent test prints to adjust settings are added to the number of pages of the copy job (SP 8072).
- When printing the first page of a job from within the document server screen, the page is counted.

8 381	T:Total PrtPGS	*CTL	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]
8 384	P:Total PrtPGS	*CTL	
8 387	O:Total PrtPGS	*CTL	

- 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.

8 391	LSize PrtPGS	*CTL	[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.

8 411	Prints/Duplex	*CTL	This SP counts the amount of paper (front/back counted as 1 page) used for duplex printing. Last pages printed only on one side are not counted. [0 to 9999999/ **0** / 1]

8 421	T:PrtPGS/Dup Comb		*CTL	[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.			
8 424	P:PrtPGS/Dup Comb		*CTL	[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.			
8 427	O:PrtPGS/Dup Comb		*CTL	[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			
8 42x 1	Simplex> Duplex			
8 42x 2	Duplex> Duplex			
8 42x 3	Book> Duplex			
8 42x 4	Simplex Combine			
8 42x 5	Duplex Combine			
8 42x 6	2>	2 pages on 1 side (2-Up)		
8 42x 7	4>	4 pages on 1 side (4-Up)		
8 42x 8	6>	6 pages on 1 side (6-Up)		
8 42x 9	8>	8 pages on 1 side (8-Up)		

8 42x 10	9>	9 pages on 1 side (9-Up)		
8 42x 11	16>	16 pages on 1 side (16-Up)		
8 42x 12	Booklet			
8 42x 13	Magazine			

- These counts (SP8 421 to SP8 427) are especially useful for customers who need to improve their compliance with ISO standards for the reduction of paper consumption.
- Pages that are only partially printed with the n-Up functions are counted as 1 page.
- Here is a summary of how the counters work for Booklet and Magazine modes:

Booklet			**Magazine**	
Original Pages	**Count**		**Original Pages**	**Count**
1	1		1	1
2	2		2	2
3	2		3	2
4	2		4	2
5	3		5	4
6	4		6	4
7	4		7	4
8	4		8	4

8 431	T:PrtPGS/ImgEdt	*CTL	[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.		
8 434	P:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of pages output with the three features		

	below with the print application.		
8 437	O:PrtPGS/ImgEdt	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total number of pages output with the three features below with Other applications.		
8 43x 1	Cover/Slip Sheet	Total number of covers or slip sheets inserted. The count for a cover printed on both sides counts 2.	
8 43x 2	Series/Book	The number of pages printed in series (one side) or printed as a book with booklet right/left pagination.	
8 43x 3	User Stamp	The number of pages printed where stamps were applied, including page numbering and date stamping.	

8 441	T:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by all applications.		
8 444	P:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the printer application.		
8 447	O:PrtPGS/Ppr Size	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by Other applications.		
8 44x 1	A3		
8 44x 2	A4		
8 44x 3	A5		
8 44x 4	B4		
8 44x 5	B5		

8 44x 6	DLT			
8 44x 7	LG			
8 44x 8	LT			
8 44x 9	HLT			
8 44x 10	Full Bleed			
8 44x 254	Other (Standard)			
8 44x 255	Other (Custom)			

- These counters do not distinguish between LEF and SEF.

8 451	PrtPGS/Ppr Tray	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the number of sheets fed from each paper feed station.		
8 451 1	Bypass Tray	Bypass Tray	
8 451 2	Tray 1	Prinetr	
8 451 3	Tray 2	Prinetr	
8 451 4	Tray 3	Paper Tray Unit (Option)	
8 451 5	Tray 4	Paper Tray Unit (Option)	
8 451 6	Tray 5	Pater Tray Unit (Option)	
8 451 7	Tray 6	Currently not used.	
8 451 8	Tray 7	Currently not used.	
8 451 9	Tray 8	Currently not used.	
8 451 10	Tray 9	Currently not used.	

8 461	T:PrtPGS/Ppr Type	*CTL	[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.		
8 464	P:PrtPGS/Ppr Type	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by paper type the number pages printed by the printer application.		
8 46x 1	Normal		
8 46x 2	Recycled		
8 46x 3	Special		
8 46x 4	Thick		
8 46x 5	Normal (Back)		
8 46x 6	Thick (Back)		
8 46x 7	OHP		
8 46x 8	Other		

8 471	PrtPGS/Mag	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by magnification rate the number of pages printed.		
8 471 1	< 49%		
8 471 2	50% to 99%		
8 471 3	100%		
8 471 4	101% to 200%		
8 471 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%.

8 481	T:PrtPGS/TonSave	*CTL	
8 484	P:PrtPGS/TonSave	*CTL	
	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]		

8 501	T:PrtPGS/Col Mode	*CTL	These SPs count the number of pages printed in the Color Mode by the print application.
8 504	P:PrtPGS/Col Mode	*CTL	
8 507	O:PrtPGS/Col Mode	*CTL	
8 50x 1	B/W		
8 50x 2	Mono Color		
8 50x 3	Full Color		
8 50x 4	Single Color		

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8 50x 5	Two Color

8 511	T:PrtPGS/Emul		*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by printer emulation mode the total number of pages printed.			
8 514	P:PrtPGS/Emul		*CTL	[0 to 9999999/ **0** / 1]
	These SPs count by printer emulation mode the total number of pages printed.			
8 514 1	RPCS			
8 514 2	RPDL			
8 514 3	PS3			
8 514 4	R98			
8 514 5	R16			
8 514 6	GL/GL2			
8 514 7	R55			
8 514 8	RTIFF			
8 514 9	PDF			
8 514 10	PCL5e/5c			
8 514 11	PCL XL			
8 514 12	IPDL-C			
8 514 13	BM-Links	Japan Only		
8 514 14	Other			

- SP8 511 and SP8 514 return the same results as they are both limited to the Print application.
- Print jobs output to the document server are not counted.

8 521	T:PrtPGS/FIN	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count by finishing mode the total number of pages printed by all applications.		
8 524	P:PrtPGS/FIN	*CTL	[0 to 9999999 / **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Print application.		
8 52x 1	Sort		
8 52x 2	Stack		
8 52x 3	Staple		
8 52x 4	Booklet		
8 52x 5	Z-Fold		
8 52x 6	Punch		
8 52x 7	Other		

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.

8 531	Staples	*CTL	This SP counts the amount of staples used by the machine. [0 to 9999999 / **0** / 1]

8 581	T:Counter	*CTL	[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.
8 581 1	Total
8 581 2	Total: Full Color
8 581 3	B&W/Single Color
8 581 4	Development: CMY
8 581 5	Development: K
8 581 6	Copy: Color
8 581 7	Copy: B/W
8 581 8	Print: Color
8 581 9	Print: B/W
8 581 10	Total: Color
8 581 11	Total: B/W
8 581 12	Full Color: A3
8 581 13	Full Color: B4 JIS or Smaller
8 581 14	Full Color Print
8 581 15	Mono Color Print
8 581 16	Full Color GPC
8 581 17	Twin Colour Mode Print
8 581 18	Full Colour Print (Twin)
8 581 19	Mono Colour Print (Twin)
8 581 20	Full Colour Total (CV)
8 581 21	Mono Colour Total (CV)
8 581 22	Full Colour Print (CV)

8 584	P:Counter	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total output of the print application broken down by color output.		
8 584 1	B/W		
8 584 2	Mono Color		
8 584 3	Full Color		
8 584 4	Single Color		
8 584 5	Two Color		

8 591	O:Counter	*CTL	[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.		
8 591 1	A3/DLT	-	
8 591 2	Duplex		

8 601	Coverage Counter	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total coverage for each color and the total printout pages for each printing mode.		
8 601 1	B/W	-	
8 601 2	Color		
8 601 11	B/W Printing Pages		
8 601 12	Color Printing Pages		
8 601 21	Coverage Counter 1		
8 601 22	Coverage Counter 2		

8 601 23	Coverage Counter 3	

8 617	SDK Apli Counter	*CTL	[0 to 9999999/ **0** / 1]
	These SPs count the total printout pages for each SDK applicaion.		
8 617 1	SDK-1	-	
8 617 2	SDK-2		
8 617 3	SDK-3		
8 617 4	SDK-4		
8 617 5	SDK-5		
8 617 6	SDK-6		

8 771	Dev Counter	*CTL	[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.		
8 771 1	Total		
8 771 2	K		
8 771 3	Y		
8 771 4	M		
8 771 5	C		

8 781	Toner_Bottle_Info.	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the number of already replaced toner bottles. **NOTE:** Currently, the data in SP7-833-011 through 014 and the data in SP8-781-001 through 004 are the same.		
8 781 1	Toner: BK	The number of black-toner bottles	

8 781 2	Toner: Y	The number of yellow-toner bottles
8 781 3	Toner: M	The number of magenta-toner bottles
8 781 4	Toner: C	The number of cyan-toner bottles

8 801	Toner Remain	*CTL	[0 to 100/ **0** / 1]
	These SPs display the percent of toner remaining for each color. This SP allows the user to check the toner supply at any time. **Note:** This precise method of measuring remaining toner supply (1% steps) is better than other machines in the market that can only measure in increments of 10 (10% steps).		
8 801 1	K		
8 801 2	Y		
8 801 3	M		
8 801 4	C		

8 851	CVr Cnt: 0-10%	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the number of scanned sheets on which the coverage of each color is from 0% to 10%.		
8 851 11	0 to 2%: BK	8 851 31	5 to 7%: BK
8 851 12	0 to 2%: Y	8 851 32	5 to 7%: Y
8 851 13	0 to 2%: M	8 851 33	5 to 7%: M
8 851 14	0 to 2%: C	8 851 34	5 to 7%: C
8 851 21	3 to 4%: BK	8 851 41	8 to 10%: BK
8 851 22	3 to 4%: Y	8 851 42	8 to 10%: Y
8 851 23	3 to 4%: M	8 851 43	8 to 10%: M
8 851 24	3 to 4%: C	8 851 44	8 to 10%: C

8 861	CVr Cnt: 11-20%	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the number of scanned sheets on which the coverage of each color is from 11% to 20%.		
8 861 1	BK		
8 861 2	Y		
8 861 3	M		
8 861 4	C		

8 871	CVr Cnt: 21-30%	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the number of scanned sheets on which the coverage of each color is from 21% to 30%.		
8 871 1	BK		
8 871 2	Y		
8 871 3	M		
8 871 4	C		

8 881	CVr Cnt: 31%-	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the number of scanned sheets on which the coverage of each color is 31% or higher.		
8 881 1	BK		
8 881 2	Y		
8 881 3	M		
8 881 4	C		

8 891	Page/Toner Bottle	*ENG	[0 to 9999999/ **0** / 1]

	These SPs display the amount of the remaining current toner for each color.
8 891 1	BK
8 891 2	Y
8 891 3	M
8 891 4	C

8 901	Page/Toner_prev1	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the amount of the remaining previous toner for each color.		
8 901 1	BK		
8 901 2	Y		
8 901 3	M		
8 901 4	C		

8 911	Page/Toner_prev2	*ENG	[0 to 9999999/ **0** / 1]
	These SPs display the amount of the remaining 2nd previous toner for each color.		
8 911 1	BK		
8 911 2	Y		
8 911 3	M		
8 911 4	C		

8 921	Cvr Cnt/Total	*CTL	[0 to 9999999/ **0** / 1]
	Displays the total coverage and total printout number for each color.		

Engine Service Mode

8 921 1	Coverage (%) Bk		
8 921 2	Coverage (%) Y		
8 921 3	Coverage (%) M		
8 921 4	Coverage (%) C		
8 921 11	Coverage /P: Bk		
8 921 12	Coverage /P: Y		
8 921 13	Coverage /P: M		
8 921 14	Coverage /P: C		

8 941	Machine Status	*CTL	[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.		
8 941 1	Operation Time	Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).	
8 941 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.	
8 941 3	Energy Save Time	Includes time while the machine is performing background printing.	
8 941 4	Low Power Time	Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.	
8 941 5	Off Mode Time	Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.	

8 941 6	SC	Total time when SC errors have been staying.
8 941 7	PrtJam	Total time when paper jams have been staying during printing.
8 941 8	OrgJam	Total time when original jams have been staying during scanning.
8 941 9	Supply PM Unit End	Total time when toner end has been staying

8 999	Admin. Counter List	*CTL	[0 to 9999999/ **0** / 1]
	Displays the total coverage and total printout number for each color.		
8 999 1	Total		
8 999 6	Printer Full Color		
8 999 7	Printer BW		
8 999 8	Printer Single Color		
8 999 9	Printer Two Color		
8 999 12	A3/DLT		
8 999 13	Duplex		
8 999 14	Coverage: Color (%)		
8 999 15	Coverage: BW (%)		
8 999 16	Coverage: Color Print Page (%)		
8 999 17	Coverage: BW Print Page (%)		

SP9-XXX: Others

9511	Skew Origin Set	*CTL	
001	M: Skew Motor	These SPs reset the skew correction value (SP2-119-001 to -003) to "0".	
002	C: Skew Motor		

003	Y: Skew Motor	

8.2.2 INPUT CHECK TABLE

When entering the Input Check mode, 8 digits display the result for a section. Each digit corresponds to a different device as shown in the table.

Bit No.	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0**
Result	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1	0 or 1

Printer

5803	**Description**	**Reading**	
		0	**1**
5803 1	2nd Tray Size Detection	See table 2 following this table.	
5803 2	1st Tray Set Detection	Set	Not set
5803 3	1st Tray Paper Height Sensor1	See table 1 following this table.	
5803 4	1st Tray Paper Height Sensor2	See table 1 following this table.	
5803 5	2nd Tray Paper Height Sensor1	See table 1 following this table.	
5803 6	2nd Tray Paper Height Sensor2	See table 1 following this table.	
5803 7	1st Tray Paper End Detection	No paper	Paper remaining
5803 8	2nd Tray Paper End Detection	No paper	Paper remaining
5803 9	1st Tray Upper Limit Sensor	Not upper limit	Upper limit
5803 10	2nd Tray Upper Limit Sensor	Not upper limit	Upper limit
5803 11	Bypass Paper Width Detection	See table 3 following this table.	
5803 12	Bypass Paper End Detection	No paper	Paper remaining
5803 13	Bypass Paper Length Detection	See table 3 following this table.	
5803 14	1st Paper Feed Sensor	Paper detected	Paper not

			detected
5803 15	2st Paper Feed Sensor	Paper detected	Paper not detected
5803 16	Exit Sensor	Paper detected	Paper not detected
5803 17	Tray Full Exit Sensor	Paper not full	Paper full
5803 18	Fusing Exit Sensor	Paper not detected	Paper detected
5803 19	Fusing Entrance Sensor	Paper detected	Paper not detected
5803 20	1st Feed Sensor	Paper detected	Paper not detected
5803 21	2nd Feed Sensor	Paper detected	Paper not detected
5803 22	Duplex Exit Sensor	Paper detected	Paper not detected
5803 23	Registration Sensor	Paper detected	Paper not detected
5803 24	Duplex Entrance Sensor	Paper detected	Paper not detected
5803 25	Junction Sensor	Paper detected	Paper not detected
5803 26	2nd Tray Set Detection	Set	Not set
5803 30	Toner End Sensor: Bk	Toner end	Toner remaining
5803 31	Toner End Sensor: M	Toner end	Toner remaining
5803 32	Toner End Sensor: C	Toner end	Toner remaining
5803 33	Toner End Sensor: Y	Toner end	Toner remaining

5803 34	Drum Phase Sensor: Bk	Actuator not detected	Actuator detected
5803 35	Drum Phase Sensor: M	Actuator not detected	Actuator detected
5803 36	Drum Phase Sensor: C	Actuator not detected	Actuator detected
5803 37	Drum Phase Sensor: Y	Actuator not detected	Actuator detected
5803 38	Interlock Release Detection 1	Front door open	Front door closed
5803 39	Interlock Release Detection 2	Front door open	Front door closed
5803 40	Right Door	Closed	Open
5803 41	Duplex Cover	Closed	Open
5803 42	Toner Collection Bottle Set	Set	Not set
5803 43	Toner Collection Full Sensor	Not full	Full
5803 46	ITB New Unit Detection	Not new	New
5803 50	Airflow Fan: Front: Lock	Normal	Lock
5803 51	Airflow Fan: Rear: Lock	Normal	Lock
5803 52	Fusing Exit Fan: Lock	Normal	Lock
5803 53	2nd Duct Fan: Lock	Normal	Lock
5803 54	3rd Duct Fan: Lock	Normal	Lock
5803 55	Paper Exit Fan:Lock	Normal	Lock
5803 56	Fusing Coil Fan: Lock	Normal	Lock
5803 57	IH Power Supply Cooling Fan: Lock	Normal	Lock

5803 60	ITB Contact Motor Position	Not contact	Contact
5803 61	Paper Transfer Contact Motor Position	Not contact	Contact
5803 62	Toner Relay Motor: Lock	Normal	Lock
5803 63	ITB Drive Motor: Lock	Normal	Lock
5803 64	K Drum/Development Drive Motor: Lock	Normal	Lock
5803 65	M Drum/Development Drive Motor: Lock	Normal	Lock
5803 66	C Drum/Development Drive Motor: Lock	Normal	Lock
5803 67	Y Drum/Development Drive Motor: Lock	Normal	Lock
5803 68	Fusing Exit Motor:Lock	Normal	Lock
5803 80	HVPS:TTS:SC Detection	SC detected	No SC
5803 81	HVPS:CB:SC Detection	SC detected	No SC
5803 82	HVPS:D:SC Detection	SC detected	No SC
5803 83	Fusing Destination Detection: DOM (Dom)	Set	Not set
5803 84	Fusing Destination Detection: NA	Set	Not set
5803 85	Fusing Destination Detection: EU	Set	Not set
5803 86	Fusing Destination Detection: TWN	Set	Not set
5803 87	Fusing New Unit Detection	New	Not new
5803 90	Zero-cross Signal	-	-
5803 91	Fusing Rotation Sensor	Actuator not detected	Actuator detected

Engine Service Mode

5803 92	Fusing Pressue Release Sensor	Not contact	Contact
5803 94	GAVD Open/Close Detection	Closed (LD5V ON)	Open (LD5V OFF)
5803 100	Keycard: Set	Set	Not set
5803 101	Mechanical Counter Bk: Set	Set	Not set
5803 102	Mechanical Counter FC: Set	Set	Not set
5803 103	Key Counter: Set	Set	Not set
5803 110	IOB Version	-	-

Table 1: Paper Height Sensor

0: Deactivated, 1: Activated (actuator inside sensor)

Remaining paper	Paper height sensor 1	Paper height sensor 2
Full	0	0
Nearly full	1	0
Near end	1	1
Almost empty	0	1

Table 2: Paper Size Switch (Tray 2)

Switch 1 is used for tray set detection.

0: Pushed, 1: Not pushed

Models		Switch Location		
North America	**Europe/Asia**	**4 (bit0)**	**3 (bit1)**	**2 (bit2)**
11" x 17" SEF[*1] (A3 SEF)	A3 SEF[*1] (11" x 17" SEF)	0	0	1

8.5" x 14" SEF[*2] (B4 SEF)	B4 SEF[*2] (8.5" x 14" SEF)	0	0	0
A4 SEF	A4 SEF	1	1	0
8.5" x 11" SEF	8.5" x 11" SEF	1	1	1
B5 SEF	B5 SEF	0	1	1
11" x 81/2" LEF[*3] (A4 LEF)	A4 LEF[*3] (11" x 81/2" LEF)	1	0	0
10.5" x 7.25" LEF[*4] (B5 LEF)	B5 LEF[*4] (10.5" x 7.25" LEF)	0	1	0
A5 LEF	A5 LEF	1	0	1

*1: The machine detects either 11" x 17" SEF or A3 SEF, depending on the setting of SP 5-181-003.
*2: The machine detects either 8.5" x 14" SEF or B4 SEF, depending on the setting of SP 5-181-004.
*3: The machine detects either 11" x 81/2" LEF or A4 LEF, depending on the setting of SP 5-181-002.
*4: The machine detects either B5 LEF or 10.5" x 7.25" LEF, depending on the setting of SP 5-181-005.

Table 3: Paper Size (By-pass Table)

0: ON, 1: OFF

By-pass Paper Size Sensor				Length Sensor	NA	EU/ASIA
bit3	Bit2	Bit1	Bit0			
1	1	1	1	1	HLT SEF	A6 SEF
0	1	1	1	1	HLT SEF	A6 SEF
0	0	1	1	1	HLT SEF	A5 SEF
1	0	1	1	1	HLT SEF	A5 SEF

Engine Service Mode

By-pass Paper Size Sensor				Length Sensor	NA	EU/ASIA
bit3	Bit2	Bit1	Bit0			
1	0	0	1	0	LT/LG SEF*[1]	A4 SEF
1	0	0	1	1	LT/LG SEF*[1]	A5 LEF
1	1	0	1	0	LT/LG SEF*[1]	A4 SEF
1	1	0	1	1	LT/LG SEF*[1]	A5 LEF
1	1	0	0	0	DLT SEF	A3 SEF
1	1	0	0	1	LT LEF	A4 LEF
1	1	1	0	0	DLT SEF	A3 SEF
1	1	1	0	1	LT LEF	A4 LEF

*1: The paper size (LT or LG) can be selected with SP1-007-001.

1000-Sheet Booklet Finisher (B793)

6138	Description	Reading	
		0	1
6138 1	Interference Escape Sensor (Stapler Safety Sensor)	Not interfered	Interfered
6138 2	Staple Moving HP Sensor (Staple Unit HP Sensor)	Not home position	Home position
6138 3	Stuck Relay1 Release HP Sensor (Stopper S HP Sensor)	Not home position	Home position
6138 4	Exit Junction Gate HP Sensor (Stack Feed Out HP Sensor)	Home position	Not home position
6138 5	Jogger HP Sensor (Jogger Fence HP Sensor)	Not home position	Home position

6138	Description	Reading	
		0	1
6138 6	Staple Tray Paper Sensor (Staple Tray Paper Sensor)	Paper not detected	Paper detected
6138 7	Rear Edge Fence HP Sensor (Paper Stack Stopper HP Sensor)	Not home position	Home position
6138 8	Saddle Stitch Exit Sensor	Paper detected	Paper not detected
6138 9	Stuck Relay2 Roller HP Sensor (Clamp Roller HP Sensor)	Home position	Not home position
6138 10	Folder Tray Full Sensor 1 (Bottom Tray HP 1 Sensor)	Full	Not full
6138 11	Folder Tray Full Sensor 2 (Bottom Tray HP 2 Sensor)	Not full	Full
6138 12	Folder Plate HP Sensor (Fold Plate HP Sensor)	Not home position	Home position
6138 13	Saddle Stitch Arrival Sensor (Fold Unit Entrance Sensor)	Paper not detected	Paper detected
6138 14	Folder Cam HP Sensor (Fold Plate Cam HP Sensor)	Not home position	Home position
6138 15	Staple Exit Sensor (Stapler Tray Exit Sensor)	Paper detected	Paper not detected
6138 16	Shift Tray Paper Sensor (Shift Tray Paper Position Sensor)	Shift tray not detected	Shift tray detected
6138 17	Shift Tray Full	Full	Nor full
6138 18	Shift Roller HP Sensor	Not home position	Home position
6138 20	Entrance Sensor (Finisher Entrance Sensor)	Paper detected	Paper not detected

Engine Service Mode

6138	Description	Reading	
		0	1
6138 21	Shift Exit Sensor (Shift Tray Exit Sensor)	Paper not detected	Paper detected
6138 22	Proof Exit Sensor (Proof Tray Exit Sensor)	Paper detected	Paper not detected
6138 23	Exit Guide Plate HP Sensor	Not home position	Home position
6138 24	Proof Full Sensor (Proof Tray Full Sensor)	Not full	Full
6138 25	Upper Cover Sensor	Open	Close
6138 26	Door SW (Front Door Switch)	Close	Open
6138 27	Clincher Timing Sensor	Encoder	
6138 28	Clincher HP Sensor	Home position	Not home position
6138 29	Driver Timing Sensor	Encoder	
6138 30	Staple Near End	Staple remaining	Staple near end
6138 31	Self Priming	Staple detected	Staple not detected
6138 32	Driver HP Sensor	Home position	Not home position
6138 33	Punch Registration Detection HP Sensor	Not home position	Home position
6138 34	Punch Moving HP Sensor (Punch Movement HP Sensor)	Not home position	Home position
6138 35	Punch HP Sensor (Punch HP Sensor)	Home position	Not home position

6138	Description	Reading	
		0	1
6138 36	Punch Pulse Count Sensor (Punch Encoder Sensor)	Encoder	
6138 37	Punch Chad Full Sensor (Punch Hopper Full Sensor)	Not full	Full
6138 38	Punch Registration Detection Sensor (Paper Position Sensor)	Paper detected	Paper not detected

3000-Sheet Finisher (B805)

6140	Bit	Description	Reading	
			0	1
6140 1	Entrance Sensor		Paper not detected	Paper detected
6140 2	Proof Exit Sensor		Paper not detected	Paper detected
6140 3	Proof Full Detection Sensor		Not Full	Full
6140 4	Trailing Edge Detection: Shift		Paper not detected*1	Paper detected*1
6140 5	Staple Exit Sensor		Paper not detected	Paper detected
6140 6	Shift HP Sensor		Not HP	HP
6140 7	Shift Exit Sensor		Paper not detected	Paper detected
6140 8	Exit Guide Plate HP Sensor		Not HP	HP

6140 9	Paper Detection Sensor: Staple	Paper not detected	Paper detected
6140 10	Paper Detection Sensor: Shift	Paper not detected	Paper detected
6140 11	Paper Full Sensor: 2000-Sheet	Not Full	Full
6140 12	Oscillating Back Roller HP Sensor	Not HP	HP
6140 13	Jogger HP Sensor	Not HP	HP
6140 14	Exit Junction Gate HP Sensor	HP	Not HP
6140 15	Staple Tray Paper Sensor	Paper not detected	Paper detected
6140 16	Staple Moving HP Sensor	Not HP	HP
6140 17	Skew HP Sensor	Not HP	HP
6140 18	Limit SW	Not Limit	Limit
6140 19	DOOR SW	Closed	Open
6140 20	Stapler 1 Rotation	Not HP	HP
6140 21	Staple Detection	Staple not detected	Staple detected
6140 22	Staple Leading Edge Detection	Staple not detected	Staple detected
6140 23	Punch Moving HP Sensor	Not HP	HP
6140 24	Punch Registration HP Sensor	Not HP	HP
6140 25	Punch Registratioin Detection Sensor	Paper not detected	Paper detected
6140 26	Punch Chad Full Sensor	Not Full	Full
6140 27	Punch HP	Not HP	HP

6140 28	Punch Selection DIPSW 1	See *[1]	
6140 29	Punch Selection DIPSW 2	See *[1]	
6140 30	Stack Junction Gate Open/Closed HP Sensor	Not HP	HP
6140 31	Leading Edge Detection Sensor	Paper not detected	Paper detected
6140 32	Drive Roller HP Sensor	Not HP	HP
6140 33	Arrival Sensor	Paper not detected	Paper detected
6140 34	Rear Edge Fence HP Sensor	Not HP	HP
6140 35	Folder Cam HP Sensor	Not HP	HP
6140 36	Folder Plate HP Sensor	Not HP	HP
6140 37	Folder Pass Sensor	Paper not detected	Paper detected
6140 38	Saddle Full Sensor: Front	Paper not detected*[2]	Paper detected*[2]
6140 39	Saddle Full Sensor: Rear	Paper not detected*[2]	Paper detected*[2]
6140 40	Saddle Stitch Stapler 1 Rotation: Front	Not HP	HP
6140 41	Saddle Stitch Detection: Front	Staple not detected	Staple detected
6140 42	Saddle Stitch Leading Edge Detection: Front	Staple not detected	Staple detected
6140 43	Saddle Stitch Stapler 1 Rotation: Rear	Not HP	HP
6140 44	Saddle Stitch Detection: Rear	Staple not	Staple detected

		detected	
6140 45	Saddle Stitch Leading Edge Detection: Rear	Staple not detected	Staple detected
6140 46	Full Sensor: 3000-Sheet	Not Full	Full
6140 47	Exit Jogger HP Sensor: Front	Not used in the machine	
6140 48	Exit Jogger HP Sensor: Rear	Not used in the machine	
6140 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".

Mail Bin (G835)

6142	Description	Reading	
		0	1
6142 1	Relay Sn 1	Paper detected	Paper not detected
6142 2	Relay Sn 2	Paper detected	Paper not detected
6142 3	Full Sn 4	Not Full	Full

6142 4	Paper Sn 4	Paper detected	Paper not detected
6142 5	Full Sn 3	Not Full	Full
6142 6	Paper Sn 3	Paper detected	Paper not detected
6142 7	Full Sn 2	Not Full	Full
6142 8	Paper Sn 2	Paper detected	Paper not detected
6142 9	Full Sn 1	Not Full	Full
6142 10	Paper Sn 1	Paper detected	Paper not detected
6142 11	Door Sn	Open	Close

Bridge Unit (D386)

6150	**Description**	**Reading**	
		0	**1**
6150 1	Bridge: Exit Sensor	Paper detected	Paper not detected
6150 2	Bridge: Feed Sensor	Paper detected	Paper not detected
6150 3	Bridge:Set Detection	Set	Not set
6150 4	Bridge: Exit Cover Detection	Closed	Open
6150 5	Bridge: Feed Cover Detection	Closed	Open

One or Two-Tray PFU (D387/D351)/ LCIT 2000 (D352)

6160	Description	Reading	
		0	1
6160 1	Bank: Tray3: Feed Sensor	Paper not detected	Paper detected
6160 2	Bank: Tray4: Feed Sensor	Paper not detected	Paper detected
6160 3	Bank: Tray5: Feed Sensor	Paper not detected	Paper detected
6160 4	Bank: Tray3: Relay Sensor	Paper not detected	Paper detected
6160 5	Bank: Tray4: Relay Sensor	Paper not detected	Paper detected
6160 6	Bank: Tray5: Relay Sensor	Paper not detected	Paper detected
6160 7	Bank: Feed Cover Detection	Closed	Open
6160 11	Bank: Palau: Paper Supply Switch	Closed	Open
6160 12	Bank: Palau: Slide Switch	Closed	Open

8.2.3 OUTPUT CHECK TABLE

Printer

5804	Display	Description
5804 3	Drum/Dev Motor: K: 230mm/s	Drum/Development Drive Motor-K: 230 mm/s
5804 4	Drum/Dev Motor: K: 205mm/s	Drum/Development Drive Motor-K: 205 mm/s

5804 5	Drum/Dev Motor: K: 154mm/s	Drum/Development Drive Motor-M: 154 mm/s
5804 7	Drum/Dev Motor: K: 77mm/s	Drum/Development Drive Motor-M: 77 mm/s
5804 10	Drum/Dev Motor: M: 230mm/s	Drum/Development Drive Motor- C: 230 mm/s
5804 11	Drum/Dev Motor: M: 205mm/s	Drum/Development Drive Motor-Y: 205 mm/s
5804 12	Drum/Dev Motor: M: 154mm/s	Drum/Development Drive Motor-Y: 154 mm/s
5804 14	Drum/Dev Motor: M: 77mm/s	Drum/Development Drive Motor-Y: 77 mm/s
5804 17	Drum/Dev Motor: C: 230mm/s	Drum/Development Drive Motor- C: 230 mm/s
5804 18	Drum/Dev Motor: C: 205mm/s	Drum/Development Drive Motor-Y: 205 mm/s
5804 19	Drum/Dev Motor: C: 154mm/s	Drum/Development Drive Motor-Y: 154 mm/s
5804 21	Drum/Dev Motor: C: 77mm/s	Drum/Development Drive Motor-Y: 77 mm/s
5804 24	Drum/Dev Motor: Y: 230mm/s	Drum/Development Drive Motor- C: 230 mm/s
5804 25	Drum/Dev Motor: Y: 205mm/s	Drum/Development Drive Motor-Y: 205 mm/s
5804 26	Drum/Dev Motor: Y: 154mm/s	Drum/Development Drive Motor-Y: 154 mm/s
5804 28	Drum/Dev Motor: Y: 77mm/s	Drum/Development Drive Motor-Y: 77 mm/s

Engine Service Mode

5804 31	Fusing Exit Motor: 230mm/s	Fusing/Paper Exit Motor: 230 mm/s
5804 32	Fusing Exit Motor: 205mm/s	Fusing/Paper Exit Motor: 205 mm/s
5804 33	Fusing Exit Motor: 154mm/s	Fusing/Paper Exit Motor: 154 mm/s
5804 35	Fusing Exit Motor: 77mm/s	Fusing/Paper Exit Motor: 77 mm/s
5804 36	Fusing Exit Motor: 56mm/s	Fusing/Paper Exit Motor: 56 mm/s
5804 37	Toner Relay Motor	Toner Transport Motor
5804 40	Image Transfer Motor: 230mm/s	ITB Drive Motor: 230 mm/s
5804 41	Image Transfer Motor: 205mm/s	ITB Drive Motor: 205 mm/s
5804 42	Image Transfer Motor: 154mm/s	ITB Drive Motor: 154 mm/s
5804 44	Image Transfer Motor: 77mm/s	ITB Drive Motor: 77 mm/s
5804 50	Feed Motor: 300mm/s	Paper Feed Motor: 300 mm/s
5804 51	Feed Motor: 265mm/s	Paper Feed Motor: 265 mm/s
5804 53	Feed Motor: 230mm/s	Paper Feed Motor: 230 mm/s
5804 54	Feed Motor: 205mm/s	Paper Feed Motor: 205 mm/s
5804 55	Feed Motor: 154mm/s	Paper Feed Motor: 154 mm/s
5804 56	Regist Motor: 115mm/s	Paper Feed Motor: 115mm/s
5804 57	Feed Motor: 77mm/s	Paper Feed Motor: 115mm/s
5804 58	Regist Motor: 215mm/s	Registration Motor: 215 mm/s
5804 60	Regist Motor: 230mm/s	Registration Motor: 230 mm/s
5804 61	Regist Motor: 205mm/s	Registration Motor: 205 mm/s
5804 62	Regist Motor: 154mm/s	Registration Motor: 154 mm/s
5804 64	Regist Motor: 77mm/s	Registration Motor: 77 mm/s
5804 67	Duplex Feed M:CW:230mm/s	Duplex/By-pass Motor: CW: 230 mm/s

5804 68	Duplex Feed M:CW:205mm/s	Duplex/By-pass Motor: CW: 205 mm/s
5804 69	Duplex Feed Motor: CW: 154mm/s	Duplex/By-pass Motor: CW: 154 mm/s
5804 71	Duplex Feed Motor: CW: 77mm/s	Duplex/By-pass Motor: CW: 77 mm/s
5804 74	Duplex Feed M:CCW:230mm/s	Duplex/By-pass Motor: CCW: 230 mm/s
5804 75	Duplex Feed M:CCW:205mm/s	Duplex/By-pass Motor: CCW: 205 mm/s
5804 76	Duplex Feed Motor: CCW: 154mm/s	Duplex/By-pass Motor: CCW: 154 mm/s
5804 78	Duplex Feed Motor: CCW: 77mm/s	Duplex/By-pass Motor: CCW: 77 mm/s
5804 81	Duplex Reverse M:CW:230mm/s	Duplex Inverter Motor: CW: 230 mm/s
5804 82	Duplex Reverse M:CW:205mm/s	Duplex Inverter Motor: CW: 205 mm/s
5804 83	Duplex Reverse Motor: CW: 154mm/s	Duplex Inverter Motor: CW: 154 mm/s
5804 85	Duplex Reverse Motor: CW: 77mm/s	Duplex Inverter Motor: CW: 77 mm/s
5804 88	Duplex Reverse M:CCW:230mm/s	Duplex Inverter Motor: CCW: 230 mm/s
5804 89	Duplex Reverse M:CCW:205mm/s	Duplex Inverter Motor: CCW: 205 mm/s
5804 90	Duplex Reverse Motor: CCW: 154mm/s	Duplex Inverter Motor: CCW: 154 mm/s
5804 92	Duplex Reverse Motor: CCW: 77mm/s	Duplex Inverter Motor: CCW: 77 mm/s
5804 95	ITB Contact Motor	Image Transfer Belt Contact Motor

Engine Service Mode

5804 96	Paper Transfer Contact Motor	Paper Transfer Contact Motor
5804 97	1st Tray Lift Motor: Up	Tray Lift Motor 1: Lift Up
5804 98	1st Tray Lift Motor: Down	Tray Lift Motor 1: Lift Down
5804 99	2nd Tray Lift Motor: Up	Tray Lift Motor 2: Lift Up
5804 100	2nd Tray Lift Motor: Down	Tray Lift Motor 2: Lift Down
5804 102	Fusing Pressue Release Motor	Pressure Roller Contact Motor
5804 104	Polygon Moter: LL	Polygon Motor: LL
5804 105	Polygon Moter: L	Polygon Motor: L
5804 107	Polygon Moter: HH	Polygon Motor: HH
5804 110	Air Flow Fan: Front	Ventilation Fan - Front
5804 111	Air Flow Fan:Rear	Ventilation Fan - Rear
5804 112	Fusing Fan:H	Fusing Fan: High Speed
5804 113	Fusing Fan:L	Fusing Fan: Low Speed
5804 114	PSU Cooling Fan	PSU Fan 1: High Speed
5804 115	2nd Duct Fan: H	Duct Fan 2: High Speed
5804 117	3rd Duct Fan: H	Duct Fan 3: High Speed
5804 119	Paper Exit Fan:H	Paper Exit Fan: High Speed
5804 121	Fusing Coil Fan	IH Coil Fan
5804 122	IH Power Supply Cooling Fan	IH Inverter Fan
5804 126	Development Clutch: Bk	Development Clutch-K
5804 127	Development Clutch: M	Development Clutch-M
5804 128	Development Clutch: C	Development Clutch-C
5804 129	Development Clutch: Y	Development Clutch-Y

5804 130	Toner Bottle Clutch: Bk	Toner Bottle Clutch-K
5804 131	Toner Bottle Clutch: M	Toner Bottle Clutch-M
5804 132	Toner Bottle Clutch: C	Toner Bottle Clutch-C
5804 133	Toner Bottle Clutch:Y	Toner Bottle Clutch-Y
5804 134	Toner Supply Pump: Bk	Toner Supply Clutch: Bk
5804 135	Toner Supply Pump: M	Toner Supply Clutch: M
5804 136	Toner Supply Pump: C	Toner Supply Clutch: C
5804 137	Toner Supply Pump: Y	Toner Supply Clutch: Y
5804 138	1st Paper Feed Clutch	Paper Feed Clutch 1
5804 139	2nd Paper Feed Clutch	Paper Feed Clutch 2
5804 140	Bypass Feed Clutch	By-pass Feed Clutch
5804 141	Bypass Pickup Solenoid	Bypass Pickup Solenoid
5804 142	Feed Tray Lock Solenoid	Tray Lock Solenoid
5804 143	TD Sensor Shutter Solenoid	ID Sensor Shutter Solenoid
5804 144	Exit Junction Solenoid	Junction Gate 1 Solenoid
5804 145	1st Feed Pickup Solenoid	1st Pickup Solenoid
5804 146	2st Feed Pickup Solenoid	2nd Pickup Solenoid
5804 147	Duplex Junction Solenoid	Duplex Junction Solenoid
5804 161	PCL: Bk	
5804 162	PCL: M	
5804 163	PCL: C	
5804 164	PCL: Y	
5804 166	HST Sensor:Bk	TD Sensor:Bk

5804 167	HST Sensor: M	TD Sensor: M
5804 168	HST Sensor: C	TD Sensor: C
5804 169	HST Sensor: Y	TD Sensor: Y
5804 170	Toner End Sensor: Bk	Toner End Sensor: Bk
5804 171	Toner End Sensor: M	Toner End Sensor: M
5804 172	Toner End Sensor: C	Toner End Sensor: C
5804 173	Toner End Sensor: Y	Toner End Sensor: Y
5804 174	TM Sensor: Front	ID Sensor: Front
5804 175	TM Sensor: Center	ID Sensor: Center
5804 176	TM Sensor: Rear	ID Sensor: Rear
5804 177	TM Sensor: M	ID Sensor: M
5804 178	TM Sensor: C	ID Sensor: C
5804 179	TM Sensor: Y	ID Sensor: Y
5804 181	Bank Motor 2: 115mm/s	Paper Feed Motor 2: 115 mm/s (Optional Paper Feed Unit)
5804 182	Bank Motor 2: 154mm/s	Paper Feed Motor 2: 154 mm/s (Optional Paper Feed Unit)
5804 183	Bank Motor 2: 205mm/s	Paper Feed Motor 2: 205 mm/s (Optional Paper Feed Unit)
5804 184	Bank Motor 2: 215mm/s	Paper Feed Motor 2: 215 mm/s (Optional Paper Feed Unit)
5804 186	PP:Development:K	-
5804 187	PP:Development:M	-
5804 188	PP:Development:C	-
5804 189	PP:Development:Y	-

5804 190	PP:Separation	-
5804 192	RFID ON/OFF: K	-
5804 193	RFID ON/OFF: Y	-
5804 194	RFID ON/OFF: C	-
5804 195	RFID ON/OFF: M	-
5804 196	RFID COM ON:K	-
5804 197	RFID COM ON: Y	-
5804 198	RFID COM ON: C	-
5804 199	RFID COM ON: M	-
5804 202	Scanner Lamp	-
5804 216	LD1: K	-
5804 217	LD2: K	-
5804 218	LD1: M	-
5804 219	LD2: M	-
5804 220	LD1: C	-
5804 221	LD2: C	-
5804 222	LD1: Y	-
5804 223	LD2: Y	-
5804 224	PP:ITB:K	PP: Image Transfer Roller: K
5804 225	PP:ITB:M	PP: Image Transfer Roller: M
5804 226	PP:ITB:C	PP: Image Transfer Roller: C
5804 227	PP:ITB:Y	PP: Image Transfer Roller: Y
5804 228	PP:PTR:+	PP: Paper Transfer Roller:+

Engine Service Mode

5804 229	PP:PTR:-	PP: Paper Transfer Roller:-
5804 231	HVPS: ChargeDC: K	-
5804 232	HVPS: ChargeDC: M	-
5804 233	HVPS: ChargeDC: C	-
5804 234	HVPS: ChargeDC: Y	-
5804 237	PP:Charge AC:K:230mm/s	-
5804 238	PP:Charge AC:K:205mm/s	-
5804 239	HVPS: ChargeAC: K: 154mm/s	-
5804 241	HVPS: ChargeAC: K: 77mm/s	-
5804 244	PP:Charge AC:M:230mm/s	-
5804 245	PP:Charge AC:M:205mm/s	-
5804 246	HVPS: ChargeAC: M: 154mm/s	-
5804 248	HVPS: ChargeAC: M: 77mm/s	-
5804 251	PP:Charge AC:C:230mm/s	-
5804 252	PP:Charge AC:C:205mm/s	-
5804 253	HVPS: ChargeAC: C: 154mm/s	-
5804 255	HVPS: ChargeAC: C: 77mm/s	-

1000-Sheet Booklet Finisher (B793)

6143	**Display**	**Description**
6143 1	Shift Motor	Shift Tray Motor
6143 2	Entrance Motor	-
6143 3	Staple Relay Motor	Stapler Unit Motor

6143 4	Knock Solenoid	
6143 5	Junction Gate SOL 1	Proof Tray Gate Solenoid
6143 6	Junction Gate SOL 2	Staple Tray Gate Solenoid
6143 7	Folder Roller Rotation Motor	Fold Roller Motor
6143 8	Staple Motor	Staple Fold Motor
6143 10	Exit Guide Plate Motor	-
6143 11	Shift Relay Motor	Upper Transport Motor
6143 12	Tray Motor	Shift Tray Motor
6143 13	Stack Feed-out Motor	Positioning Roller Solenoid
6143 14	Stuck Relay1 Motor	Upper Clamp Roller Motor
6143 15	Stuck Relay1 Release Motor	Upper Retraction Motor
6143 16	Rear Edge Fence Drive Motor	Bottom Fence Lift Motor
6143 17	Folder Plate Motor	-
6143 18	Drive Roller Oscillating Motor	Lower Retraction Motor
6143 19	Staple Moving Motor	Staple Unit Driver Motor
6143 20	Jogger Motor	Jogger Motor
6143 21	Punch Registration Moving Motor	Paper Position Sensor Slide Motor
6143 22	Punch Motor	-
6143 23	Punch Moving Motor	Punch Movement Motor

3000-Sheet Finisher

6145	Display	Description
6145 1	Entrance Motor	Finisher Entrance Motor
6145 2	Upper Feed Motor	Upper Transport Motor
6145 3	Lower Feed Motor	Lower Transport Motor
6145 4	Exit Motor	Upper/Proof Tray Exit Motor
6145 5	Knock Roller Motor	Clamp Roller Retraction Motor
6145 6	Shift Motor	Shift Roller Motor
6145 7	Exit Guide Plate Open/Close Motor	Exit Guide Plate Motor
6145 8	Tray Lift Motor	Upper Tray Lift Motor
6145 9	Oscillating Back Roller Motor	Stacking Sponge Roller Motor
6145 10	Jogger Motor	Jogger Fence Motor
6145 11	Stack Feed-out Motor	Feed Out Belt Motor
6145 12	Staple Moving Motor	Corner Stapler Movement Motor
6145 13	Staple Skew Motor	Corner Stapler Rotation Motor
6145 14	Staple Motor	Corner Stapler EH530
6145 15	Upper Junction Gate Solenoid	Proof Junction Gate Solenoid
6145 16	Lower Junction Gate Solenoid	Stapling Tray Junction Gate Solenoid
6145 17	Knock Solenoid	Stapling Edge Pressure Plate Solenoid
6145 18	Trailing Edge Hold Solenoid	Positioning Roller Solenoid
6145 19	Saddle Stitch Hold Solonoid	Booklet Pressure Roller Solenoid
6145 20	Stack Junction Gate Open/Close Motor	Stack Junction Gate Motor

6145 21	Trailing Edge Fence Moving Motor	Fold Unit Bottom Fence Lift Motor
6145 22	Saddle Stitch Staple Motor: Front	Booklet Stapler EH185R: Front
6145 23	Saddle Stitch Staple Motor: Rear	Booklet Stapler EH185R: Rear
6145 24	Folder Plate Motor	Fold Plate Motor
6145 25	Folder Roller Motor	Fold Roller Motor
6145 26	Drive Roller Oscillating Motor	Positioning Roller Motor
6145 27	Punch Motor	Punch Drive Motor
6145 28	Punch Moving Motor	Punch Movement Motor
6145 29	Punch Registration Detection Motor	Paper Position Sensor Slide Motor
6145 30	Exit Jogger Motor: Front	-
6145 31	Exit Jogger Motor: Rear	-
6145 32	Exit Jogger Release Motor	-

Mail Bin (G835)

6147	Display	Description
6147 1	Feed Motor	-
6147 2	Solenoid 1	Junction Gate Solenoid: 1 (Tray 1)
6147 3	Solenoid 2	Junction Gate Solenoid: 2 (Tray 2)
6147 6	Solenoid 3	Junction Gate Solenoid: 3 (Tray 3)

Engine Service Mode

6157	Display	Description
6157 1	4bin:Junction SOL	Not used in this machine.

Bridge Unit (D386)

6151	Display	Description
6151 1	Bridge: Feed Motor: Current Selection	Bridge: Feed Motor: Current switching signal
6151 2	Bridge: Feed Motor:Reset	Bridge: Feed Motor:Reset
6151 3	Bridge: Feed Motor:Enable	Bridge: Feed Motor:Enable
6151 6	Bridge: Feed Motor:230mm/s	Bridge: Feed Motor: 230mm/s
6151 7	Bridge: Feed Motor:205mm/s	Bridge: Feed Motor: 205mm/s
6151 8	Bridge: Feed Motor: 154mm/s	Bridge: Feed Motor:154mm/s
6151 10	Bridge: Feed Motor: 77mm/s	Bridge: Feed Motor: 77mm/s
6151 11	Bridge: Junction Solenoid	Bridge: Junction Solenoid

One or Two-Tray PFU (D387/D351)/ LCIT 2000 (D352)

6161	Display	Description
6161 5	Bank1: Feed Motor:300mm/s	Feed Motor:300mm/s (D351/ D352/D387)
6161 6	Bank1: Feed Motor:265mm/s	Feed Motor:265mm/s (D351/ D352/D387)
6161 8	Bank1: Feed Motor:230mm/s	Feed Motor:230mm/s (D351/ D352/D387)
6161 9	Bank1: Feed Motor:215mm/s	Feed Motor:215mm/s (D351/ D352/D387)

6161 10	Bank1: Feed Motor:205mm/s	Feed Motor:205mm/s (D351/ D352/D387)
6161 11	Bank1: Feed Motor:154mm/s	Feed Motor:154mm/s (D351/ D352/D387)
6161 12	Bank1: Feed Motor:115mm/s	Feed Motor:115mm/s (D351/ D352/D387)
6161 13	Bank1: Feed Motor:77mm/s	Feed Motor:77mm/s (D351/ D352/D387)
6161 15	Bank2: Feed Motor:300mm/s	Not used in this machine.
6161 16	Bank2: Feed Motor:265mm/s	Not used in this machine.
6161 18	Bank2: Feed Motor:230mm/s	Not used in this machine.
6161 19	Bank2: Feed Motor:215mm/s	Not used in this machine.
6161 20	Bank2: Feed Motor:205mm/s	Not used in this machine.
6161 21	Bank2: Feed Motor:154mm/s	Not used in this machine.
6161 22	Bank2: Feed Motor:115mm/s	Not used in this machine.
6161 23	Bank2: Feed Motor:77mm/s	Not used in this machine.
6161 25	Bank1:Tray Lock Solenoid	Tray Lock Solenoid (D351/ D352)
6161 26	Bank2:Tray Lock Solenoid	Not used in this machine.
6161 30	Bank:Tray3: PU Solenoid	Pick-up Solenoid (D351/ D352)
6161 31	Bank:Tray4: PU Solenoid	Pick-up Solenoid (D351)
6161 32	Bank:Tray5: PU Solenoid	Pick-up Solenoid (D353)
6161 35	Bank:Tray3: Feed Clutch	Pick-up Solenoid (D351/ D352)
6161 36	Bank:Tray4: Feed Clutch	Pick-up Solenoid (D351)
6161 37	Bank:Tray5: Feed Clutch	Not used in this machine.

8.2.4 TEST PATTERN PRINTING

Printing Test pattern: SP2-109

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

Note

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

1. Enter the SP mode and select **SP2-109-003**.
2. Enter the number for the test pattern that you want to print and press "OK" key.
3. When you want to select the single color of Magenta, Yellow or Cyan for printing a test pattern, select the color with SP2-109-005 (2: Magenta, 3: Yellow, 4: Cyan).
4. When you want to change the density of printing a test pattern, select the density with SP2-109-006 to -009 for each color.

   Note

   - If you select "0" with SP2-109-006 to -009, the color to be adjusted to "0" does not come up on a test pattern.
5. When you are prompted to confirm your selection, press "OK" key to select the test pattern for printing.
6. Exit SP mode.
7. Enter the menu mode, and then select "Color Demo Page" (Menu > "List/Test Print" > "Color Demo Page").
8. Press the "OK" key to start the test print.
9. After checking the test pattern, enter the SP mode again.
10. Return the value of the setting in SP2-109-003 to "00" before completing this procedure.
11. Exit the SP mode.

No.	Pattern	No.	Pattern
0	None	11	Independent Pattern (1-dot)
1	Vertial Line (1dot)	12	Independent Pattern (2-dot)
2	Vertial Line (2dot)	13	Independent Pattern (4-dot)
3	Horizontal Line (1dot)	14	Triming Area
4	Horizontal Line (2dot)	16	Tooth Check (Horizontal)

5	Grid Vertical Line	17	Band (Horizontal)
6	Grid Horizontal Line	18	Band (Vertical)
7	Grid Pattern Small	19	Checker Flag Pattern
8	Grid Pattern Large	20	Grayscale (Vertical Margin)
9	Argyle Pattern Small	21	Grayscale (Horizontal Margin)
10	Argyle Pattern Large	23	Full Dot Pattern

BOOKLET FINISHER
B793

B793 BOOKLET FINISHER SR3000 REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

BOOKLET FINISHER B793

TABLE OF CONTENTS

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.

When taking apart the bridge unit, first take the unit out of the copier.

Symbols Used in this Manual

This manual uses the following symbols.

☛: See or Refer to

: Screws

: Connector

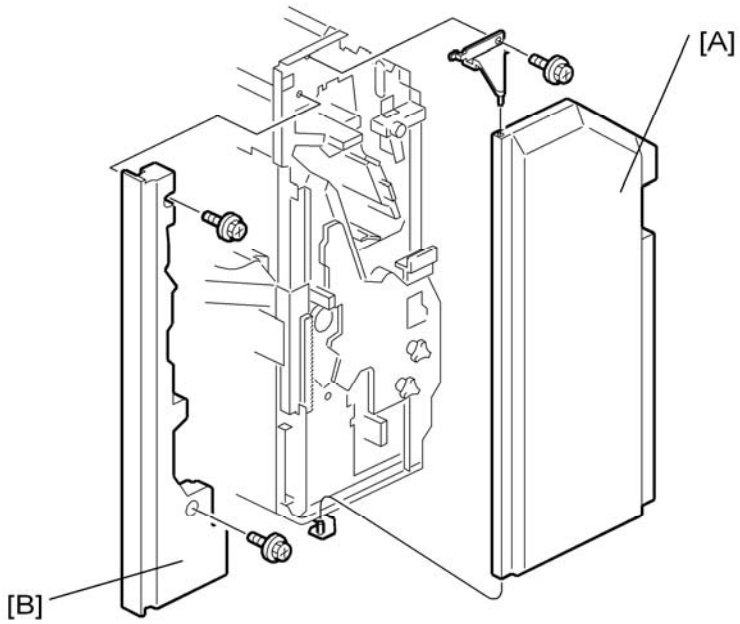
: Clip ring

: E-ring

1. REPLACEMENT AND ADJUSTMENT

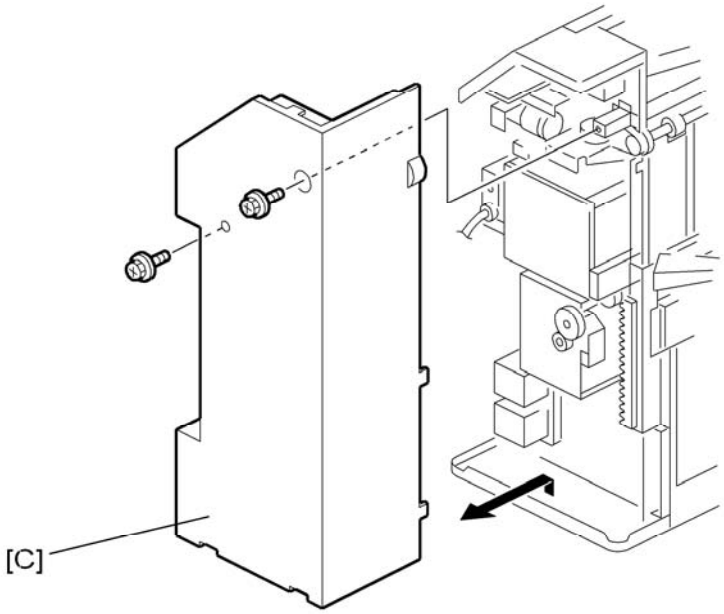
1.1 COVERS

1.1.1 FRONT/INNER/REAR COVERS



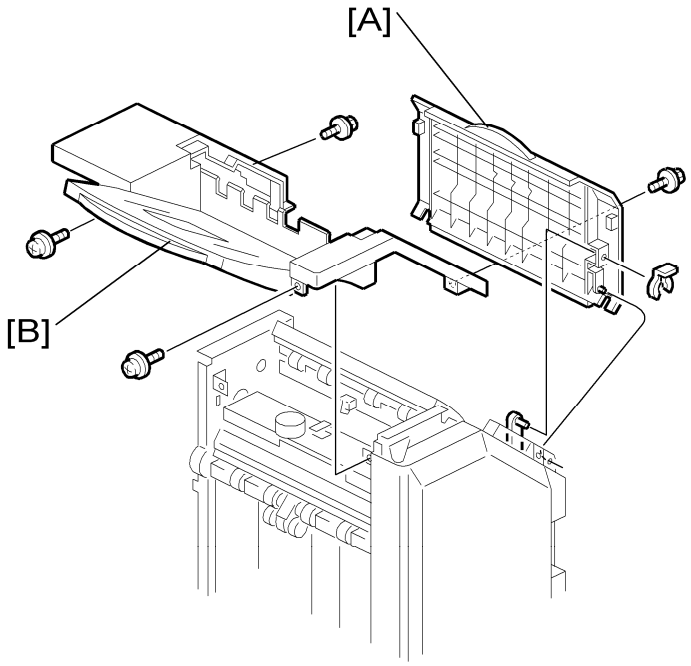
1. Remove the front cover [A] (x 1).
2. Remove the inner cover [B] (x 2).

Covers



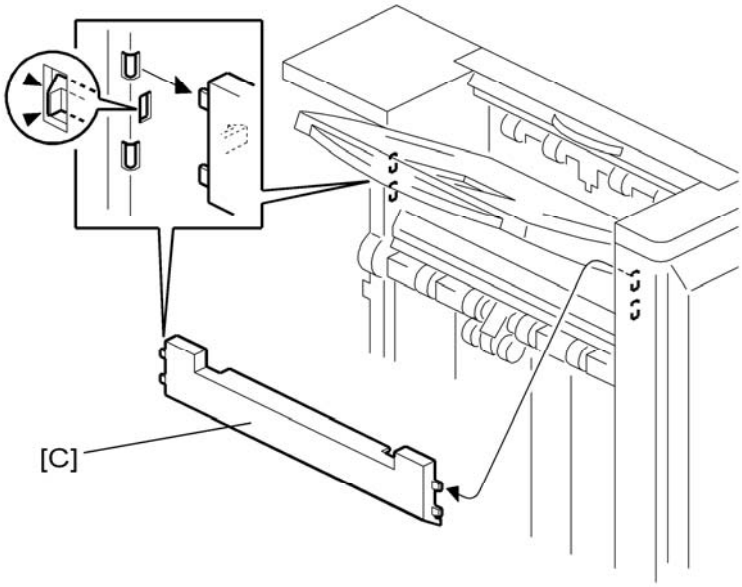
3. Remove the rear cover [C] (x 2).

1.1.2 UPPER COVERS



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

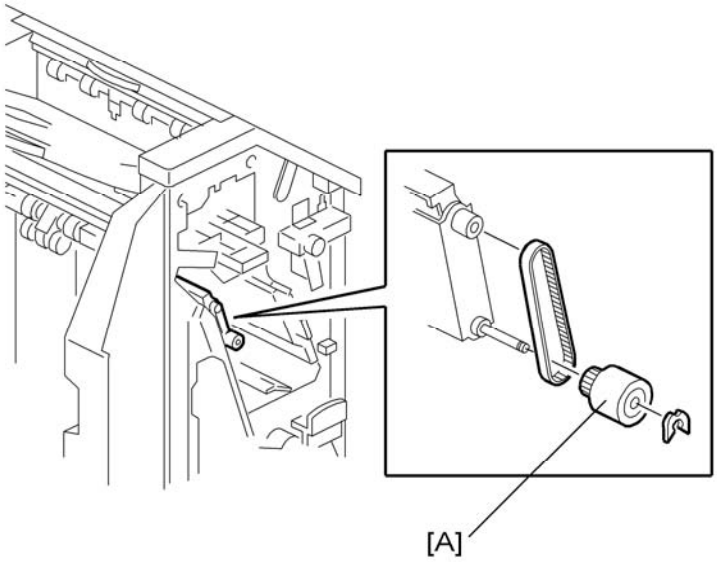
2. Remove the proof tray [B] (x 4).



3. Remove the upper left cover [C].

1.2 MAIN BODY

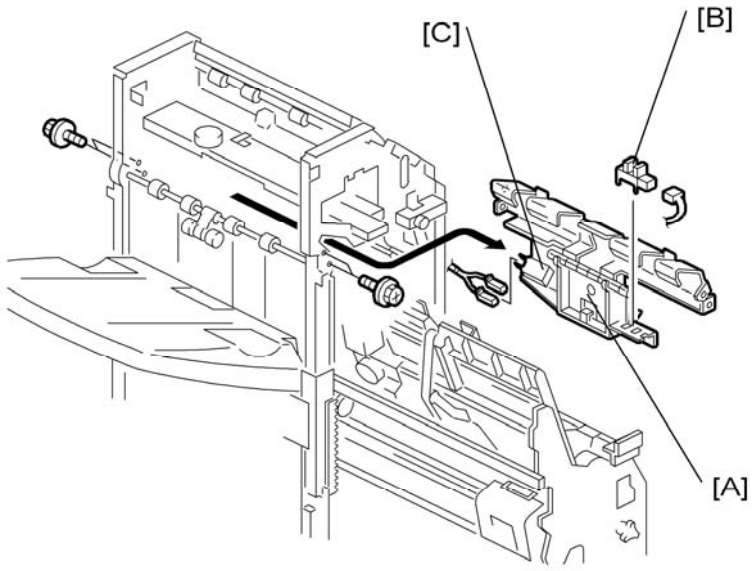
1.2.1 POSITIONING ROLLER



1. Open the front cover.
2. Remove the positioning roller [A] (x 1).

1.2.2 SHIFT TRAY POSITION SENSOR, UPPER LIMIT SWITCH

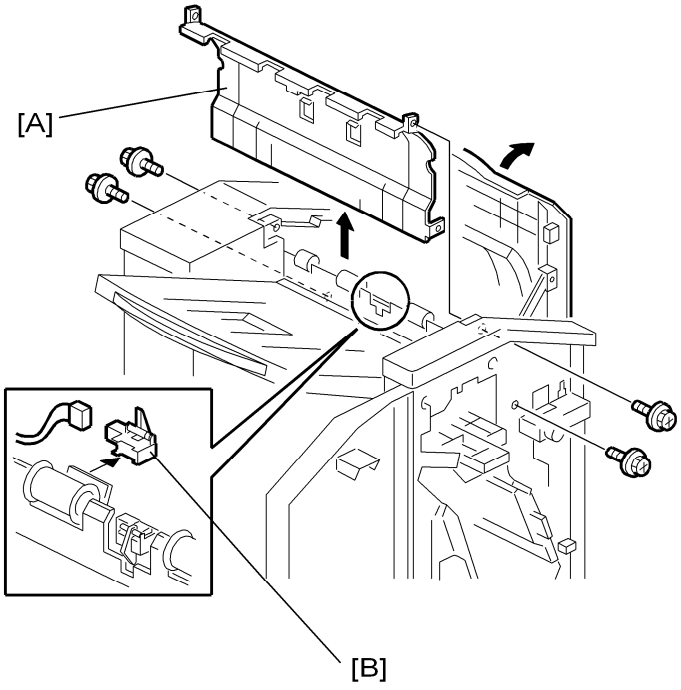
1. Remove the following items.
   - Front Cover
   - Inner Cover
   - Rear Cover
   - Proof Tray
   - Upper Left Cover



2. Remove the lower guide unit [A] (x 4, x 2).
3. Remove the shift tray position sensor [B] (x 1).
4. Remove the upper limit switch [C] (x 2). (Pull it out from the assembly.)

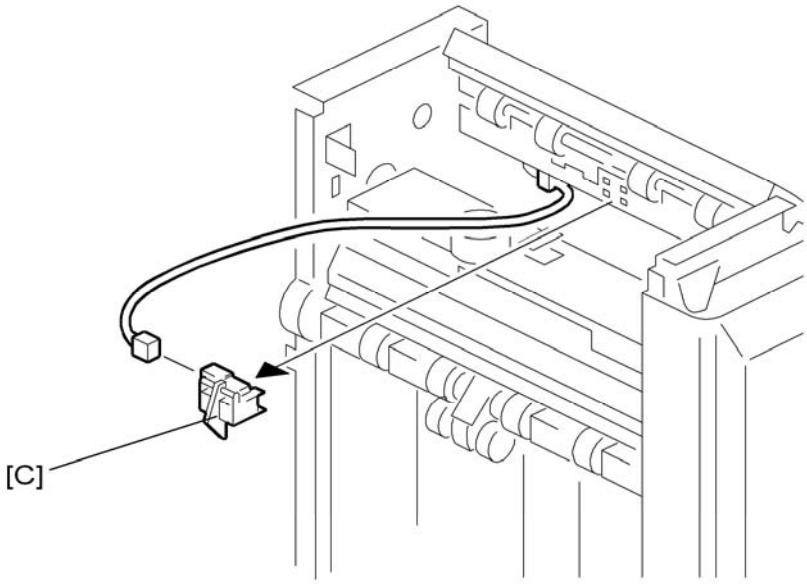
1.2.3 PROOF TRAY EXIT / FULL SENSOR

1. Remove the front cover, rear cover and proof tray.
2. Open the upper cover.



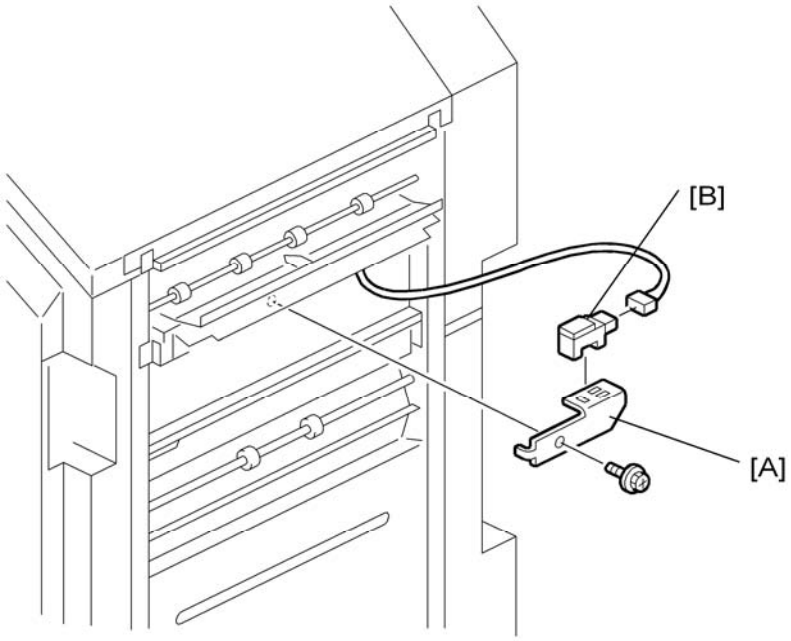
Main Body

3. Remove the vertical transport guide [A] (x 4).
4. Remove the exit sensor [B] (x 1).



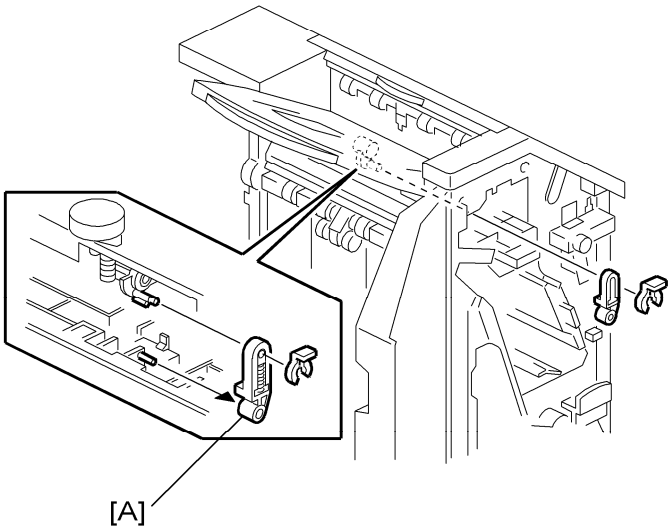
5. Remove the tray full sensor [C] (x 1).

1.2.4 FINISHER ENTRANCE SENSOR

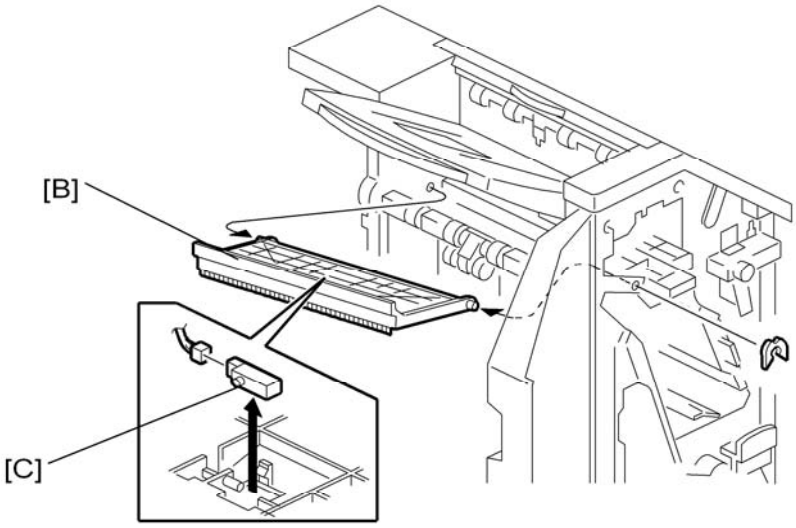


1. Remove the finisher entrance sensor with bracket [A] (x 1).
2. Remove the finisher entrance sensor [B] (x 1).

1.2.5 SHIFT TRAY EXIT SENSOR

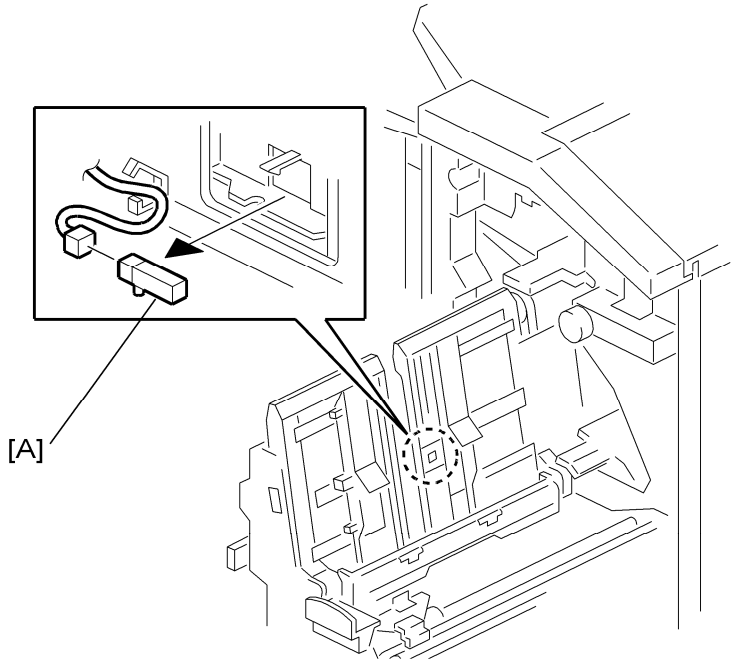


1. Remove the front cover and upper left cover.
2. Remove the link [A] (x 1).



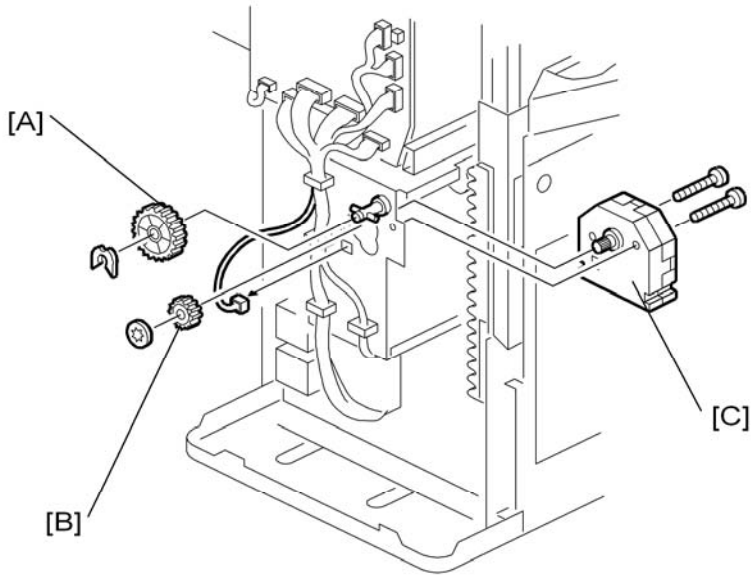
3. Remove the exit guide unit [B].
4. Remove the sensor [C] (x 1).

1.2.6 STAPLE TRAY PAPER SENSOR



1. Open the front cover.
2. Pull out the staple/fold unit.
3. Remove the staple tray paper sensor [A] (x 1).

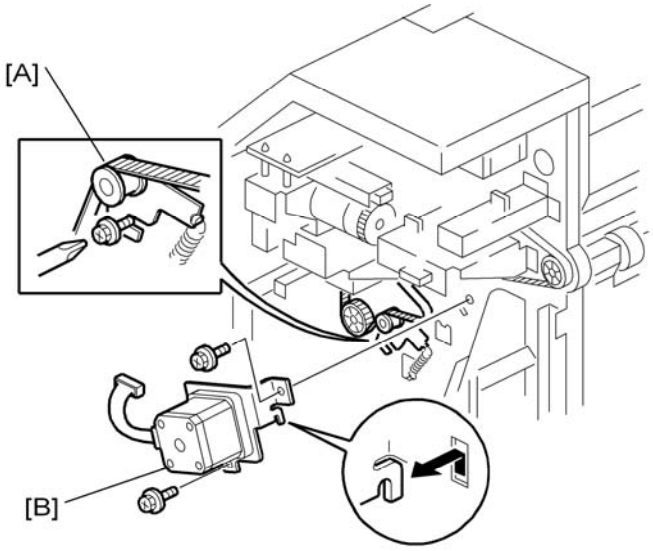
1.2.7 SHIFT TRAY MOTOR



1. Remove the rear cover.
2. Open the front cover, and then pull out the staple/fold unit.

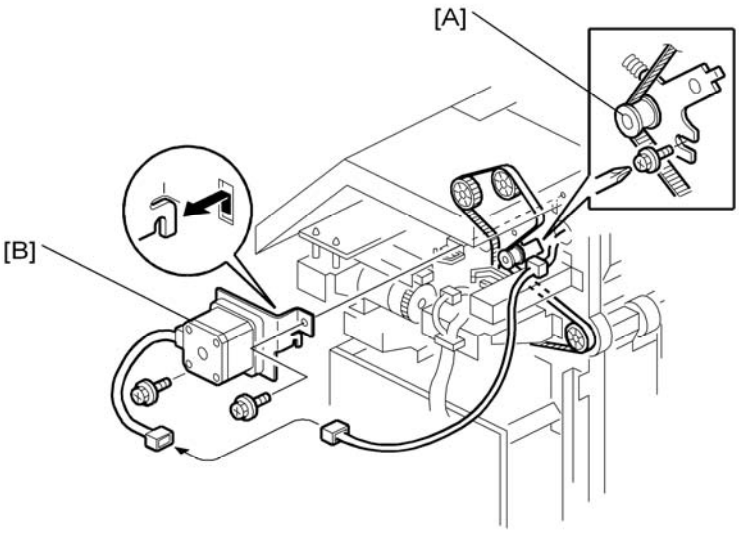
3. Remove the two gears [A], [B].
4. Remove the shift tray motor [C] (x 2, x 1)

1.2.8 ENTRANCE MOTOR



1. Remove the rear cover.
2. Release the belt tension [A].
3. Remove the entrance motor [B] (x 2, x 1).

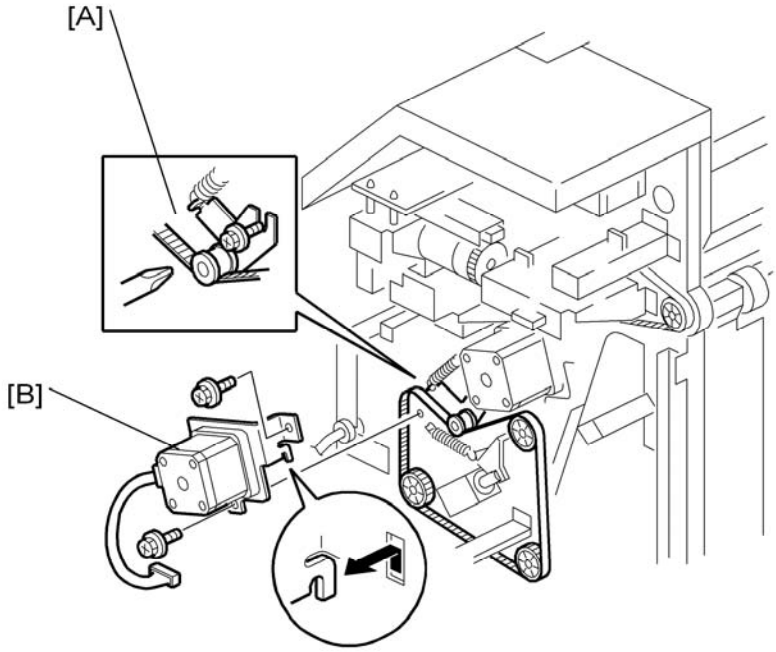
1.2.9 UPPER TRANSPORT MOTOR



1. Remove the rear cover.

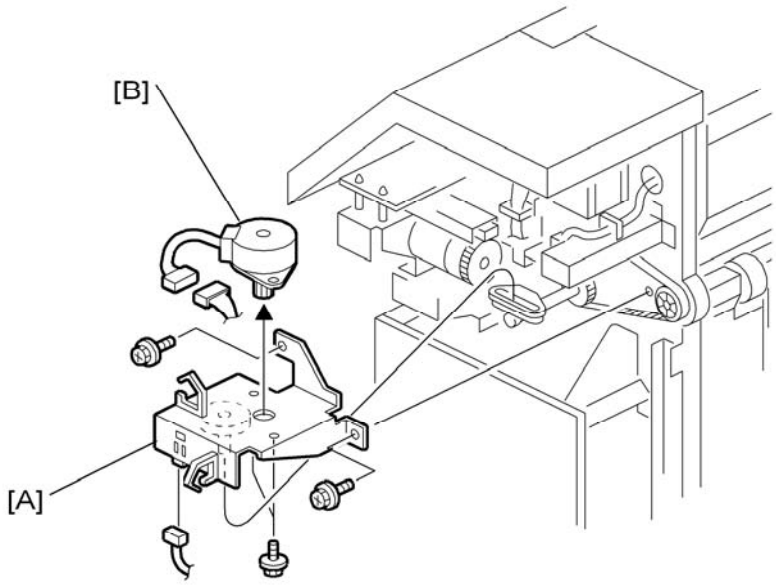
2. Release the belt tension [A].
3. Remove the upper transport motor [B] (x 2, x 1).

1.2.10 LOWER TRANSPORT MOTOR



1. Remove the rear cover.
2. Release the belt tension [A].
3. Remove the lower transport motor [B] (x 2, x 1).

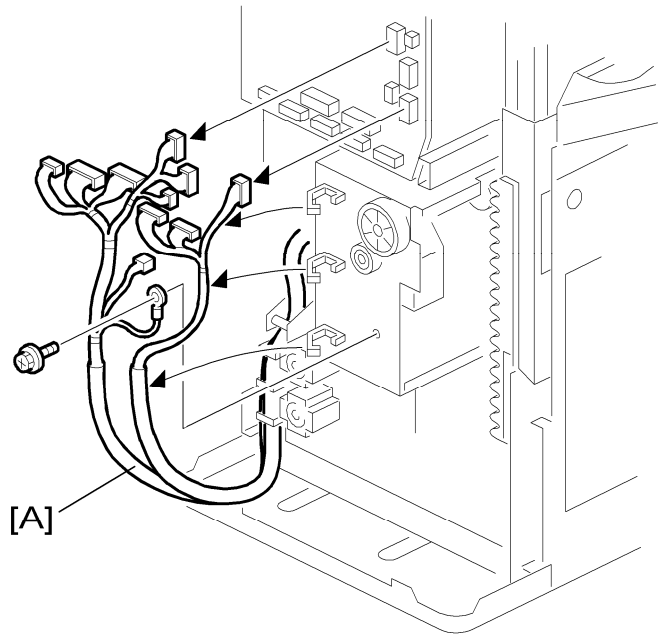
1.2.11 SHIFT MOTOR



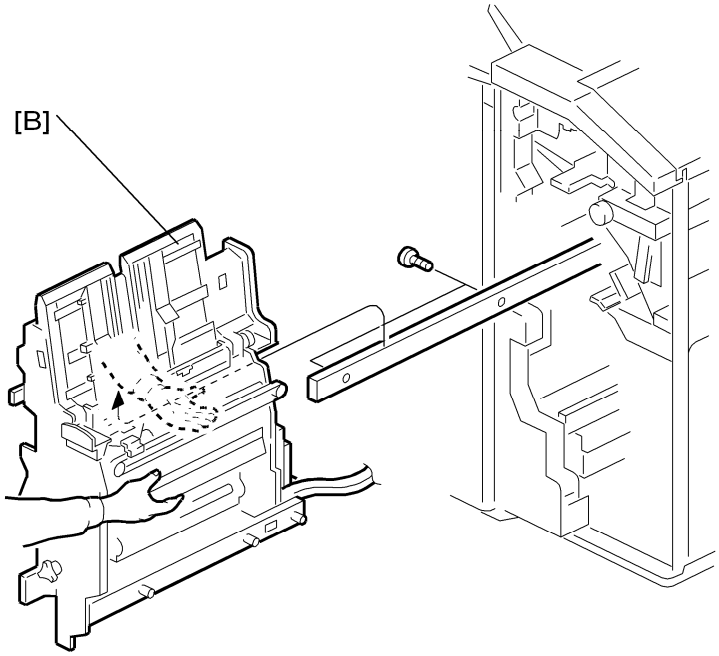
1. Remove the rear cover.
2. Remove the shift motor with bracket [A] (x 1, x 4)
3. Remove the shift motor [B] (x 1).

1.3 FOLDER

1.3.1 STAPLE FOLDER UNIT



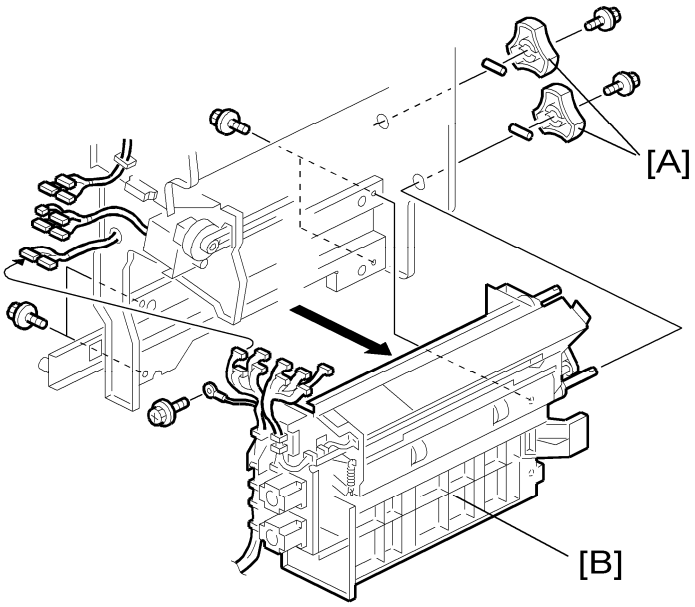
1. Remove the rear cover.
2. Disconnect all connectors and release the harness [A] for the staple folder unit (x 1, x 3).
3. Open the front cover.



4. Pull out and remove the staple folder unit [B] (x 2).

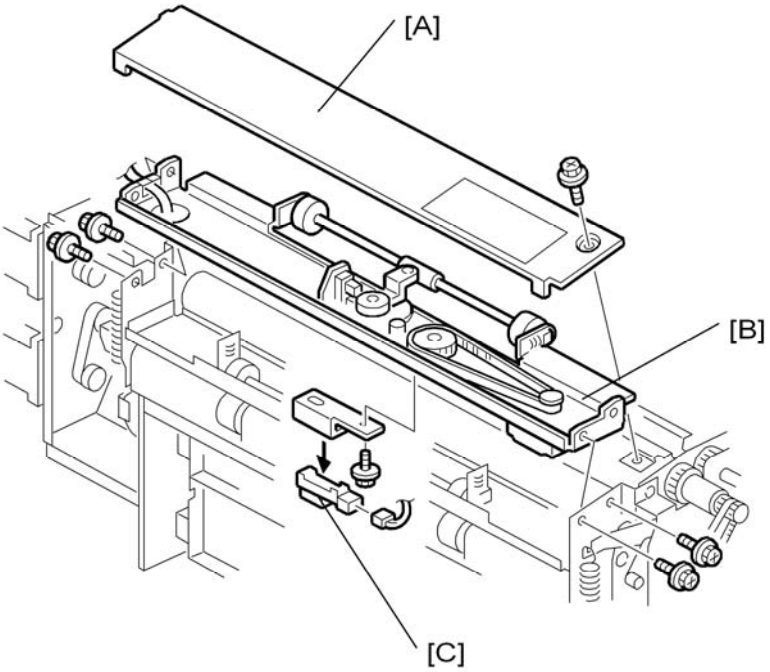
1.3.2 FOLDER UNIT

1. Remove the staple folder unit.



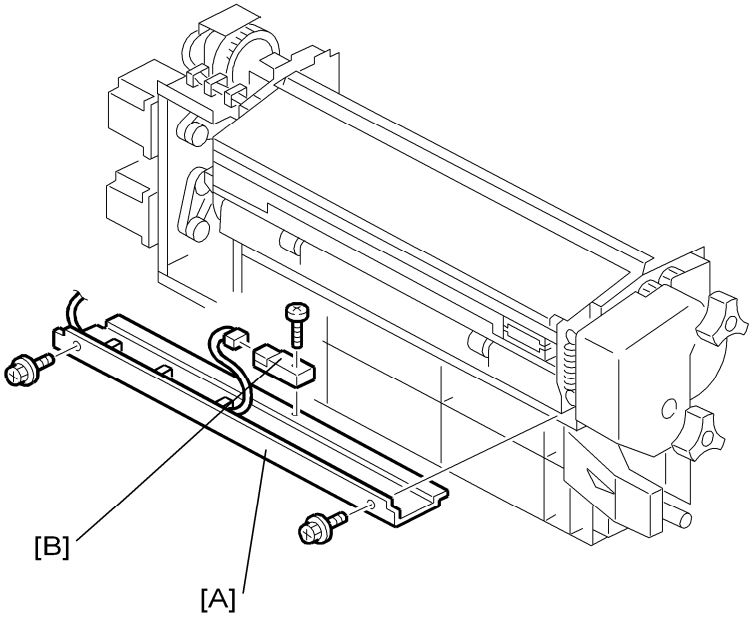
2. Remove the knobs [A] (x 1 each).
3. Disconnect the connectors.
4. Remove the folder unit [B] (x 4).

1.3.3 FOLDER UNIT EXIT SENSOR



1. Remove the folder unit.
2. Remove the folder unit upper cover [A] (x 1).
3. Remove the lower clamp roller unit [B] (x 4).
4. Remove the folder unit exit sensor [C] (x 1, x 1).

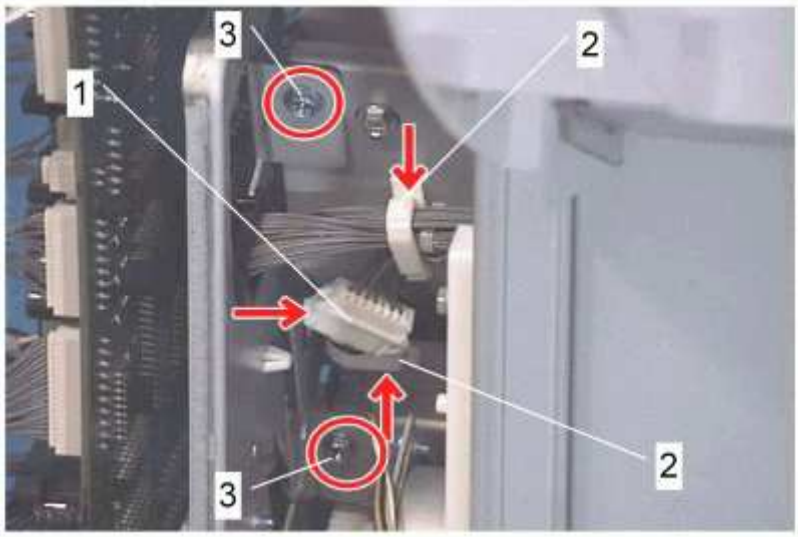
1.3.4 FOLDER UNIT ENTRANCE SENSOR



1. Open the front cover.
2. Pull out the staple folder unit.
3. Remove the exit cover [A] (x 2).
4. Remove the entrance sensor [B] (x 1, x 1).

1.3.5 STAPLER UNIT

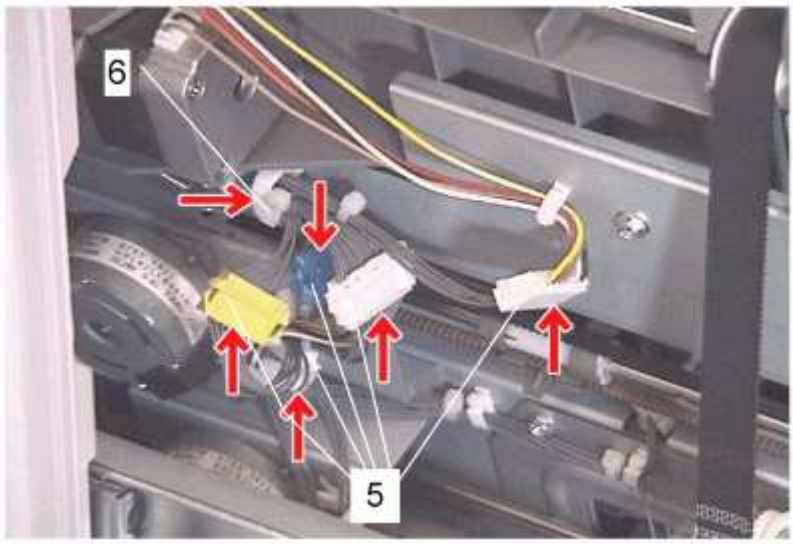
1. Remove the rear cover.



2. Disconnect the connector [1] and release the harness (x 2 [2]).
3. Remove two screws [3].

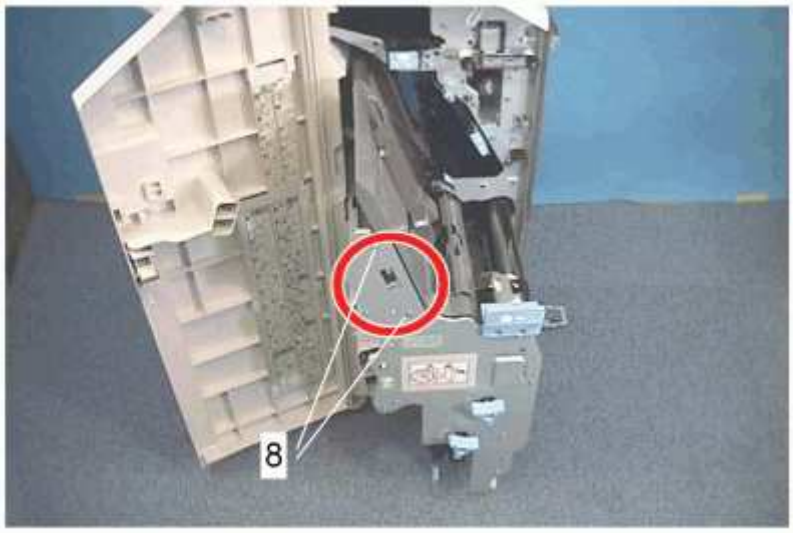
Folder

4. Open the front cover and pull out the staple folder unit [4].



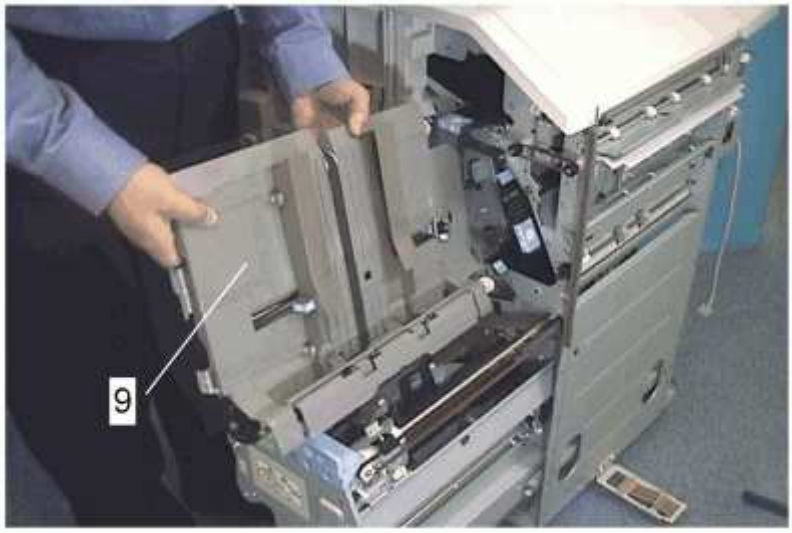
5. Disconnect the connectors and release the harness. (4 connectors [5], 1 clamp [6])

6. Remove a connector [7].

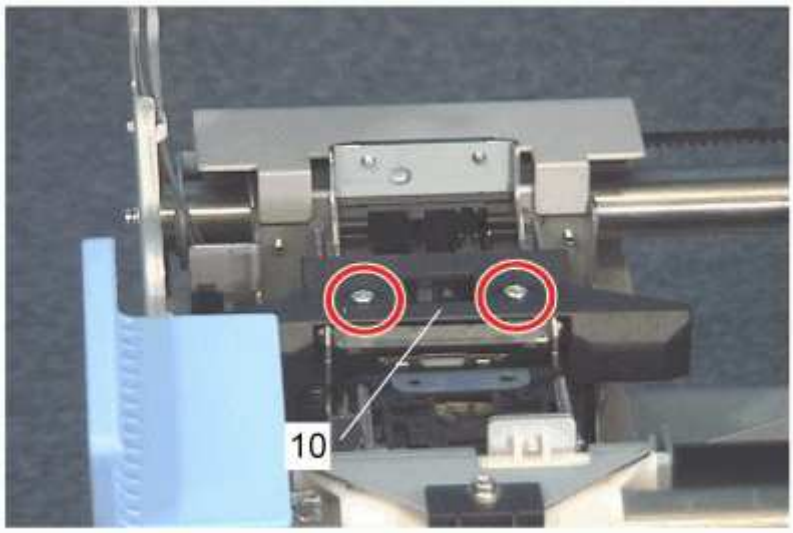


7. Remove 2 screws [8].

Folder

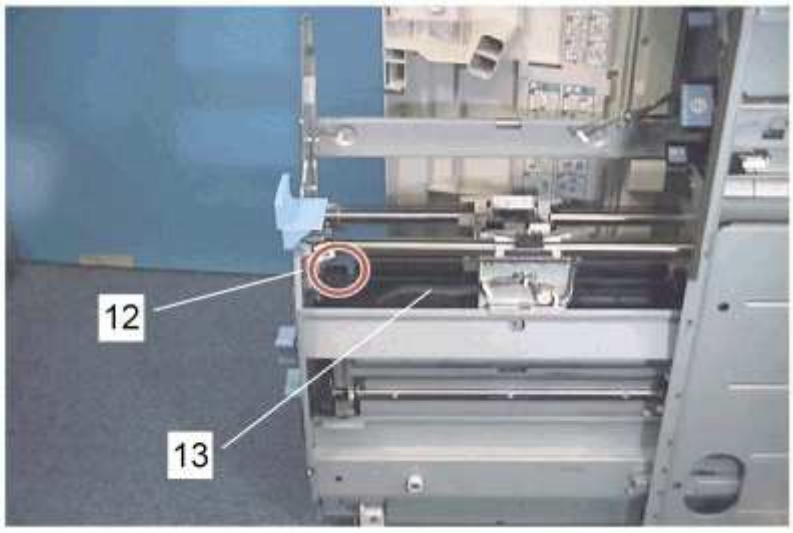


8. Remove the staple tray [9].



9. Remove the guide [10]. (2 screws)

10. Move the stapler unit until its screw come to the hole [11] on the stay.



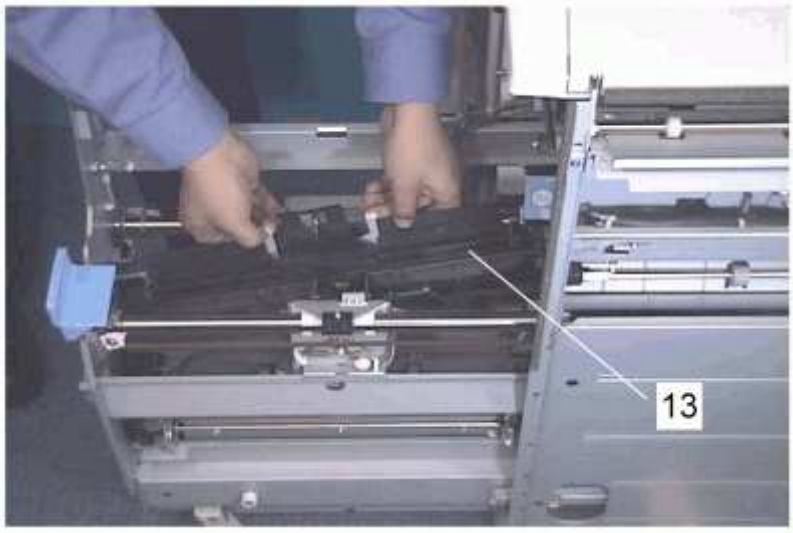
11. Remove the screw [12] that holds the front of the guide plate [13].

Folder

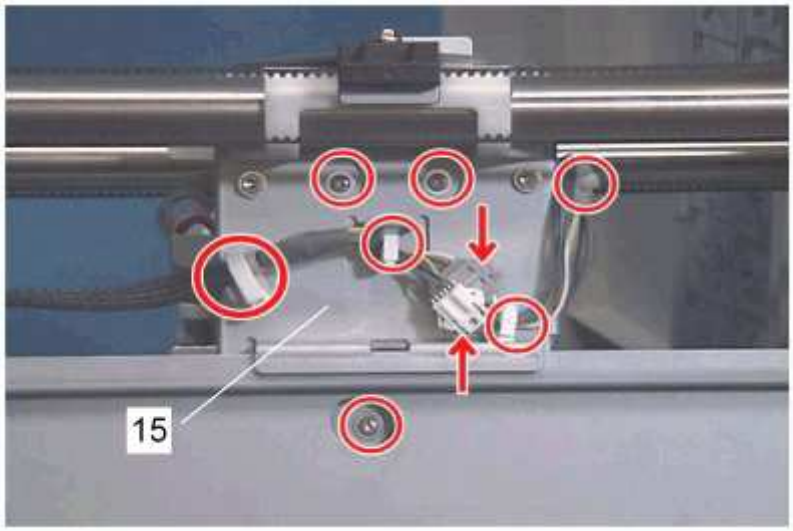
12. Remove the screw [14] that holds the rear of the guide plate.

Note

- Remove the rear side screw through the hole in the stay.

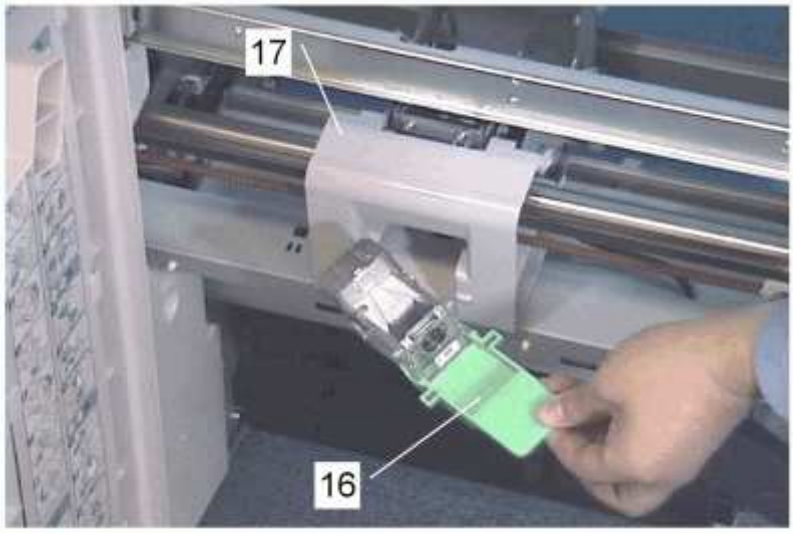


13. Remove the guide plate [13].



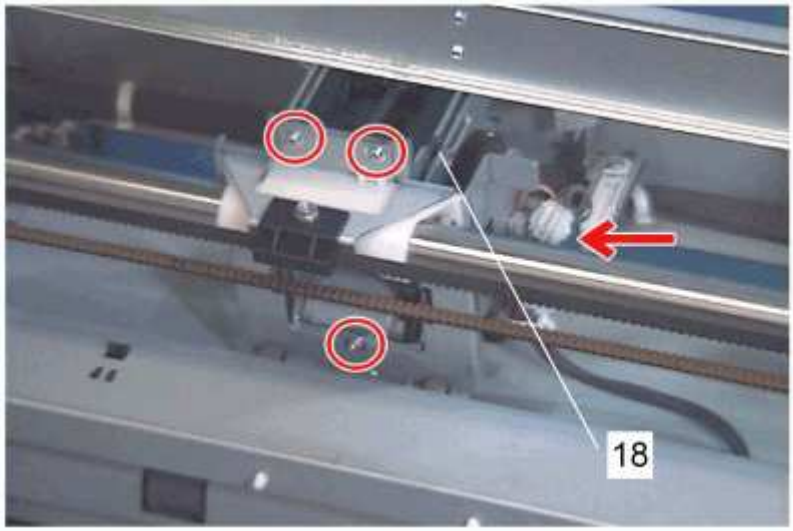
14. Remove the staple folding unit [15] (3 screws, 2 connectors).

Folder



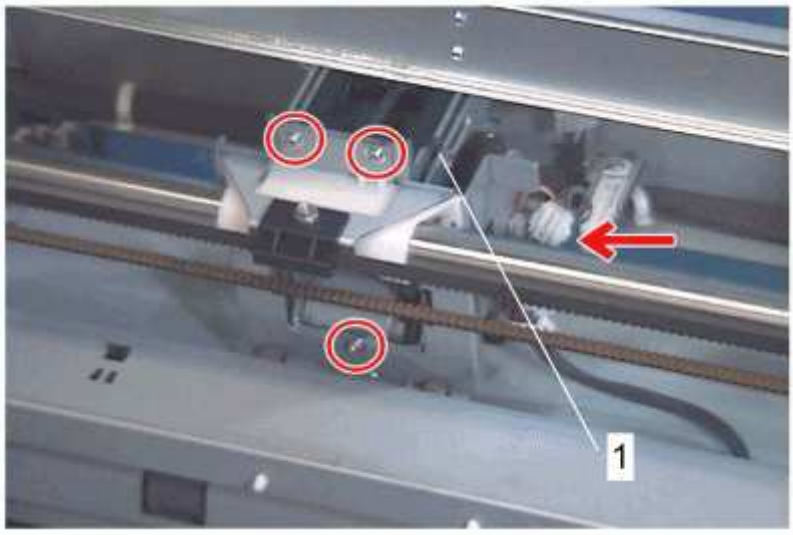
15. Remove the staple cartridge [16].

16. Remove the stapler unit cover [17].

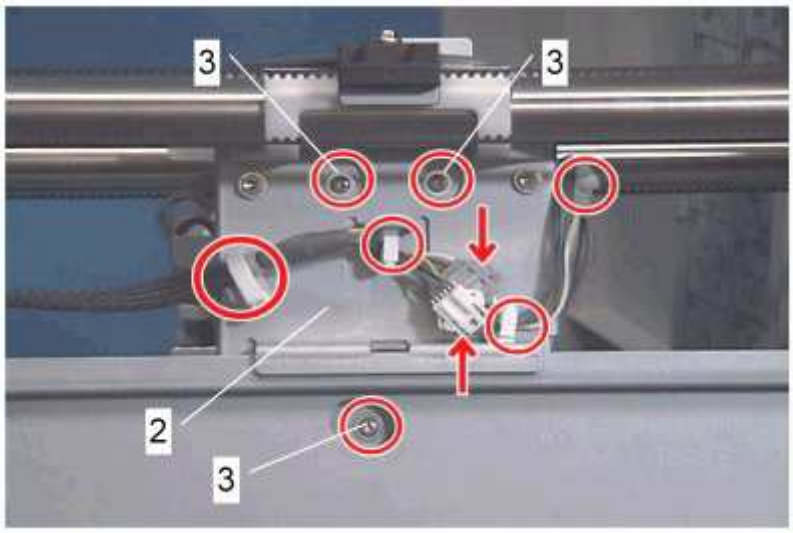


17. Remove the stapler drive unit [18].

Reassembly

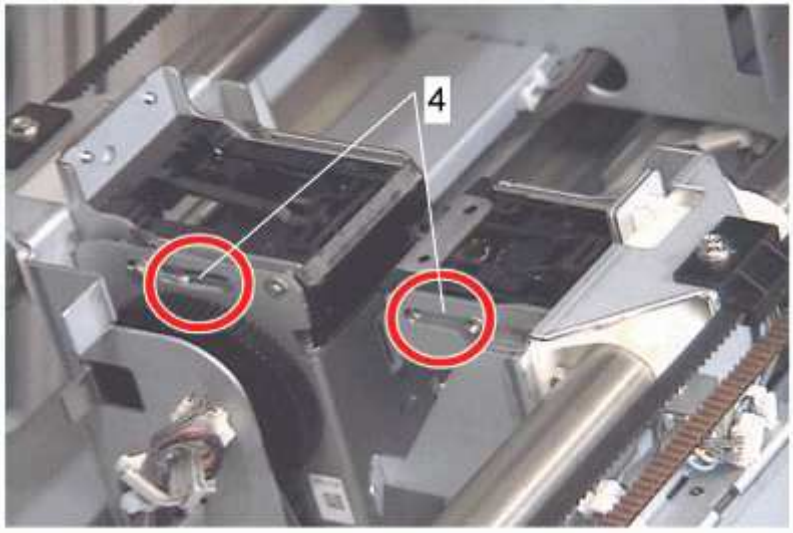


1. Mount the stapler drive unit [1].

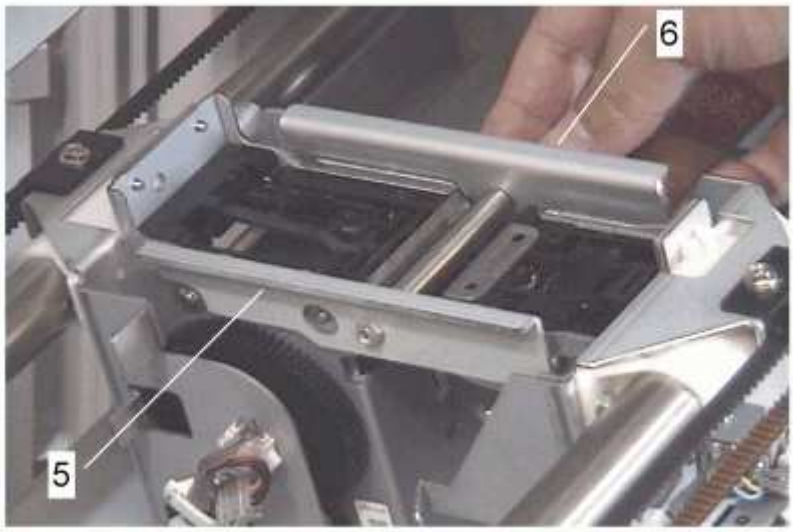


2. Mount the staple folder unit [2]. Do not tighten the screws [3] at this time.

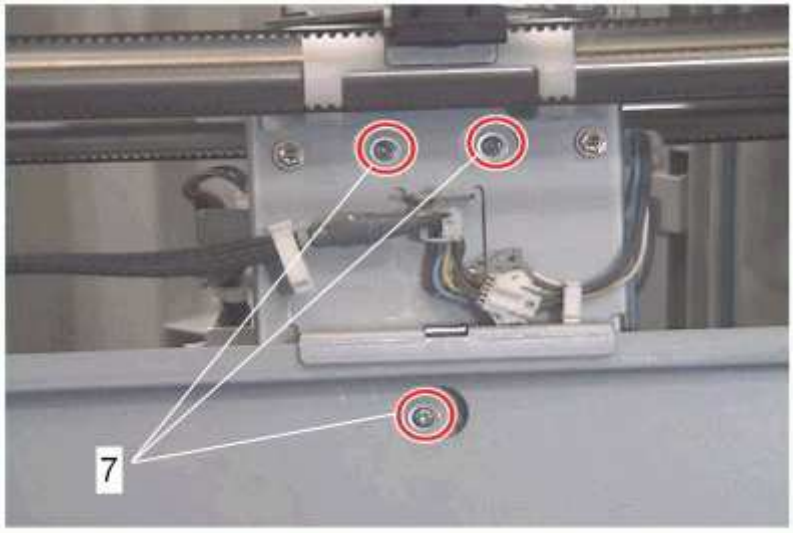
Folder



3. Set the special tool in the long hole [4] on both units.



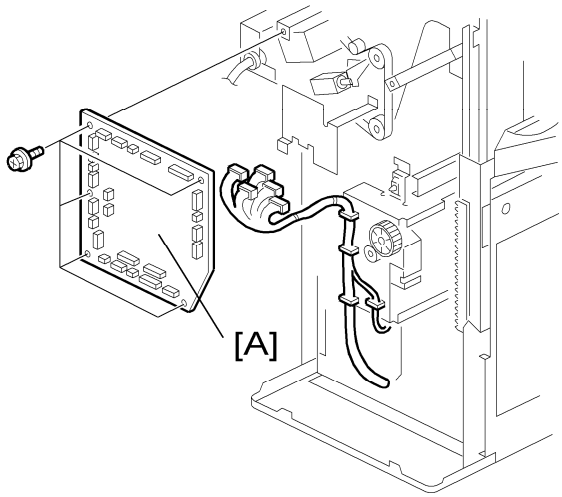
4. Secure the special tool [5] with the knob [6].



5. Tighten the screws [7] for the stapler folder unit.
6. Reassemble the machine.

1.4 OTHERS

1.4.1 MAIN BOARD



1. Remove the rear cover.
2. Remove the main board [A] (x 5).

1.5 DIP SWITCHES

SW100: Adjust the staple position for booklet mode

No.	Function
1	ON: 0.3 mm
2	ON: 0.6 mm
3	ON: 1.2 mm
4	Direction OFF: Towards the trailing edge, ON: Towards the leading edge

SW101: Adjust the fold position

No.	Function
1	ON: 0.2 mm
2	ON: 0.4 mm
3	ON: 0.8 mm
4	Direction OFF: Towards the trailing edge, ON: Towards the leading edge

SW102: Move the tray position

No.	Function
1	OFF → ON → OFF Turn the switch from off to on, then turn it to off again. Then, the tray moves down to the shipping position
2	Not used

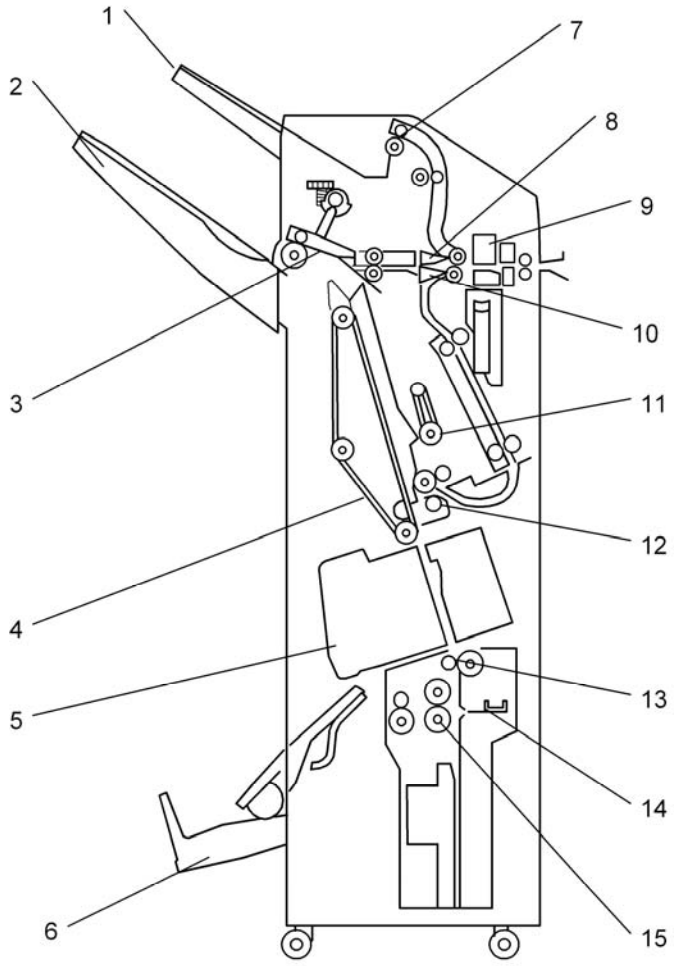
Note

- After you change any of these dip switch settings, open and close the finisher cover to activate the new setting. It is not necessary to turn the main power off/on.

2. DETAILED SECTION DESCRIPTIONS

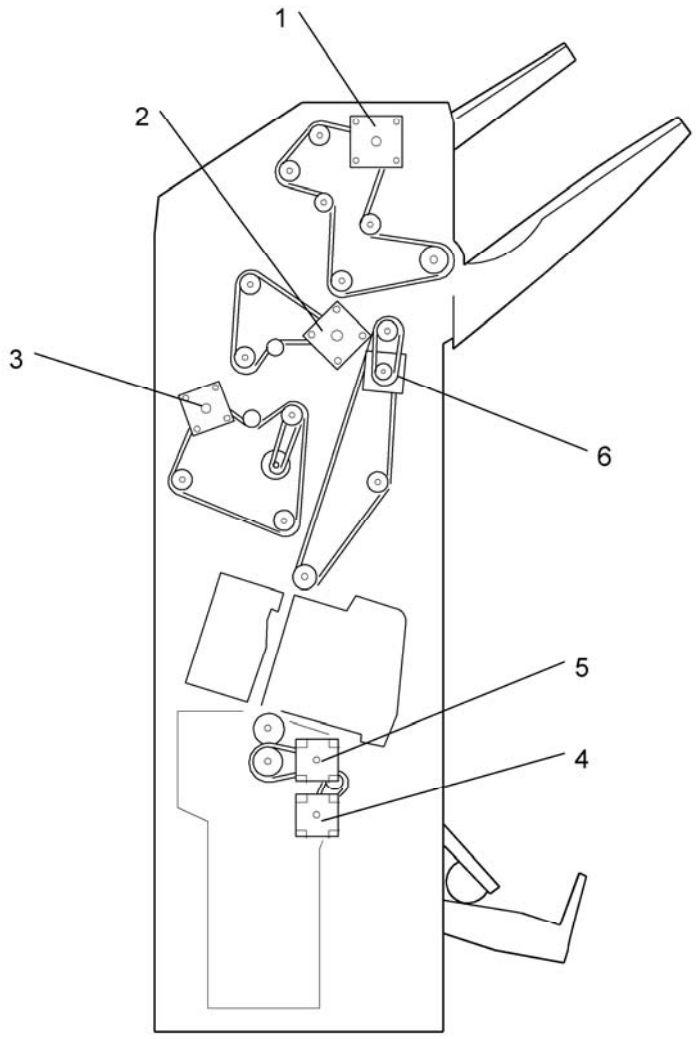
2.1 COMPONENT LAYOUT

2.1.1 MECHANICAL COMPONENT LAYOUT



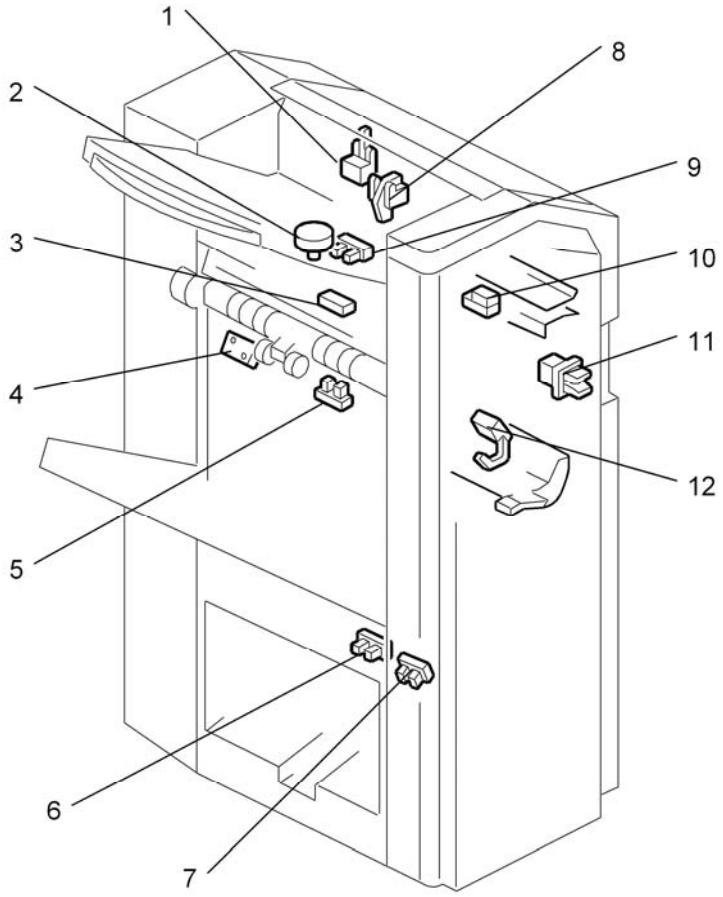
1. Proof Tray	2. Shift Tray	3. Exit Guide Plate
4. Stack Feed Out Belt	5. Staple Unit	6. Booklet Tray
7. Proof Tray Exit Roller	8. Proof Tray Junction Gate	9. Punch Unit
10. Staple Tray Junction Gate	11. Positioning Roller	12. 1st Clamp Roller
13. 2nd Clamp Roller	14. Folder Plate	15. Folder Roller

Drive Layout

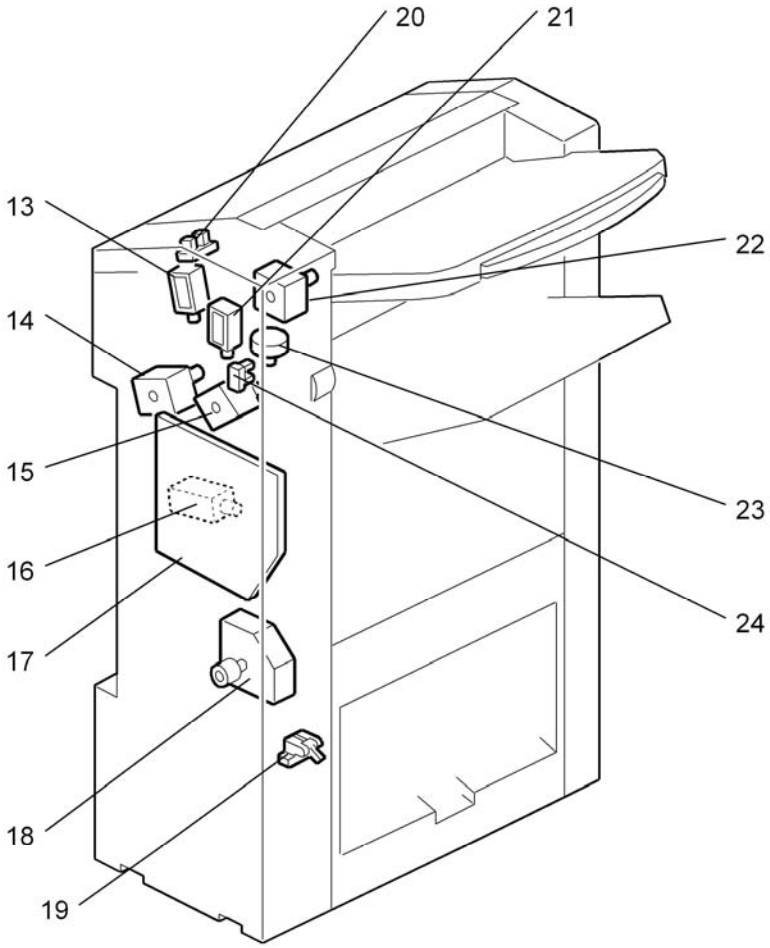


1. Upper Transport Motor
2. Entrance Motor
3. Lower Transport Motor
4. Fold Plate Motor
5. Fold Roller Motor
6. Stack Feed-out Motor

2.1.2 ELECTRICAL COMPONENT LAYOUT

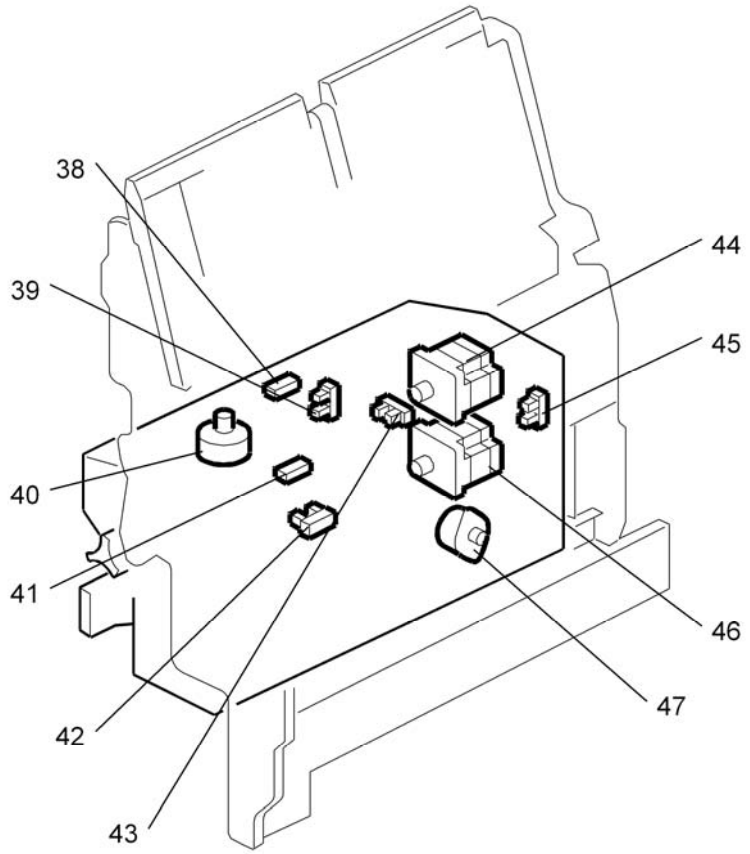


1. Proof Tray Exit Sensor
2. Exit Guide Plate Motor
3. Shift Tray Exit Sensor
4. Upper Limit Switch
5. Shift Tray Position Sensor
6. Rear Booklet Tray Full Sensor
7. Front Booklet Tray Full Sensor
8. Proof Tray Full Sensor
9. Exit Guide Plate HP Sensor
10. Entrance Sensor
11. Front Door Safety Switch
12. Staple Tray Exit Sensor

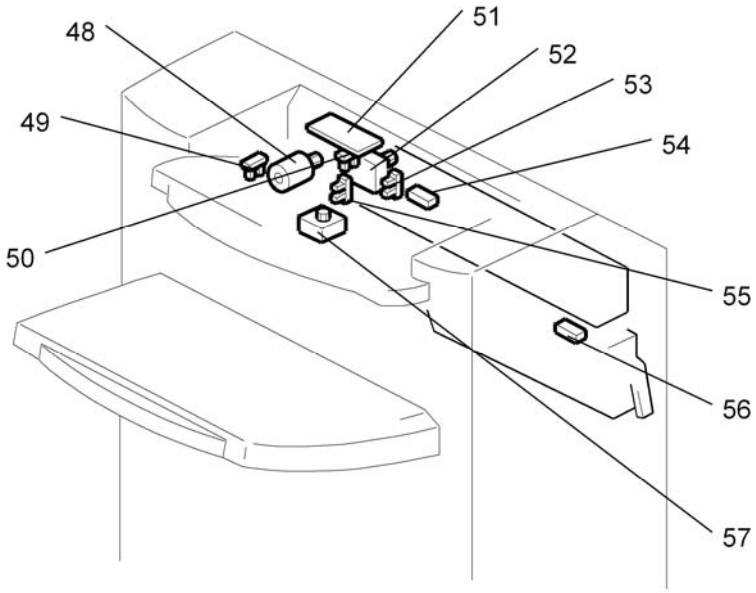


13. Proof Tray Gate Solenoid
14. Lower Transport Motor
15. Entrance Motor
16. Positioning Roller Solenoid
17. Main Board
18. Shift Tray Motor
19. Lower Limit Sensor
20. Upper Cover Sensor
21. Staple Tray Gate Solenoid
22. Upper Transport Motor
23. Shift Motor
24. Shift Motor HP Sensor

Component Layout



38. Fold Unit Exit Sensor
39. Lower Clamp Roller HP Sensor
40. Lower Retraction Motor
41. Fold Unit Entrance Sensor
42. Bottom Fence HP Sensor
43. Fold Cam HP Sensor
44. Fold Roller Motor
45. Fold Plate HP Sensor
46. Fold Plate Motor
47. Bottom Fence Lift Motor



48. Punch Motor
49. Punch Encoder Sensor
50. Punch HP Sensor
51. Punch Board
52. Paper Position Sensor Slide Motor
53. Paper Position Slide HP Sensor
54. Paper Position Sensor
55. Punch Movement HP Sensor
56. Punch Hopper Full Sensor
57. Punch Movement Motor

Component Layout

Electrical Component Descriptions

Boards

Item	No.	Purpose
Main Board	17	Controls the finisher.
Punch Board	51	Controls the punch unit.

Sensors

Item	No.	Purpose
Proof Tray Exit Sensor	1	Detects paper when it is fed out to the proof tray.
Shift Tray Exit Sensor	3	Detects paper when it is fed out to the shift tray.
Shift Tray Position Sensor	5	Detects when the shift tray is at the correct height to receive paper.
Rear Booklet Tray Full Sensor	6	One of two sensors that the machine uses to determine when the booklet tray is full.
Front Booklet Tray Full Sensor	7	One of two sensors that the machine uses to determine when the booklet tray is full.
Proof Tray Full Sensor	8	Detects when the proof tray is full.
Exit Guide Plate HP Sensor	9	Detects when the exit guide plate is at home position
Entrance Sensor	10	Detects when paper comes into the finisher
Staple Tray Exit Sensor	12	Detects paper leaving the bottom of the stapler
Lower Limit Sensor	19	Detects when the shift tray has moved to its lowest possible position (the shift tray is full).
Upper Cover Sensor	20	Detects when the upper cover is open
Shift Motor HP Sensor	24	Detects when the side-to-side motion of the shift roller is at home position

Item	No.	Purpose
Stopper S HP Sensor	28	Detects when the 'stopper S' mechanism is at home position.
Stack Feed Out HP Sensor	29	Detects when the stack feed-out belt is at home position
Staple Unit HP Sensor	30	Detects when the side-to-side motion of the stapler unit is at home position
Jogger HP Sensor	34	Detects when the jogger unit is at home position
Staple Tray Paper Sensor	35	Detects when paper is fed into the stapler tray
Stapler Safety Sensor	37	Stops side-to-side movement of the stapler until stopper S and the stack feed-out pawl mechanisms are at home position, to prevent damage to the machine.
Fold Unit Exit Sensor	38	1) Detects the folded edge of the stack as it feeds out from the nip of the fold rollers 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.
Lower Clamp Roller HP Sensor	39	Detects when the lower clamp roller is at home position
Fold Unit Entrance Sensor	41	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.
Bottom Fence HP Sensor	42	Detects when the bottom fence of the booklet folding mechanism is at home position
Fold Cam HP Sensor	43	Along with the fold plate HP sensor, 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 the fold plate.
Fold Plate HP Sensor	45	Along with the fold plate HP sensor 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.
Punch Encoder Sensor	49	Controls the timing for activating the punches, to punch holes in the paper at the correct position.

Component Layout

Item	No.	Purpose
Punch HP Sensor	50	Detects when the hole-punch firing mechanism is at home position
Paper Position Slide HP Sensor	53	Detects when the mechanism that measures the paper position in the punch unit is at home position
Paper Position Sensor	54	Detects the side edge of the paper, to tell the machine where to put the punch holes.
Punch Movement HP Sensor	55	Detects when the side-to-side motion of the punch unit is at home position.
Punch Hopper Full Sensor	56	Detects when the punch hopper is full. Also checks if the hopper is installed correctly.

Motors

Item	No.	Purpose
Exit Guide Plate Motor	2	Controls the exit guide plate mechanism.
Lower Transport Motor	14	Controls the positioning roller, and other rollers in the finisher (see 'Drive Layout' for details).
Entrance Motor	15	Controls the rollers at the entrance of the finisher.
Shift Tray Motor	18	Moves the shift tray up and down.
Upper Transport Motor	22	Controls the rollers that feed paper from the junction gate to the proof tray and to the shift tray (see 'Drive Layout' for details).
Shift Motor	23	Moves the shift tray from side to side.
Stack Feed Out Motor	25	Controls the stack feed-out belt
Jogger Motor	26	Controls the jogger in the stapler tray
Upper Retraction Motor	27	Controls the 'stopper S' mechanism. Also moves the upper clamp roller into contact and away from the stack of paper in the stapler tray.
Upper	33	Rotates the upper clamp roller.

Item	No.	Purpose
Clamp Roller Motor		
Stapler Unit Motor	36	Moves the stapler from side to side.
Lower Retraction Motor	40	Drives a large cam that alternately clamps and unclamps the lower clamp roller, which is the idle roller of the clamp roller pair. When these rollers are clamped, they 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.
Fold Roller Motor	44	Controls the rollers that fold the paper.
Fold Plate Motor	46	Controls the plate that makes the fold in the paper.
Bottom Fence Lift Motor	47	Raises the bottom fence and stapled stack to the correct fold position for the paper size.
Punch Motor	48	Punches the holes in the paper.
Paper Position Sensor Slide Motor	52	Controls side-to-side movement of the paper position sensor in the punch unit.
Punch Movement Motor	57	Moves the punch from side to side.

Solenoids

Item	No.	Purpose
Proof Tray Gate Solenoid	13	Controls the proof tray junction gate
Positioning Roller Solenoid	16	Controls the positioning roller.
Staple Tray Gate Solenoid	21	Controls the staple tray junction gate

Switches

Item	No.	Purpose
Upper Limit Switch	4	Detects when the shift tray is at the highest possible position, and cuts power to the shift tray motor.

Component Layout

Item	No.	Purpose
Front Door Safety Switch	11	Cuts dc power when the front door is opened.

Others

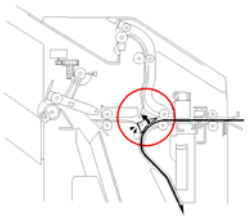
Item	No.	Purpose
Staple Driver Unit	31	Pushes the staples into the paper.
Staple Folder Unit	32	Folds the ends of the staples after stapling

2.2 JUNCTION GATES

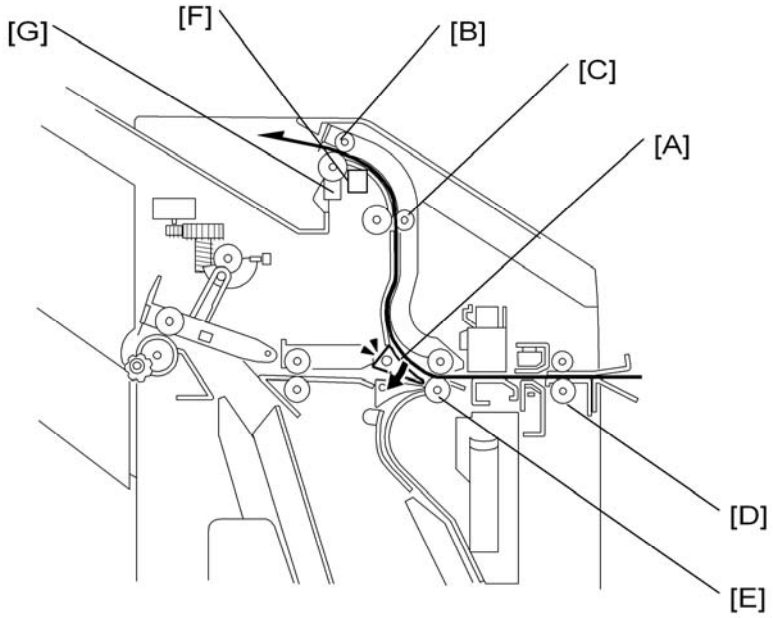
Two junction gates control the path of paper.

Each junction gate is controlled by a solenoid.

Junction gate operation is summarized in the following table.

Mode	Proof	Shift	Staple
Paper Path			
Proof Tray Gate Solenoid	ON	OFF	OFF
Staple Tray Gate Solenoid	OFF	OFF	ON

2.3 PROOF TRAY



Proof Tray Junction Gate Control [A]: Proof Tray Gate Solenoid

Roller Drive:

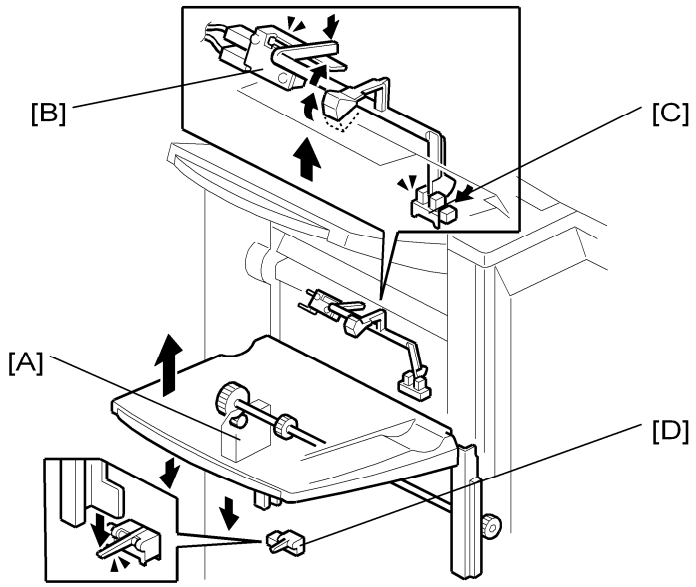
- Proof Tray Exit Roller [B], Proof Tray Transport Roller [C]: Controlled by the Upper Transport Motor
- Entrance Roller [D], Transport Roller [E]: Controlled by the Entrance Motor

Jam Detection: Proof Tray Exit Sensor [F]

Tray Full Detection: Proof Tray Full Sensor [G]

2.4 SHIFT TRAY

2.4.1 UP/DOWN MOTION



The shift tray motor [A] moves the tray up and down.

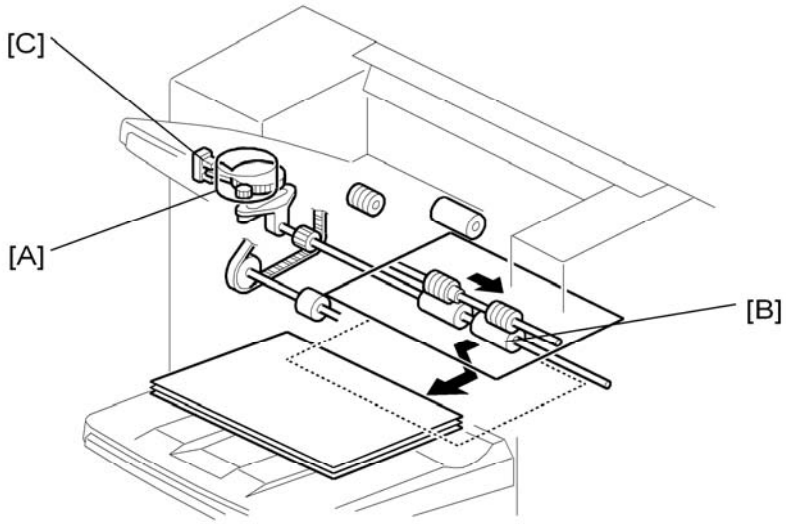
The upper limit switch [B] detects when the tray moves up too far, and cuts power to the shift tray motor.

The shift tray position sensor [C] checks when the tray (or the top of the stack) is at the correct height to receive paper.

- Shift Mode: This is checked every 5 sheets
- Staple Mode: This is checked every stack

The lower limit sensor [D] detects when the tray is full. At this point, the tray cannot move down any more.

2.4.2 SIDE-TO-SIDE MOTION



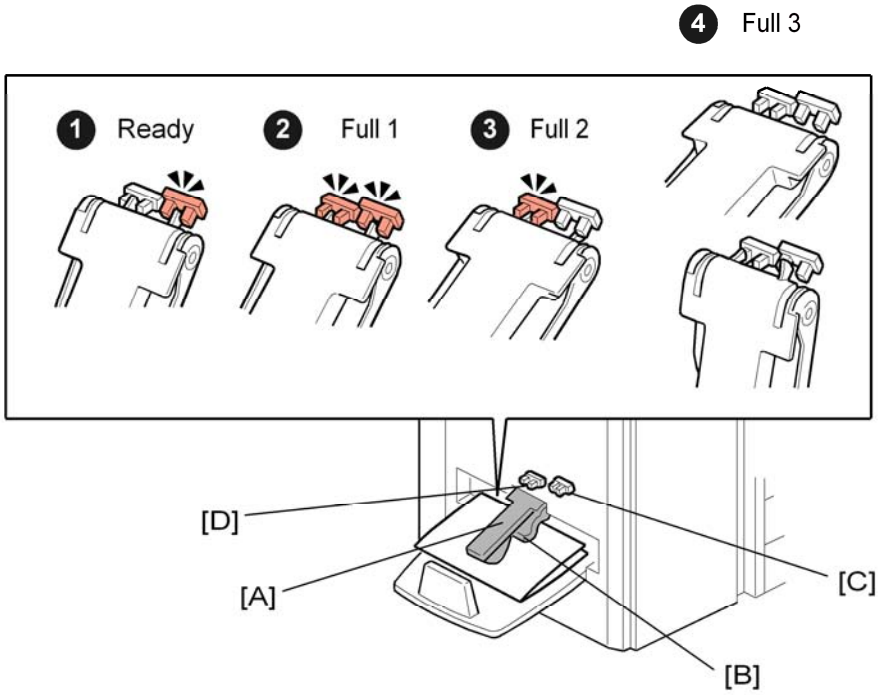
The shift motor [A] moves the shift roller [B] from side to side.

The shift motor HP sensor [C] detects when the mechanism is at home position.

The upper transport motor rotates the shift roller.

When shift mode is used, the shift motor turns on after each page is fed out. Then, for the next set, the shift motor turns the other way. In this way, the user can easily divide the sets.

2.5 BOOKLET TRAY



The 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 booklet tray full sensor [C] and rear booklet tray full sensor [D] detect when the tray is full of booklets.

Note

- The front booklet tray full sensor is mounted higher than the rear booklet tray full sensor.
- The booklet tray is stationary. When it becomes full, the stapling and folding job stops until booklets are removed from the tray.
- If the booklet 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 when the actuator arm rises determines the number of booklets that the tray can hold before the job stops.

Tray full detection depends on the size of the paper and the number of sheets in one stapled and folded booklet.

The condition detected by the machine (❶ Ready ❷ Full 1, ❸ Full 2, ❹ Full 3; see the illustration above) depends on the states of the sensors, as shown in the table below.

Booklet Tray

Condition	Front Sensor	Rear Sensor
Ready	ON	OFF
Full 1	ON	ON
Full 2	OFF	ON
Full 3 (or booklet 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 feed-out of a paper stack. The machine checks a certain condition, based on the size of the paper and the number of sheets in the booklet. Two examples are shown below the table. Tell the operators that the number of sheets that the lower tray can hold will vary greatly.

- Lower Tray Full Condition Tables -

A3 (DLT)

Sheet	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Full 1	**15 Cnt**	-	-	-	-	-	-	-	-	-
Full 2	-	3 Cnt	11 Cnt	-	-	-	-	-	-	-
Full 3	-	-	-	16 Cnt	12 Cnt	2 Cnt	3 Cnt	5 Cnt	6 Cnt	7 Cnt

A4 (LT)

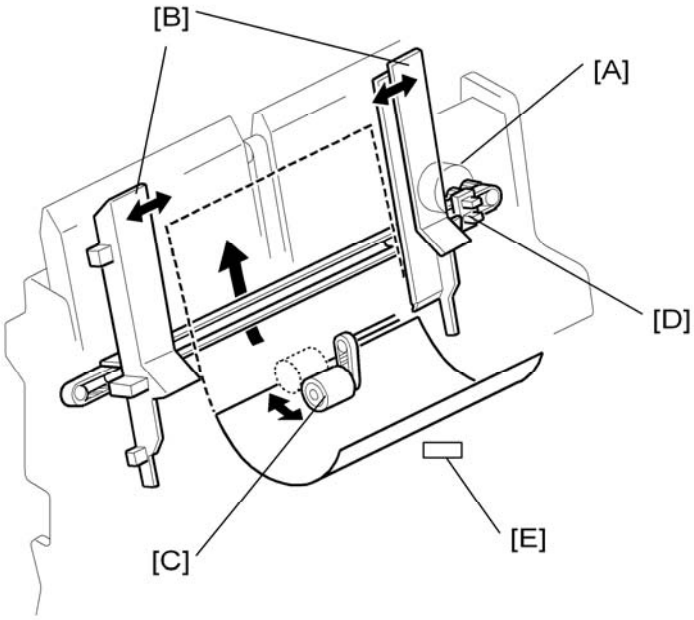
Sheet	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Full 1	**15 Cnt**	-	-	-	-	-	-	-	-	-
Full 2	-	8 Cnt	16 Cnt	19 Cnt	**5 Cnt**	2 Cnt	2 Cnt	2 Cnt	3 Cnt	4 Cnt
Full 3	-	-	-	-	-	-	-	-	-	-

- Examples -

After the copier makes a booklet with 1 sheet of 11 x 17 inch paper, the machine checks every feed-out of a paper stack for the 'Full 1' condition. If the Full 1 condition occurs 15 times ('**15 Cnt'** in the table above), 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 feed-out of a paper stack for the 'Full 2' condition. If the Full 3 condition occurs 5 times ('**5 Cnt'** in the table above), the machine detects that the tray is full.

2.6 JOGGER UNIT



The jogger is used in corner-staple mode and in booklet mode.

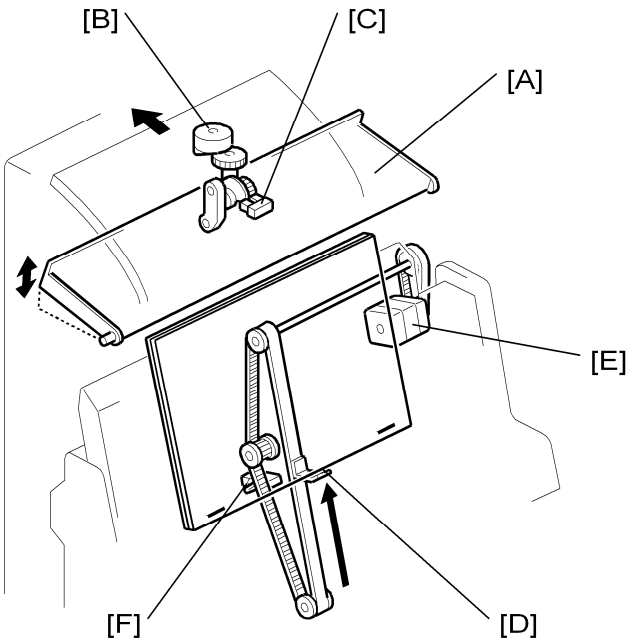
For each sheet of paper when it arrives in the staple tray, the following is done.

- The jogger motor [A] drives the jogger fences [B].
- The positioning roller solenoid moves the positioning roller [C] onto the top of the sheet. Then the lower transport motor turns on and the positioning roller rotates to push the sheet of paper against the stopper (there are two stoppers: stopper L or stopper S the one that is used depends on the paper size, as we shall see later.)

The jogger HP sensor [D] detects when the jogger fences are at home position (away from the stack).

The staple tray exit sensor [E] detects if a jam occurs when the machine feeds the stack out at the bottom of the jogger tray.

2.7 EXIT GUIDE PLATE, PAPER FEED OUT



The exit guide plate [A] opens when a stapled stack is fed out.

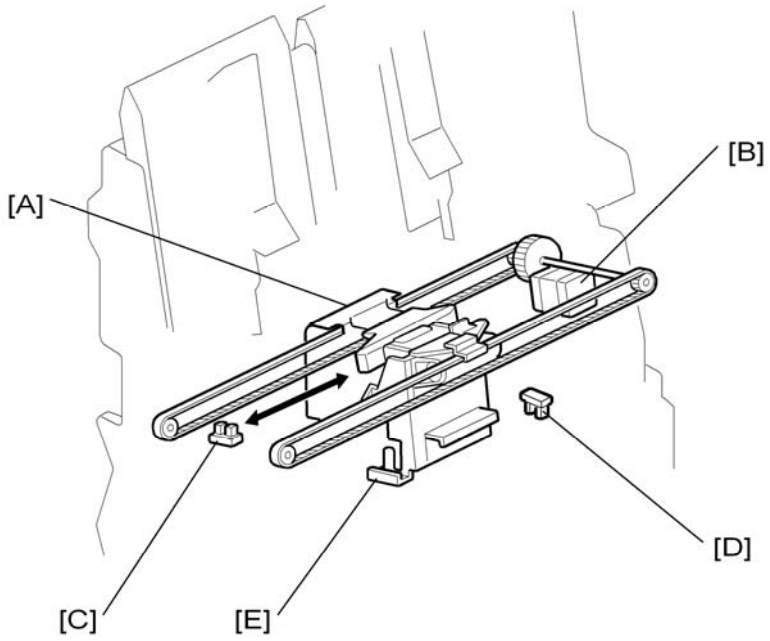
Also it opens every time a sheet is fed to the staple tray, to prevent the paper running into the exit roller during stacking.

The exit guide plate motor [B] drives the exit guide plate. The exit guide plate HP sensor [C] detects when the guide plate is at home position.

The stack feed-out belt feeds out stapled stacks. The pawl [D] on the belt moves the stack out to the exit.

The stack feed-out motor [E] drives the belt. The stack feed-out HP sensor [F] detects when the belt is at home position.

2.8 STAPLER UNIT MOVEMENT



The machine has only one stapler [A]. It does stapling for booklets and for corner stapling. The stapler unit motor [B] moves the stapler from side to side. The stapler unit HP sensor [C] detects when the stapler unit is at home position.

In corner staple mode, at the start of the job, the stapler moves to the position where the stapler will be inserted.

In booklet mode, at the start of a job, the stapler moves to a starting position that depends on the paper size, as follows:

- 8.5 x 14 inches or shorter: Rear side staple position
- Longer than 8.5 x 14 inches: Center position. When the stapler is at the center position, bracket [E] releases 'stopper L', which catches the bottom edge of the paper for booklet stapling with longer paper sizes. This will be described in a later section.

If the stapler safety sensor [D] detects the stapler unit at its initialization, the stapler unit stops moving until the stack feed out belt pawl and stopper S are at home position. If the stapler unit does not stop, it could collide with the pawl and/or the stopper.

2.9 STACKING FOR BOOKLET STAPLING

2.9.1 OVERVIEW

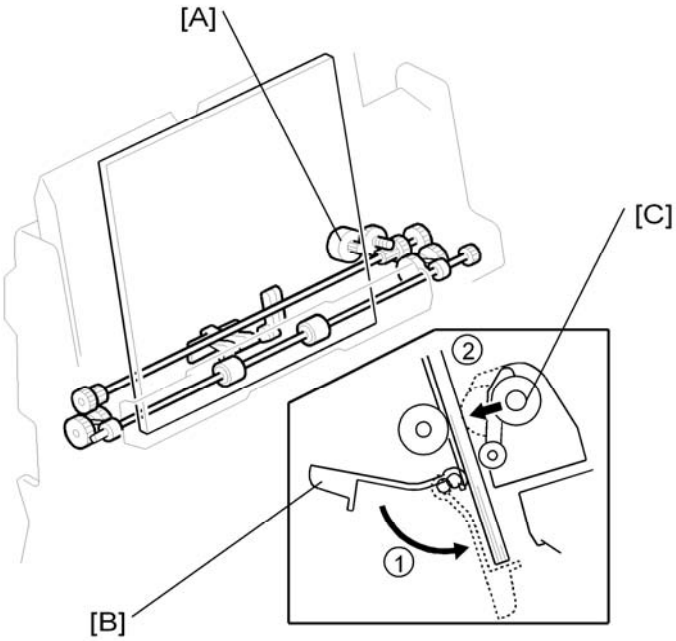
There are two stoppers near the stapler unit. These stoppers hold the stack of paper in the correct position during stacking.

The stoppers are called ‘stopper S’ and ‘stopper L’. Stopper S is used for legal size paper, or shorter than 8.5 x 14 inches. Stopper L is used for paper that is longer than 8.5 x 14 inches.

Note

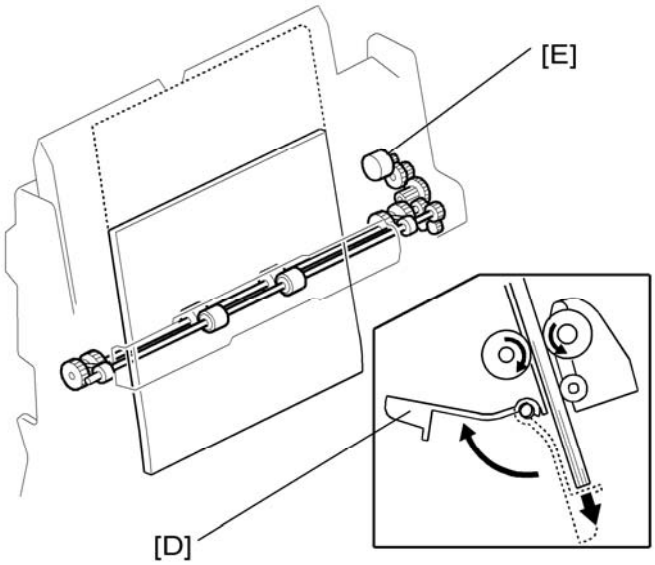
- In corner stapling mode, the pawl on the stack feed-out belt holds the stack of paper. For booklet stapling, this pawl stays at home position, which is on the rear side, so it does not interfere with booklet stapling.

2.9.2 8.5 X 14 (LEGAL) OR SHORTER



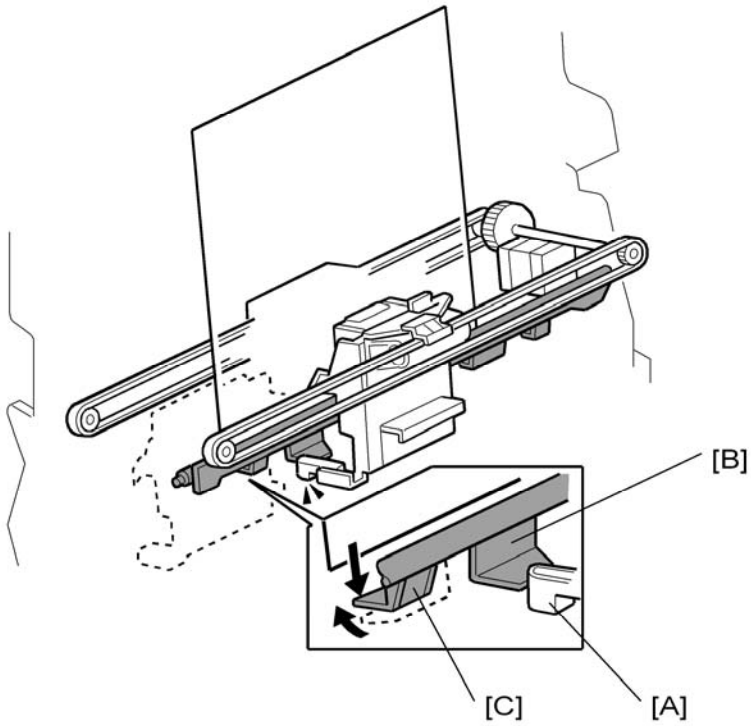
At the start of the set, the upper retraction motor [A] turns on, and stopper S [B] moves down into position to catch the paper ①. The upper retraction motor also moves the upper clamp roller [C] into contact with the stack ②.

Stacking for Booklet Stapling



When the stack is complete, stopper S moves away [D], and the machine feeds the stack to the correct position for stapling. To do this, the upper clamp roller motor [E] rotates the upper clamp roller.

2.9.3 LONGER THAN 8.5 X 14 INCHES

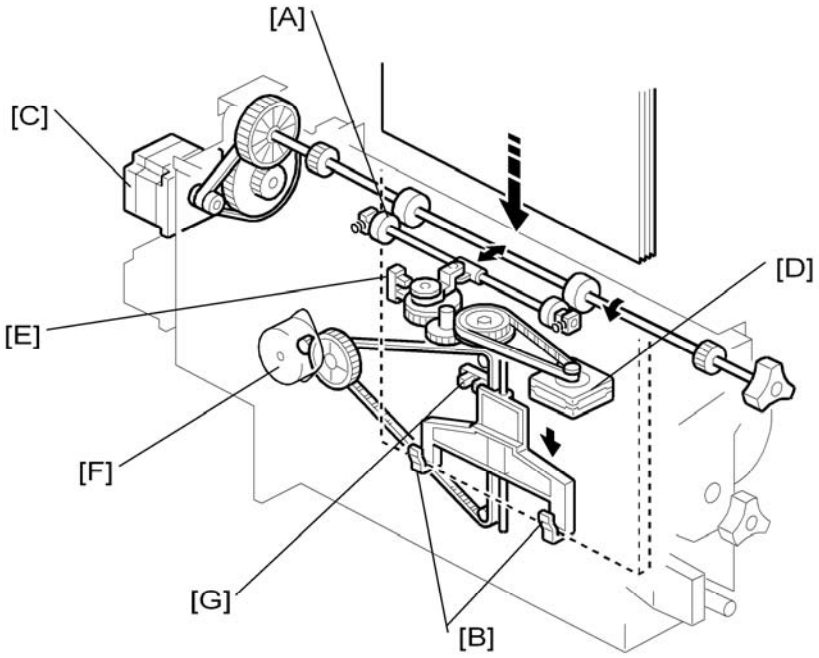


At the start of the set, the stapler moves to the center position. At this position, a bracket [A] on the stapler unit pushes stopper L [B]. The pawl [C] on the stopper L assembly then moves into position to catch the paper. The upper clamp roller holds the stack (see the

previous section).

When the stack is complete, the stapler moves to the rear-side position, and stopper L moves away. The machine feeds the stack to the correct position for stapling.

2.10 MOVING THE STACK TO THE FOLDING POSITION



First, the upper clamp roller feeds the stack down after the stack has been stapled. When the lower clamp roller [A] catches the stack, the upper clamp roller stops, and the lower clamp roller feeds the stack down.

The lower clamp roller is released just before the leading edge of the stack reaches the bottom fence [B] (this fence consists of two pawls that catch the paper). The bottom fence moves the stack to the folding position

The fold roller motor [C] turns the lower clamp roller.

The lower retracting motor [D] moves the lower clamp roller against and away from the stack. The lower clamp roller HP sensor [E] detects when the lower clamp roller is moved to the home position.

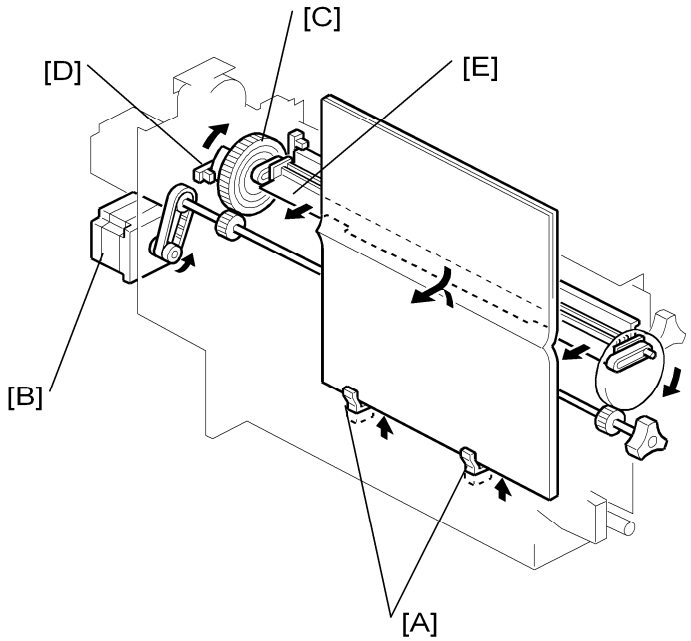
The bottom fence lift motor [F] moves the bottom fence up and down. The bottom fence HP sensor [G] detects when the bottom fence is at home position.

2.11 FOLDER

2.11.1 OVERVIEW

The fold plate pushes the stack into the nip between the fold rollers. The fold rollers feed out the stack, then reverse to feed it back in again. Then, the fold rollers feed the stack out of the folder, to the booklet tray.

2.11.2 FOLD PLATE



[A]: Bottom Fence Stack Stoppers. Catches the stack after it is released by the clamp rollers.

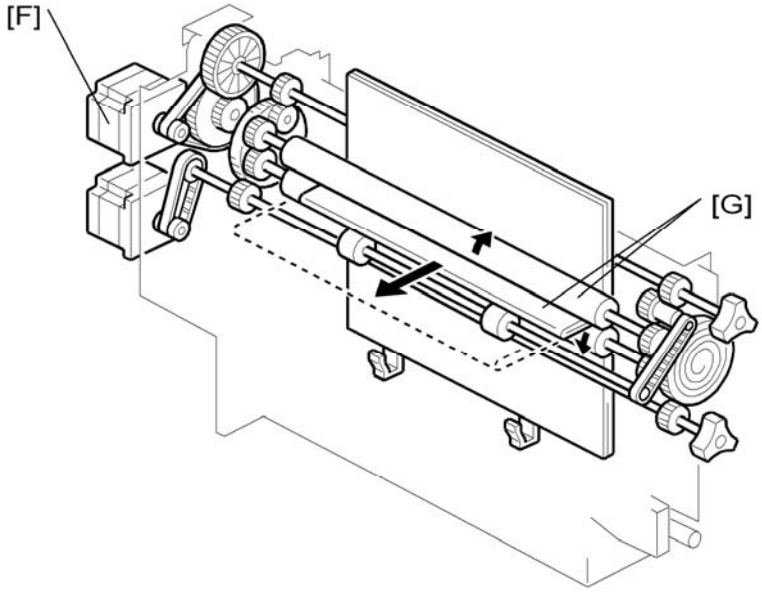
[B]: Fold Plate Motor. Drives the timing belt and gears that move the fold plate.

[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.

2.11.3 FOLD ROLLERS



[F]: Fold Roller Motor. Drives forward to feed out the stack at the fold, and then drives forward again to feed out the folded stack.

Note

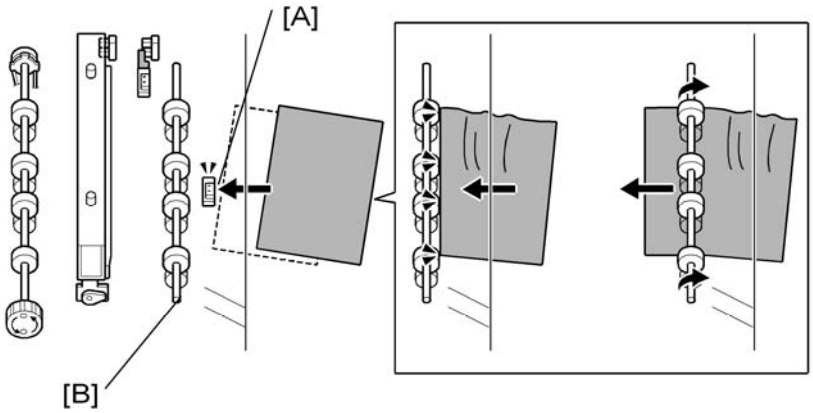
- This cycle can be repeated by changing the setting of SP6136.

[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.

2.12 PUNCH UNIT

2.12.1 OVERVIEW OF OPERATION

Skew Correction Before Punching



The finisher entrance roller corrects for paper skew and then the punch unit moves across to punch the holes at the correct position. Each sheet is punched one at a time.

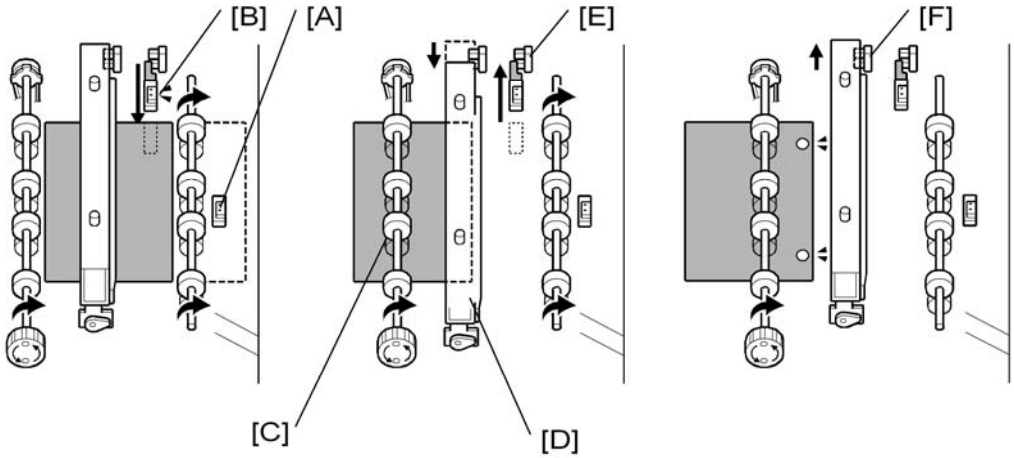
Paper feeds out of the copier. The finisher entrance sensor [A] detects the leading edge of the sheet.

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 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 "5. 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 "5. 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 moves the paper position sensor [B] 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 [C] the prescribed distance to put the paper under the punch unit [D].

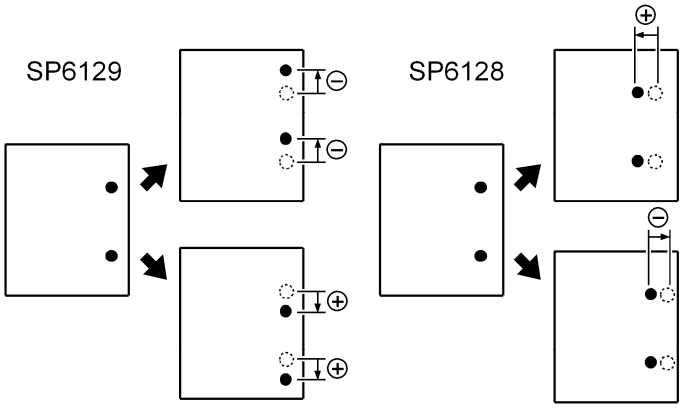
❷

Using the result of the position calculation, the punch unit control board moves the punch unit [D] to the adjusted punch position.

The paper position slide unit and its paper sensor, move back to the paper position slide home position sensor [E], and the punch unit fires the punches to make the holes.

❸

The feed rollers feed the punched paper out of the punch unit and into the paper path. The punch unit moves back to home position (detected by the home position sensor [F].

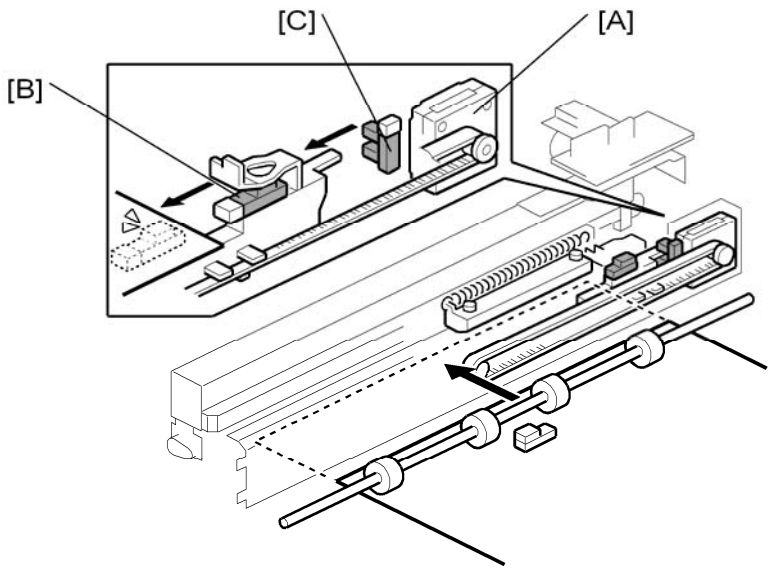


These SP codes adjust the punch hole alignment:

- SP6128 Adjusts the punch positions in the direction of paper feed.
- SP6129 Adjusts the punch position perpendicular to the direction of feed.

For more, see Section "5. Service Tables".

2.12.2 PAPER POSITION DETECTION

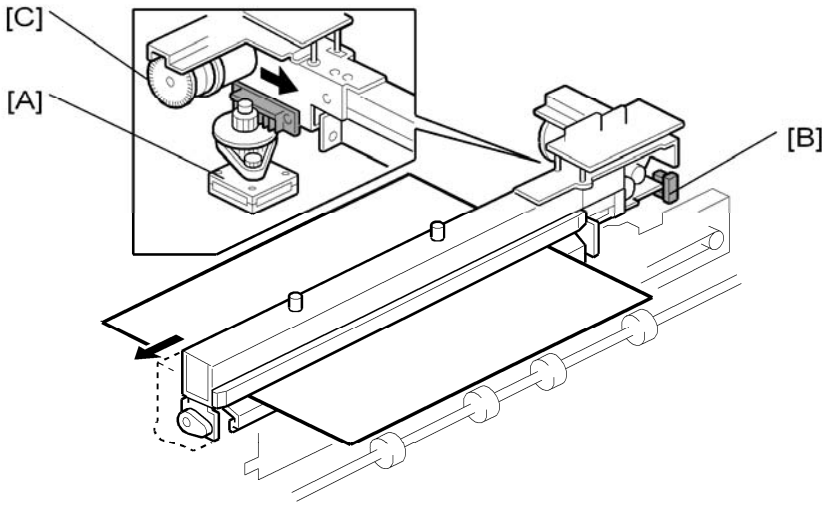


The paper position sensor slide motor [A] extends and retracts the paper position slide that holds the paper position sensor [B].

The paper position sensor detects the position of the paper edge. The detected position of the paper is used to move the punch unit across to the correct position for punching.

When the paper position slide is retracted, the paper position slide HP sensor [C] detects when the slider is at home position and stops paper position slide motor.

2.12.3 PUNCH UNIT MOVEMENT

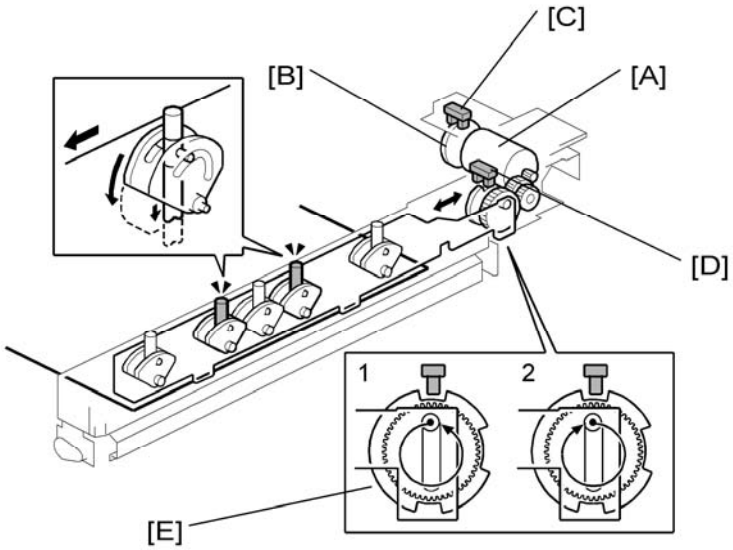


The punch movement motor [A] extends and retracts the punch unit to put it at the correct position for punching.

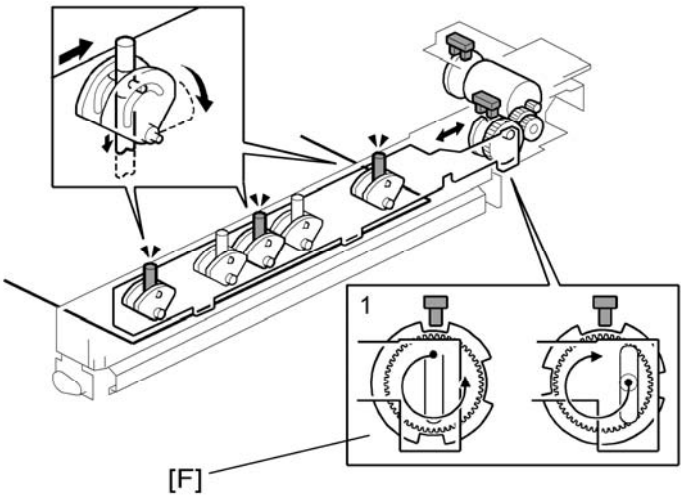
The punch movement HP sensor [B] detects the position when it retracts, switches off the punch movement motor, and stops the punch unit at its home position.

The punch drive motor [C] fires the punches that punch holes in the paper below.

2.12.4 PUNCH SELECTION AND FIRING



The punch drive motor [A] turns the small, notched encoder wheel [B] through the gap in the punch encoder sensor [C]. The sensor output is used to control the punch timing.



The timing for 2-hole punching [E] is different from 3-hole punching [F].

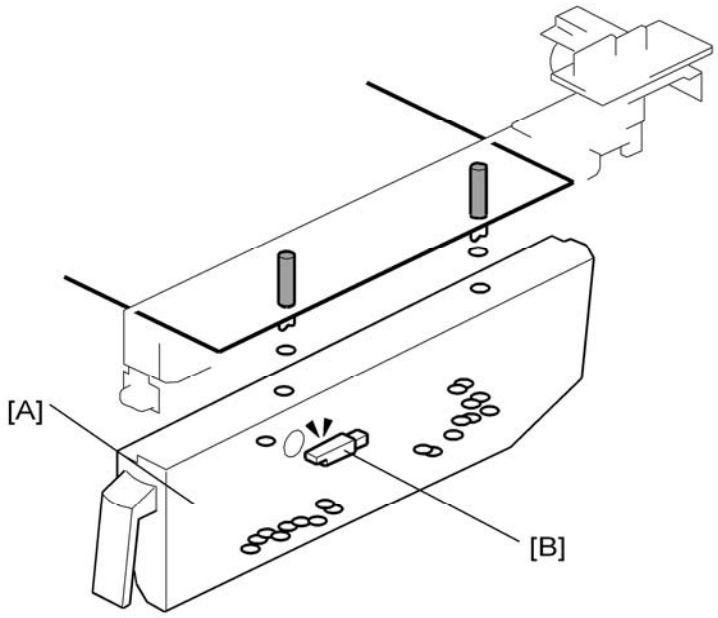
When the punch unit is at the punching position, the punch motor turns until the encoder detects the starting position for 2-hole or 3-hole punching.

- This is the '1' position in the diagrams (the first diagram is for 2-hole punching, and the second 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.

2.12.5 PUNCH HOPPER MECHANISM



The punchouts fall from the punch unit into the punch hopper [A].

Punch Unit

The punch hopper full sensor [B] does the following:

- Signals that the hopper is full when it detects the top of the stack of punchouts that have collected in the hopper.
- Detects when the punch hopper is set properly.

BOOKLET FINISHER & FINISHER SR3020/SR3030/SR4010/SR4020 B804/B805/D373/D374

B804/B805/D373/D374 BOOKLET FINISHER SR3020/SR3030 REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

BOOKLET FINISHER & FINISHER SR3020/SR3030/SR4010/SR4020

TABLE OF CONTENTS

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

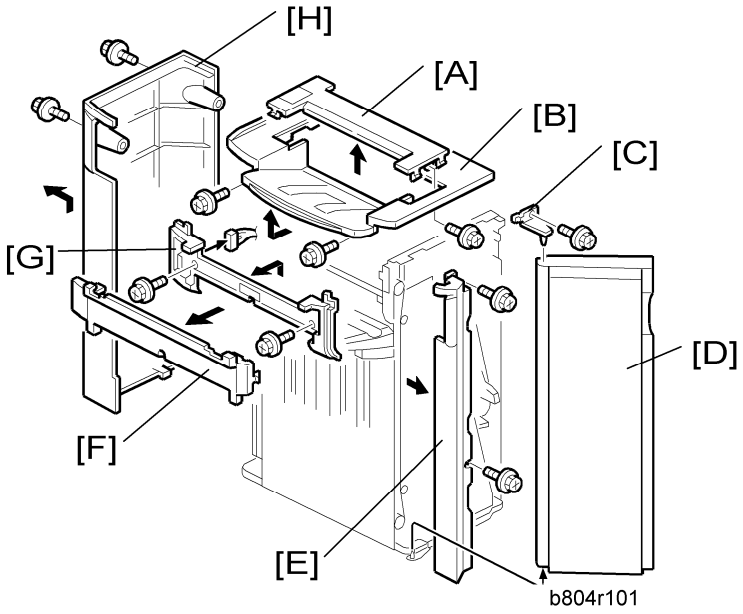
: Clip ring

: E-ring

1. REPLACEMENT AND ADJUSTMENT

1.1 COVERS

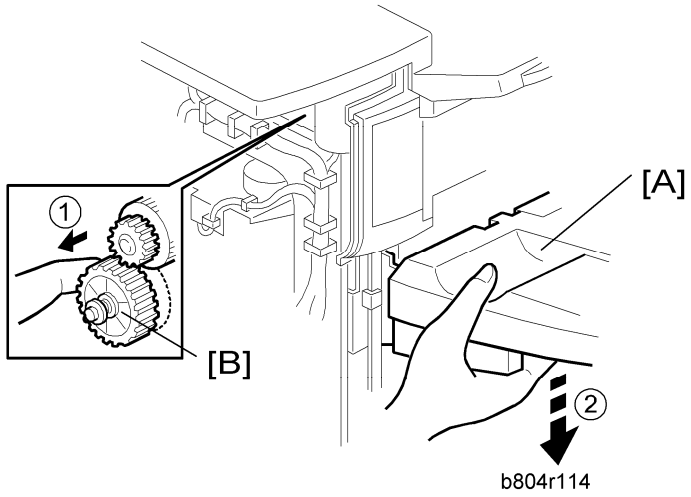
1.1.1 EXTERIOR COVERS



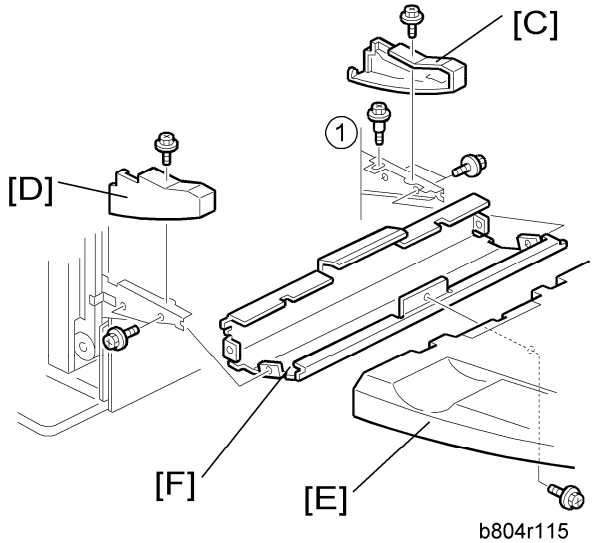
1. Open the front door [D].
2. Small upper cover [A] (x1)
3. Upper cover [B] (x2)
4. Front door bracket [C] (x1)
5. Front door [D]
6. Front left side cover [E] (x2)
7. Cover [F]
8. Paper exit cover [G] (x2)
9. Rear cover [H] (x2)

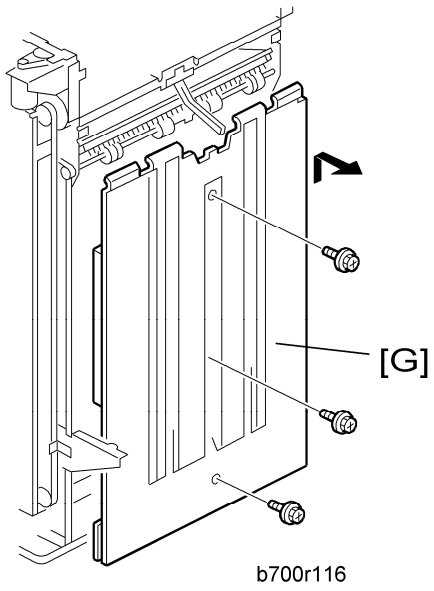
1.1.2 UPPER TRAY, END FENCE

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.

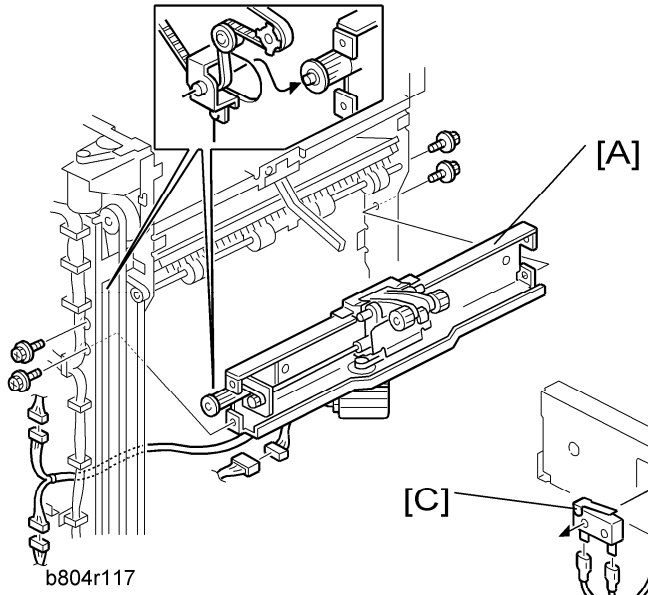


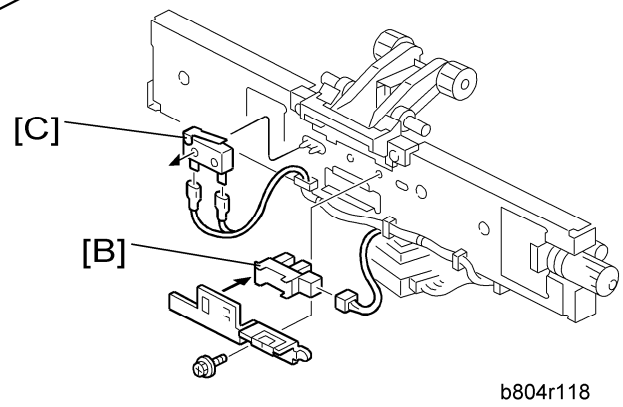


4. Front side cover [C] (x1)
5. Rear side cover [D] (x1)
6. Upper tray [E] (x1)
7. Tray bracket [F] (x4, x1 shoulder screw ①)
8. End Fence [G](x3)

1.2 MAIN UNIT

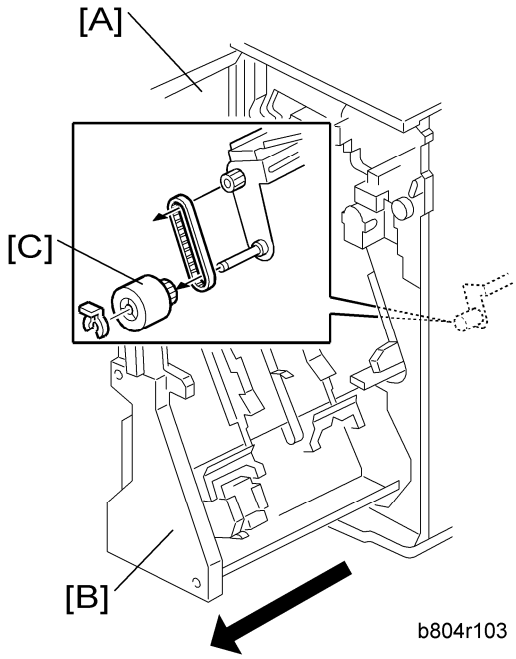
1.2.1 UPPER TRAY LIMIT SENSOR, LIMIT SWITCH





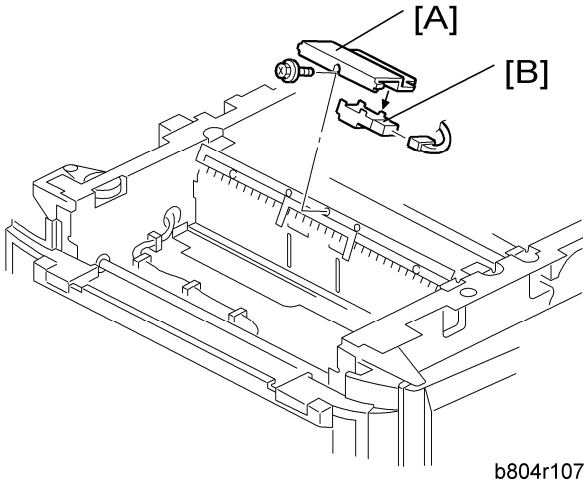
1. Front door, front left side cover, rear cover, upper cover (☛ "Exterior Cover")
2. End fence (☛1.1.2 "Upper Tray, End Fence")
3. Upper tray exit mechanism [A] (x4, x3)
4. Upper tray limit sensor [B] (x1, x1)
5. Upper tray limit switch [C] (x2)

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

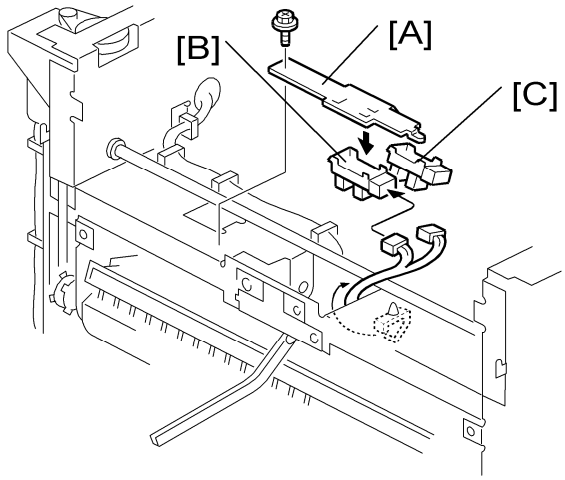


1. Small upper cover (1.1.1 "Exterior Cover")
2. Proof tray exit sensor bracket [A] (x1)

Main Unit

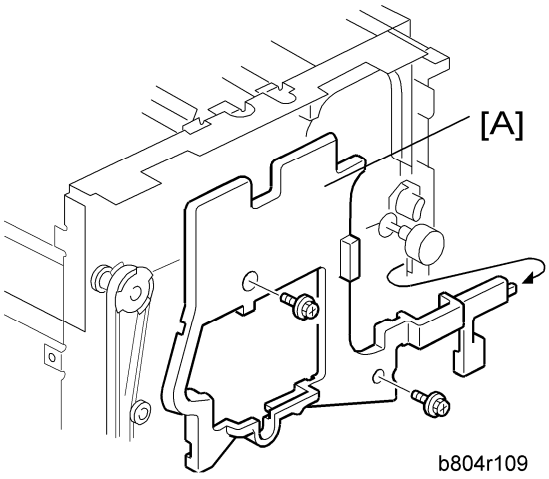
3. Proof tray exit sensor [B] (☞ x1)

1.2.4 UPPER TRAY HEIGHT SENSORS 1, 2

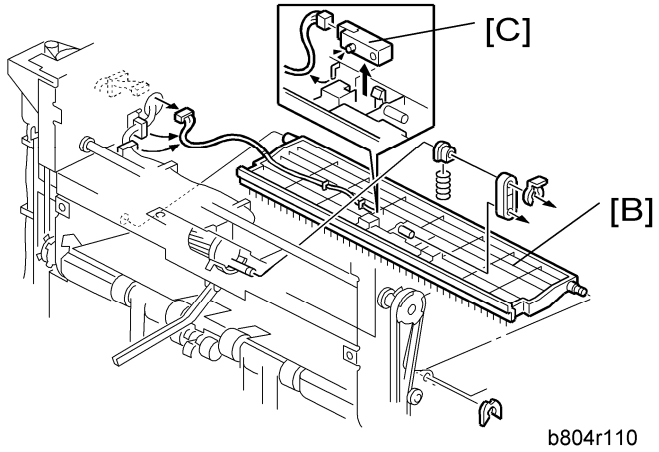


1. Small upper cover, upper cover (☛1.1.1 "Exterior Cover")
2. Upper tray paper height sensor bracket [A] (☞ x1)
3. Upper tray paper height sensor [B] – staple mode (S08) (☞ x1)
4. Upper tray paper height sensor [C] – non-staple mode (S09) (☞ x1)

1.2.5 EXIT GUIDE PLATE, UPPER TRAY EXIT SENSOR

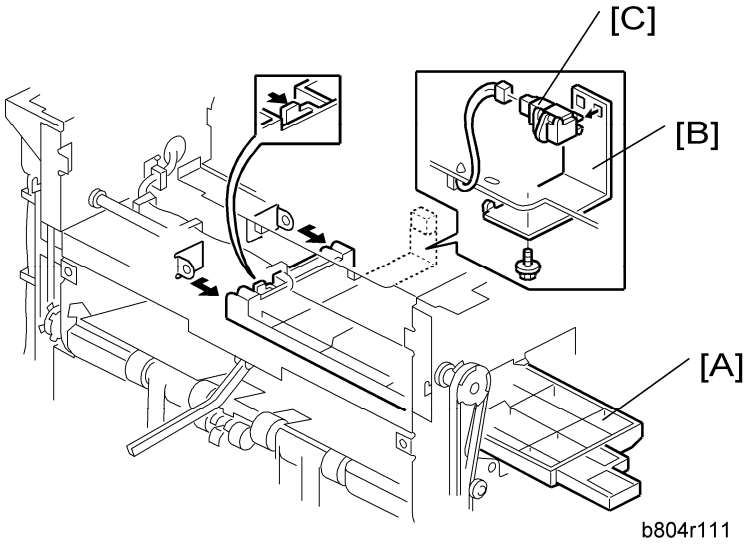


1. Rear cover, Upper covers, Front door, Cover, Paper exit cover (☛1.1.1 "Exterior Cover")
2. Inner cover [A] (☞ x2)



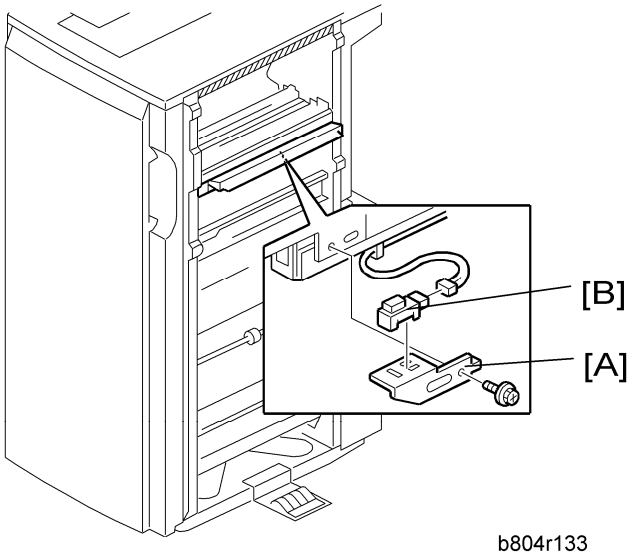
3. Exit guide plate [B] (x1, Link and spring, x1, x1)
4. Upper tray exit sensor [C] (S6) (x1)

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)

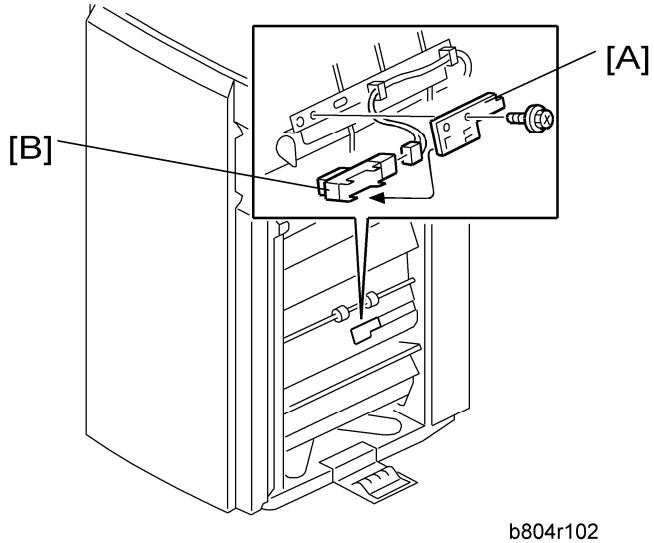
1.2.7 FINISHER ENTRANCE SENSOR



b804r133

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

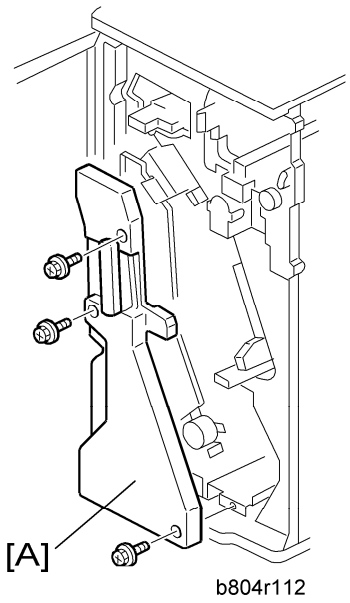


b804r102

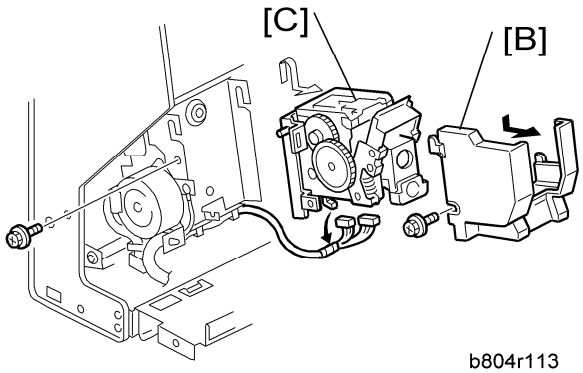
1. Disconnect the finisher if it is connected to the copier.
2. Sensor bracket [A]
3. Pre-stack tray exit sensor [B] (S2)

1.3 STAPLER UNIT

1.3.1 CORNER STAPLER



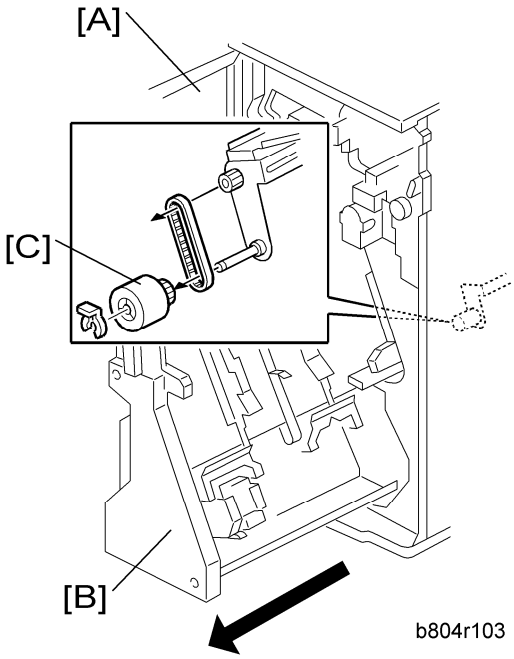
b804r112



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)

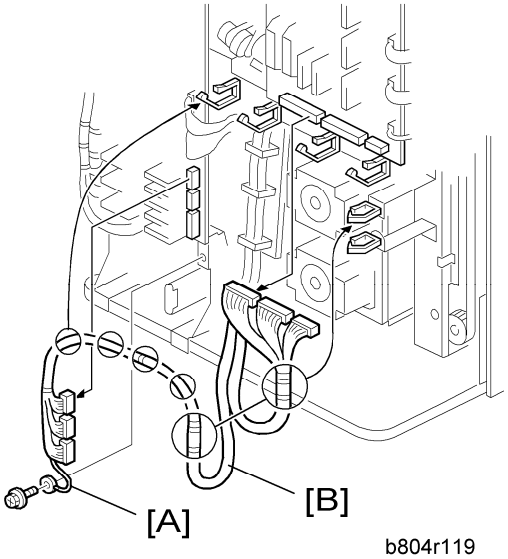
1.3.2 POSITIONING ROLLER



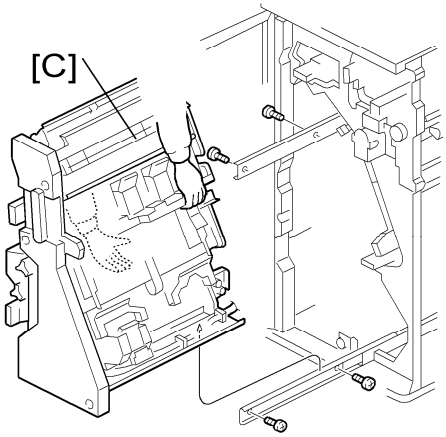
1. Open the front door [A].
2. Pull out the stapling unit [B].
3. Positioning roller [C] (x1, timing belt x1)

1.4 FOLD UNIT

1.4.1 FOLD UNIT



b804r119



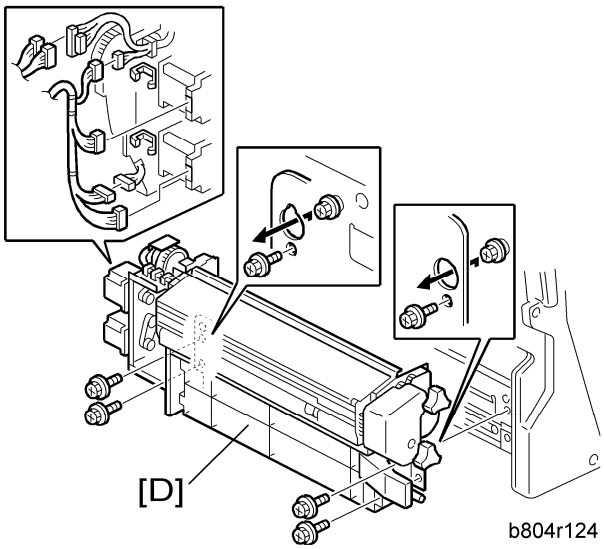
b804r801

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

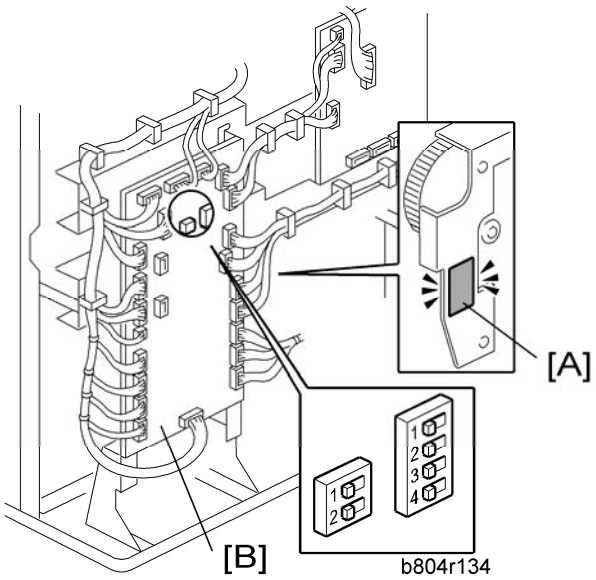
- Support the fold unit with your hand to prevent it from falling.

CAUTION

- The fold unit is heavy.

6. Folding unit [D] (x4, x2, x6)

If you have replaced the folding unit:

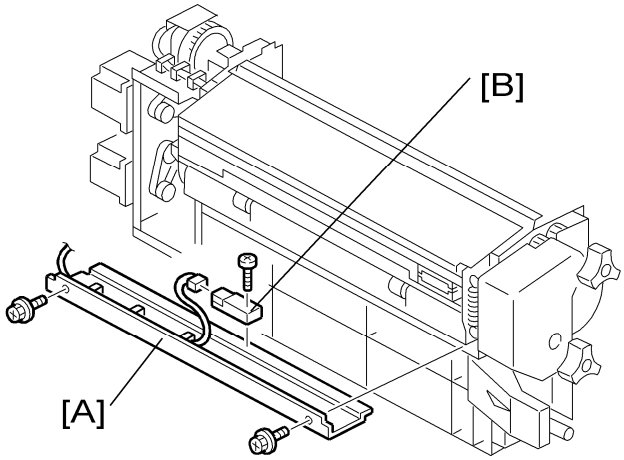


1. Read the DIP SW settings on the decal [A] attached to the back of the new folding unit.
2. Check the DIP SW settings on the main board [B] of the finisher.
3. If these settings are different, change these settings to match the settings printed on the decal attached to the folding unit.

Note

- Set DIP switches 1 to 4 (the switch set on the right). Do not touch the other DIP switches.

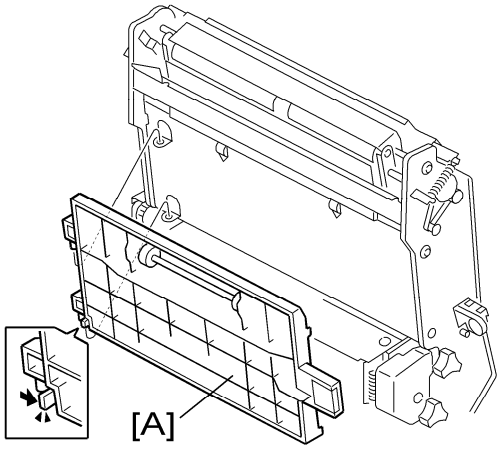
1.4.2 FOLD UNIT ENTRANCE SENSOR



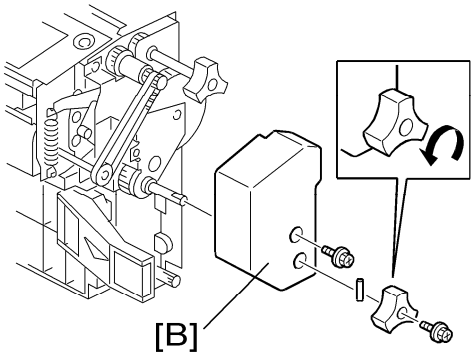
b804r132

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



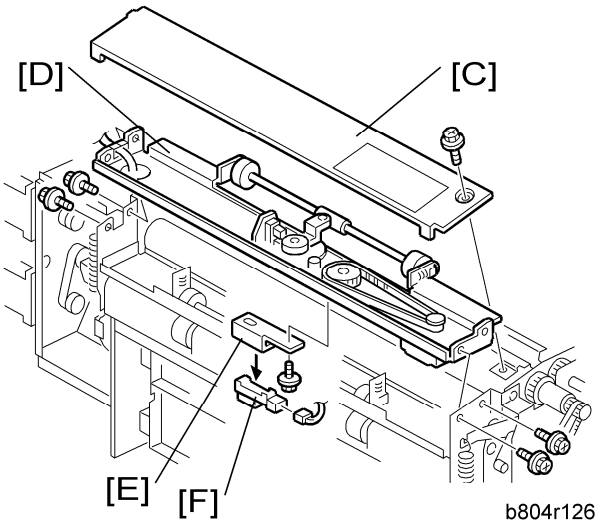
b804r121



b804r125

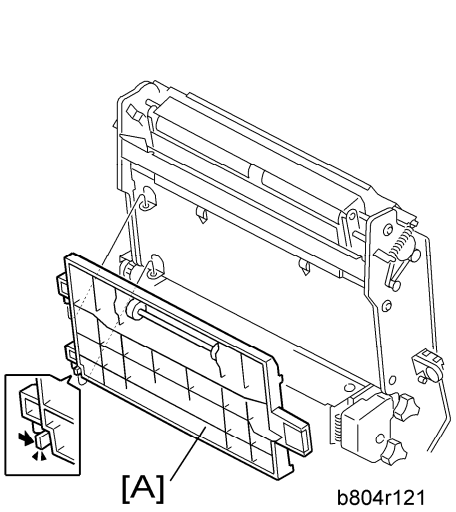
1. Open the front door.
2. Pull out the stapler unit (☛1.3.2 "Positioning Roller").
3. Fold unit vertical guide plate [A]
4. Fold unit inner cover [B] (☞ x2, Spring pin x1)

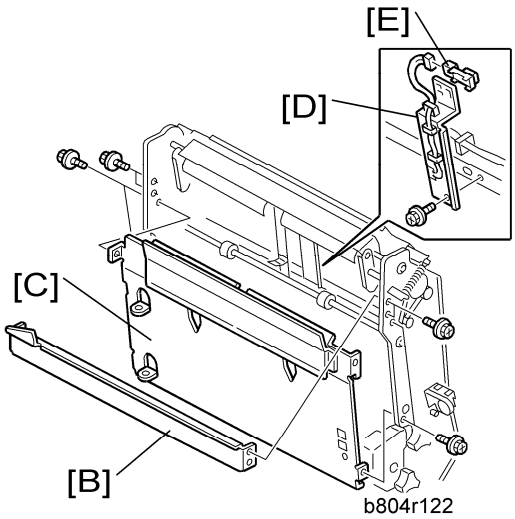
Fold Unit



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





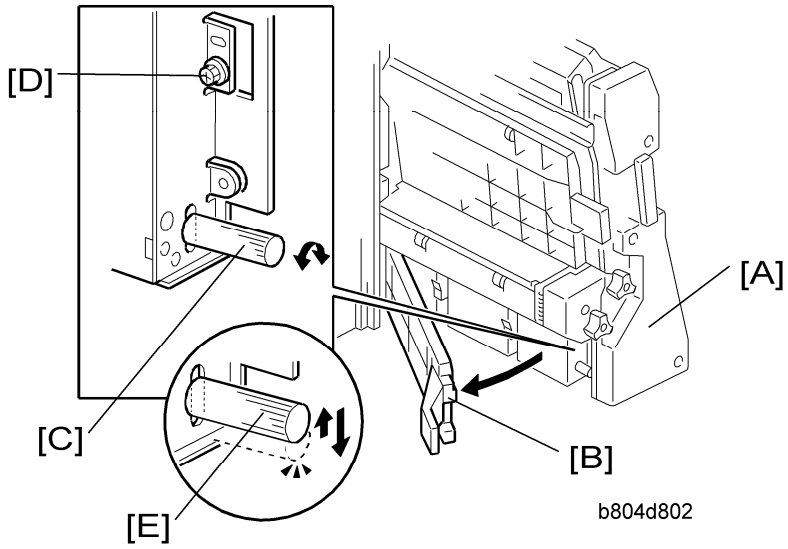
Important

- 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).

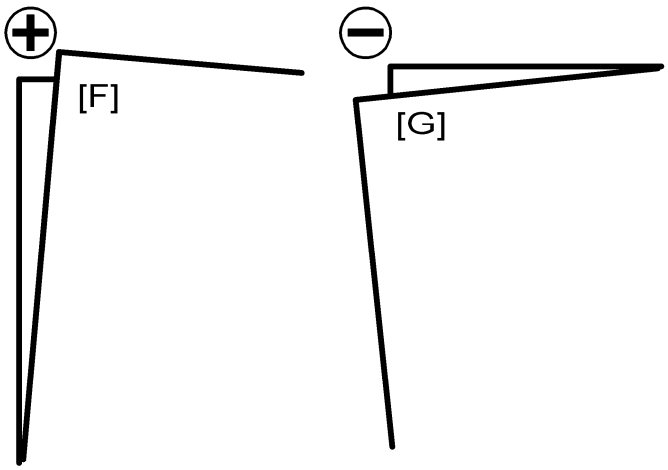
Note

- 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.

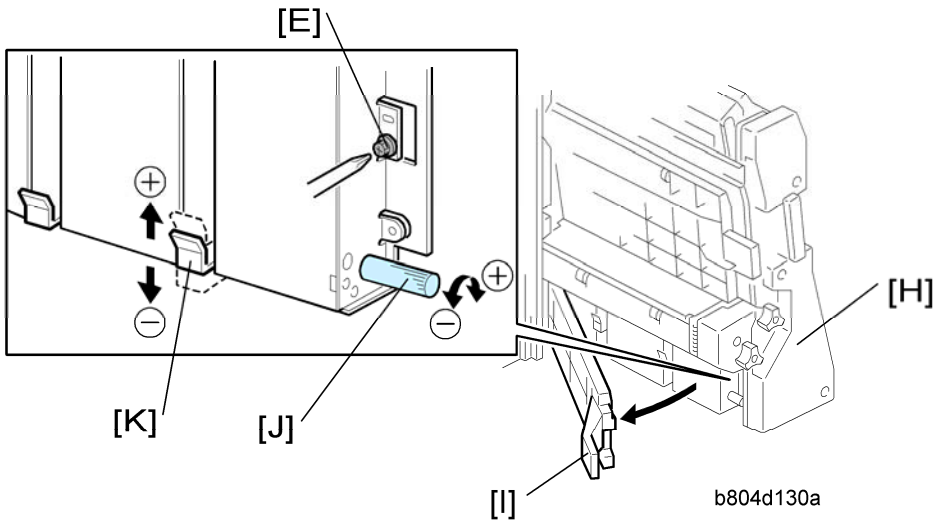
Fold Unit

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

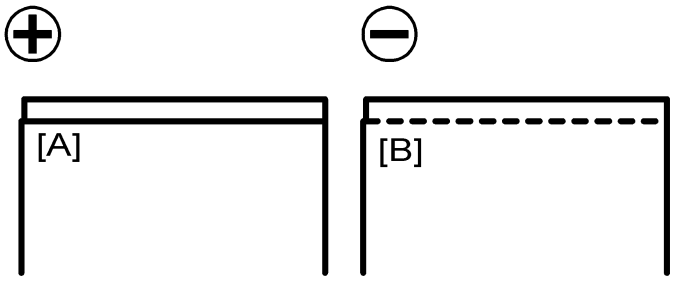
- After doing this adjustment, adjust for vertical skew, if necessary. (☛1.4.6 "Fold Vertical Skew Adjustment")

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).



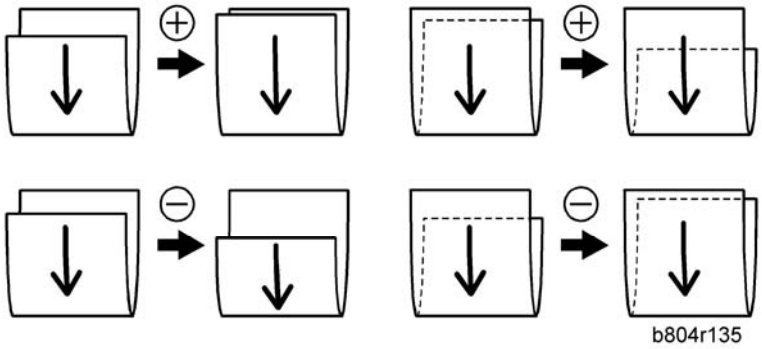
b804r902

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

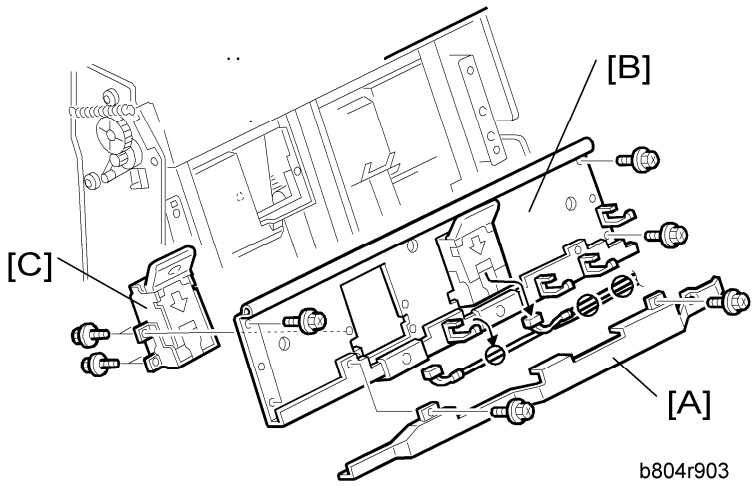
   - The range for measurement is –3.0 mm to +3.0 mm in 0.2 mm steps for every notch adjustment.
8. Exit the SP mode and do the test again (steps 2 to 5).
9. Repeat this procedure until the skew is corrected.

   The illustration below shows the effects of +/- adjustment with SP6113. (The vertical arrows show the direction of paper feed.)


b804r135

1.5 BOOKLET STAPLER UNIT

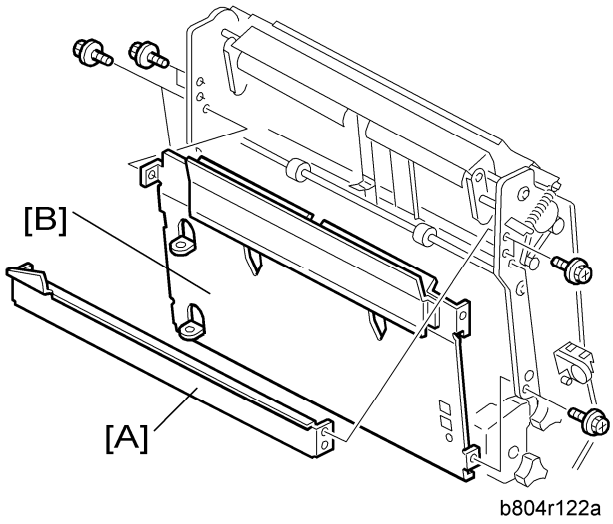
1.5.1 BOOKLET STAPLER



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)

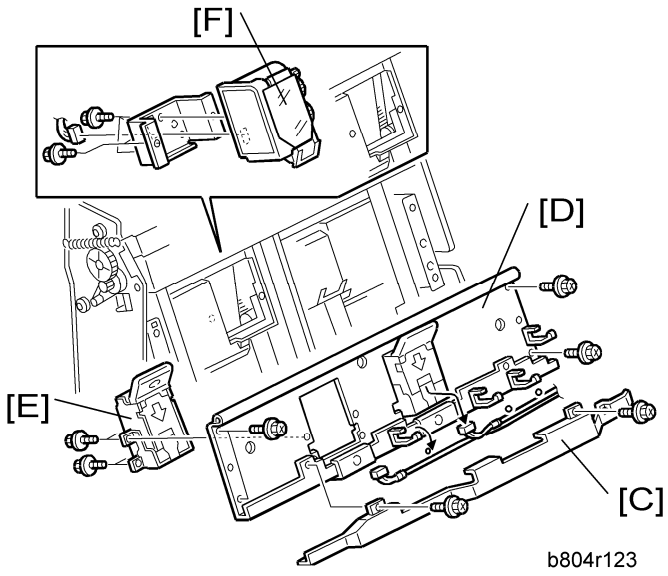
1.5.2 BOOKLET STAPLER MOTOR

1. Open the front door.
2. Remove the stapler unit. (☛1.4.1 "Fold Unit")



b804r122a

3. Stay [A] (x4).
4. Left plate [B] (x4)



b804r123

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)

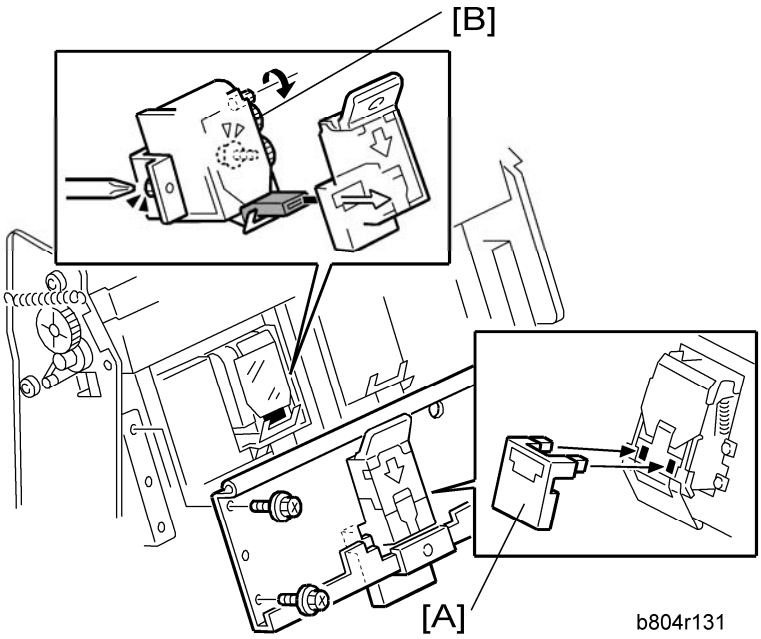
To Reattach the Booklet Stapler Motor

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

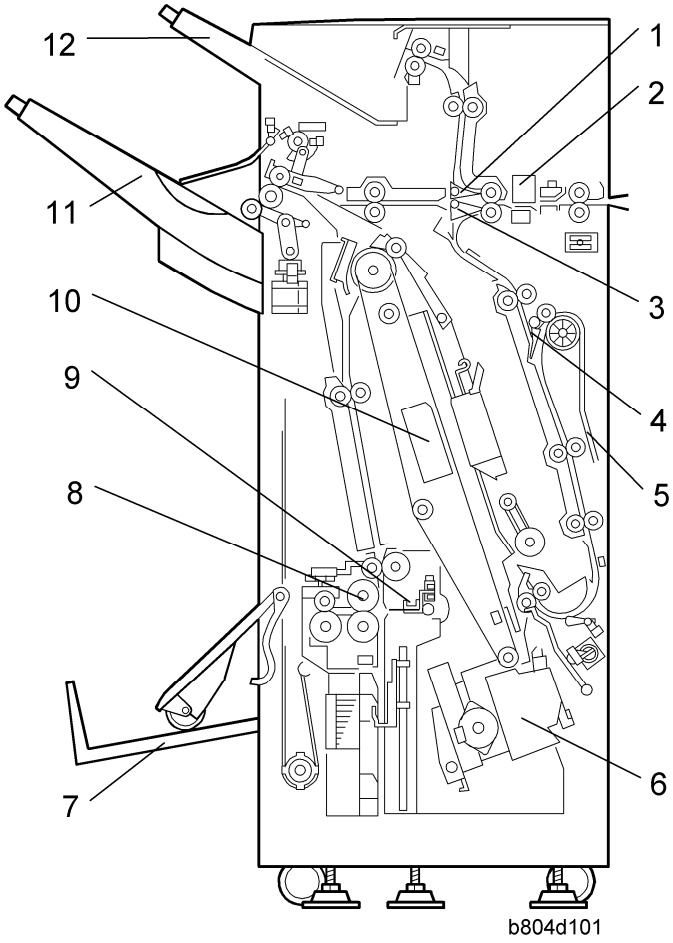
- This tool is included with the stapler spare part.

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

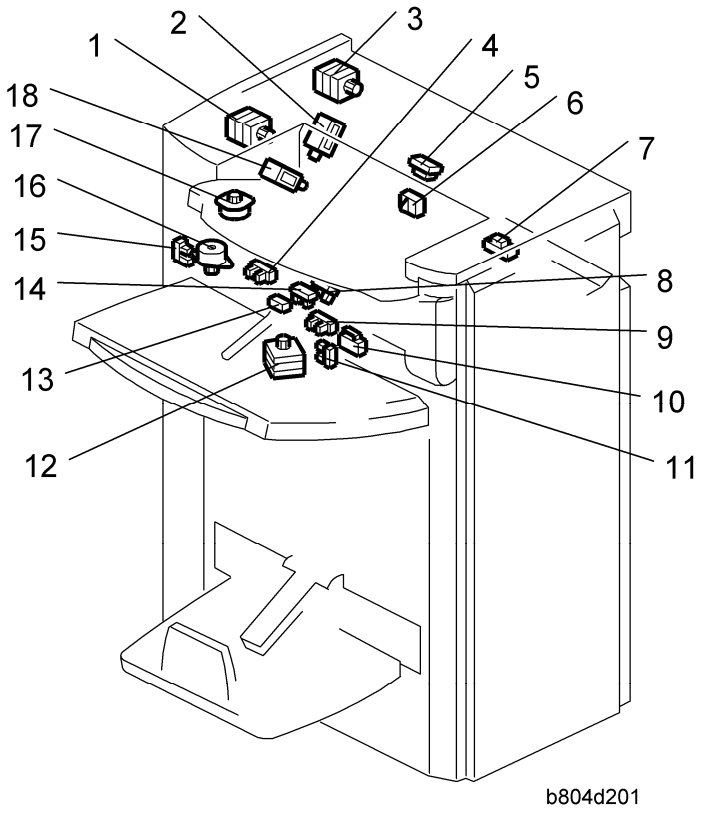
The pre-stack tray (5) has a switchback mechanism to increase the productivity of stapling. (☛2.3 "Pre-Stacking) Pre-stacking is done for corner stapling in the B804/B805 and for booklet stapling in the B804.

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

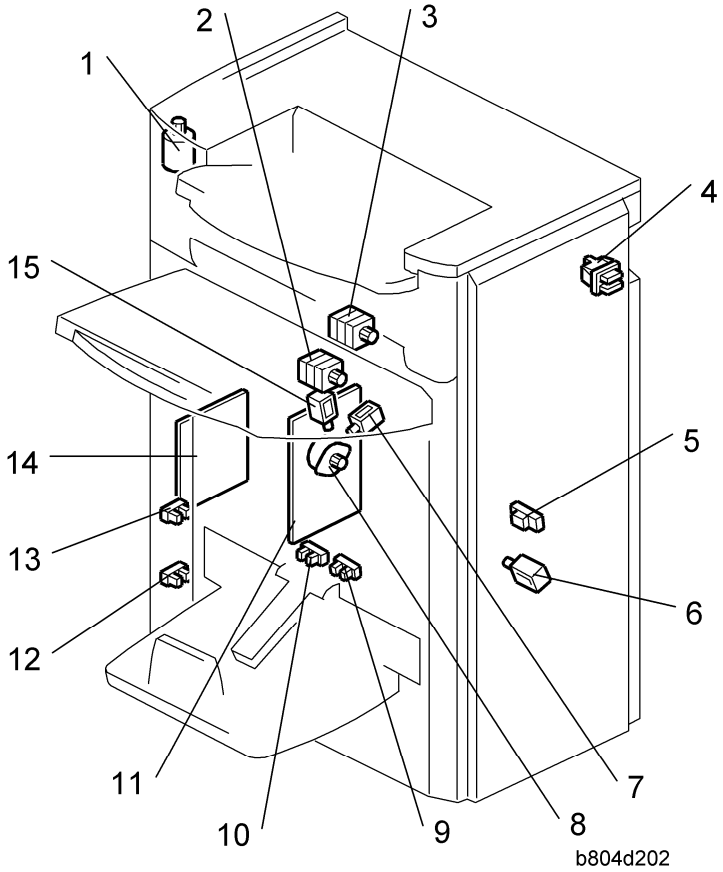
Upper Area B804/B805



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)

Component Layout

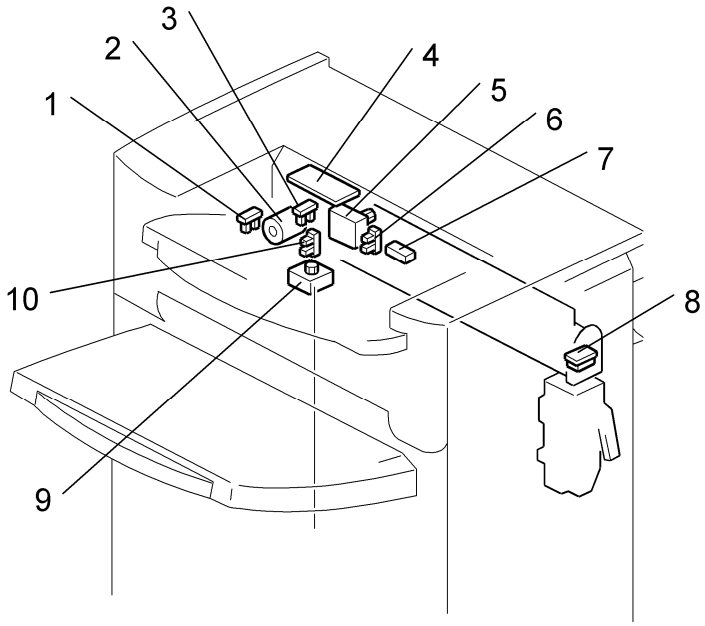
Lower Area B804/B805



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



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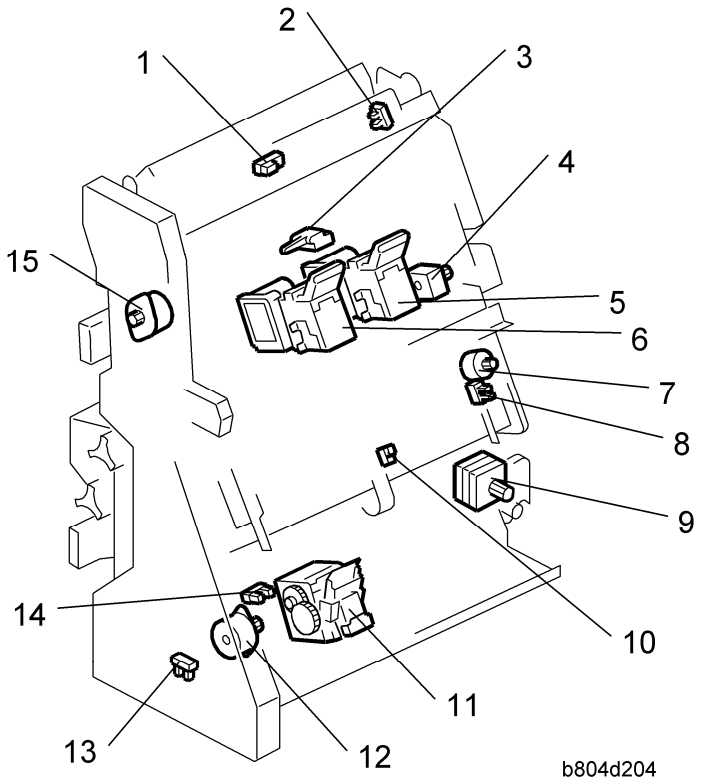
1. Punch Encoder Sensor (S24) 2. Punch Drive Motor (M24) 3. Punch HP Sensor (S24) 4. Punch Unit Board (PCB3) 5. Paper Position Sensor Slide Motor (M7)	6. Paper Position Slide HP Sensor (S22) 7. Paper Position Sensor (S3) 8. Punch Hopper Full Sensor (S4) 9. Punch Movement Motor (M9) 10. Punch Movement HP Sensor (S21)

Component Layout

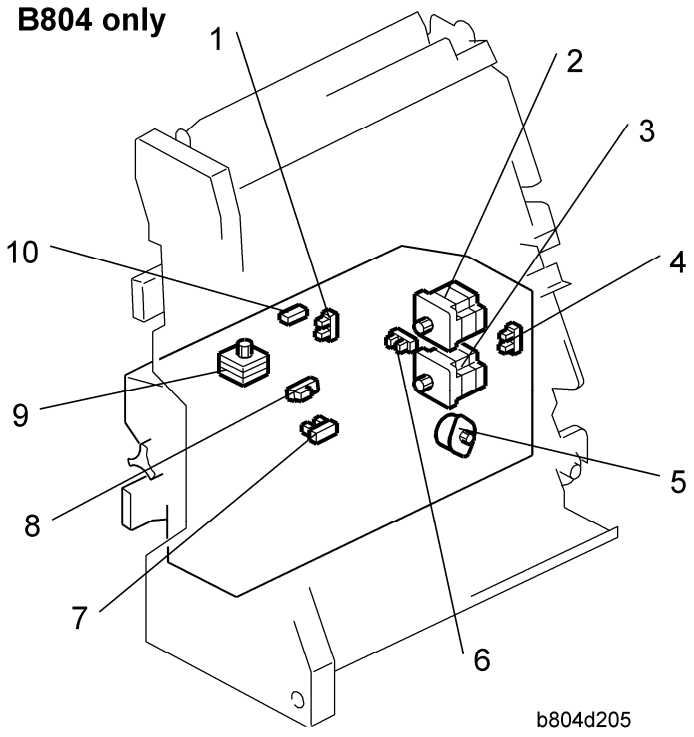
Stacker/Stapler - B804/B805



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.

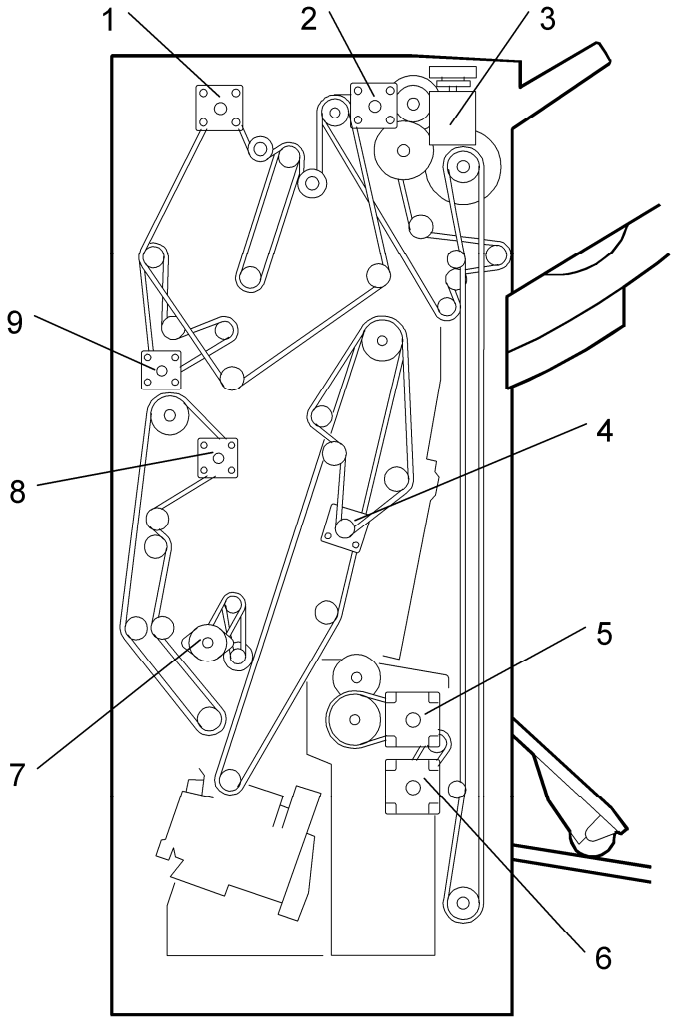
No.	Component	Function
S28	Fold Bottom Fence HP Sensor	Controls the movement of the bottom fence in the folding unit using pulse counts based on the size of the paper selected for the job to position the stack correctly for feeding.
S29	Fold Plate HP Sensor	Along with the fold plate cam HP sensor (S30) 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



b804d206

Component Layout

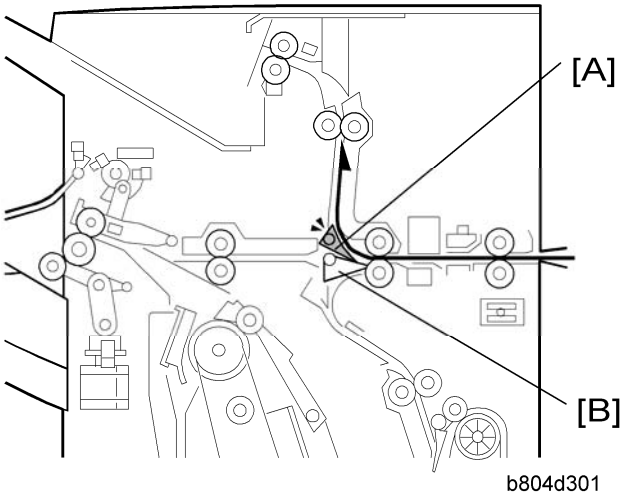
1. Upper Transport Motor (M2) 2. Upper/Proof Exit Motor (M4) 3. Upper Tray Lift Motor (M21) 4. Feed-Out Belt Motor (M5) 5. Fold Roller Motor*[1] (M12)	6. Folder Plate Motor*[1] (M11) 7. Positioning Roller Motor (M14) 8. Lower Transport Motor (M3) 9. Entrance Motor (M1)

*[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



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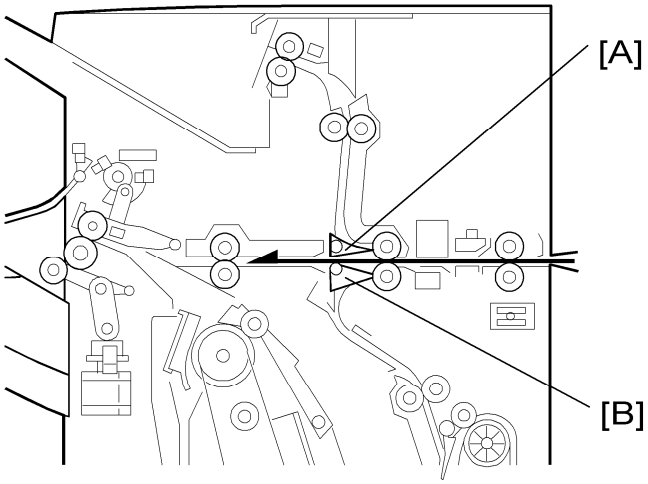
Proof tray junction gate [A] opens. Staple tray junction gate [B] remains closed.
The proof tray junction gate directs paper to the proof tray above.

2.2.2 SHIFT MODE

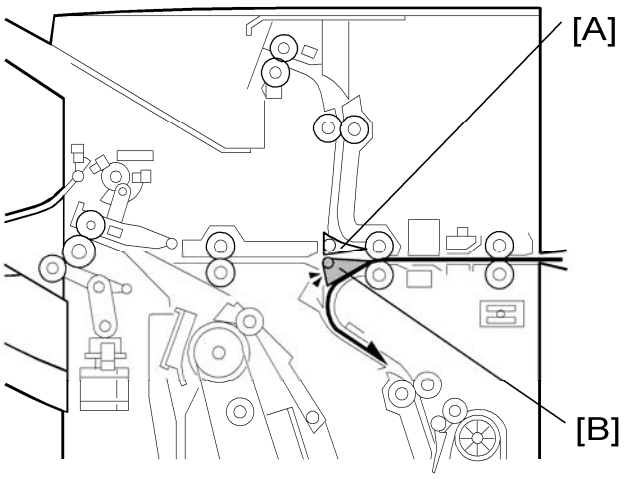


b804d302

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

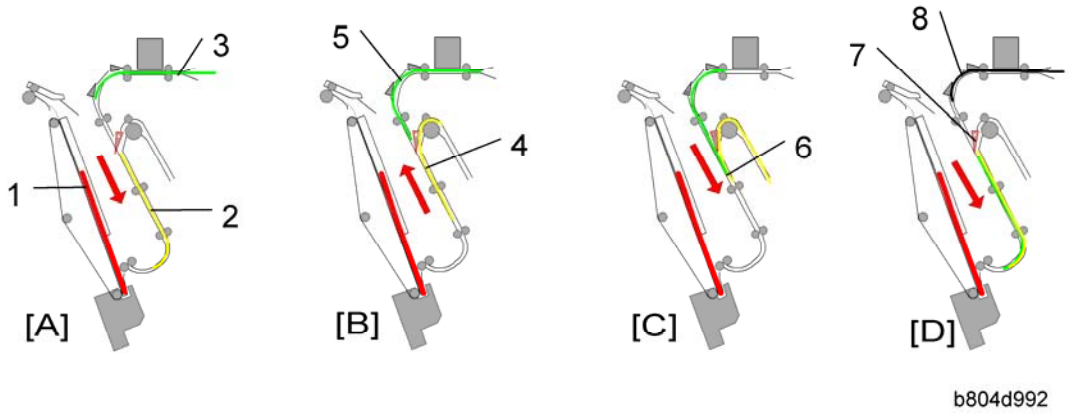


b804d303

Proof tray junction gate [A] remains closed. Staple tray junction gate [B] opens

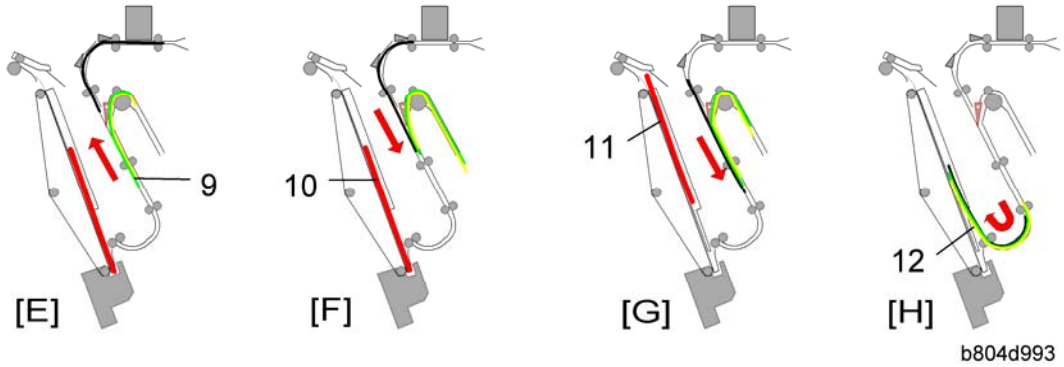
The staple tray junction gate directs the paper to the staple tray below for jogging and stapling.

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.

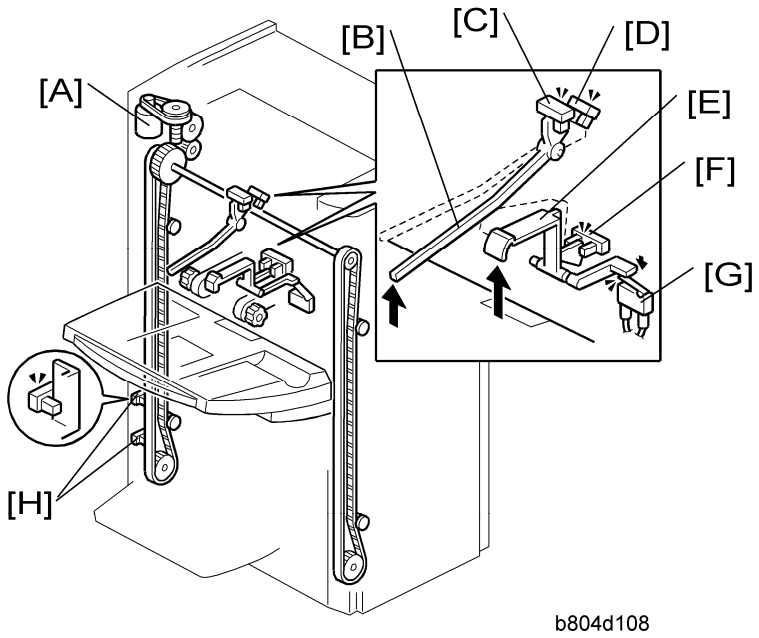
Pre-Stacking

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].

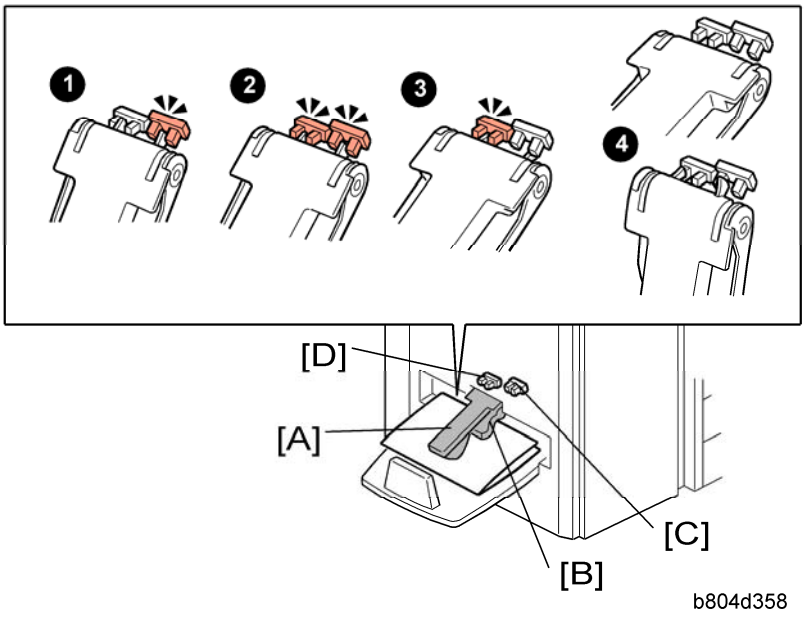
Upper Tray Raising and Lowering

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	—	—	—							…

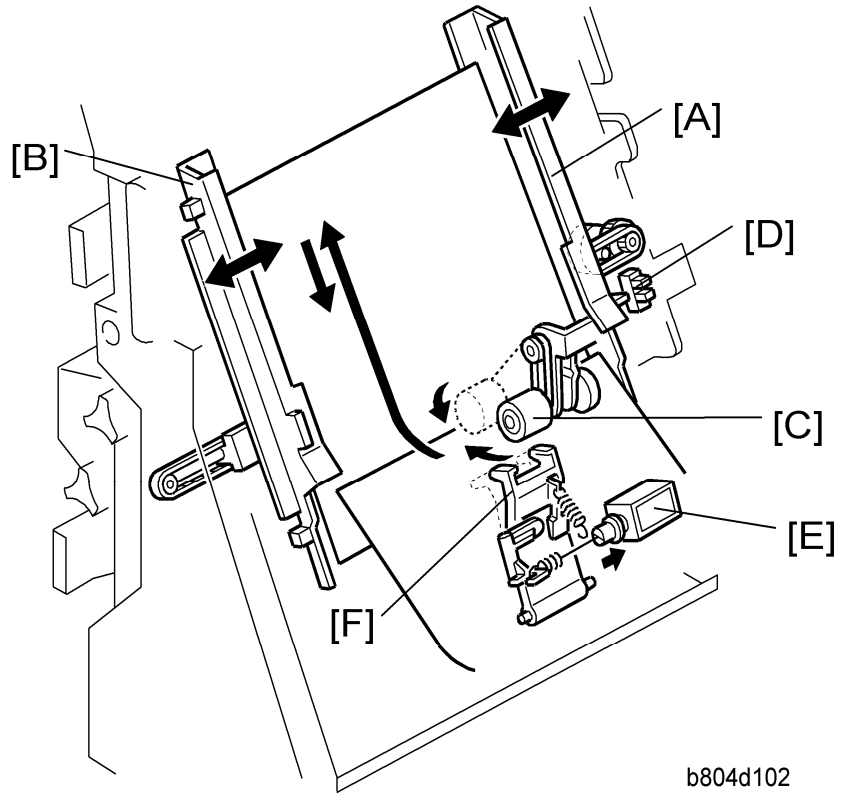
Examples:

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.

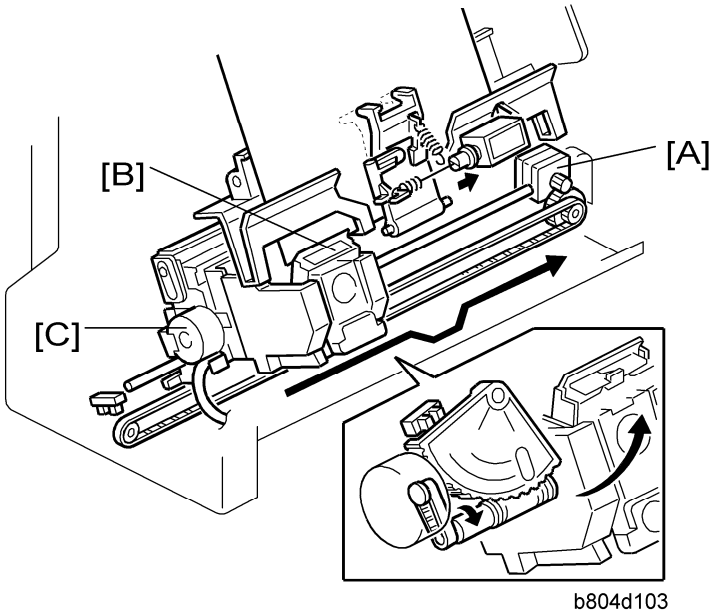
Next, the jogger fence motor:

- 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



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[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).

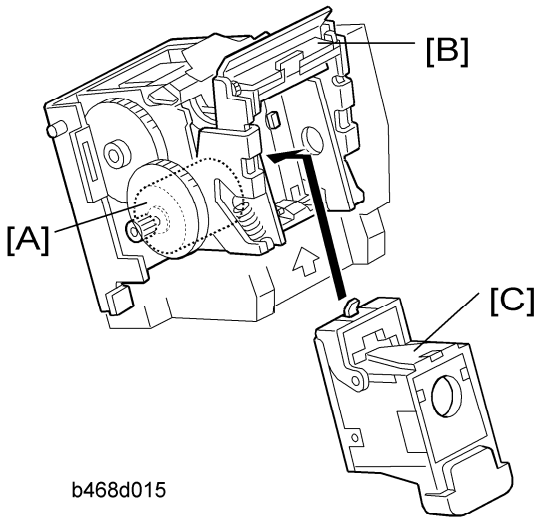
If the stack is to be stapled at two positions:

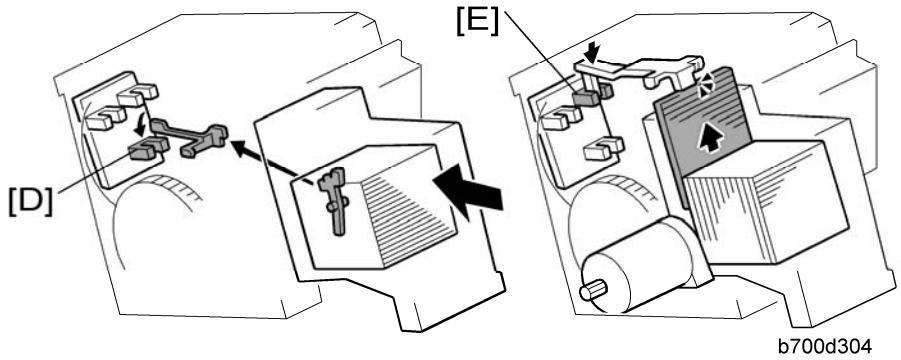
- The stapler movement motor moves the stapler to the front position and staples the front.
- The stapler movement motor moves the stapler to the rear and the stapler staples the rear.

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





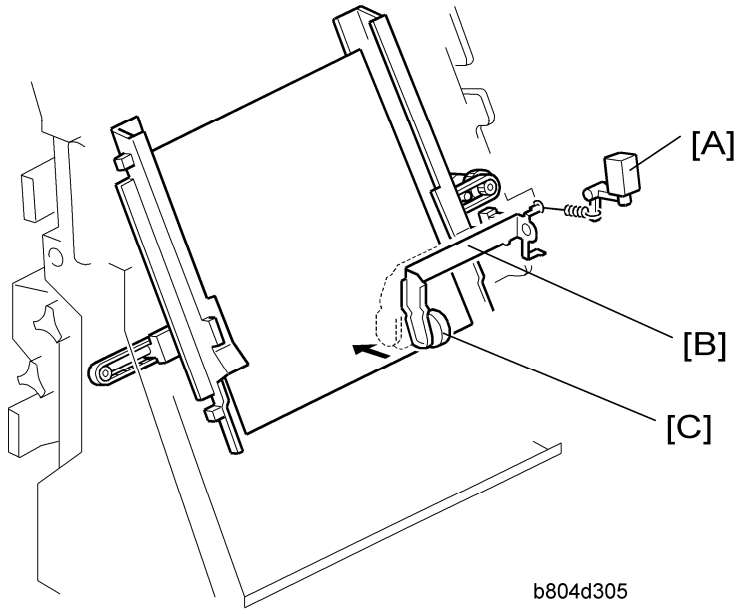
Staple firing is driven by the stapler motor [A] inside the stapler unit. The stapler hammer [B] fires the stapler [C].

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



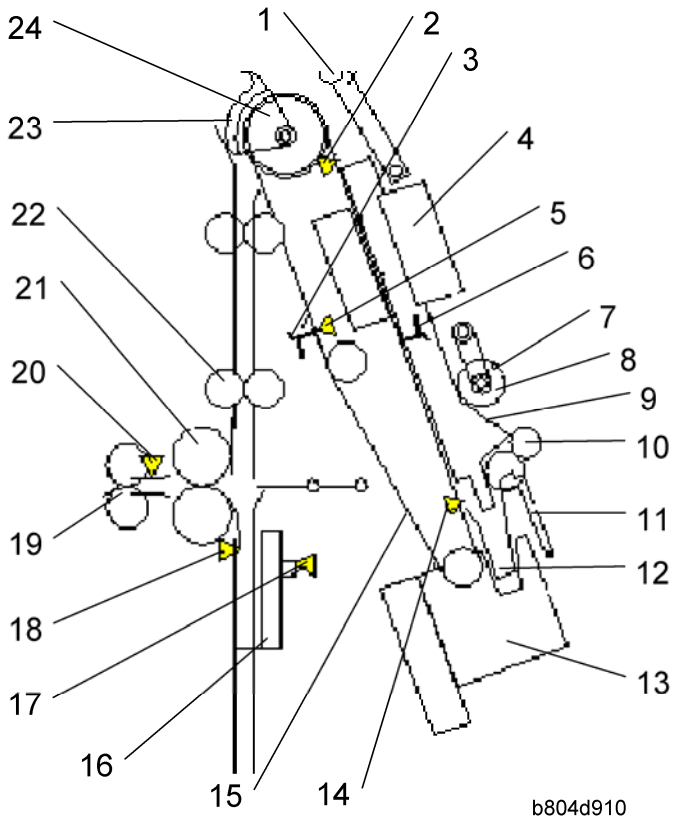
[A]: Booklet Pressure Roller Solenoid (SOL5)
[B]: Booklet Pressure Roller Arm
[C]: Booklet Pressure Roller

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.

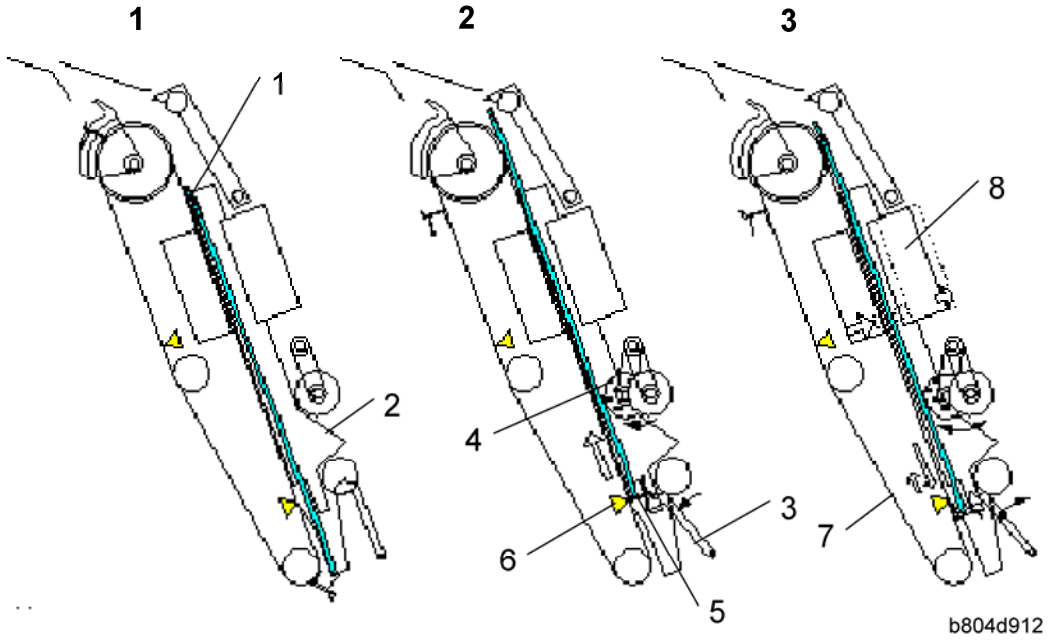
2.6.2 BOOKLET STAPLING AND FOLDING

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:

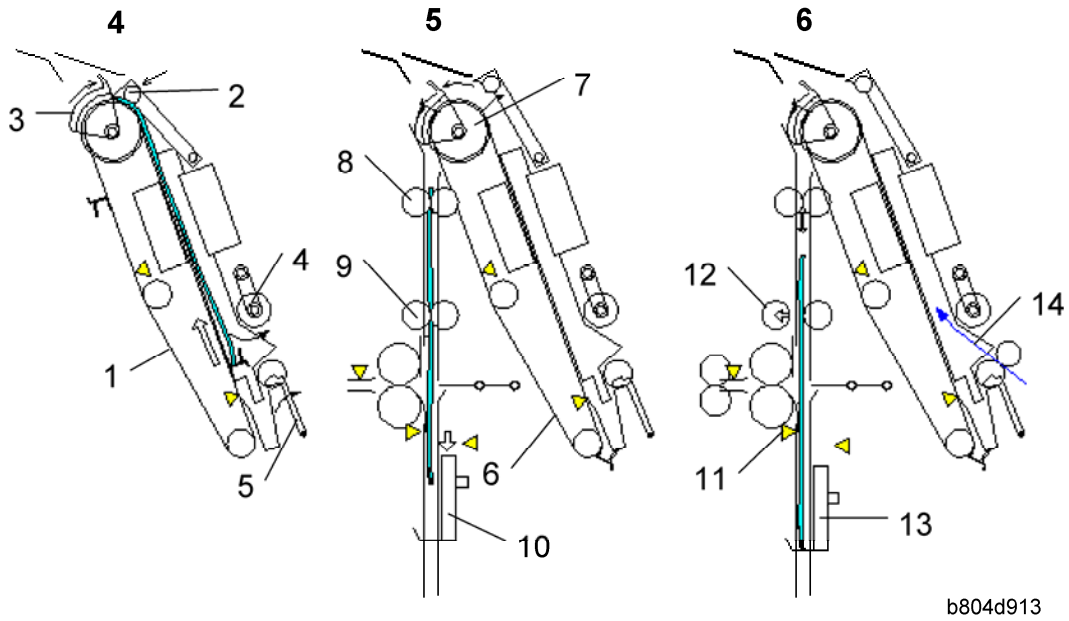
The last sheet of the stack [1] enters the stapling tray. The jogger fences [2] jog the last sheet into position (based on the width of the selected paper size) and then retract and stop 1 mm away from the sides of the stack.

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.

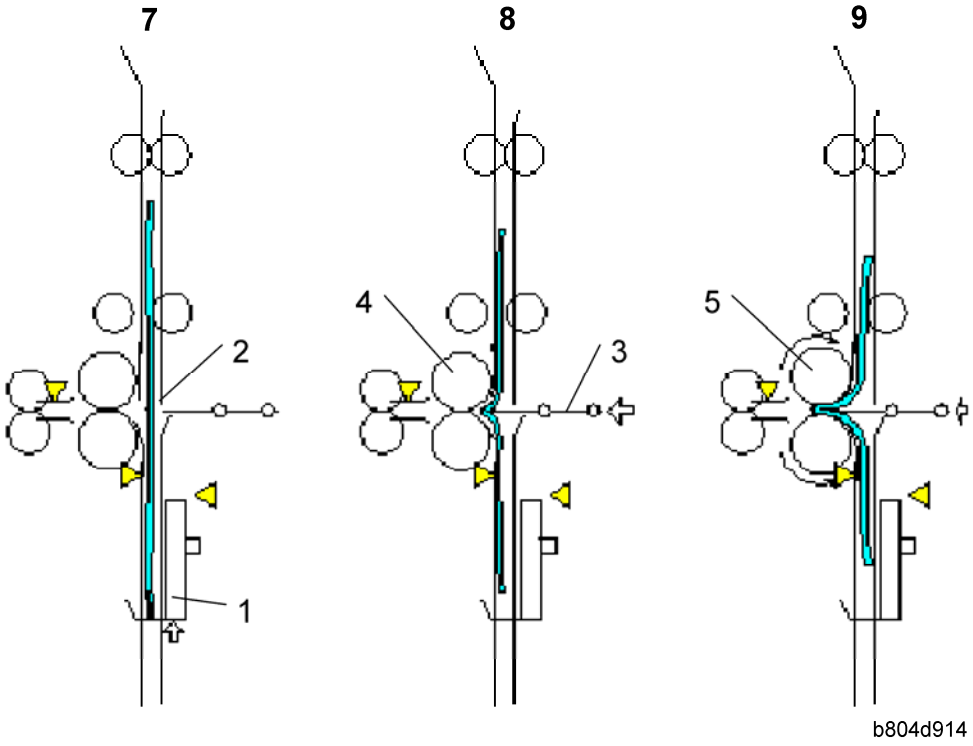
5:

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:

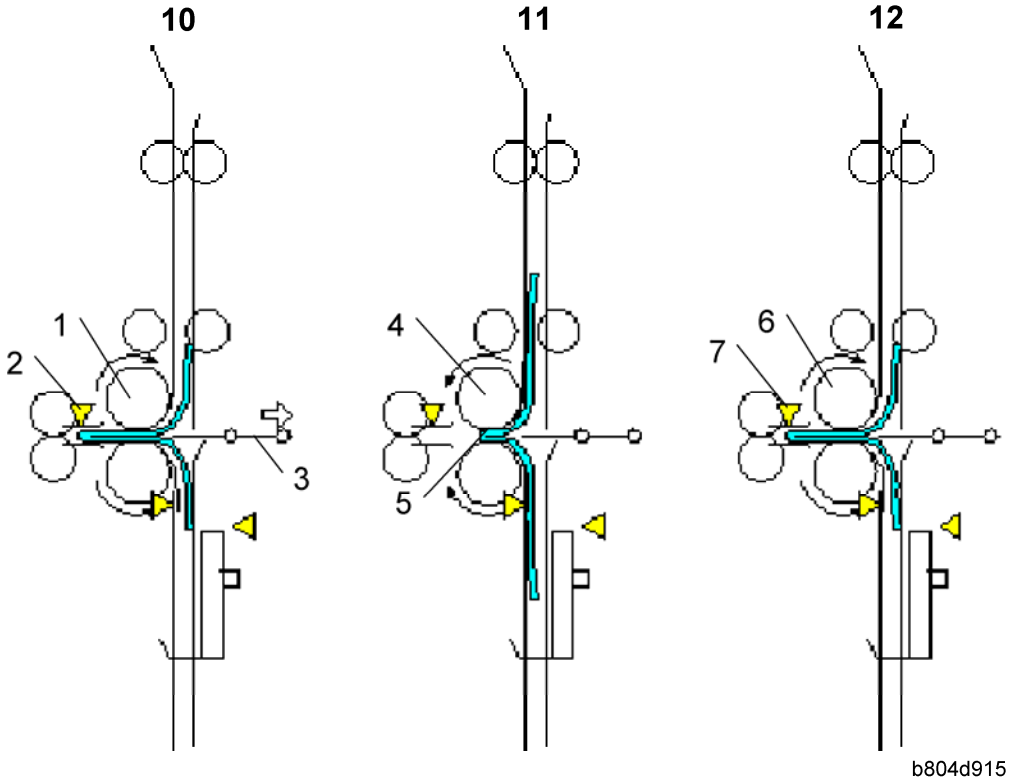
The bottom fence [1] raises the stack to the prescribed fold position [2].

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.

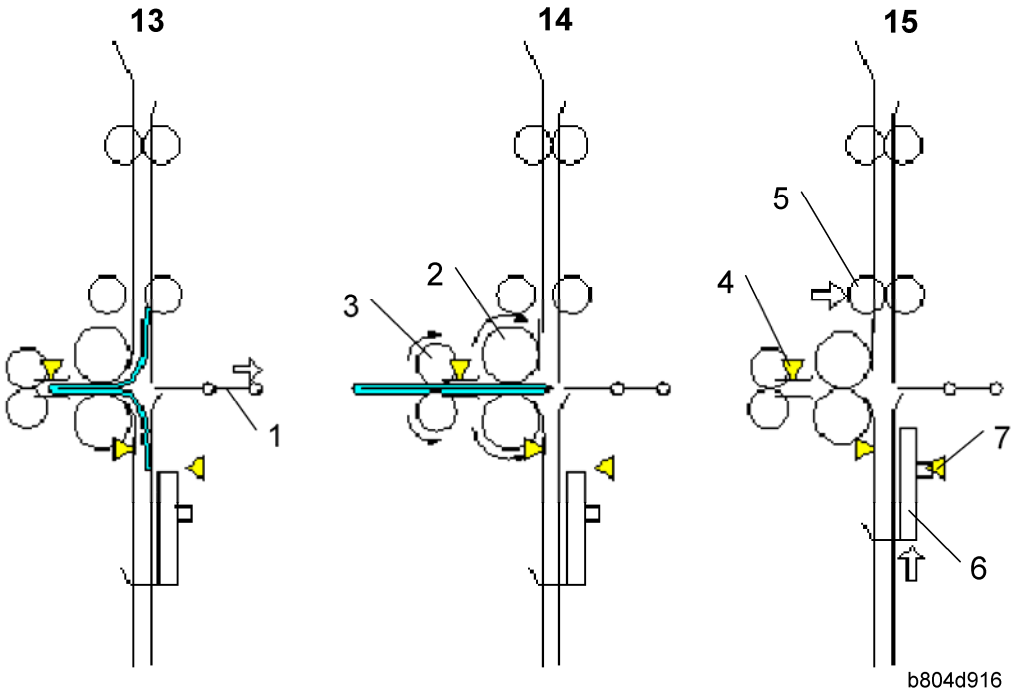
12:

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.

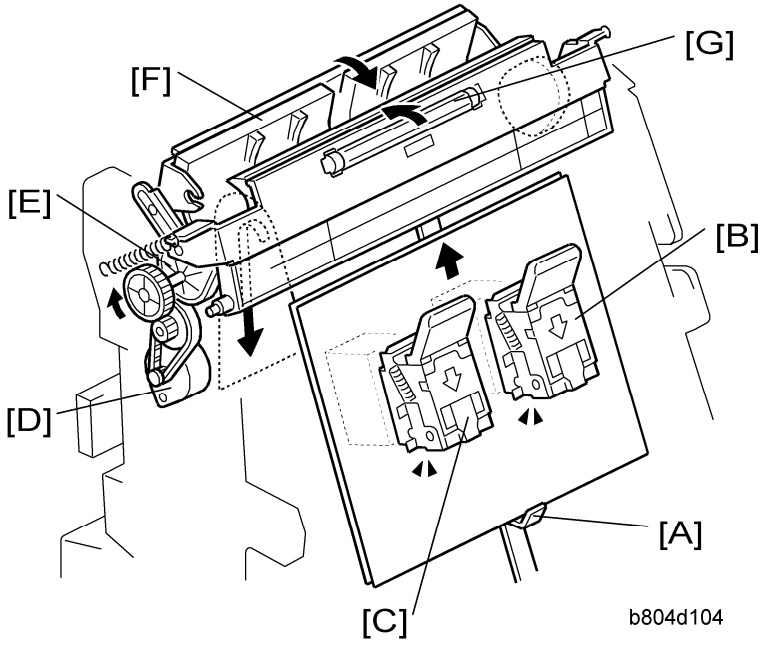
14:

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

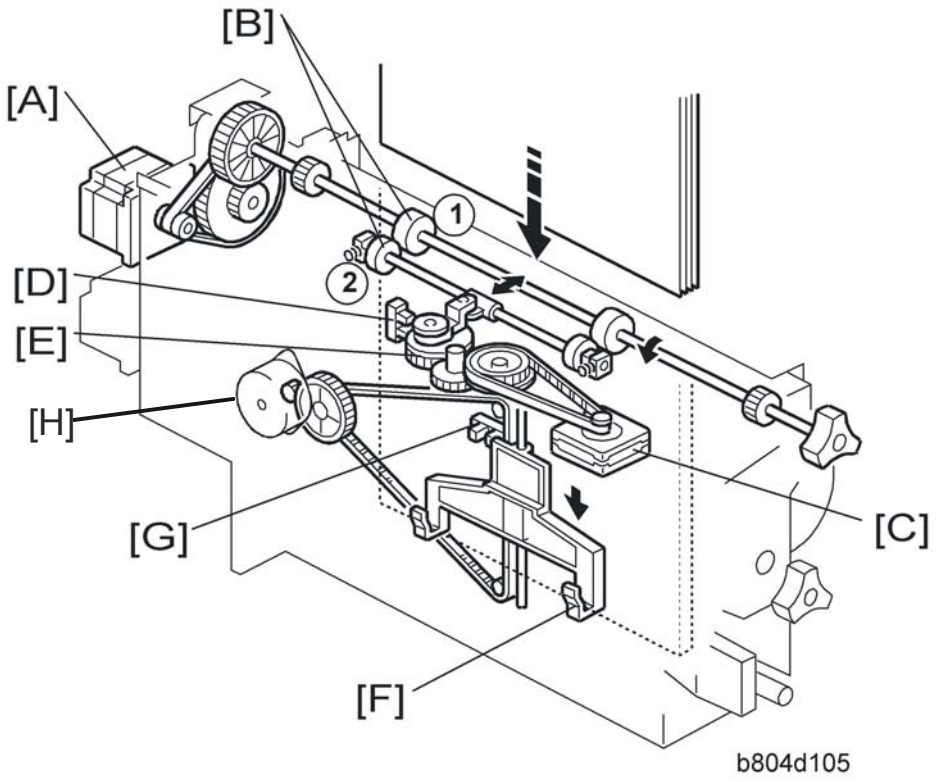
[D]: Stack Junction Gate Motor. Drives a timing belt and stack junction gate cam.

[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.

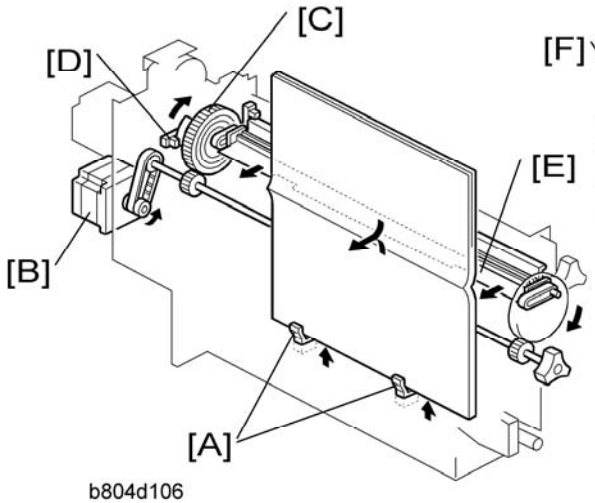
[E]: Clamp Roller Cam. Forces open the spring loaded retracting clamp roller.

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.



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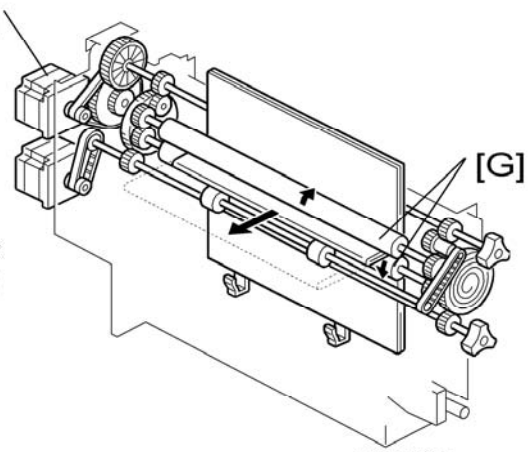

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Fold Plate

[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.

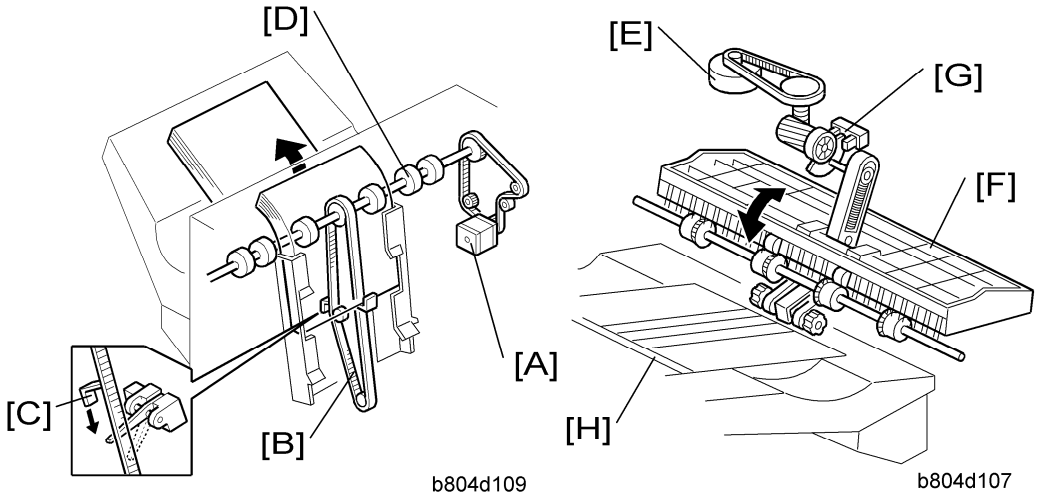
Note

- 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



[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.

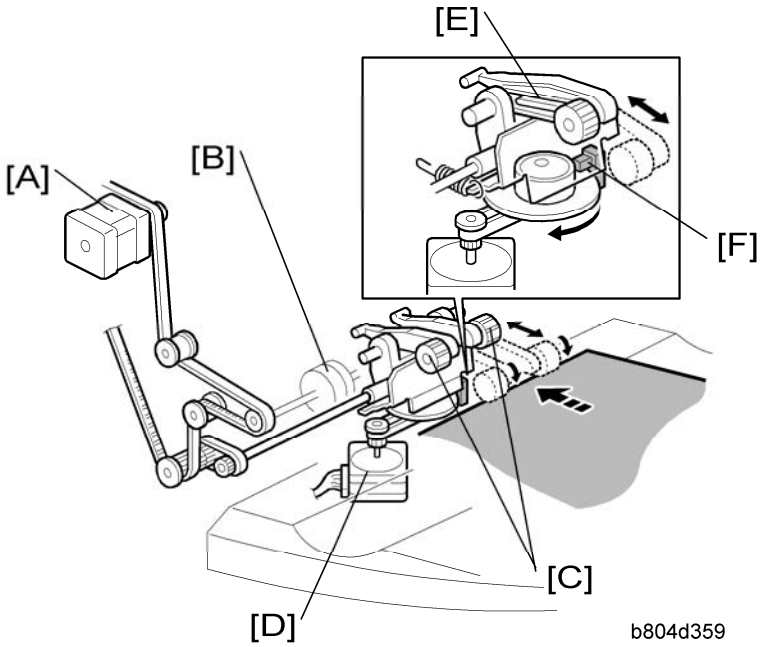
Next, the exit guide plate closes and the exit roller feeds the stack out.

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].

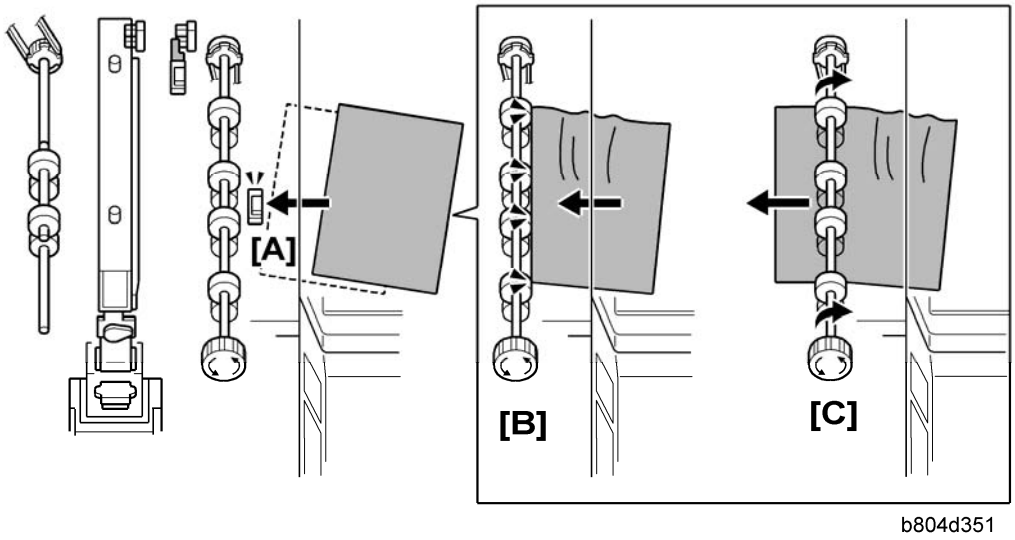
Stacking sponge roller motor [D] moves the sponge roller forward and back with link [E].

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.

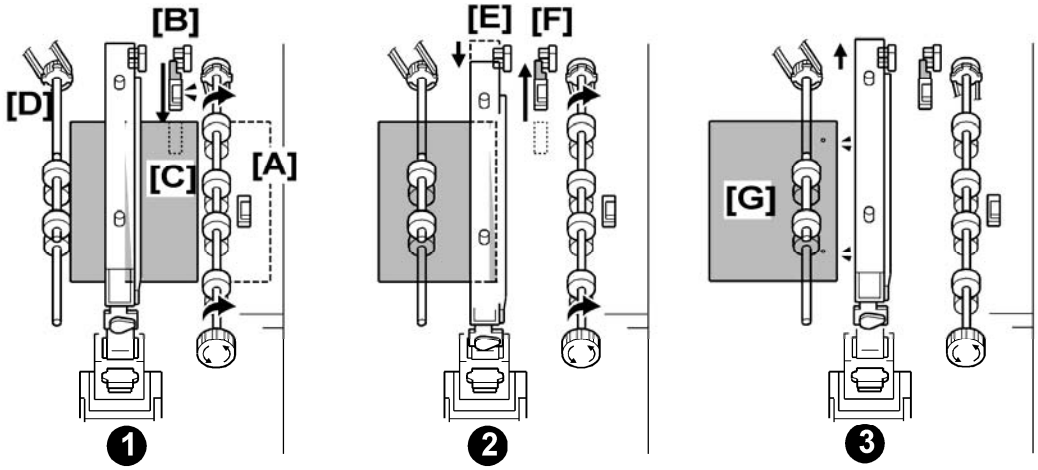
Paper feeds out of the copier. The finisher entrance sensor [A] detects the leading edge of the sheet.

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



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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:

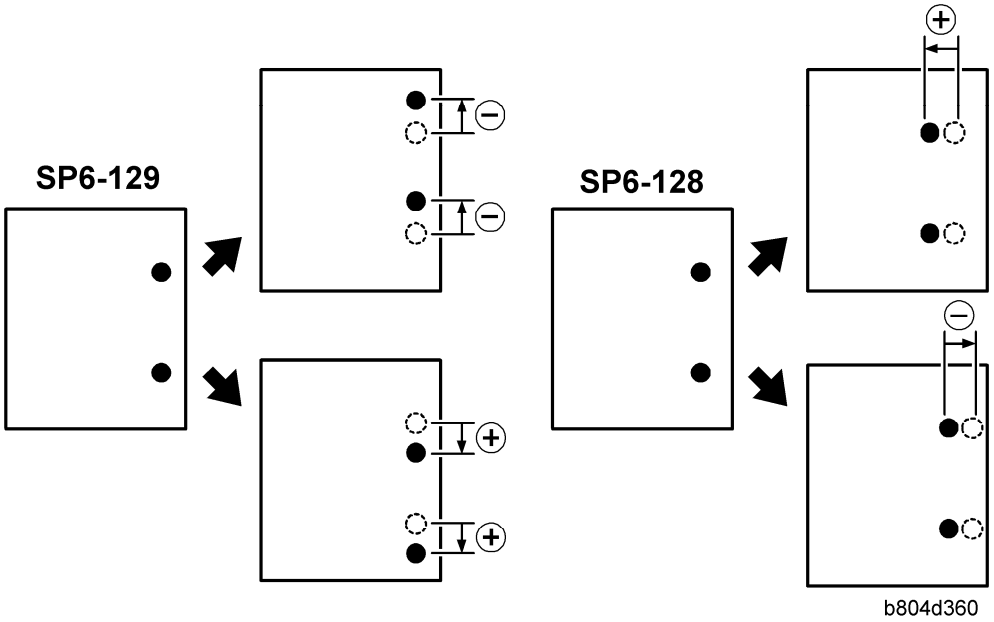
Using the result of the position calculation, the punch unit control board moves the punch unit [E] to the adjusted punch position.

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.

Punch Unit B702 (For B804/B805)



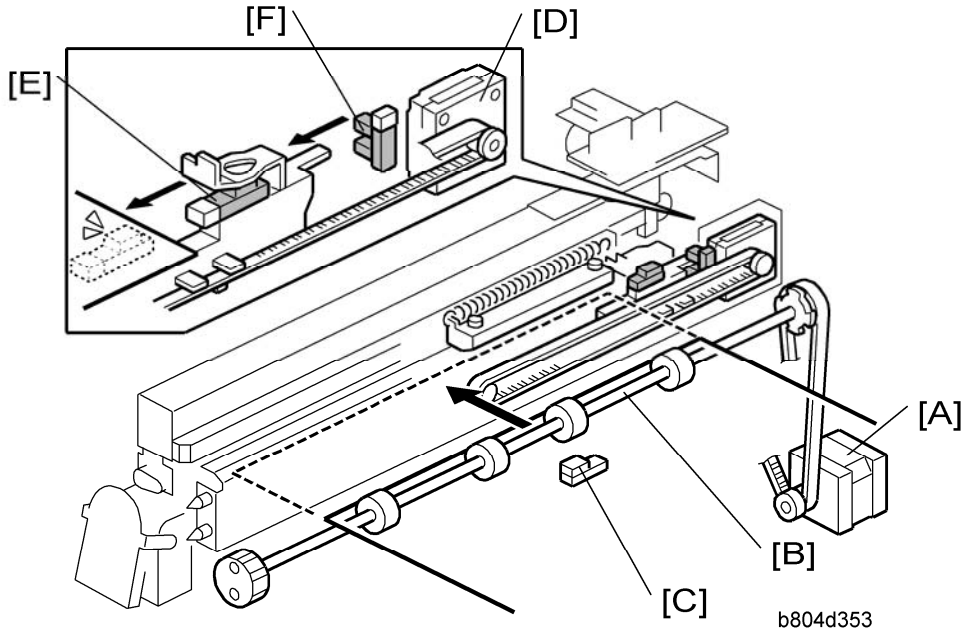
These SP codes adjust the punch hole alignment:

- **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

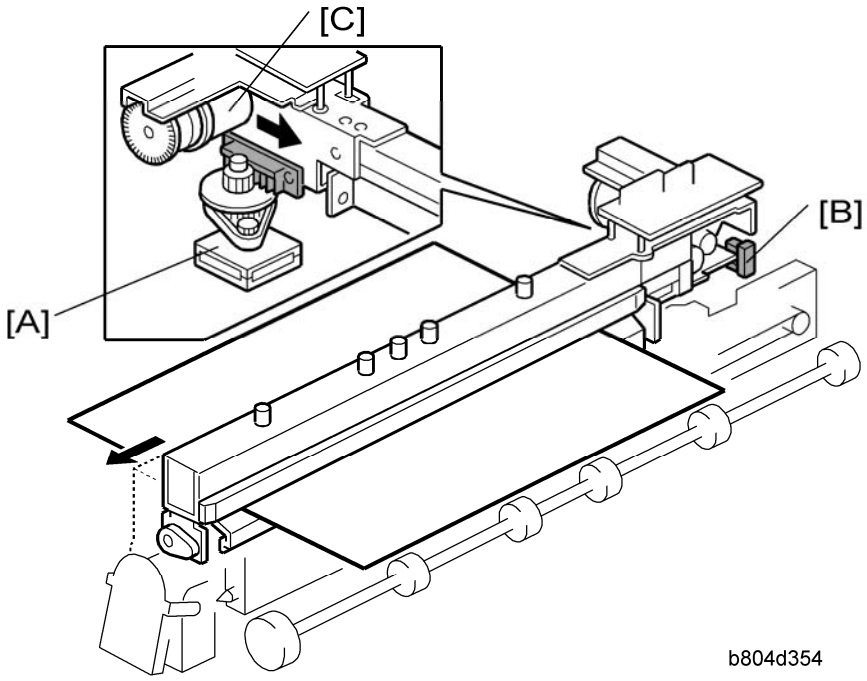
Paper Position Detection



[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

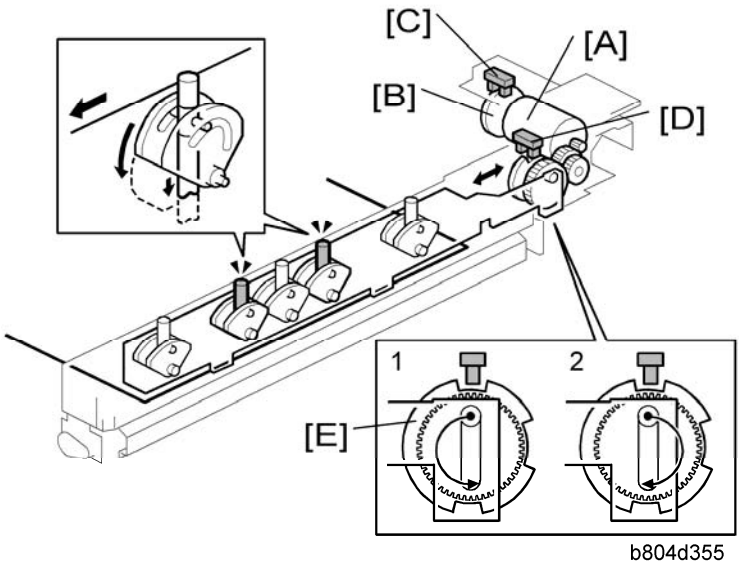


Punch Unit B702 (For B804/B805)

[A]: Punch Movement Motor (M9)
[B]: Punch Movement HP Sensor (S21)
[C]: Punch Drive Motor (M24)

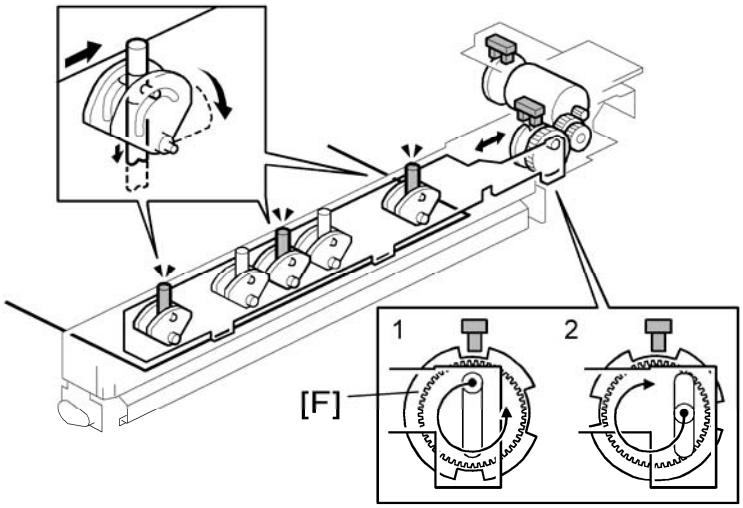
The punch movement motor (M9) [A] extends and retracts the punch unit to position it at the correct position for punching.
The punch movement HP sensor (S21) [B] detects the position when it retracts, switches off the punch position movement motor, and stops the punch unit at its home position.
The punch 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.



b804d356

The timing for 2-hole punching [E] is different from 3-hole punching [F].

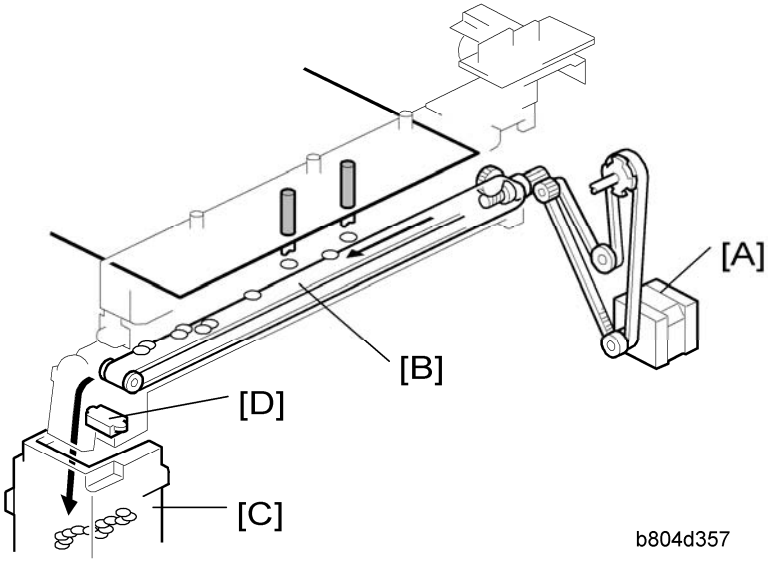
When the punch unit is at the punching position, the punch motor turns until the encoder detects the starting position for 2-hole or 3-hole punching.

- 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



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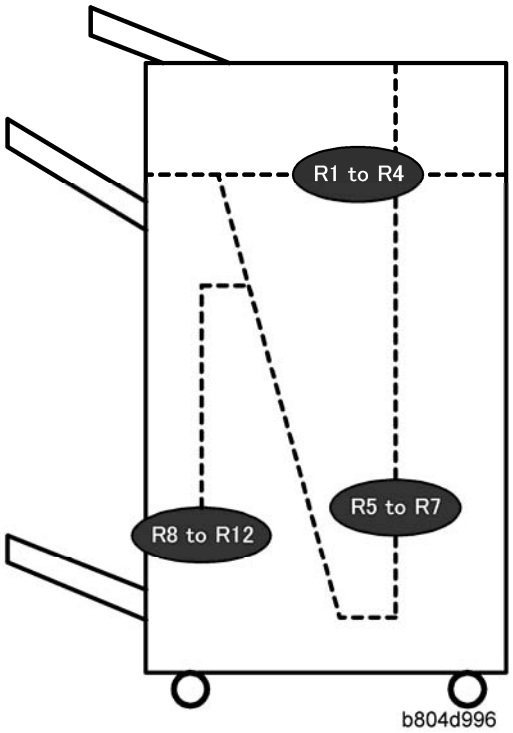
Punch Unit B702 (For B804/B805)

[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.

PAPER FEED UNIT PB3040
D351

D351 PAPER FEED UNIT PB3040 REVISION HISTORY		
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PAPER FEED UNIT PB3040 (D351)

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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

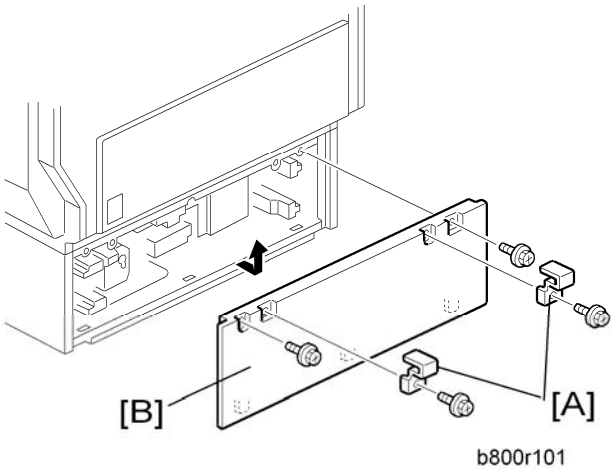
: Connector

: Clip ring

: E-ring

1. REPLACEMENT AND ADJUSTMENT

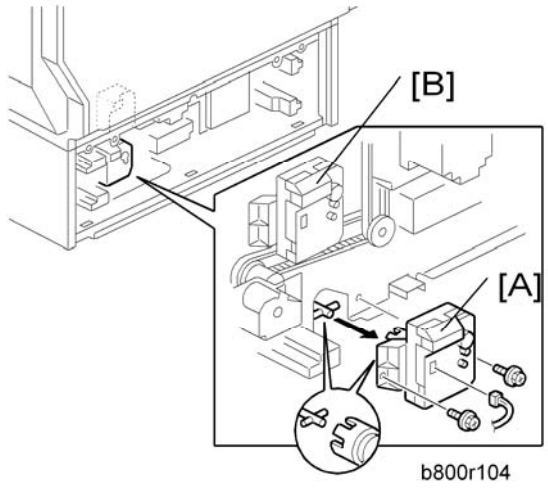
1.1 REAR COVER



1. Securing brackets [A] (🔩 x 1 each)
2. Rear cover [B] (🔩 x 2)

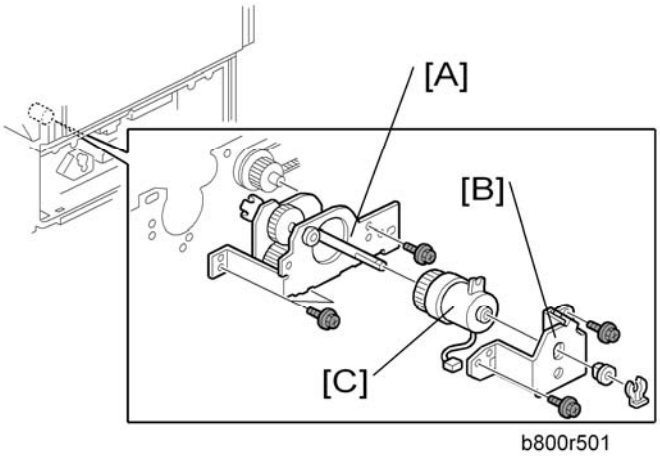
1.2 MOTORS AND CLUTCHES

1.2.1 LIFT MOTORS

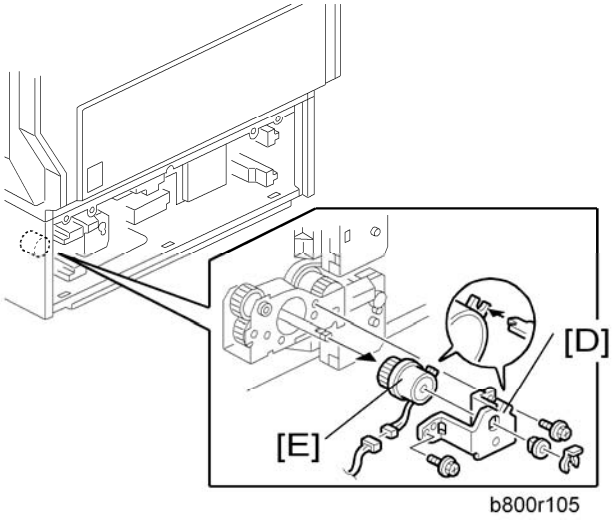


1. Rear cover (☛ "Rear Cover")
2. Lift motors [A][B] (🔩 x 2, 🖐 x 1 each)

1.2.2 UPPER AND LOWER PAPER FEED CLUTCHES

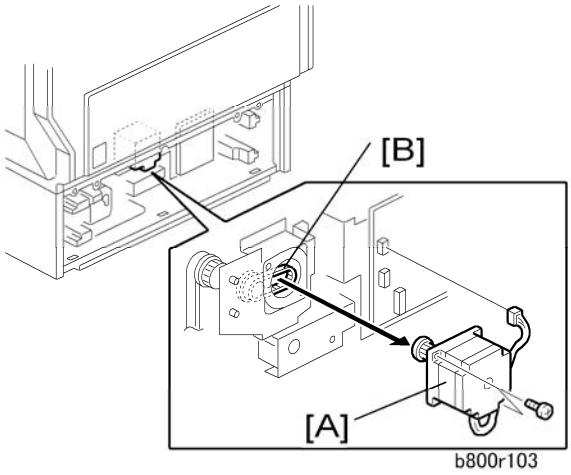


1. Rear cover (☛ "Rear Cover")
2. Upper paper feed gear unit [A] (🔩 x 3, 🖐 x 1)
3. Upper paper feed clutch bracket [B] (🔘 x 1, 🔩 x 2, bushing x 1)
4. Upper paper feed clutch [C]



5. Lower paper feed clutch bracket [D] (x 1, bushing x 1, x 2)
6. Lower paper feed clutch [E] (x 1)

1.2.3 PAPER FEED MOTOR

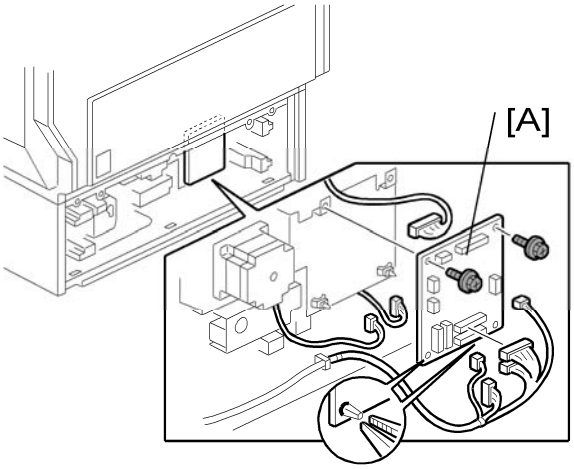


1. Rear cover (☛ "Rear Cover")
2. Paper feed motor [A] (x 1, x 2)

Note

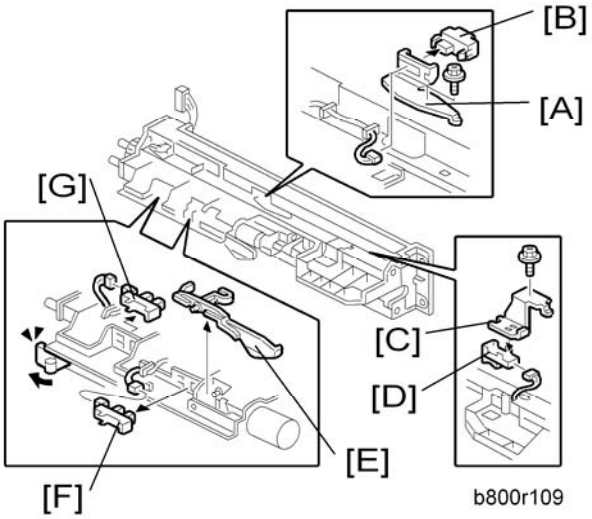
- When installing the paper feed motor, make sure that the gear of the paper feed motor holds the timing belt [B].

1.3 MAIN BOARD



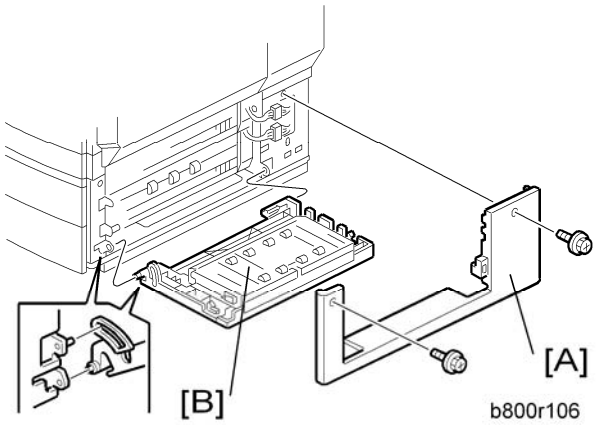
1. Rear cover (☛ "Rear Cover")
2. Main board [A] (All ☞s, ☞ x 2, snap pin x 2)

1.4 LIFT, PAPER END, AND RELAY SENSORS

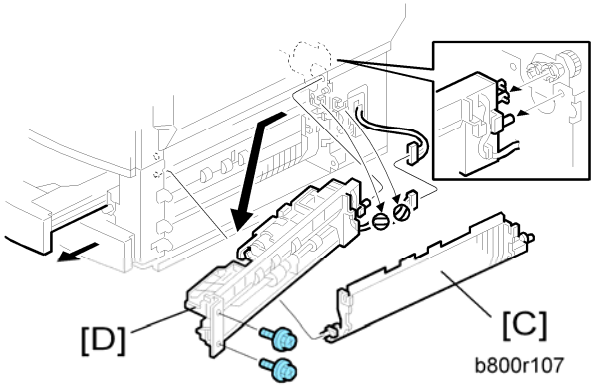


1. Paper feed unit (☛ "Paper Feed Unit")
2. Vertical transport sensor bracket [A] (☞ x 1)
3. Vertical transport sensor [B] (☞ x 1)
4. Paper feed sensor bracket [C] (☞ x 1)
5. Paper feed sensor [D] (☞ x 1)
6. Paper end sensor filler [E]
7. Paper end sensor [F] (☞ x 1)
8. Lift sensor [G] (☞ x 1)

1.5 PAPER FEED UNIT



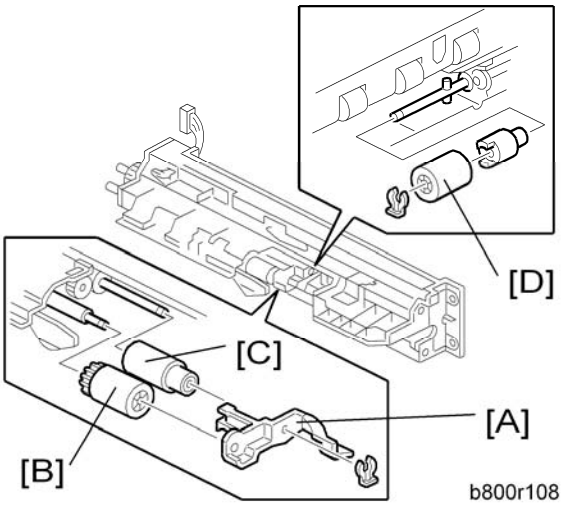
1. Right cover [A] (x 2)
2. Vertical transport guide [B] of the paper feed unit



1. Pull the tray 3 (or 4).
2. Paper guide [C]
3. Paper feed unit [D] (x 2, x 1, x 2)

When replacing the paper feed unit of tray 4, do the same.

1.6 PICK-UP, PAPER FEED AND SEPARATION ROLLERS

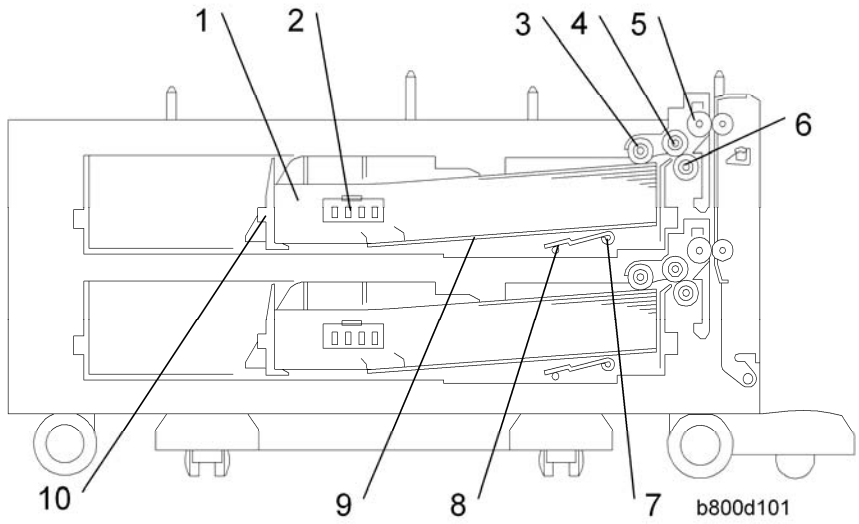


1. Paper feed unit (☛ "Paper Feed Unit)
2. Roller holder [A] (⟲ x 1)
3. Pick-up roller [B]
4. Paper feed roller [C]
5. Separation roller [D] (⟲ x 1)

2. DETAILS

2.1 COMPONENT LAYOUT

2.1.1 MECHANICAL COMPONENT LAYOUT

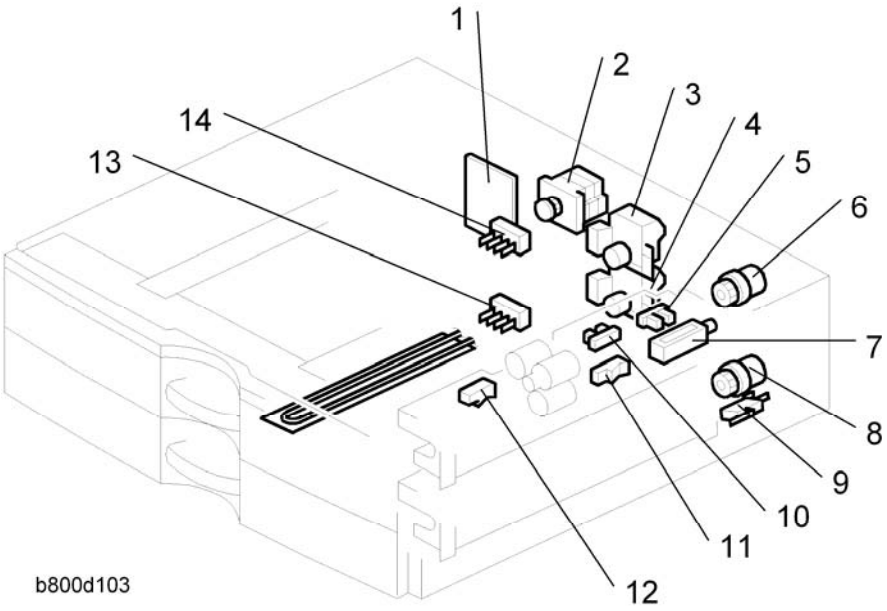


1. Upper tray	6. Separation roller
2. Paper size switch: Upper tray	7. Tray lift arm
3. Pick-up roller: Upper tray	8. Lift arm shaft
4. Paper feed roller	9. Bottom plate
5. Vertical transport roller	10. End plate

Note

- Listed above are the components of tray 1 (upper tray). Tray 2 (lower tray) has the same components as tray 1.

2.1.2 ELECTRICAL COMPONENT LAYOUT

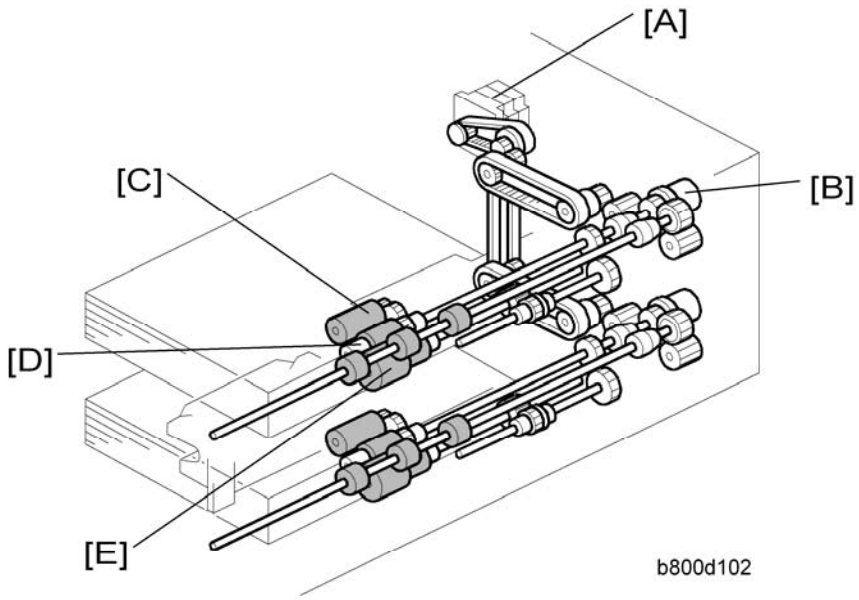


1. Main board	8. Lower paper feed clutch
2. Feed motor	9. Vertical transport guide switch
3. Upper tray lift motor	10. Paper end sensor
4. Lower tray lift motor	11. Vertical transport sensor 1
5. Upper lift sensor	12. Paper feed sensor
6. Upper paper feed clutch	13. Paper size switch: Lower tray
7. Pick-up solenoid	14. Paper size switch: Upper tray

Note

- Listed above are the components of tray 1 (upper tray), except for the right cover switch and anti-condensation heater (there is only one each of these for the entire unit). Tray 2 (lower tray) has the same components as tray 1.

2.2 PAPER FEED



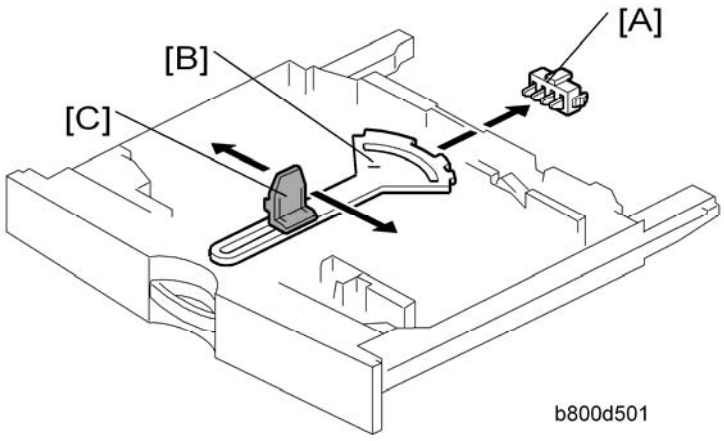
Paper Feed Mechanism:

An FRR (feed and reverse roller) feed mechanism is used (☛ "Paper Feed Methods" in the Core Technology Manual).

Drive Path:

Tray 3 (upper tray) and tray 4 (lower tray) have identical paper feed systems. The feed motor [A] drives all the rollers in the unit. The paper feed clutch [B] controls the pick-up roller [C], paper feed roller [D], and separation roller [E].

2.3 PAPER SIZE DETECTION



There are four paper size switches [A] working in combination. Switch 1 (right end) is for tray set detection. The other three switches detect the paper size as shown in the table below. The actuator [B] is moved by the end plate [C].

0: Not pushed, 1: Pushed

Models		Switch Location		
North America	**Europe/Asia**	**SW4**	**SW3**	**SW2**
DLT (A3) SEF*1	A3 (DLT) SEF*1	1	1	0
LG (B4) SEF*2	B4 (LG) SEF*2	1	1	1
A4 SEF	A4 SEF	0	0	1
B5 SEF	B5 SEF	0	0	0
LT (A4) LEF*3	A4 (LT) LEF*3	0	1	1
B5 (Exe) LEF*4	B5 (Exe) LEF*4	1	0	1
A5 LEF	A5 LEF	0	1	0

Note

- *1: Detects either DLT SEF or A3 SEF, depending on the setting of SP5-181-7 or 11.
- *2: Detects either LG SEF or B4 SEF, depending on the setting of SP5-181-8 or 12.

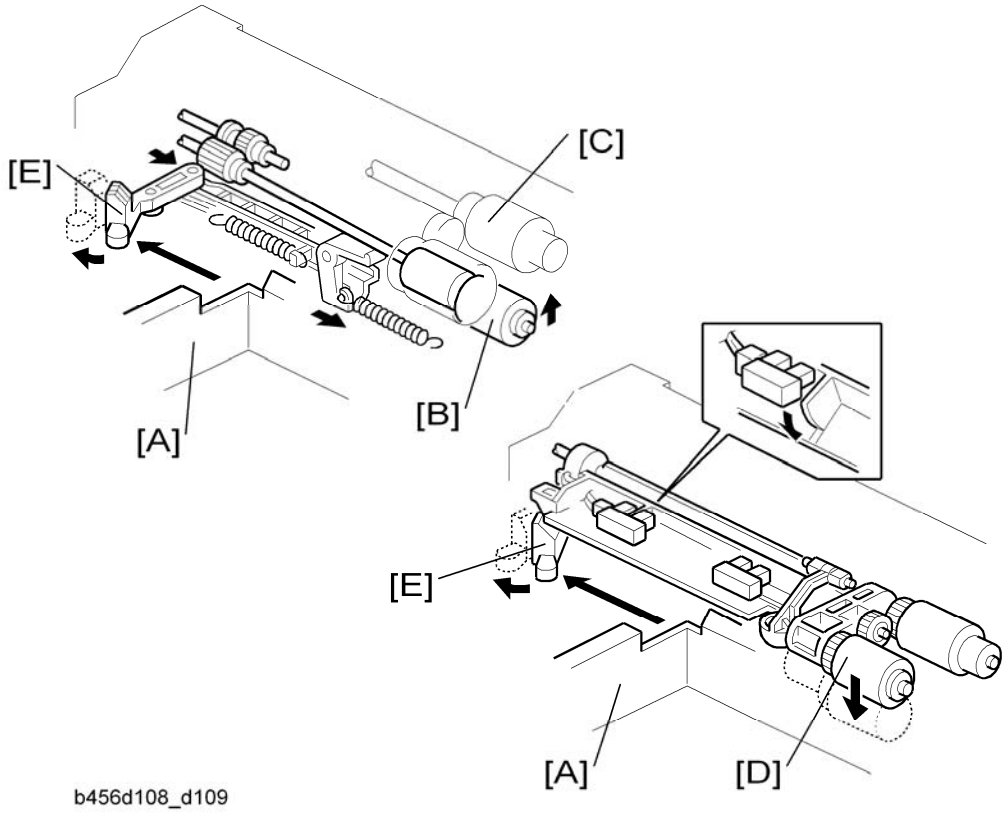
Paper Size Detection

- *3: Detects either LT LEF or A4 LEF, depending on the setting of SP5-181-6 or 10.
- *4: Detects either Exe LEF or B5 LEF, depending on the setting of SP5-181-9 or 13

The machine disables paper feed from a tray if the paper size cannot be detected (if the paper size actuator is broken or no tray is installed).

For non-standard paper sizes, if they are not visible on the user tool screen for selecting paper sizes, then set SP 5-112 to 1. If the user selects one of these sizes, auto paper size selection is disabled.

2.4 REVERSE ROLLER AND PICK-UP ROLLER RELEASE



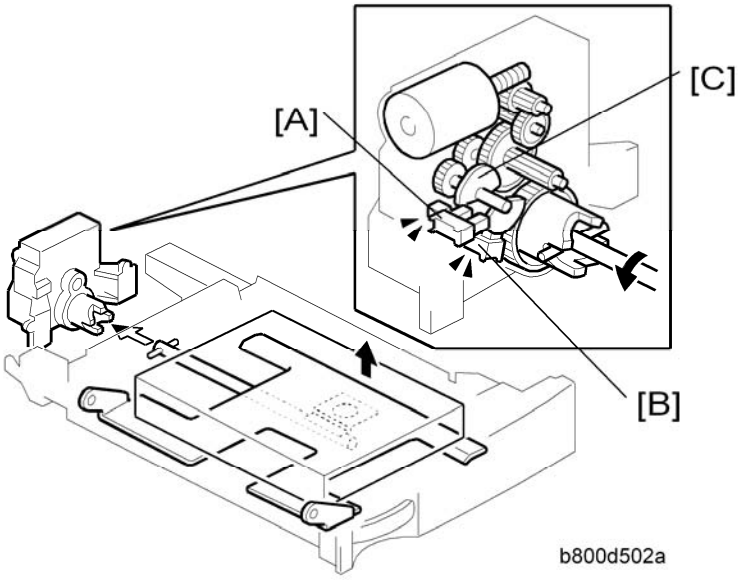
The pick-up roller and separation roller release the paper when it is not being fed. This helps remove jammed paper easily.

When the paper tray [A] is not in the machine, the separation roller [B] is away from the paper feed roller [C] and the pick-up roller stays in its upper position.

When the paper tray is pushed into the machine, it pushes the release lever [E]. This causes the pick-up roller [D] to go down into contact with the top sheet of paper, and causes the reverse roller [B] to move up and contact the paper feed roller.

2.5 PAPER HEIGHT AND END DETECTION

2.5.1 PAPER HEIGHT DETECTION

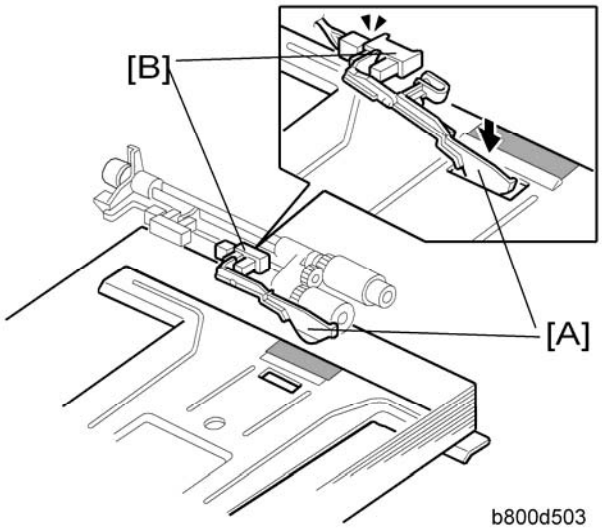


Two paper height sensors [A] [B] and actuator [C] are built into the paper tray lift motor. The paper height sensors, detect the amount of paper in the tray.
The actuator [C] has two semicircles, and it is engaged with the lift arm shaft via gears. The paper height sensors detect the paper size depending on the position of the two semicircles. The list shown below shows the detection combination of the two sensors.
The paper remaining status bar is displayed in the tray selection icon on the LCD.

Remaining paper	Paper height sensor 1 [A]	Paper height sensor 2 [B]
100% (Status bar x 4)	OFF	OFF
70% (Status bar x 3)	ON	OFF
30% (Status bar x 2)	ON	ON
10% (Status bar x 1)	OFF	ON

OFF: No actuator

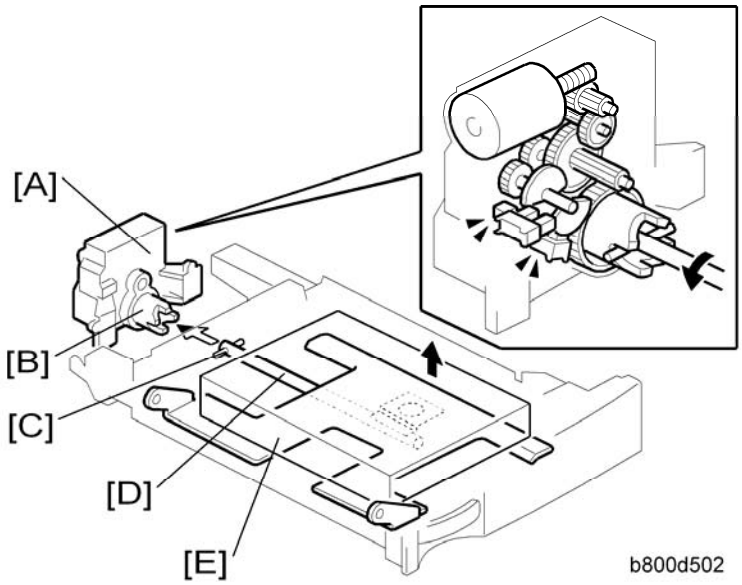
2.5.2 PAPER END AND BOTTOM PLATE



The paper stack raises the paper end feeler [A] and the paper end sensor [B] deactivates if there is some paper in the paper tray.

When the paper tray runs out of paper, the paper end feeler [A] drops into the cutout in the tray bottom plate. At this time the paper end sensor [B] activates

2.6 PAPER LIFT



When the machine detects that a tray has been placed in the machine, the tray lift motor [A] rotates and the coupling gear [B] on the tray lift motor engages the pin [C] on the lift arm shaft [D]. Then the tray lift arm lifts the tray bottom plate [E] until the paper lift sensor for the tray detects that the top of the stack is at the paper feed position.

When the tray is removed from the machine, the connection between the coupling gear and lift arm shaft is disengaged, and the tray bottom plate lowers.

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D352 LCIT PB 3050 REVISION HISTORY		
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		None

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Safety and Symbols

Replacement Procedure Safety

⚠CAUTION

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Symbols Used in this Manual

This manual uses the following symbols.

☞: See or Refer to

: Screws

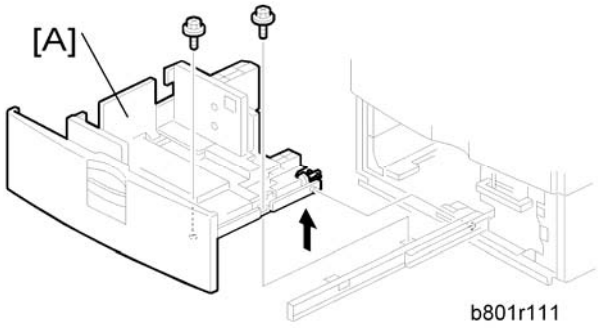
: Connector

: Clip ring

: E-ring

1. REPLACEMENT AND ADJUSTMENT

1.1 LEFT AND RIGHT TRAY

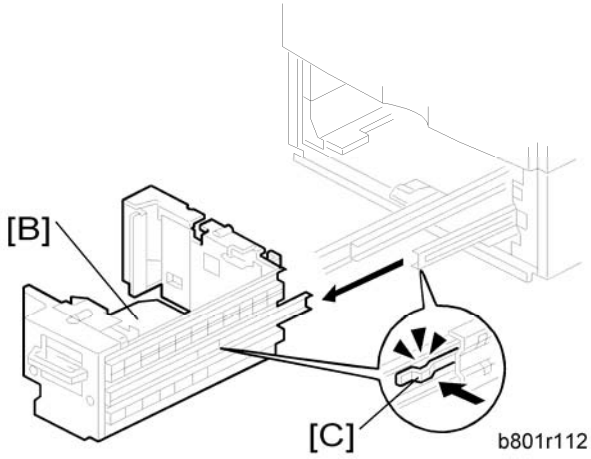


1. Pull the LCT drawer.

Note

- If the right tray comes up with the left tray, push the right tray into the LCT.

2. Left tray [A] (x 2)



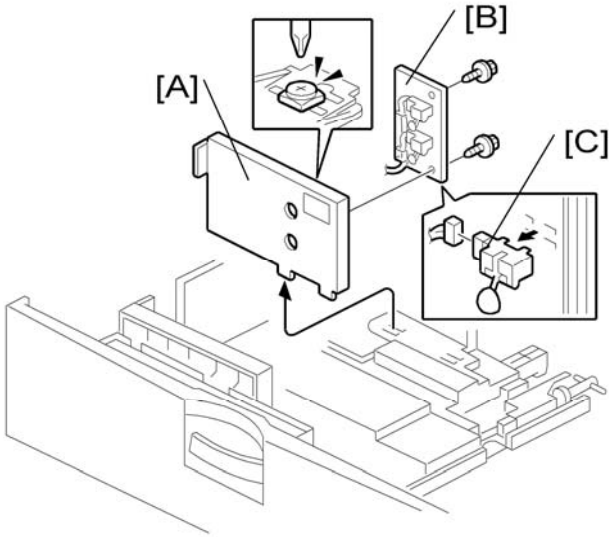
3. Remove the right tray [B] while pressing down the stopper [C].

Note

- When reinstalling the tray, set the tray on the guide rail and carefully push the tray in, making sure to keep the tray level.

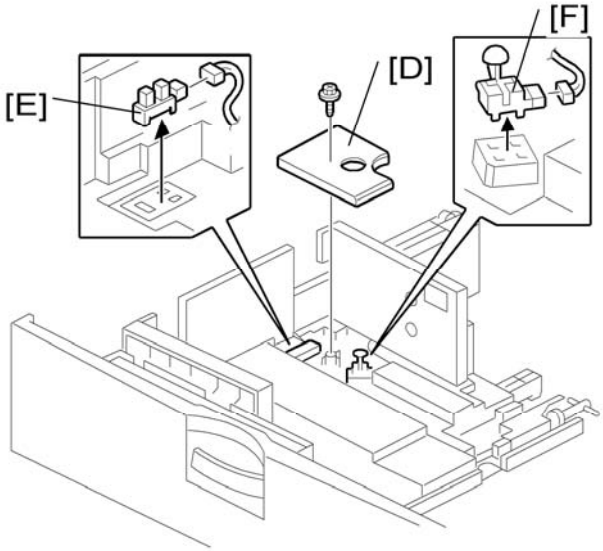
1.2 SENSORS

1.2.1 PAPER HEIGHT SENSORS ON THE PAPER STORAGE SIDE



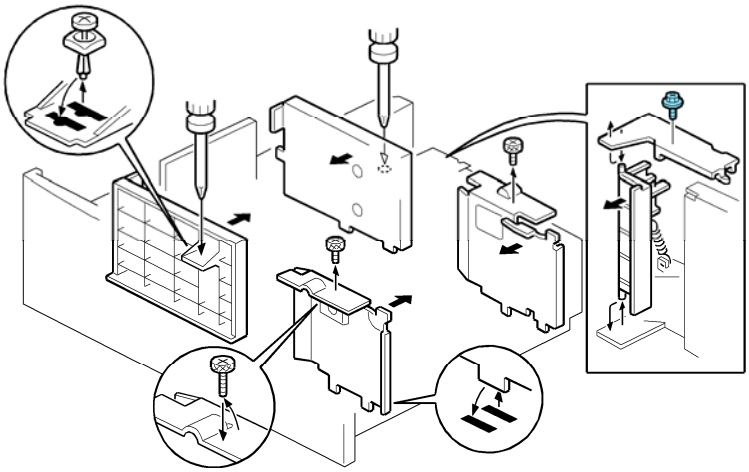
1. Tray (☛ "Left and Right Tray")
2. Rear fence [A] (☞ x 1)
3. Rear fence bracket [B] (☞ x 2)
4. Paper height sensors [C] (☜ x 1 each)

1.2.2 END FENCE HP SENSOR/PAPER END SENSOR 2



1. Bottom cover [D] (☞ x 1)
2. End fence HP sensor [E] (☜ x 1)
3. Paper end sensor 2 (paper storage side) [F] (☜ x 1)

1.3 CHANGING THE TRAY SIZE

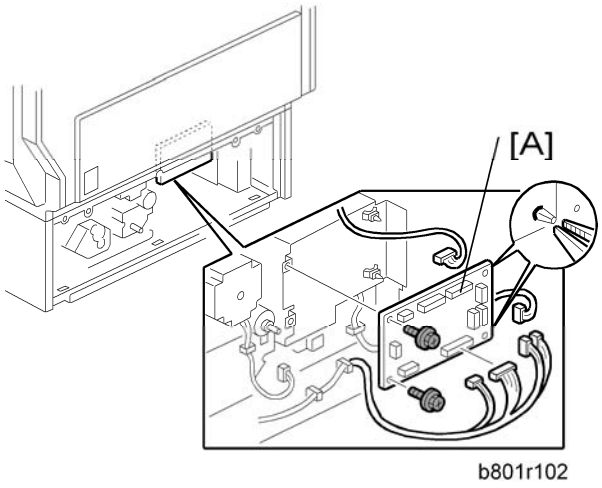


1. Remove the fence screws (x 5).
2. Change the position of the fences.

Note

- Before fastening the screws, set paper in the tray.

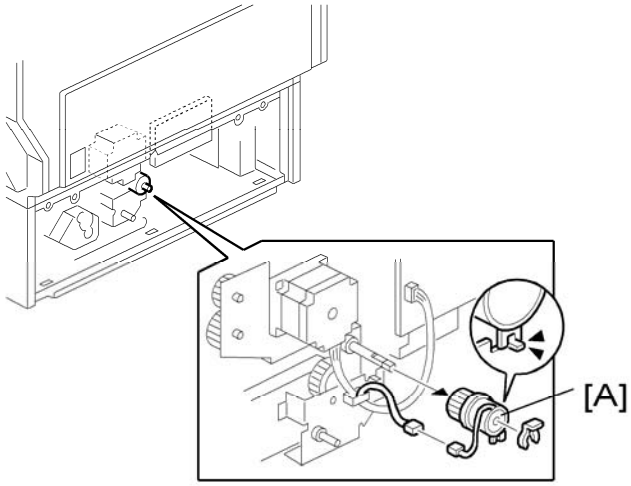
1.4 MAIN BOARD



1. Rear cover (☛ "Tray Lift Motor")
2. Main board [A] (All ☟s, 🔩 x 2, snap x 2)

1.5 CLUTCHES

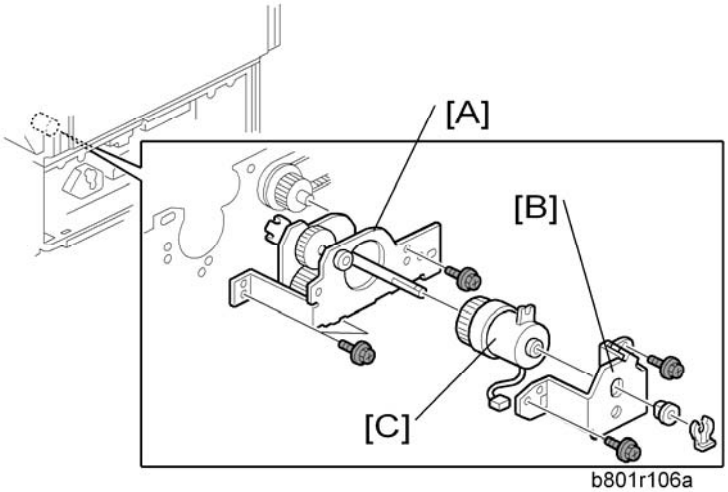
1.5.1 STACK TRANSPORT CLUTCH



b801r105

1. Rear cover (☛ "Tray Lift Motor")
2. Stack transport clutch [A] (x 1, x 1)

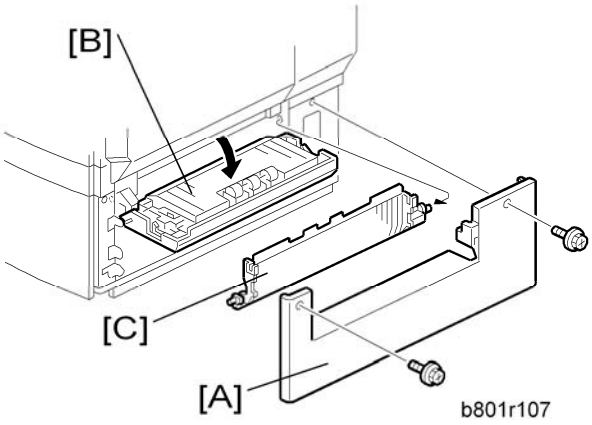
1.5.2 PAPER FEED CLUTCH



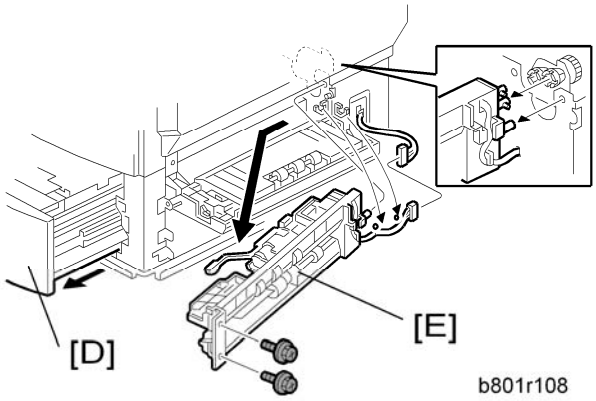
b801r106a

1. Rear cover (☛ "Tray Lift Motor")
2. Paper feed gear unit [A] (x 3, x 1)
3. Paper feed clutch bracket [B] (x 1, x 2, bushing x 1)
4. Paper feed clutch [C]

1.6 PAPER FEED UNIT



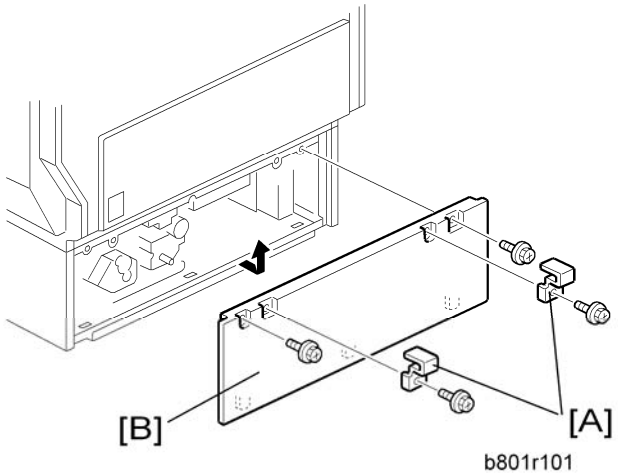
1. Right cover [A]
2. Open the vertical guide plate [B]
3. Guide plate [C]



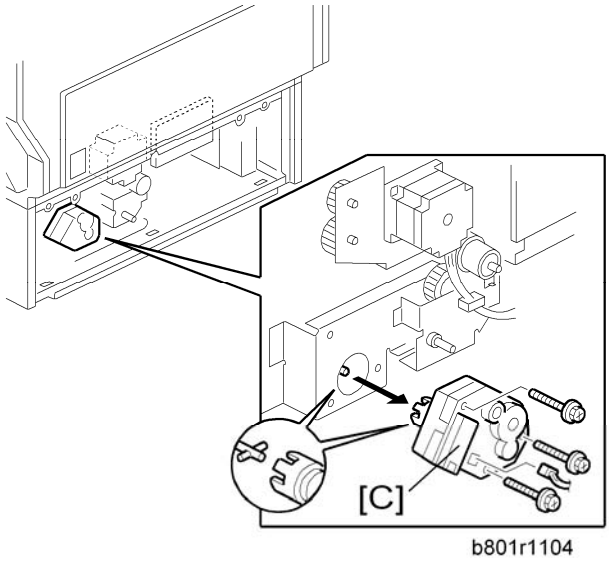
4. Pull the LCT drawer [D].
5. Paper feed unit [E] (x 2, x 1)

1.7 MOTORS

1.7.1 TRAY LIFT MOTOR

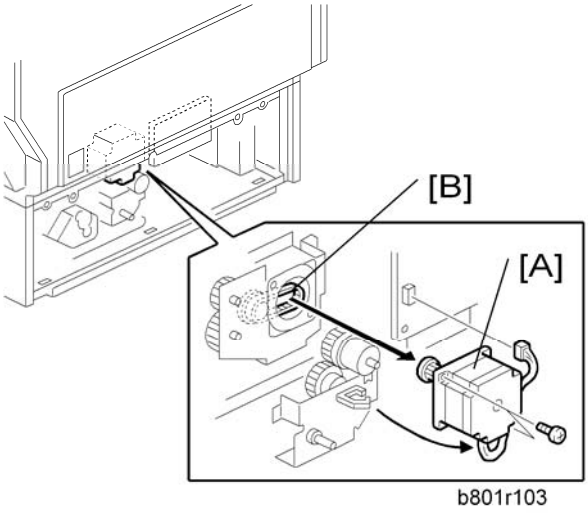


1. Securing brackets [A] (x 1 each)
2. Rear cover [B] (x 2)



3. Tray lift motor [C] (x 1, x 3)

1.7.2 TRAY MOTOR

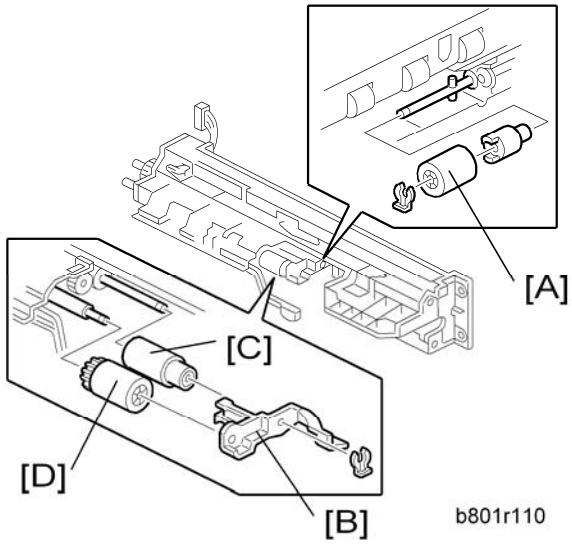


1. Rear cover (☛ "Tray Lift Motor")
2. Tray motor [A] (✌ x 1, 🔩 x 2)

Note

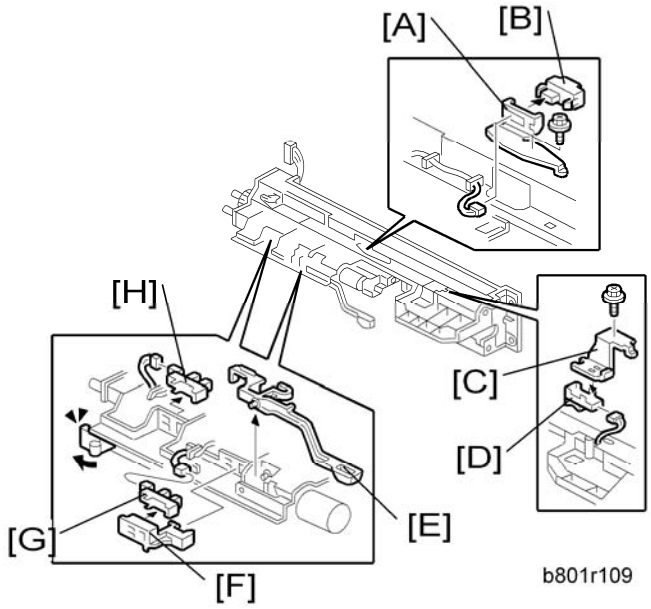
- When installing the tray motor, make sure that the gear of the tray motor holds the timing belt [B].

1.8 PICK-UP, FEED AND SEPARATION ROLLERS



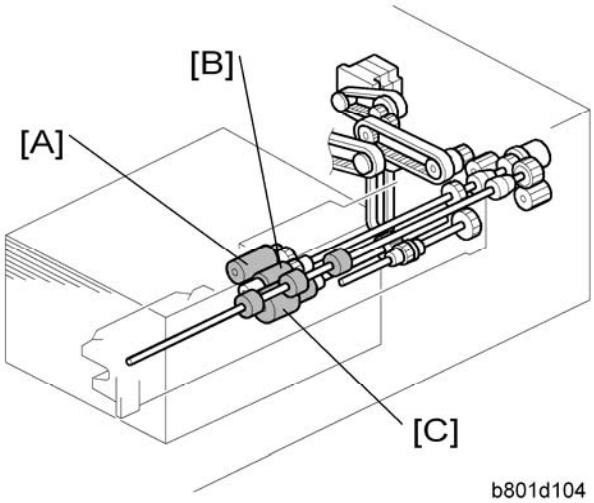
1. Paper feed unit (☛ "Paper Feed Unit")
2. Separation roller [A] (⟲ x 1)
3. Roller holder [B] (⟲ x 1)
4. Feed roller [C] and pick-up roller [D]

1.9 PAPER FEED, PAPER END, LIFT AND RELAY SENSORS



1. Paper feed unit (☛ "Paper Feed Unit")
2. Vertical transport sensor bracket [A] (☞ x 1, 🖑 x 1)
3. Relay sensor [B]
4. Paper feed sensor bracket [C]
5. Paper feed sensor [D]
6. Paper end feeler [E]
7. Paper end sensor holder [F] (hook x 3)
8. Paper end sensor [G] (🖑 x 1, hook x 3)
9. Lift sensor [H] (🖑 x 1, hook x 3)

1.10 PAPER FEED



This products uses an FRR type paper feed mechanism.

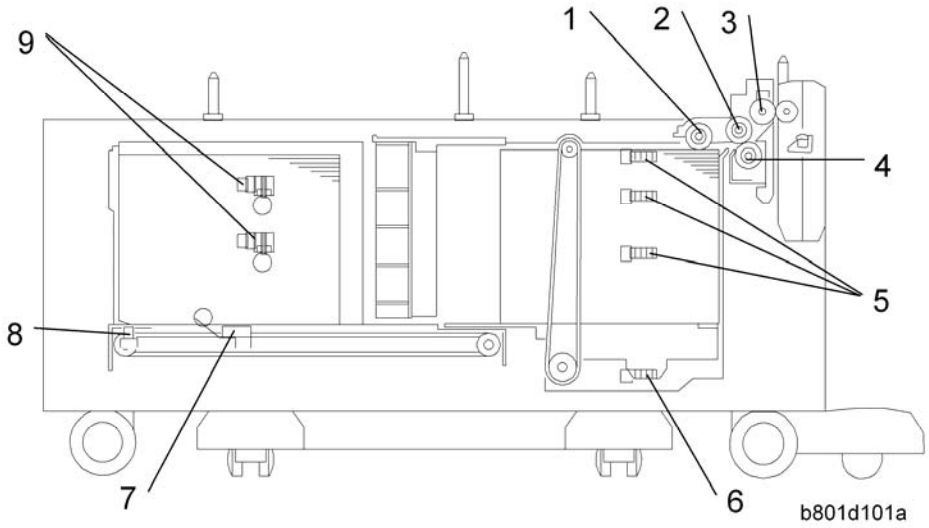
The paper feed unit consists of the pick-up roller [A], paper feed roller [B], separation roller [C], and relay rollers.

There is a torque limiter in the back of the separation roller (ferrite powder type).

2. DETAILS

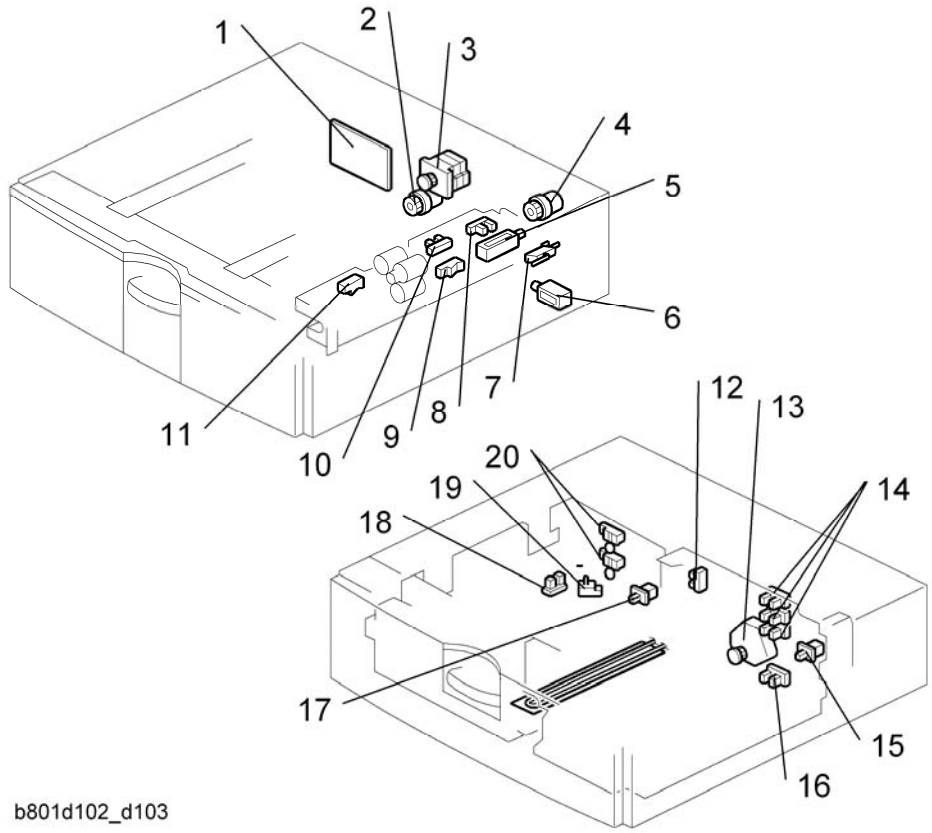
2.1 COMPONENT LAYOUT

2.1.1 MECHANICAL COMPONENT LAYOUT



1. Pick-up Roller 2. Paper Feed Roller 3. Relay Sensor 4. Separation Roller 5. Paper Height Sensors 1, 2, 3	6. Lower Limit Sensor 7. Paper End Sensor 2 8. End Fence HP Sensor 9. Paper Height Sensors 4, 5

2.1.2 ELECTRICAL COMPONENT LAYOUT



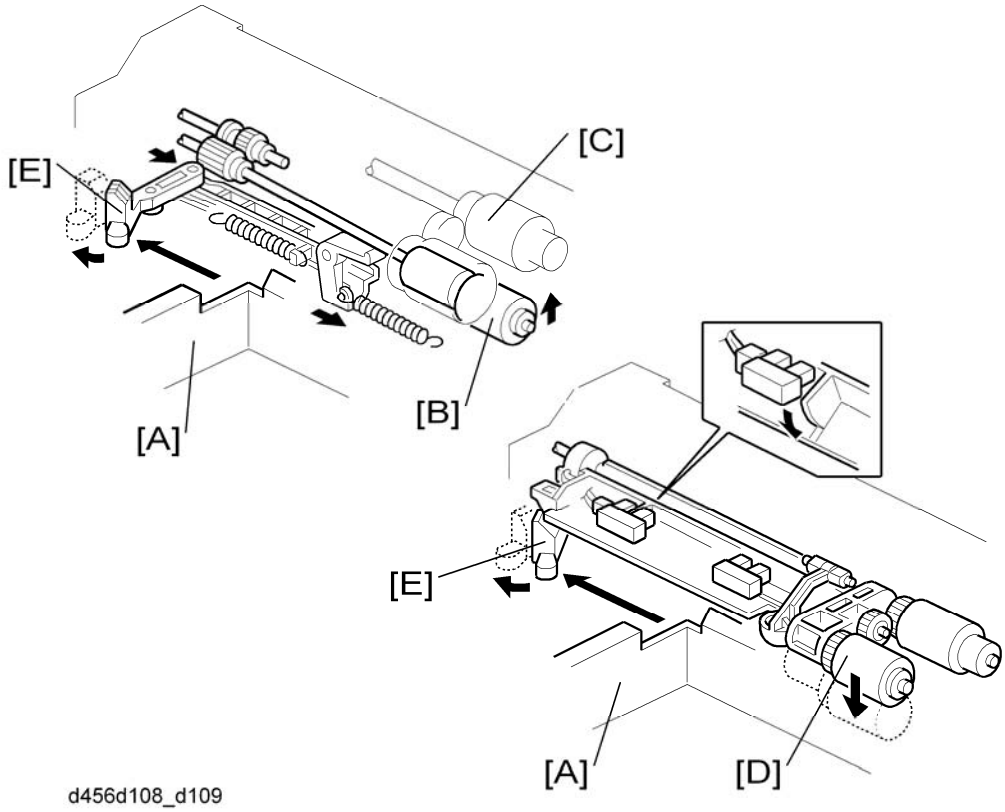
1. Main board	11. Paper feed sensors
2. Stack transport clutch	12. Side fence sensor
3. Tray motor	13. Tray lift motor
4. Paper feed clutch	14. Paper height sensor 1, 2, 3
5. Pick-up solenoid	15. Tray set switch
6. Right tray lock solenoid	16. Lower limit sensor
7. Vertical guide switch	17. Left tray set switch
8. Lift sensor	18. End fence HP sensor
9. Relay sensor	19. Paper end sensor 2
10. Paper end sensor 1	20 Paper height sensors 4, 5

2.1.3 ELECTRICAL COMPONENT DESCRIPTIONS

Symbol	Name	Function	Index No.
Motors			
M1	Tray	Drives all rollers.	3
M2	Tray Lift	Drives the paper tray up or down.	13
Sensors			
S1	Paper Feed Sensor	Detects whether the paper is jammed at LCT.	11
S2	Relay	Detects the copy paper coming to the relay roller and checks for misfeeds.	9
S3	Paper End 1 (paper feed side)	Informs the copier/printer when the paper in the right side (paper feed side) of the tray has been used up. If there is a paper stack in the left side (paper storage side), this is moved into the paper feed side. If there is no paper stack in the left side, paper end is indicated.	10
S4	Lift	Detects when the paper is at the correct paper feed height.	8
S5-S7	Paper Height 1, 2, 3	Detects the amount of paper remaining in the right side of the tray.	14
S8	Lower Limit	Detects when the tray is completely lowered, to stop the LCT motor.	16
S9	End Fence HP	Detects when the left fence is at its home position	18
S10	Side Fence	Detects whether the side fence is open or closed. (The fence opens when the	12

Symbol	Name	Function	Index No.
		left-tray paper stack is moving to the paper feed side.)	
S11	Paper End 2 (paper storage side)	Informs the copier/printer when there is no paper in the left side (paper storage side) of the tray.	19
S12 S13	Paper Height 4, 5	Detects the amount of paper remaining in the left side of the tray.	20
Switches			
SW1	Vertical Guide	Detects whether the right cover is open.	7
SW2	Tray Set Switch	Detects whether the tray is correctly set.	15
SW3	Left Tray Set Switch	Detects whether the left tray is correctly set.	17
Magnetic Clutches			
MC1	Paper Feed	Drives the paper feed roller.	4
MC2	Stack Transport	Drives the rear fence of the paper storage side.	2
Solenoids			
SOL1	Pick-up	Pushes the pick-up roller up or down.	5
SOL2	Tray Lock	Locks or unlocks the right tray.	6
PCBs			
PCB1	Main	Controls the LCT and communicates with the copier/printer.	1

2.2 SEPARATION ROLLER AND PICK-UP ROLLER RELEASE

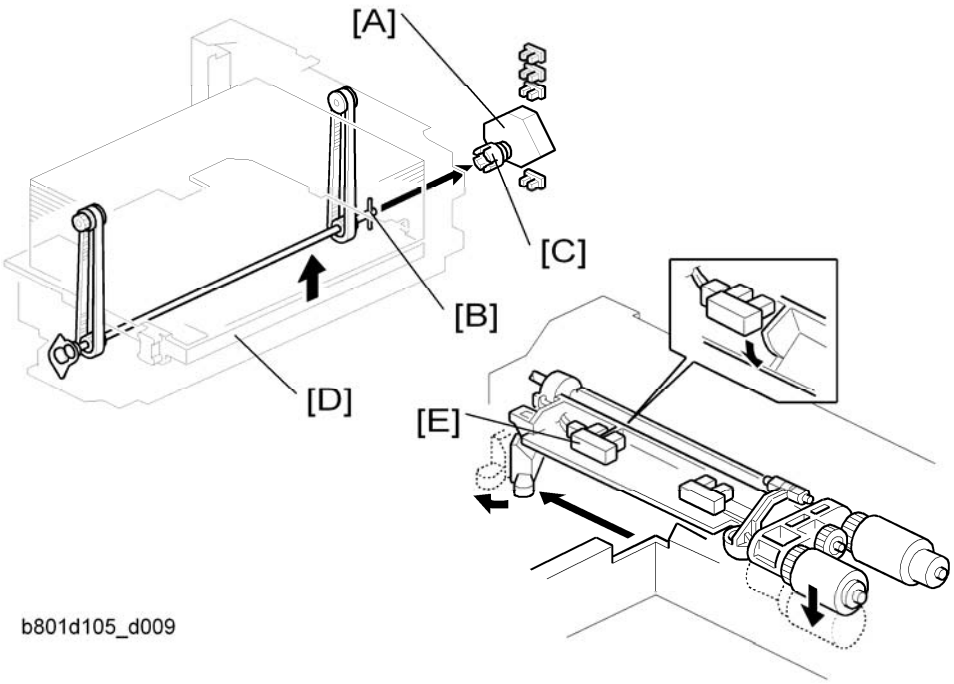


To prevent the paper from being torn when pulling out the paper feed tray, the separation and pick-up rollers release automatically.

When the paper tray [A] is not inside the machine, the separation roller [B] is away from the paper feed roller [C], and the pick-up roller [D] stays in the upper position.

When the paper tray is set into the machine, it pushes the release lever [E]. This causes the pick-up roller [D] to go down into contact with the top sheet of paper and the separation roller [B] to move up and contact the paper feed roller.

2.3 TRAY LIFT



When the paper feed tray is put in the machine, the tray switch on the back turns on and the tray lift motor [A] starts. The base plate lift shaft [B] is coupled to the lift motor at the shaft [C], so the base plate [D] of the tray is lifted. After a short while, the top of the paper stack contacts the pick-up roller and lifts it up. Then the motor stops lifting the plate when the upper limit sensor actuator enters the sensor (☛ "Electrical Component Layout").
When paper in the tray is used up, the pick-up roller is gradually lowered, and the actuator leaves the lift sensor [E]. When this happens, the lift motor begins turning again. The tray will then be lifted until the actuator enters the upper limit sensor again).
When the tray is removed from the copier, the coupling between the lift motor [A] and base plate lift shaft [B] is broken and the base plate goes into a controlled free fall (using a damper to slow the fall and prevent damage).

2.4 PAPER AMOUNT DETECTION

The table lists the sensors that are used to detect the amount of remaining paper.

Right Tray (Paper feed side)

- Paper end sensor 1
- Paper height sensor 1 to 3

Left Tray (Paper storage side)

- Paper height sensor 4 and 5
- Paper end sensor 2

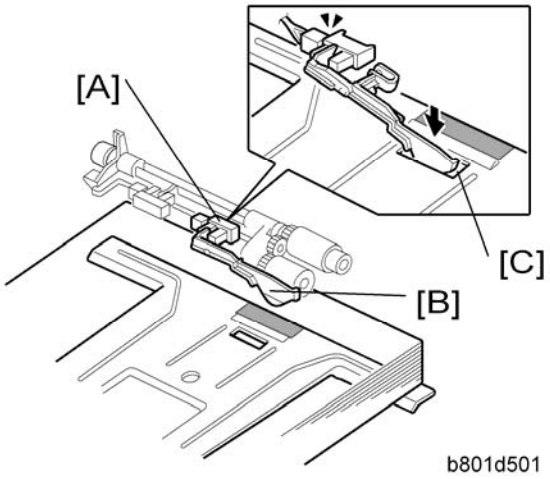
Right Tray

Amount of paper	Paper Height Sensor			Paper End Sensor	Display No. of Line
	1	2	3		
100%	OFF	OFF	OFF	ON	4
70%	OFF	OFF	ON	ON	3
30%	OFF	ON	-	ON	2
10%	ON	-	-	ON	1
Paper End	-	-	-	OFF	0

Left Tray

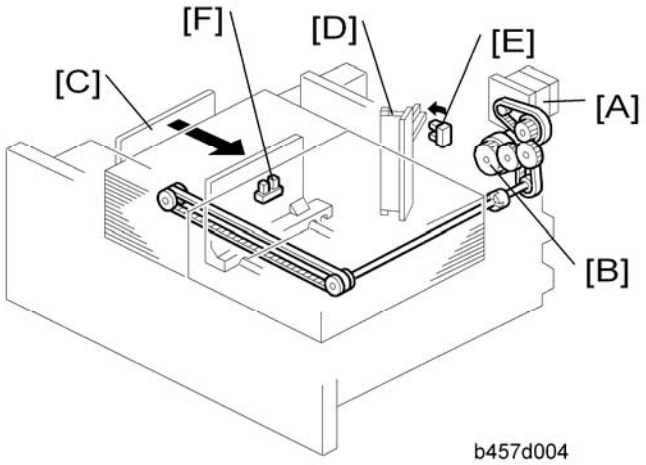
Amount of paper	Paper Height Sensor		Paper End Sensor	Display No. of Line
	4	5		
100%	OFF	OFF	OFF	4
70%	ON	OFF	OFF	3
30%	ON	ON	OFF	2
Paper End	ON	ON	ON	0

2.5 PAPER END DETECTION (PAPER FEED SIDE)



The paper end sensor 1 [A] detects when copy paper in the paper feed side runs out. When there is paper in the tray, the paper pushes up the feeler [B] and the actuator enters the sensor. When paper runs out, the feeler drops in to cutout [C] and the actuator leaves the sensor, and the machine detects that there is no paper in the tray.

2.6 PAPER STACK TRANSPORT



When the paper in the paper feed side is used up, the tray motor [A] and stack transport clutch [B] turn on. Then the end fence [C] moves the stack of paper from the paper storage side to the paper feed side.

Note

- During paper feed, the stack transport clutch (☞ "Electrical Component Layout") does not switch on, so drive from the tray motor only transfers to the relay roller and not to the fence mechanism.

While the stack is in motion, it pushes the side fence [D] aside, and the side fence sensor [E] detects that the fence is open.

After the stack has been moved all the way across, a spring in the side fence moves the side fence back, and the side fence sensor detects that the fence is closed. Then, the tray motor reverses until end fence home position sensor [F] is deactivated.

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D386

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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.

When taking apart the bridge unit, first take the unit out of the copier.

Symbols Used in this Manual

This manual uses the following symbols.

☞: See or Refer to

: Screws

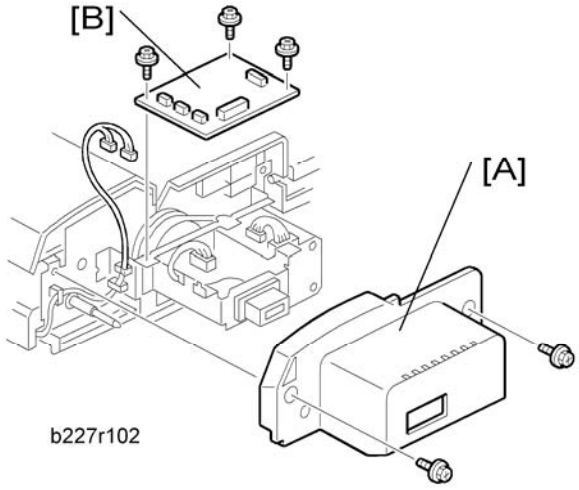
: Connector

: Clip ring

: E-ring

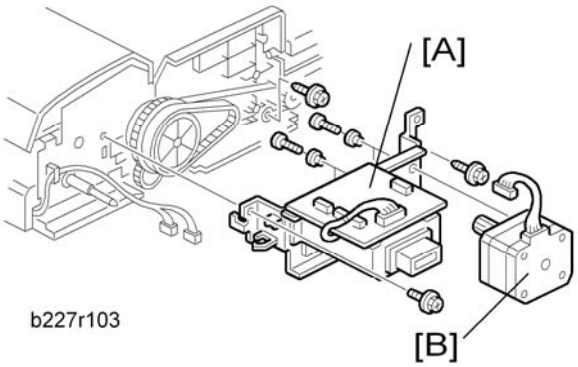
1. REPLACEMENT AND ADJUSTMENT

1.1 BRIDGE UNIT CONTROL BOARD



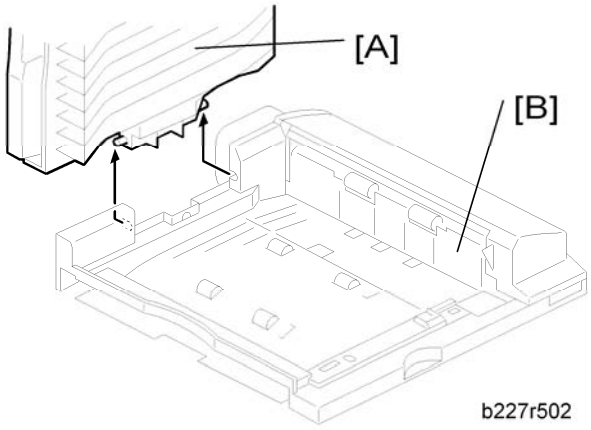
1. Bridge unit (☛ "Installation Procedure" in the base copier manual)
2. Rear cover [A] (☞ x 2)
3. Bridge unit control board [B] (☞ x 3, ☞ x 4)

1.2 BRIDGE UNIT DRIVE MOTOR

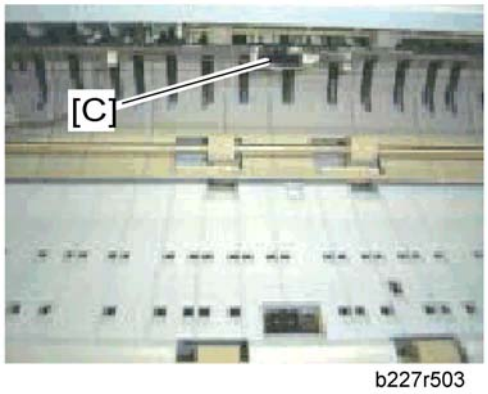


1. Bridge unit (☛ "Installation Procedure" in the base copier manual)
2. Rear cover (☛ "Bridge Unit Control Board")
3. Bracket [A] (x 3, x 2)
4. Bridge unit drive motor [B] (x 4, x 1)

1.3 TRAY EXIT SENSOR

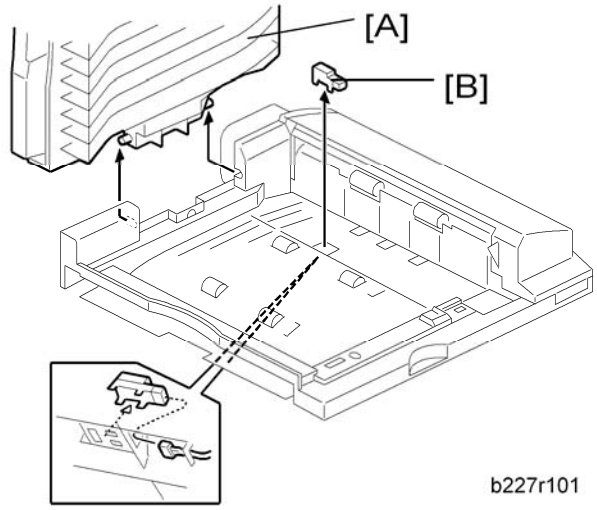


1. Bridge unit (☛ "Installation Procedure" in the base copier manual)
2. Rear cover (☛ "Bridge Unit Control Board")
3. Paper tray [A]
4. Exit guide [B] (☞ x 1)



5. Tray exit sensor [C] (✋ x 1)

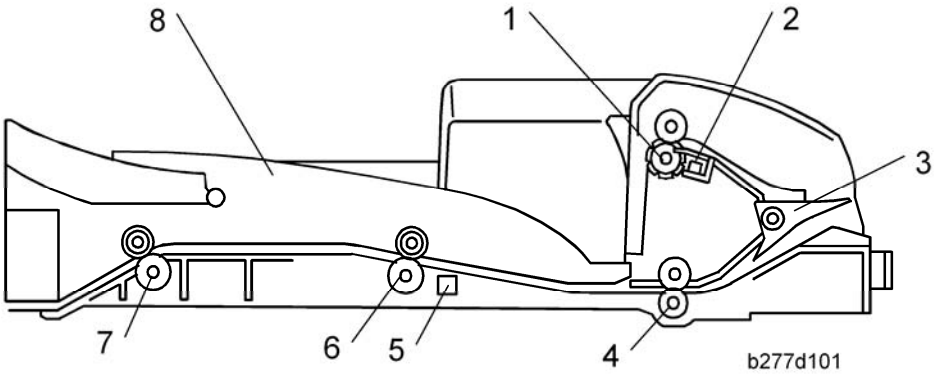
1.4 RELAY SENSOR



1. Bridge unit (☛ "Installation Procedure" in the base copier manual)
2. Paper tray [A]
3. Relay sensor [B] (☞ x 1)

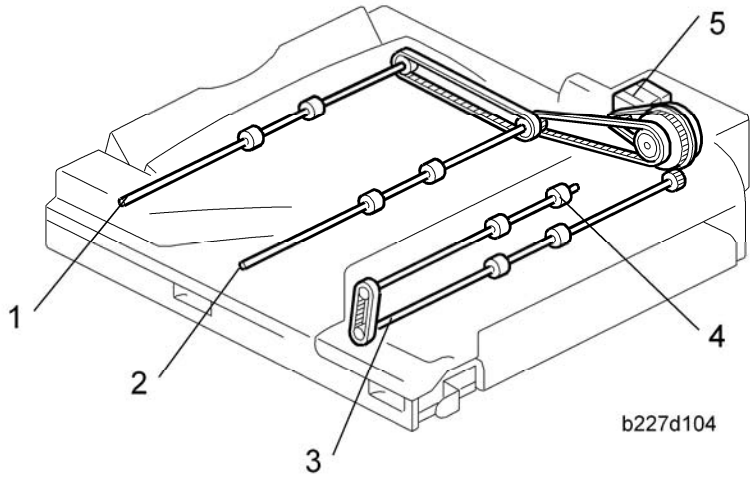
2. DETAILS

2.1 MECHANICAL COMPONENT LAYOUT



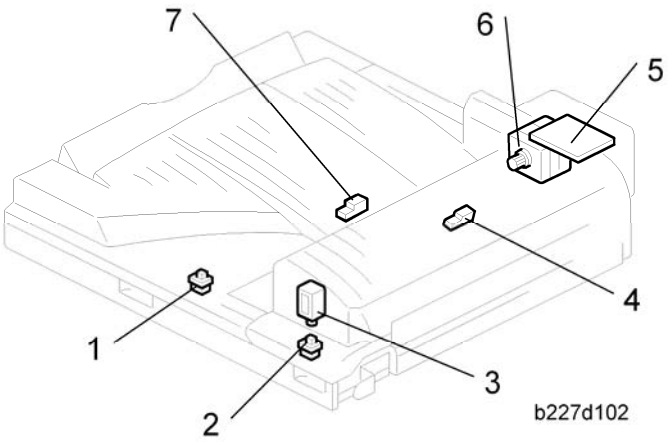
1. Upper Exit Roller	5. Relay Sensor
2. Tray Exit Sensor	6. 2nd Transport Roller
3. Junction Gate	7. Left Exit Roller
4. 1st Transport Roller	8. Paper Tray

2.2 DRIVE LAYOUT



1. Left Exit Roller
2. 2nd Transport Roller
3. 1st Transport Roller
4. Upper Exit Roller
5. Bridge Unit Drive Motor

2.3 ELECTRICAL COMPONENT LAYOUT

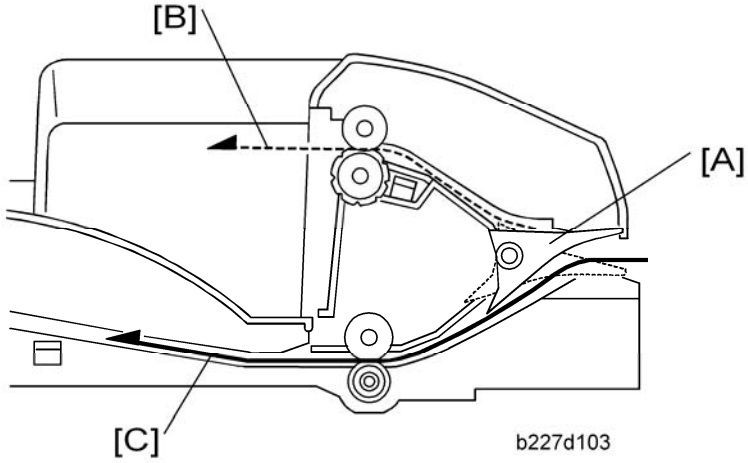


1. Left Guide Switch
2. Right Guide Switch
3. Junction Gate Solenoid
4. Tray Exit Sensor
5. Bridge Unit Control Board
6. Bridge Unit Drive Motor
7. Relay Sensor

2.4 ELECTRICAL COMPONENT DESCRIPTION

Symbol	Name	Function	Index No.
Motors			
M1	Drive Motor	Drives the bridge unit.	6
Sensors			
S1	Tray Exit	Checks for misfeeds.	4
S2	Relay	Checks for misfeeds.	7
Switches			
SW2	Right Guide	Detects when the right guide is opened.	2
SW3	Left Guide	Detects when the left guide is opened.	1
Solenoids			
SOL1	Junction Gate	Moves the junction gate to direct the paper to the upper tray (on top of the bridge unit) or to the finisher.	3
PCBs			
PCB1	Bridge Unit Control Board	Controls the bridge unit.	5

2.5 JUNCTION GATE MECHANISM



The junction gate [A] directs any paper reaching the bridge unit to either the upper tray (on top of the bridge unit) or to the finisher, depending on which has been selected.

If the junction gate solenoid has been activated, the junction gate [A] points downward and directs the paper to the upper tray [B] (dotted line path in illustration). When the solenoid is off, the junction gate points upward and the paper is fed out to the finisher [C] by the transport and left exit rollers (solid line).

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Safety and Symbols

Replacement Procedure Safety

⚠CAUTION

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Symbols Used in this Manual

This manual uses the following symbols.

☞: See or Refer to

: Screws

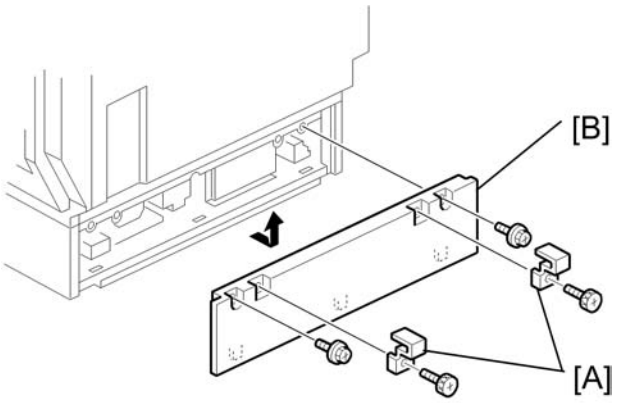
: Connector

: Clip ring

: E-ring

1. REPLACEMENT AND ADJUSTMENT

1.1 REAR COVER

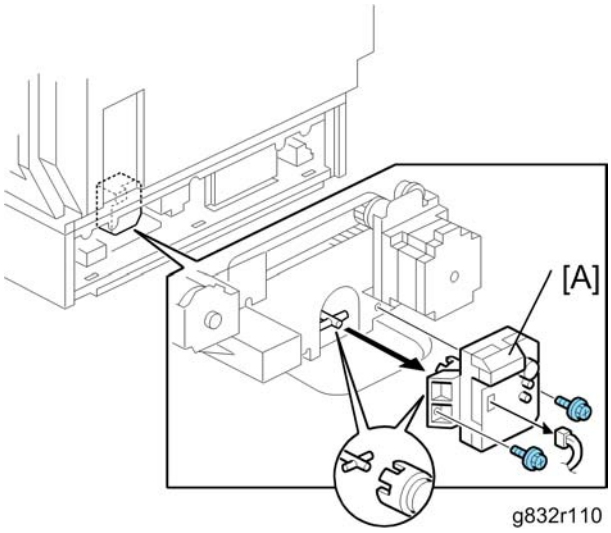


g832r105

1. Securing brackets [A] (☞ x 1 each)
2. Rear cover [B] (☞ x 2)

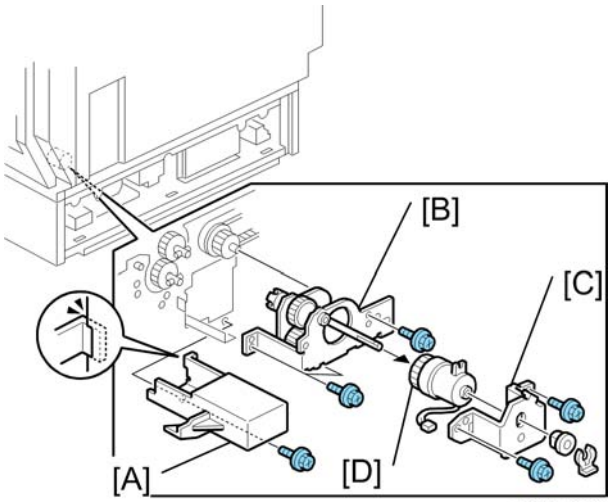
1.2 MOTORS, CLUTCH AND MAIN BOARD

1.2.1 LIFT MOTOR



1. Rear cover (☛ p.1 "Rear Cover")
2. Lift motor [A] (🔩 x 2, ✋ x 1)

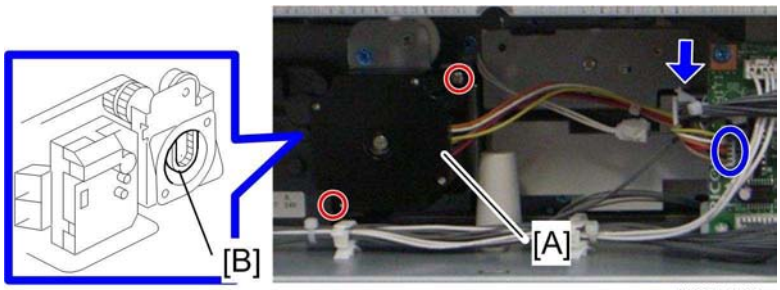
1.2.2 PAPER FEED CLUTCH



g832r107

1. Rear cover (☛ p.1 "Rear Cover")
2. Remove the tray end cover [A].
3. Paper feed gear unit [B] (x 3, x 1)
4. Paper feed clutch bracket [C] (x 1, x 2, bushing x 1)
5. Paper feed clutch [D]

1.2.3 PAPER FEED MOTOR



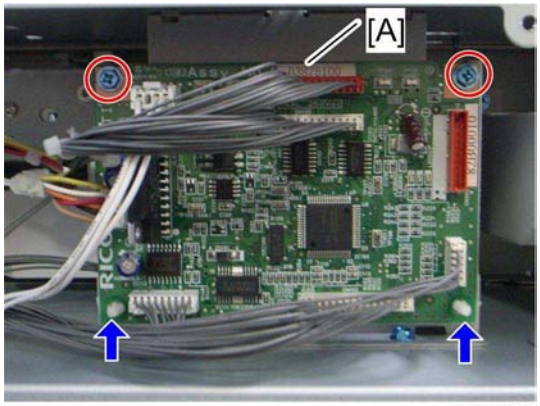
d387r106

1. Rear cover (☛ p.1 "Rear Cover")
2. Paper feed motor [A] (x 1, x 2, x 1)

Note

- When installing the paper feed motor, make sure that the gear of the paper feed motor holds the timing belt [B].

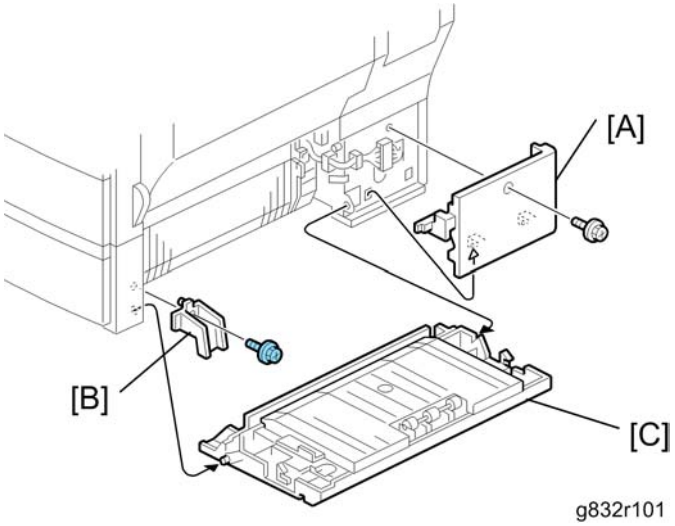
1.2.4 MAIN BOARD



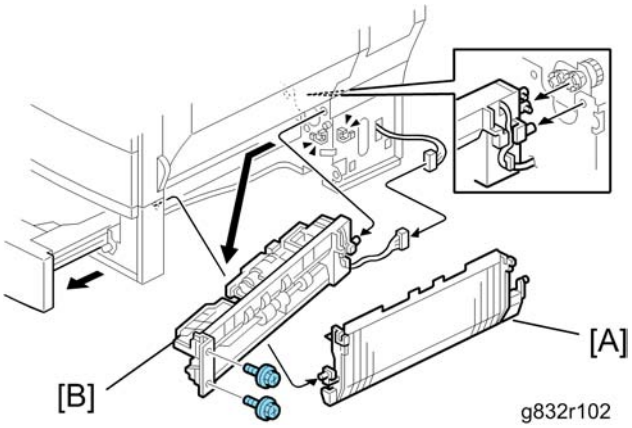
d387r108

1. Rear cover (☛ p.1 "Rear Cover")
2. Main board [A] (All ☜s, ☞ x 2, snap pin x 2)

1.3 PAPER FEED UNIT



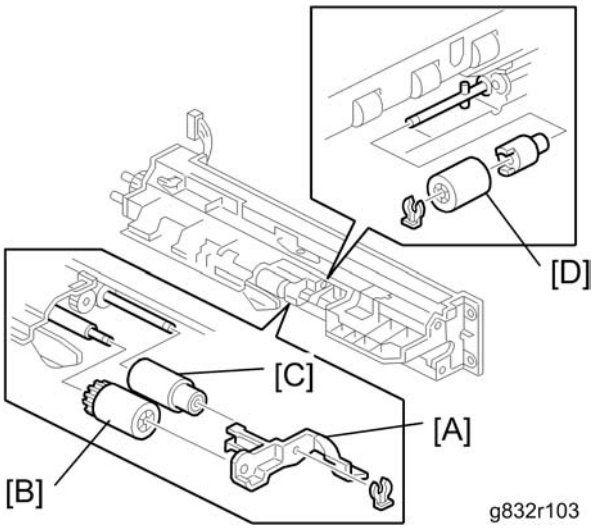
1. Right cover [A] (x 2)
2. Stopper [B] (x 1)
3. Vertical transport guide [C] of the paper feed unit



4. Pull tray 3.
5. Paper guide [A]
6. Paper feed unit [B] (x 2, x 1, x 2)

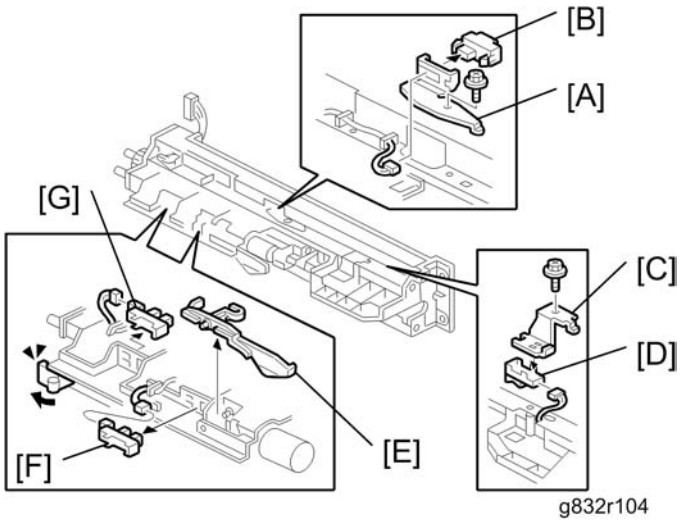
1.4 ROLLERS AND SENSORS

1.4.1 PICK-UP, PAPER FEED AND SEPARATION ROLLERS



1. Paper feed unit (☛ p.5 "Paper Feed Unit")
2. Roller holder [A] (🔩 x 1)
3. Pick-up roller [B]
4. Paper feed roller [C]
5. Separation roller [D] (🔩 x 1)

1.4.2 LIFT, PAPER END, AND RELAY SENSORS



1. Paper feed unit (☛ p.5 "Paper Feed Unit")
2. Vertical transport sensor bracket [A] (☞ x 1)
3. Vertical transport sensor [B] (☞ x 1)
4. Paper feed sensor bracket [C] (☞ x 1)
5. Paper feed sensor [D] (☞ x 1)
6. Paper end sensor filler [E]
7. Paper end sensor [F] (☞ x 1)
8. Lift sensor [G] (☞ x 1)

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G835 MAIL BIN TYPE C820 REVISION HISTORY		
Page	**Date**	**Added/Updated/New**
		None

MAIL BIN TYPE C820 G835

TABLE OF CONTENTS

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

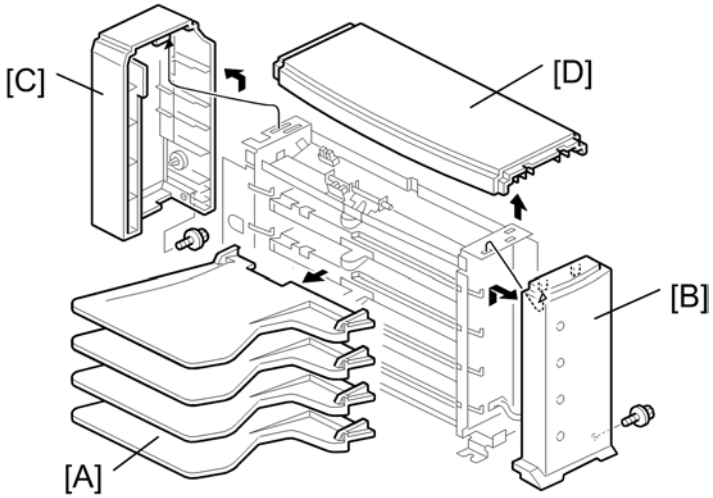
This manual uses the following symbols.

☛	See or Refer to
	Clip ring
	Screw
	Connector
	Clamp
	E-ring
SEF	Short Edge Feed
LEF	Long Edge Feed

1. REPLACEMENT AND ADJUSTMENT

1.1 EXTERIOR COVERS

1.1.1 TOP, REAR AND FRONT COVERS



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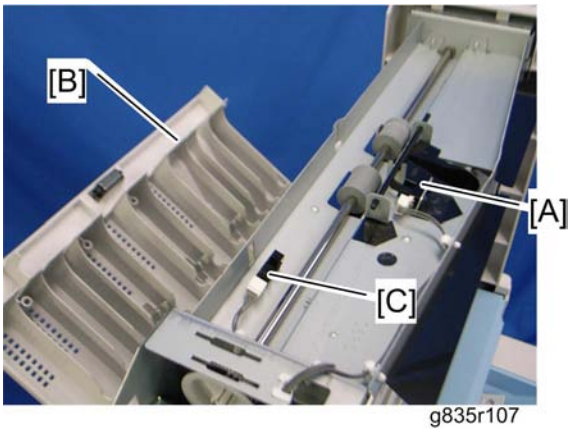
1. Four bin trays [A]
2. Front cover [B] (x 1, x 2, x all)
3. Rear cover [C] (x 1)
4. Top cover [D]

1.2 MOTOR AND SENSORS

1.2.1 MAIL BIN DOOR OPEN SENSOR AND OVERFLOW SENSOR 4

1. Rear cover (☛ p.1)
2. Top cover (☛ p.1)



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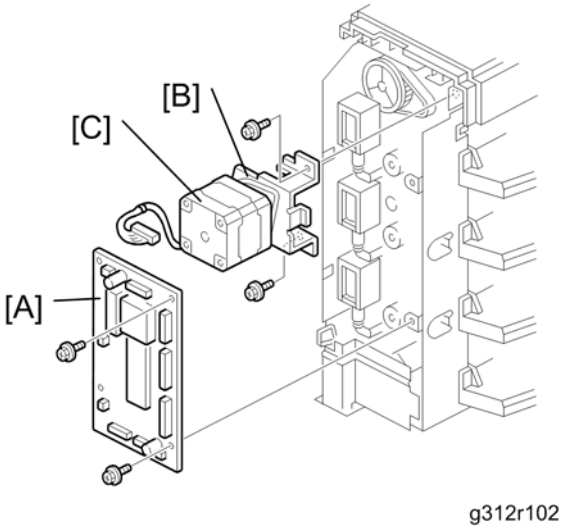
3. Overflow sensor 4 [A] (hooks, x 1)
4. Open the mail bin door [B].
5. Mail bin door open sensor [C] (x 1)

1.2.2 MAIN BOARD AND TRANSPORT MOTOR

1. Rear cover (☛ p.1)
2. Top cover (☛ p.1)



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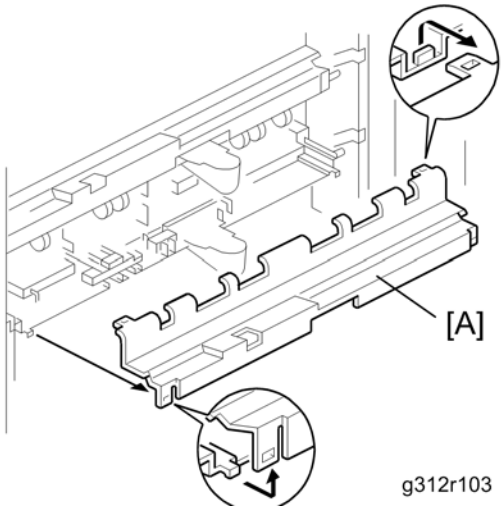
3. Main board [A] (x 2, x 7)

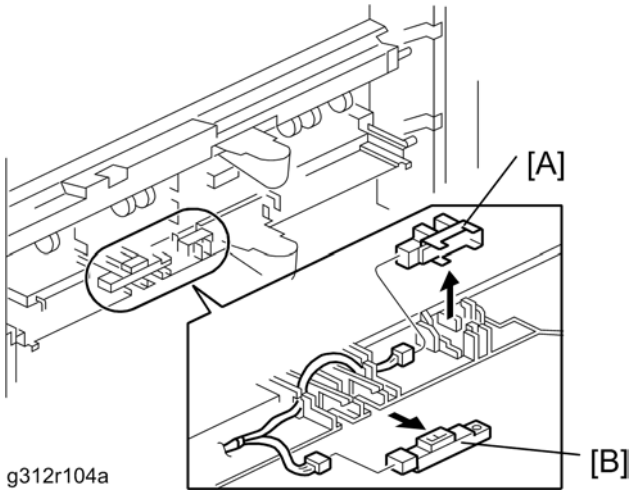
4. Transport motor bracket [B] (x 2, x 1)
5. Transport motor [C] (x 2)

1.2.3 TRAY PAPER AND OVERFLOW SENSORS

1. Remove all bin trays.



2. Bin cover [A] (hook x 4)



3. Overflow sensor [A] (hooks, x 1)
4. Tray paper sensor [B] (hooks, x 1)

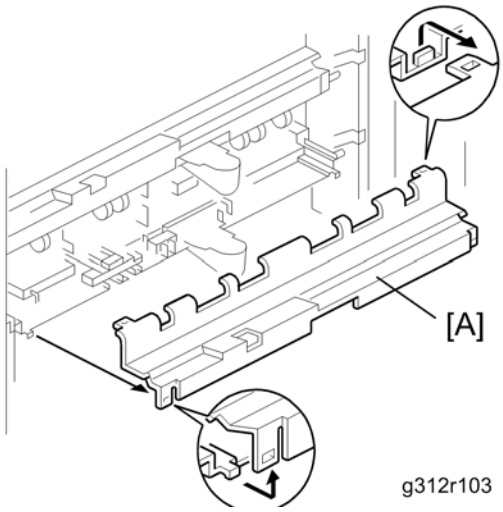
Note

- The overflow sensor 1 is located at the second bin.
- The overflow sensor 2 is located at the third bin.
- The overflow sensor 3 is located at the fourth bin.

1.2.4 VERTICAL TRANSPORT SENSORS

1. Remove all bin trays.

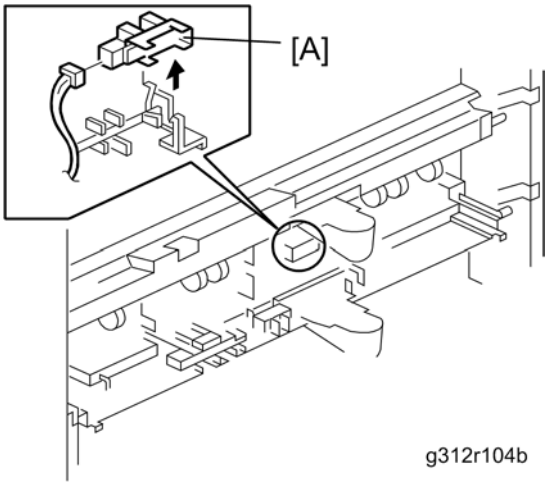
Motor and Sensors



2. First bin cover or second bin cover [A] (hook x 4)

Note

- Remove the first bin cover to access the vertical transport sensor 1.
- Remove the third bin cover to access the vertical transport sensor 2.



3. Vertical transport sensor [A]

Note

- The vertical transport sensor 1 is located at the first bin.
- The vertical transport sensor 2 is located at the third bin.