Model R-C3
(Machine Code: B089/B093/B097)

SERVICE MANUAL
(Insert Version)

September, 2003
Subject to change

⚠IMPORTANT SAFETY NOTICES

PREVENTION OF PHYSICAL INJURY

1. Before disassembling or assembling parts of the copier and peripherals, make sure that the copier power cord is unplugged.
2. The wall outlet should be near the copier 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. If a job has started before the copier completes the warm-up or initializing period, keep hands away from the mechanical and electrical components because the starts making copies as soon as the warm-up period is completed.
5. The inside and the metal parts of the fusing unit become extremely hot while the copier is operating. Be careful to avoid touching those components with your bare hands.

HEALTH SAFETY CONDITIONS

Toner is non-toxic, but if you get it in your eyes by accident, it may cause temporary eye discomfort. Try to remove with eye drops or flush with water as first aid. If unsuccessful, get medical attention.

SAFETY AND ECOLOGICAL NOTES FOR DISPOSAL

1. Do not incinerate the toner cassettes. Toner dust may ignite suddenly when exposed to an open flame.
2. Dispose of toner cassettes in accordance with local regulations. (This is a non-toxic unit.)
3. Dispose of replaced parts in accordance with local regulations.

OBSERVANCE OF ELECTRICAL SAFETY STANDARDS

1. The copier and its peripherals must be installed and maintained by a customer service representative who has completed the training course on those models.
2. The NVRAM on the Controller board has a lithium battery which can explode if replaced incorrectly. Replace the NVRAM only with an identical one. Do not recharge or burn this battery. Used NVRAM must be handled in accordance with local regulations.
3. The danger of explosion exists if batteries on the FCU, MBU and JBIG are incorrectly replaced. Replace only with the same or an equivalent type recommended by the manufacturer. Discard used batteries in accordance with the manufacturer’s instructions.

LASER SAFETY

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

⚠WARNING

Use of controls, or adjustment, or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

⚠WARNING FOR LASER UNIT

WARNING: Turn off the main switch before attempting any of the procedures in the Laser Unit section. Laser beams can seriously damage your eyes.

CAUTION MARKING:

LASER-4.WMF

TABLE OF CONTENTS

1. OVERALL MACHINE INFORMATION

1.1 SPECIFICATIONS

Configuration: Desktop

Copy Process: Dry electrostatic transfer system

Originals: Sheet/Book

Original Size: Maximum A3/11" x 17"

Copy Paper Size: Maximum: A3/11" x 17"
Minimum: A5/81/2" x 51/2" lengthwise
Custom sizes
2nd paper tray
Width: 100 ~ 297 mm (3.9" ~ 11.5")
Length: 148 ~ 432 mm (5.8" ~ 17.0")
By-pass tray (Option):
Width: 90 ~ 305 mm (3.5" ~ 12.0")
Length: 148 ~ 1,260 mm (5.8" ~ 49.6")

Copy Paper Weight: Paper Tray:
60 ~ 105 g/m^2, 16 ~ 28 lb (1st paper tray)
52 ~ 157 g/m^2, 16 ~ 43 lb (2nd paper tray)
By-pass (Option):
52 ~ 157 g/m^2, 16 ~ 42 lb

Reproduction Ratios: 5 Enlargement and 7 Reduction

	A4/A3 Version	LT/DLT Version
Enlargement	400% 200% 141% 122% 115%	400% 200% 155% 129% 121%
Full Size	100%	100%
Reduction	93% 87% 82% 71% 65% 50% 25%	93% 85% 78% 73% 65% 50% 25%

Zoom: 25% to 400% in 1% steps (Platen mode)
25% to 200% in 1% steps (ADF mode)

Power Source: 120 V, 60 Hz: More than 12 A (for North America)
220 ~ 240 V, 50/60 Hz: More than 7 A (for Europe/Asia)
110 V, 50/60 Hz: More than 13 A (for Taiwan)

Power Consumption:

		Mainframe Only		Full System	
		120 V	**220 ~ 240 V**	**120 V**	**220 ~ 240 V**
Maximum (B089/B093/B097)		Less than 1.44 kW	Less than 1.5 kW	Less than 1.44 kW	Less than 1.5 kW
Copying	B089/B093	Approx. 650 W	Approx. 650 W	Approx. 680 W	Approx. 680 W
	B097	Approx. 770 W	Approx. 770 W	Approx. 800 W	Approx. 800 W
Warm-up (B089/B093/B097)		Approx. 1.44 kW	Approx. 1.5 kW	Approx. 1.44 kW	Approx. 1.5 kW
Stand-by (B089/B093/B097)		Approx. 150 W	Approx. 150 W	Approx. 160 W	Approx. 160 W
Energy Saver / Auto Off (B089/B093/B097)		Less than 10 W	Less than 10 W	Less than 10 W	Less than 10 W

NOTE: 1) Full system: Mainframe + ADF + 1-bin Sorter + Paper Tray Unit + Duplex Unit + Bridge Unit + Finisher
2) Without the Option heaters, fax unit, and printer controller

Noise Emission (Sound Power Level):

Stand-by (Mainframe only):	B089/B093:	40 dB(A)
	B097:	40 dB(A)
Operating (Mainframe only):	B089/B093:	63 dB(A)
	B097:	66 dB(A)
Operating (Full System):	B089/B093 :	68.5 dB(A)
	B097:	70 dB(A)

NOTE: 1) The above measurements were made in accordance with ISO 7779.
2) Full System: Mainframe + ADF + 1-bin Sorter + Paper Tray Unit + Duplex Unit + Bridge Unit + Finisher

Dimensions (W x D x H): 550 x 604 x 709 mm (21.7" x 23.8" x 28.0")
NOTE: Measurement Conditions
1) With the paper tray unit or LCT
2) Without the ADF

Weight: Less than 55 kg (121.3lb)

Copying Speed (copies/minute):

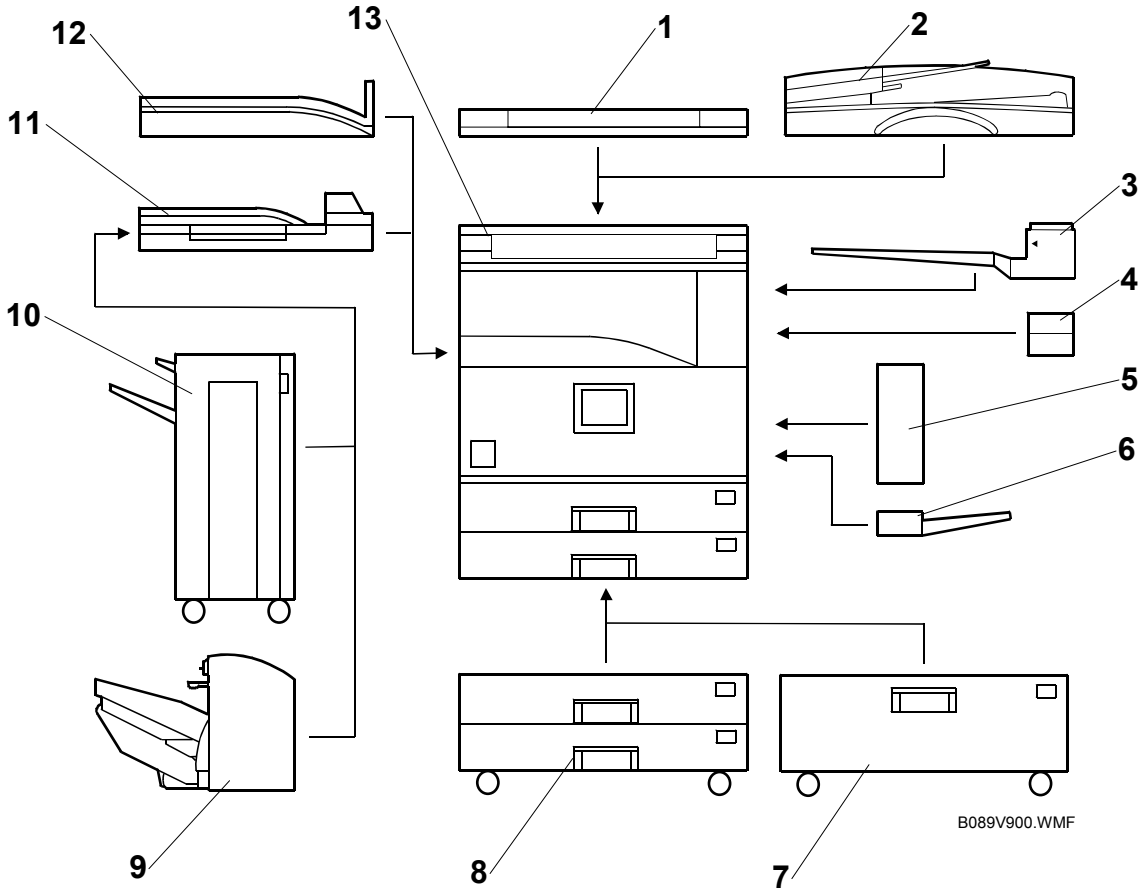
B089	**A4, 11" x 8 1/2" LEF**	**A3/11" x 17"**
Non-memory copy mode	22	13
Memory copy mode	22	13
B093	**A4, 11" x 8 1/2" LEF**	**A3/11" x 17"**
Non-memory copy mode	27	15
Memory copy mode	27	15
B097	**A4, 11" x 8 1/2" LEF**	**A3/11" x 17"**
Non-memory copy mode	32	18
Memory copy mode	32	18

NOTE: Measurement Conditions
1) Not APS mode
2) A4/LT copying
3) Full size

Warm-up Time:	Less than 10 seconds (20°C, 68°F) from Wen the operation switch is turned on. Less than 15 seconds (20°C, 68°F) from Wen the main switch is turned on.
First Copy Time:	B089/B093: Less than 4.9 sec. (A4), less than 5.0 sec. (LT) B097: Less than 4.5 sec. (A4/LT) Measured under the following conditions: • Wen the polygonal mirror motor is spinning. • From the 1st paper tray • Not APS mode • Full size
Copy Number Input:	Ten-key pad, 1 to 99 (count up or count down)
Manual Image Density:	7 steps
Paper Tray Capacity:	Paper Tray: 500 sheets x 2 (Special paper in the 2nd paper tray: 50 sheets) Paper Tray Unit (Option): 500 sheets x 2 LCT (Option): 1000 sheets x 2 By-pass Tray (Option): 100 sheets (A4, B5, A5, B6, 81/2" x 11", 51/2" x 81/2") 10 sheets (A3, B4, 11" x 17", 81/2" x 13") 1 sheets (non-standard sizes) **NOTE:** Copy paper weight: 80g/m^2 (20 lb)
Toner Replenishment:	Cartridge exchange (360 g/cartridge)
Toner Yield:	11 k copies (A4 sideways, 6% full black, 1 to 1 copying, ADS mode)
Copy Tray Capacity:	Copy Tray: 500 sheets (without 1-bin tray) 250 sheets (with 1-bin tray)
Memory Capacity:	Standard 64 MB, Optional memory 128 MB

1.2 MACHINE CONFIGURATION

1.2.1 SYSTEM COMPONENTS



Version	Item	Code	No.	Comments
Copier	Copier (R-C3a)	B089	13	
	Copier (R-C3b)	B093	13	
	Copier (R-C3c)	B097	13	
	ARDF (Option)	B386	2	Common with B022/B027/B031
	Platen Cover (Option)	B406	1	
	Paper Tray Unit-2 tray (Option)	B390	8	
	LCT (Option)	B391	7	
	1-bin Tray (Option)	B413	3	
	Shift Tray (Option)	B459	12	
	Duplex Unit (Option)	B414	5	
	By-pass Tray (Option)	B415	6	
	Interchange Unit (Option)	B416	4	
	Bridge Unit (Option)	B417	11	
	1000-sheet finisher (Option)	B408	10	
	500-sheet finisher (Option)	B442	9	
	User Account Enhance Unit (Option)	B443		
	HDD (Option)	B592		
	Memory – 128 MB (Option)	G331		Common with B079
	Key Counter Bracket (Option)	B452		Common with B022/B027/B031
Fax	Fax Controller (Option)	B576		
	G3 Interface Unit (Option)	B593		
	Memory – 32 MB (Option)	G578		Common with B022/B027/B031
	Fax Function Expander (Option)	A892		
	Handset (Option)	B433		
Printer/ Scanner	Printer/Scanner Unit (Option)	B577		
	PS3 (Option)	B354		
	Bluetooth (Option)	G354		Common with B079
	IEEE1394 (FireWire - Option)	G336		
	USB 2.0 (Option)	B525		
	IEEE 802.11b (Wireless – LAN Option)	B515		
Others	NIB (Option)	G529		
	File Format Converter (Option)	B519		Common with B135

1.2.2 INSTALLABLE OPTIONAL TABLE

Copier options

No.	Option	B089/B093/ B097	Note
1	ARDF (Option)	❍	Install either no. 1 or 2.
2	Platen Cover (Option)	❍	Install either no. 1 or 2.
3	Paper Tray Unit – two-tray (Option)	❍	Install either no. 3 or 4.
4	LCT (Option)	❍	Install either no. 3 or 4.
5	1-bin Tray (Option)	Δ	Requires no.9.
6	Shift Tray (Option)	❍	Install either no. 6 or 10.
7	Duplex Unit (Option)	Δ	Requires no.9.
8	By-pass Tray (Option)	❍	
9	Interchange Unit (Option)	❍	
10	Bridge Unit (Option)	Δ	No. 10 requires no.11 or 12. Install either no. 6 or 10.
11	1000-sheet Finisher (Option)	Δ	Install either no. 11 or 12 Requires no.10, and either no.3 or 4
12	500-sheet Finisher (Option)	Δ	Install either no. 11 or 12 Requires no.10, and either no.3 or 4
13	Memory 128 MB (Option)	❍	
14	Key Counter Bracket	❍	

❍ = Available Δ = Requires another option

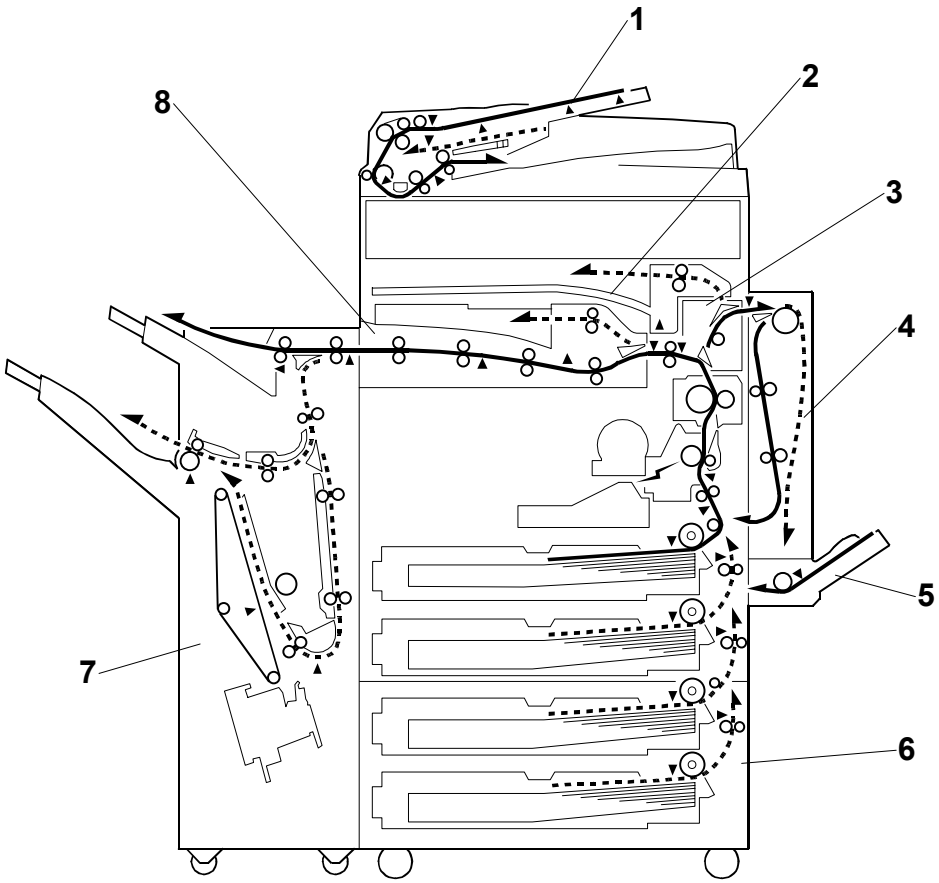
Fax option

All options for the fax unit are available when the fax unit has been installed.

Printer/scanner options

1. The following boards cannot be installed together: USB 2.0, Bluetooth, File Format Converter, IEEE1394 (FireWire), IEEE 802.11b (Wireless LAN).
2. The printer/scanner option requires the 128 MB memory option.

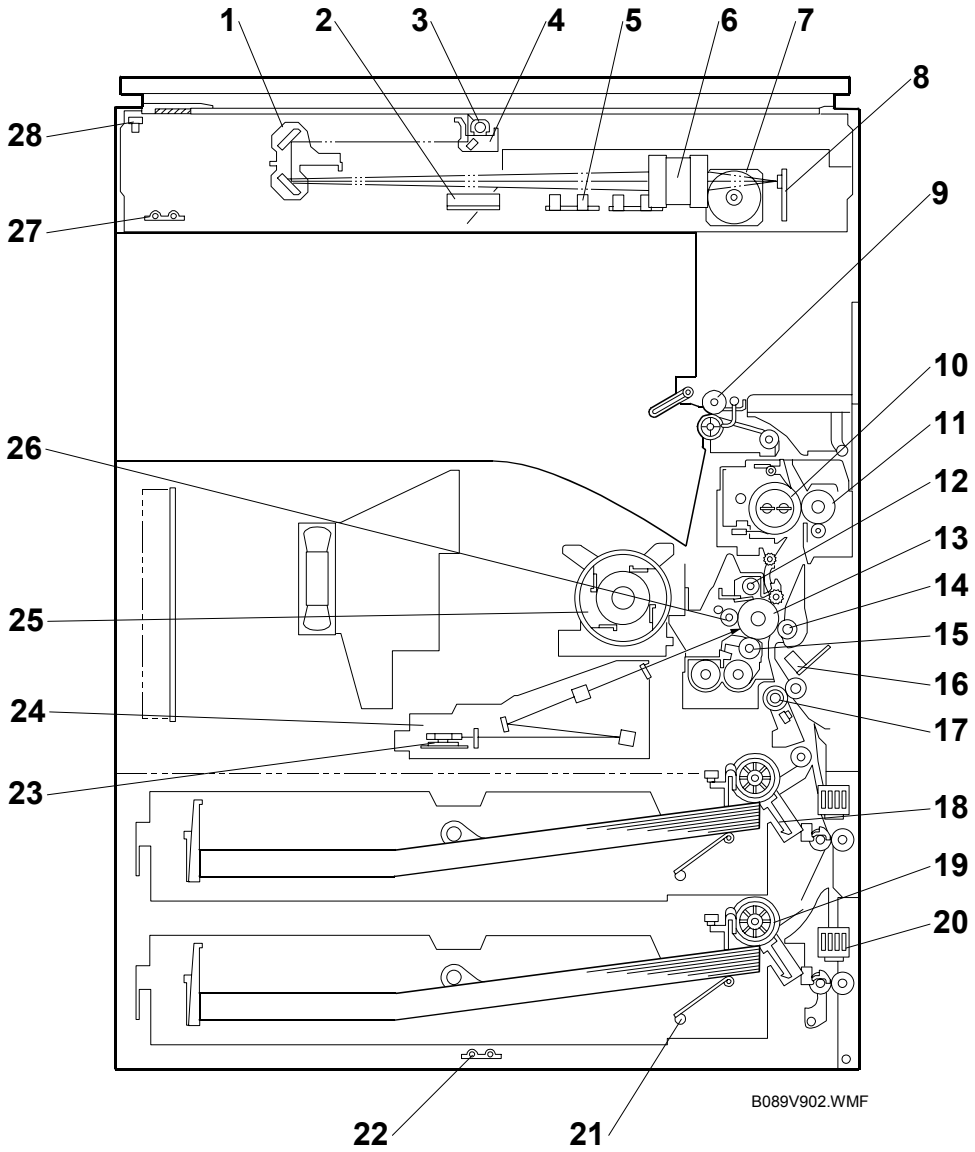
1.3 PAPER PATH



B089V901.WMF

1. Optional ADF
2. Optional 1-bin Tray
3. Optional Interchange Unit
4. Optional Duplex Unit
5. Optional By-pass Feed Tray
6. Optional Paper Tray Unit
7. Optional 1000-sheet Finisher
8. Optional Bridge Unit

1.4 MECHANICAL COMPONENT LAYOUT



1. 2nd scanner
2. Original width sensor
3. Exposure lamp
4. 1st scanner
5. Original length sensor
6. Lens
7. Scanner motor
8. SBU board
9. Exit roller
10. Fusing hot roller
11. Fusing pressure roller
12. Cleaning unit
13. OPC drum
14. Transfer roller
15. Development roller
16. ID sensor
17. Registration roller
18. Friction pad
19. Paper feed roller
20. Paper size sensor
21. Bottom plate
22. Tray heater
23. Polygon mirror motor
24. Laser unit
25. Toner supply bottle holder
26. Drum charge roller
27. Anti-condensation heater
28. Scanner home position sensor

1.5 ELECTRICAL COMPONENT DESCRIPTIONS

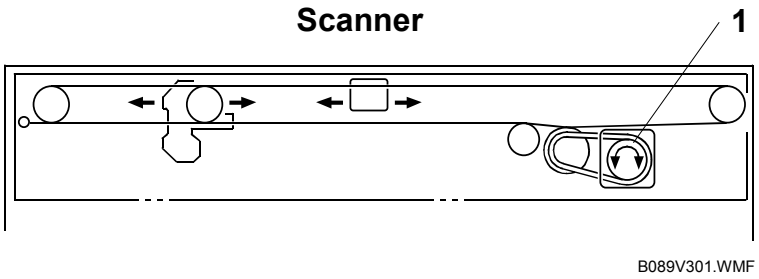
Refer to the electrical component layout on the reverse side of the point-to-point diagram for the location of the components.

Symbol	Name	Function
Motors		
M1	Scanner	Drives the 1st and 2nd scanners.
M2	Polygonal Mirror	Turns the polygonal mirror.
M3	Main	Drives the main unit components.
M4	Exhaust Fan	Removes heat from around the fusing unit.
M5	Upper Paper Lift	Raises the bottom plate in the 1st paper tray.
M6	Lower Paper Lift	Raises the bottom plate in the 2nd paper tray.
M7	Toner Supply	Rotates the toner bottle to supply toner to the development unit.
Magnetic Clutches		
MC1	Upper Paper Feed	Starts paper feed from the 1st paper tray.
MC2	Lower Paper Feed	Starts paper feed from the 2nd paper tray.
MC3	Upper Relay	Drives the upper relay rollers.
MC4	Lower Relay	Drives the lower relay rollers.
MC4	Registration	Drives the registration rollers.
Switches		
SW1	Main	Provides power to the machine. If this is off, there is no power supplied to the machine.
SW2	Right Upper Cover	Detects Wether the right upper cover is open or not.
SW3	Right Cover	Cuts the +5VLD and +24V dc power line and detects Wether the right cover is open or not.
SW4	Right Lower Cover	Detects Wether the right lower cover is open or not.
SW5	Upper Paper Size	Determines Wat size of paper is in the upper paper tray.
SW6	Lower Paper Size	Determines Wat size of paper is in the lower paper tray.
SW7	New PCU Detect	Detects Wen a new PCU is installed.
SW8	Front Cover Safety	Cuts the +5VLD and +24V dc power line and detects Wether the front cover is open or not.
SW9	Operation	Provides power for machine operation. The machine still has power if this switch is off.
Sensors		
S1	Scanner HP	Informs the CPU Wen the 1st and 2nd scanners are at home position.
S2	Platen Cover	Informs the CPU that the platen cover is in the up or down position (related to the APS/ARE functions).
S3	Original Width	Detects original width. This is one of the APS (Auto Paper Select) sensors.
S4	Original Length 1	Detects original length. This is one of the APS (Auto Paper Select) sensors.

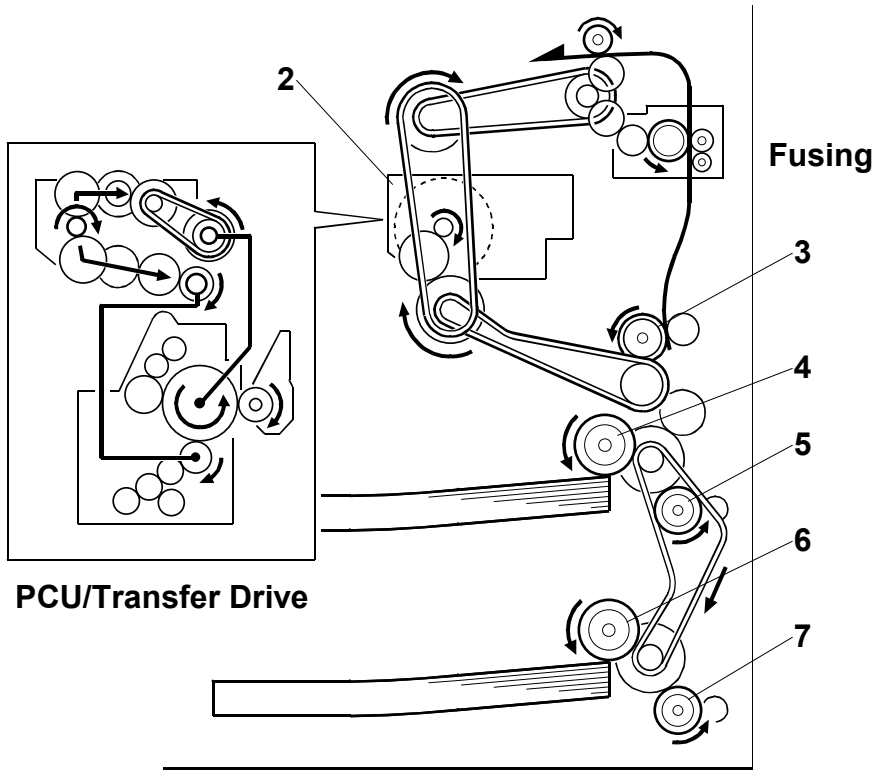
Symbol	Name	Function
S5	Original Length 2	Detects original length. This is one of the APS (Auto Paper Select) sensors.
S6	Toner Density (TD)	Detects the amount of toner inside the development unit.
S7	1st Paper End	Informs the CPU Wen the 1st paper tray runs out of paper.
S8	2nd Paper End	Informs the CPU Wen the 2nd paper tray runs out of paper.
S9	Image Density (ID)	Detects the density of various patterns and the reflectivity of the drum for process control.
S10	Paper Overflow	Detects paper overflow in the built-in copy tray.
S11	Paper Exit	Detects misfeeds.
S12	Upper Relay	Detects misfeeds.
S13	Lower Relay	Detects misfeeds.
S14	Registration	Detects misfeeds and controls registration clutch off-on timing.
S15	1st Paper Lift	Detects Wen the paper in the 1st paper tray is at the feed height.
S16	2nd Paper Lift	Detects Wen the paper in the 2nd paper tray is at the feed height.
S17	1st Paper Height – 1	Detects the amount of paper in the 1st paper tray.
S18	1st Paper Height – 2	Detects the amount of paper in the 1st paper tray.
S19	2nd Paper Height – 1	Detects the amount of paper in the 2nd paper tray.
S20	2nd Paper Height – 2	Detects the amount of paper in the 2nd paper tray.
PCBs		
PCB1	Controller	Controls all applications both directly and through other control boards.
PCB2	PSU (Power Supply Unit)	Provides dc power to the system and ac power to the fusing lamp and heaters.
PCB3	SBCU (Scanner & Base Engine Control Unit)	Controls the fusing lamp and the mechanical parts of the machine.
PCB4	SBU (Sensor Board Unit)	Contains the CCD, and outputs a video signal to the BICU board.
PCB5	Lamp Stabilizer	Stabilizes the power to the exposure lamp.
PCB6	LDD (Laser Diode Driver)	Controls the laser diode.
PCB7	Operation Panel	Controls the operation panel.
PCB8	High Voltage Supply	Supplies high voltage to the drum charge roller, development roller, and transfer roller.
PCB9	Memory (Option)	Expands the memory capacity for the copier, printer, and scanner features.
PCB10	IPU (Image Processing Unit)	Performs the image processing functions.
Solenoids		
SOL1	Fusing Drive Release	Releases the drive for the fusing unit.
Lamps		
L1	Exposure Lamp	Applies high intensity light to the original for exposure.

Symbol	Name	Function
L2	Main Fusing Lamp	Heats the center of the hot roller.
L3	Secondary Fusing Lamp	Heats both ends of the hot roller.
L4	Quenching Lamp	Neutralizes any charge remaining on the drum surface after cleaning.
Heaters		
H1	Anti-condensation (Option)	Turns on Wen the main power switch is off to prevent moisture from forming on the optics.
H2	Tray (Option)	Turns on Wen the main power switch is off to prevent moisture from forming around the paper trays.
Others		
TS1	Fusing Thermostats	Opens the fusing lamp circuit if the fusing unit overheats.
TH1	Fusing Thermistors	Detects the temperature of the hot roller.
LSD 1	Laser Synchronization Detector	Detects the laser beam at the start of the main scan.
CO1	Mechanical Counter	Keeps track of the total number of prints made.
CO2	Key Counter (Option)	Used for control of authorized use. If this feature is enabled for copying, copying will be impossible until it is installed.

1.6 DRIVE LAYOUT



B089V301.WMF

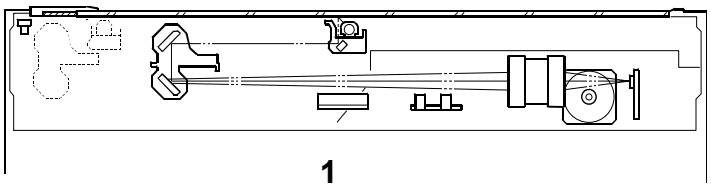


B089V302.WMF

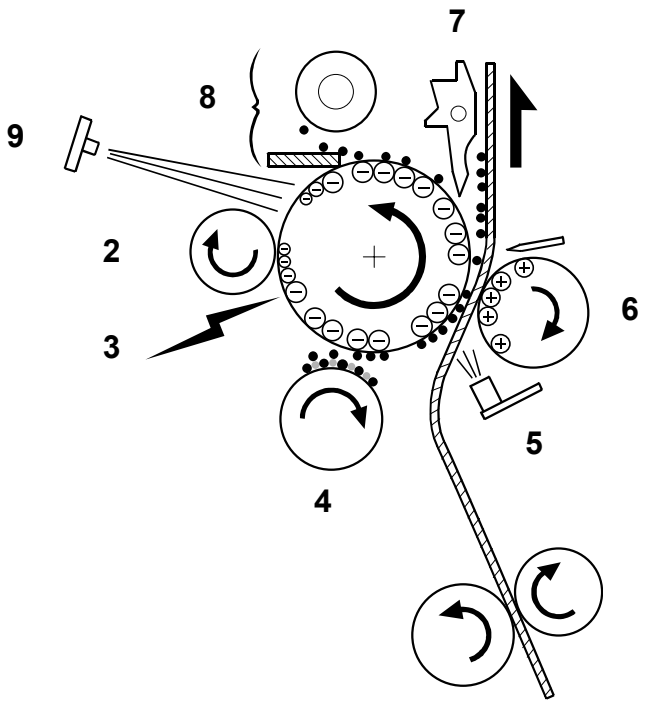
1. Scanner Drive Motor
2. Main Motor
3. Registration Clutch
4. Upper Paper Feed Clutch
5. Upper Transport Clutch
6. Lower Paper Feed Clutch
7. Lower Transport Clutch

1.7 COPY PROCESS

1.7.1 OVERVIEW



B089V401.WMF



B089V101.WMF

1. EXPOSURE

A xenon lamp exposes the original. Light reflected from the original passes to the CCD, Were it is converted into an analog data signal. This data is converted to a digital signal, processed and stored in the memory. At the time of printing, the data is retrieved and sent to the laser diode. For multi-copy runs, the original is scanned once only and stored to the memory.

2. DRUM CHARGE

In the dark, the charge roller gives a negative charge to the organic photo-conductive (OPC) drum. The charge remains on the surface of the drum because the OPC layer has a high electrical resistance in the dark.

3. LASER EXPOSURE

The processed data scanned from the original is retrieved from the memory and transferred to the drum by a laser beam, Wich forms an electrical latent image on the drum surface. The amount of charge remaining as a latent image on the drum depends on the laser beam intensity, Wich is controlled by the BICU board.

4. DEVELOPMENT

The magnetic developer brush on the development rollers comes in contact with the latent image on the drum surface. Toner particles are electrostatically attached to the areas of the drum surface Were the laser reduced the negative charge on the drum.

5. ID SENSOR

The laser forms a sensor pattern on the drum surface. The ID sensor measures the reflectivity of the pattern. The output signal is one of the factors used for toner supply control. Also, the ID sensor measures the reflectivity of the drum surface. The output signal is used for charge roller voltage control.

6. IMAGE TRANSFER

Paper is fed to the area between the drum surface and the transfer roller at the proper time for aligning the copy paper and the developed image on the drum surface. Then, the transfer roller applies a high positive charge to the reverse side of the paper. This positive charge pulls the toner particles from the drum surface onto the paper. At the same time, the paper is electrostatically attracted to the transfer roller.

7. PAPER SEPARATION

Paper separates from the drum as a result of the electrostatic attraction between the paper and the transfer roller. The discharge plate helps separate the paper from the drum.

8. CLEANING

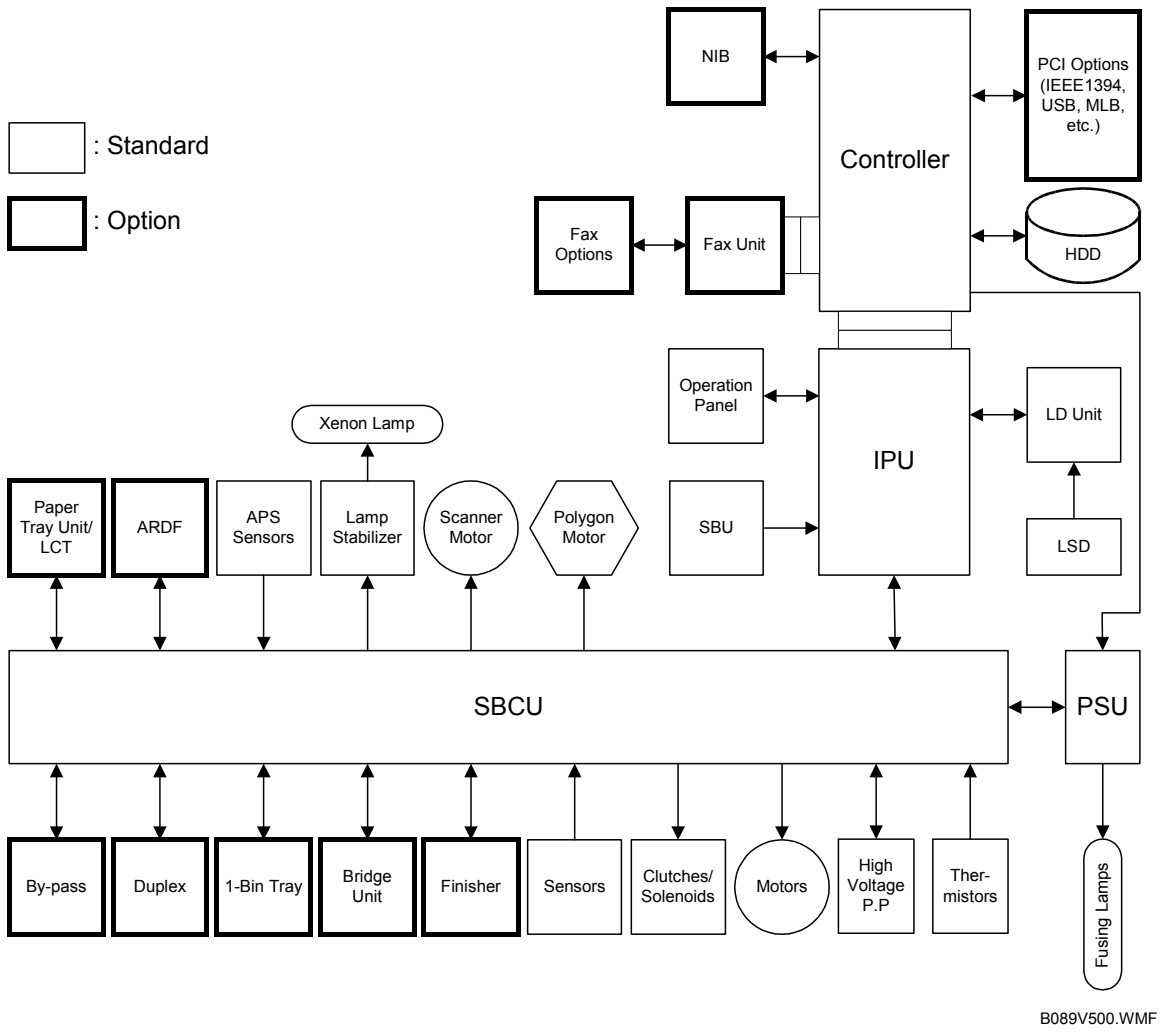
The cleaning blade removes any toner remaining on the drum surface after the image transfers to the paper.

9. QUENCHING

The light from the quenching lamp electrically neutralizes the charge on the drum surface.

1.8 BOARD STRUCTURE

1.8.1 OVERVIEW



This machine uses the GW (Ground Work) architecture, Wich allows the copier to be expanded as an MFP by installing simple modular components (ROM DIMMs) on the controller board.

Controller (Main Board):
Controls the memory and all peripheral devices.

SBCU (Scanner & Base Engine Control Unit):
This is the scanner and engine control board. It controls the following functions:

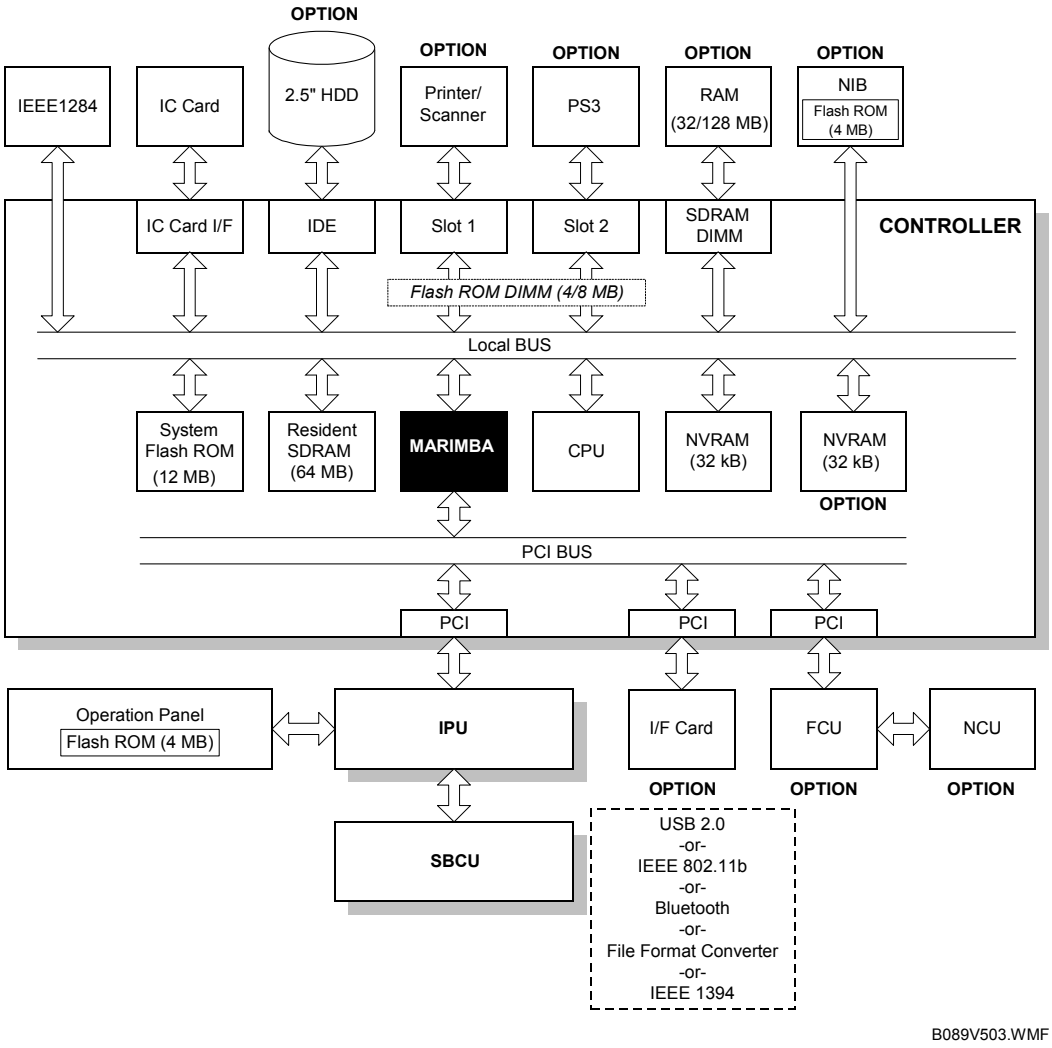
- Engine sequence
- Timing control for peripherals
- Operation control
- Drive control for the sensors, motors, and solenoids of the printer and scanner
- High voltage supply board control
- Serial interfaces with peripherals
- Fusing control

IPU (Image Processing Board):
This is the scanned image processing board. It controls the following functions.

- Image processing control
- Video control

SBU (Sensor Board Unit):
The SBU deals with the analog signals from the CCD and converts them into digital signals.

1.8.2 CONTROLLER



The controller employs GW (Grand Work) architecture, which allows the board to control all applications, including copier, printer, scanner, and fax applications. To add the optional printer, scanner, or fax applications, ROM DIMMs must be installed on the controller. The fax option, however, requires FCU and NCU installation also.

The following systems and application software can be downloaded from the controller's IC Card slot.

- Controller (System OS/Copier)
- Operation panel
- SBCU (engine control)
- Printer
- Scanner
- Fax
- PostScript 3
- NIB
- FCU

For details about how to download software from an IC card, see "Software Download" in 4.3. Program Download in the B022 Service Manual.

CPU:
RM5261. Clock frequency: 400 MHz.

MARIMBA ASIC:
This is a dedicated chip developed for use with GW architecture. The CPU and memory I/F employ a 124 MHz bus (32 bit). These components perform CPU and I/F control and also control all of the following functions: memory, local bus, interrupts, PCI bus, video data, HDD, network, operation panel, IEEE1284, and image processing.

SDRAM:
This is a 64 MB RAM chip, expandable with a 128 MB or 32 MB SDRAM.

System Flash ROM:
8 MB Flash ROM for the system OS and copier application.

Flash ROM DIMM Slots:
Two slots are provided for two ROM DIMMs (4 MB or 8MB). Expansion slots provided for the optional printer/scanner and PostScript 3 applications.

NVRAM:
32 KB of NVRAM are provided for the system. The NVRAM stores many settings, including OS system log information, copier calendar, current system settings, user accounts (max. 100) and all settings for the fax, printer, scanner, and network. The NVRAM also has an RTC (Real Time Clock) for time management.

NOTE: Optional NVRAM, Wich can store up to 400 user accounts, can be installed on the controller.

HDD:
A 2.5" HDD (more than 20 GB) can be connected using an IDE I/F. The hard disk is partitioned as shown below.

Partition	Size	Function	Power OFF
File System 1	500 MB	Downloaded fonts, forms.	Remains
File System 2	500 MB	Job spooling area.	Erased
File System 3	2000 MB	Work data area	Remains *1
Image TMP	3780 MB	Collation, sample print, locked print.	Erased *3
Image LS *2	3055 MB	Document server, local storage archive	Remains *3
SAF Thumbnails	300 MB	Stores the SAF thumbnails	Remains
Job Log	10 MB	Job log.	Remains
Address Book	100 MB	Stores address book data	Remains
Mail RX	200 MB	Stores mail RX images	Remains
Image Transfer	1000 MB	Stores images for transfer	Remains
Capture	500 MB	Stores captured images	Remains
Others	1362 MB		Remains
Total	**13.3 GB**		

***1** Used for document server application.
***2** Wen an application uses an image page, first it uses the Image LS area. If this area is in use and not available, then it uses the Image TMP area.
***3** Commonly used area for applications. Stores copy, printer, fax, and scanner data. Storage capacity: About 9000 pages (3,000 files)

2. DETAILED SECTION DESCRIPTIONS

2.1 SUMMARY

This is a summary of the differences between the B022/B027/B031 and the B089/B093/B097.

- **2nd Feed Roller:**
  The release lever and spring to stop the feed roller have been replaced by a release stopper. The shape of this mechanism has been simplified. The mechanical layout of the 1st feed roller has not changed.
- **Feed/Transport Clutch:**
  The pawl attached to the clutch to stop it has been replaced with snap feet. This improves the operation of the clutch.
- **Quenching Lamp**:
  The magnet that attaches the quenching lamp has been replaced with a hook. This change simplifies the configuration of the attachment mechanism.
- **Scanner Arm:**
  A plate has been added to the scanner arm to strengthen it. This change reduces the degree of distortion in the shape of the scanner unit caused by the lowering of the front left side of the unit.
- **Controller Bracket**:
  A plate has been added to controller bracket to strengthen it. This change increases the strength of the bracket that holds the controller unit in place.
- **Cap to Connect the Bridge Unit**:
  The cap used to attach the Bridge Unit has been combined with the left rear cover (P/N:B0241304). The cap and cover have been combined to simply the structure of this mechanism.
- **Magnet for the Front Cover of the Machine:**
  The hook type mechanism has been replaced with a screw. This change simplifies the need for parts procurement.

3. INSTALLATION PROCEDURE

3.1 INSTALLATION REQUIREMENTS

3.1.1 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 1,500 lux (do not expose to direct sunlight.)
4. Ventilation: Room air should turn over at least 30 m3/hr/person
5. Ambient Dust: Less than 0.10 mg/m^3 (2.7 x 10 -6 oz/yd^3)
6. Avoid an area which is exposed to sudden temperature changes. This includes:
   1) Areas directly exposed to cool air from an air conditioner.
   2) Areas directly exposed to heat from a heater.
7. Do not place the machine in an area where it will be exposed to corrosive gases.
8. Do not install the machine at any location over 2,000 m (6,500 ft.) above sea level.
9. Place the copier on a strong and level base. (Inclination on any side should be no more than 5 mm.)
10. Do not place the machine where it may be subjected to strong vibrations.

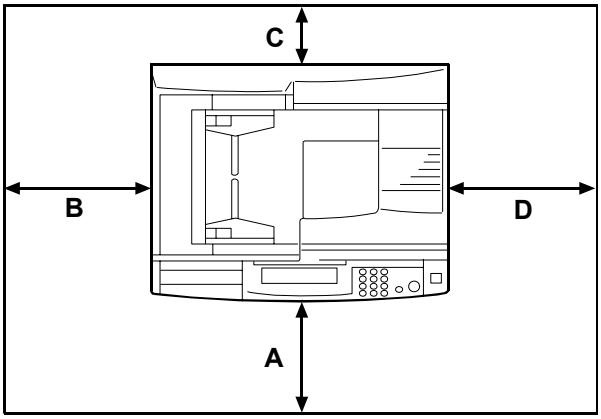
3.1.2 MACHINE LEVEL

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

Right to left: With in 5 mm (0.2") of level

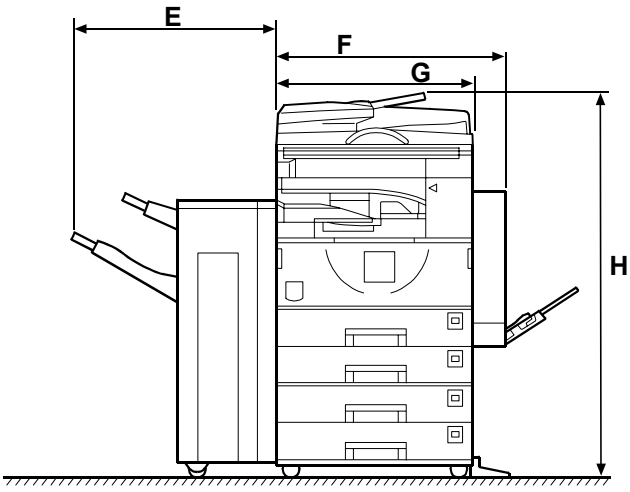
3.1.3 MINIMUM SPACE REQUIREMENTS

Place the copier near the power source, providing clearance as shown:



B089I201.WMF

A: In Front: Over 750 mm (29.6")
B: Left: Over 10 mm (4")
C: To Rear: Over 10 mm (4")
D: Right: Over 10 mm (4")



B089I202.WMF

E: 620 mm (24.4")
F: 640 mm (25.2")
G: 550 mm (21.7")
H: 1137 mm (44.8")

NOTE: The 750 mm recommended for the space at the front is only for pulling out the paper tray. If an operator stands at the front of the copier, more space is required.

3.1.4 POWER REQUIREMENTS

⚠CAUTION

1. **Make sure that the wall outlet is near the copier and easily accessible. Make sure the plug is firmly inserted in the outlet.**
2. **Avoid multi-wiring.**
3. **Be sure to ground the machine.**

1. Input voltage level: 120 V, 60 Hz: More than 12 A
   220 V ~ 240 V, 50 Hz/60 Hz: More than 7 A
   110V, 50 Hz/60 Hz: More than 13 A
2. Permissible voltage fluctuation: ±10 %
3. Do not set anything on the power cord.

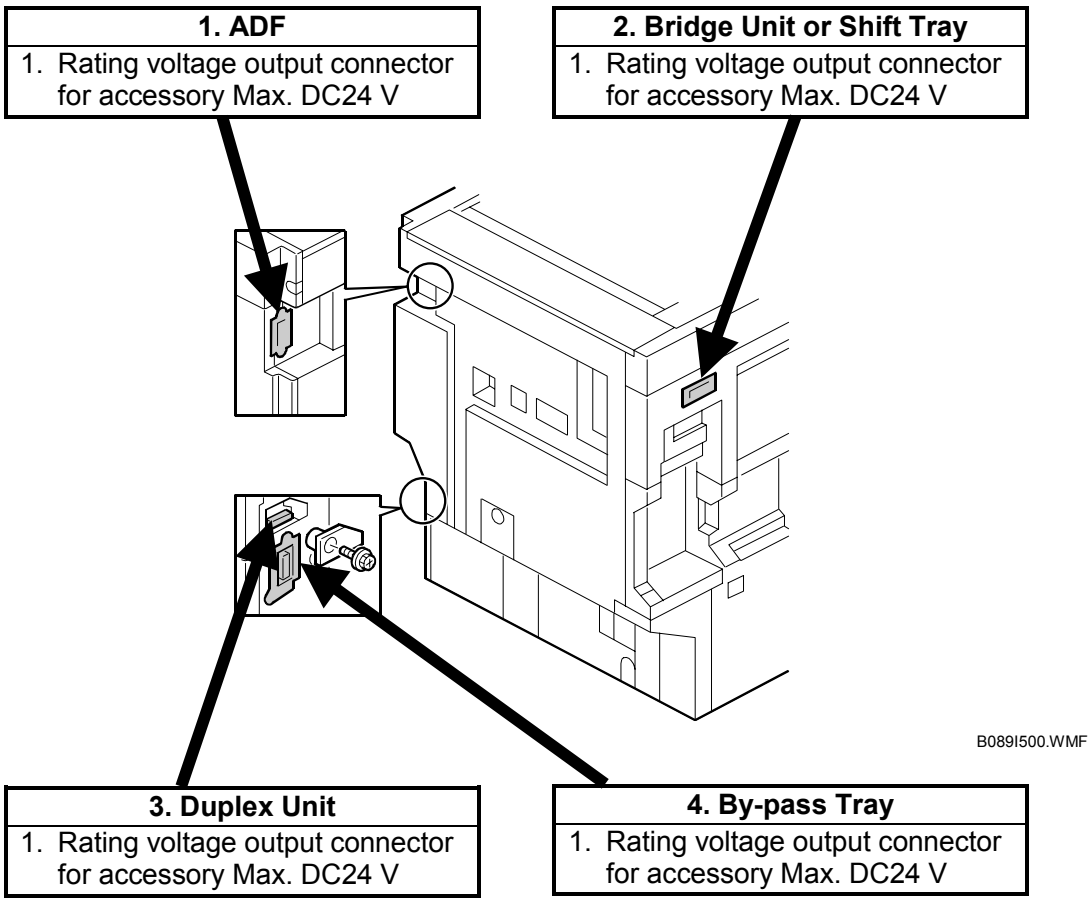
3.2 COPIER INSTALLATION

3.2.1 POWER SOCKETS FOR PERIPHERALS

⚠CAUTION

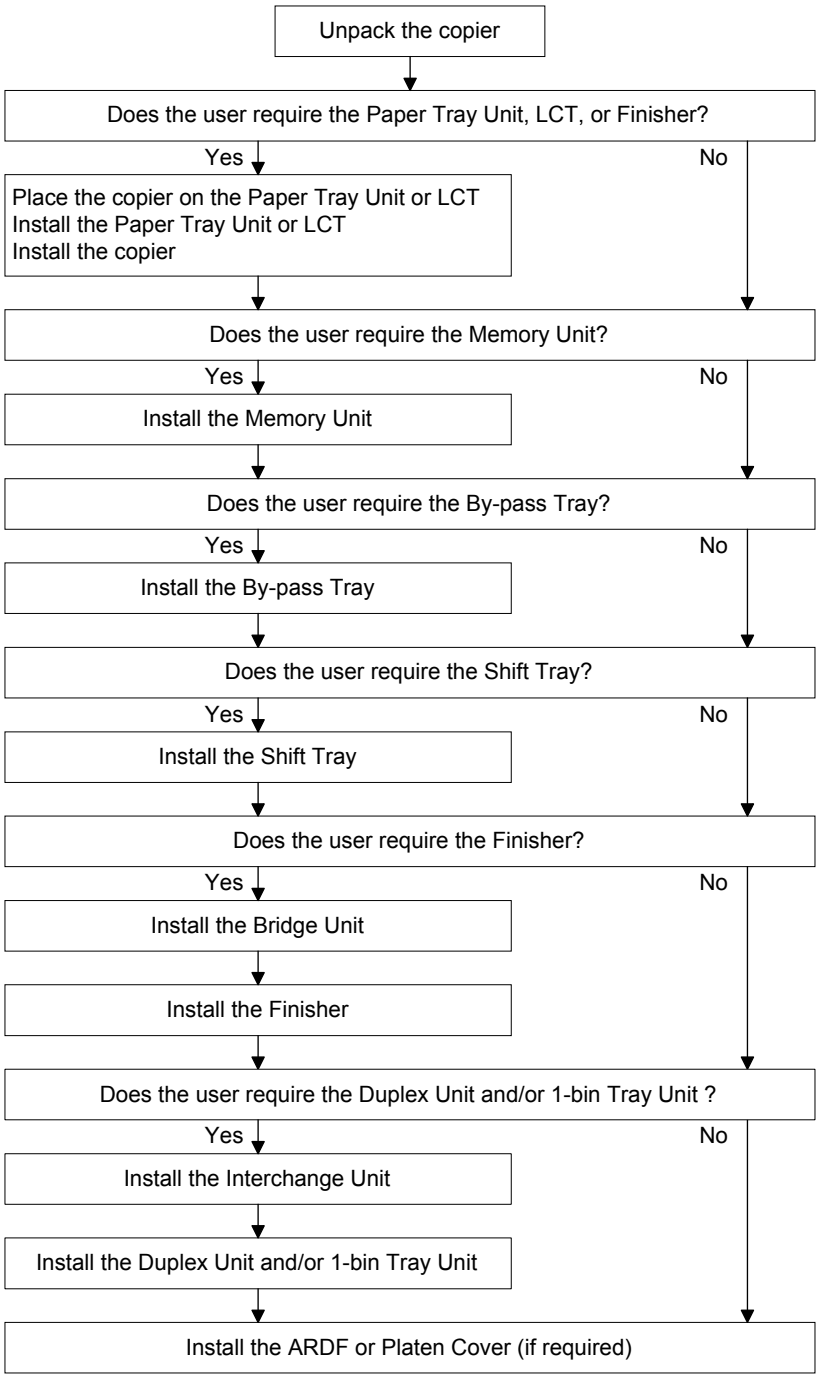
Rating voltage for peripherals.

Make sure to plug the cables into the correct sockets.



3.2.2 INSTALLATION FLOW CHART

The following flow chart shows how to install the optional units more efficiently.



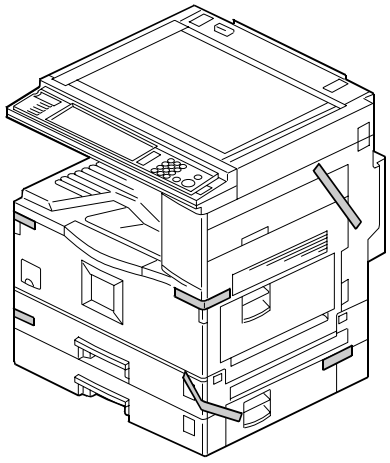
B089I513.WMF

3.2.3 ACCESSORY CHECK

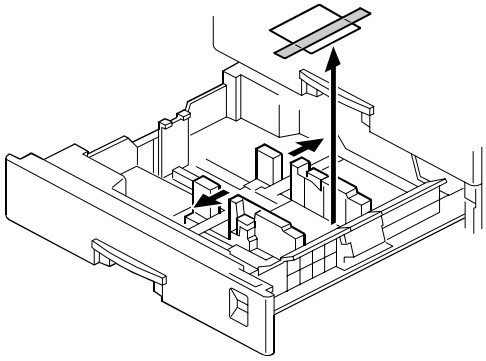
Check the quantity and condition of the accessories in the box against the following list:

Description	Q'ty
1. Paper Tray Decal	1
2. Emblem	1
3. Model Name Decal	1
4. NECR	1
5. End Fence	1
6. HDD Caution Decal (-17, -57 only)	1
7. Operating Instructions – System Setting	1
8. Operating Instructions – Copy Reference	1

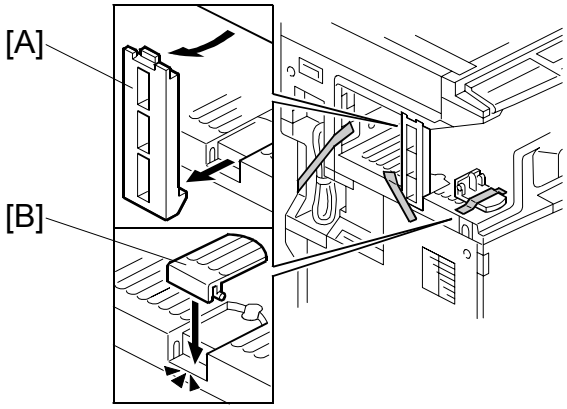
3.2.4 INSTALLATION PROCEDURE



B089I101.WMF



B089I502.WMF



B089I501.WMF

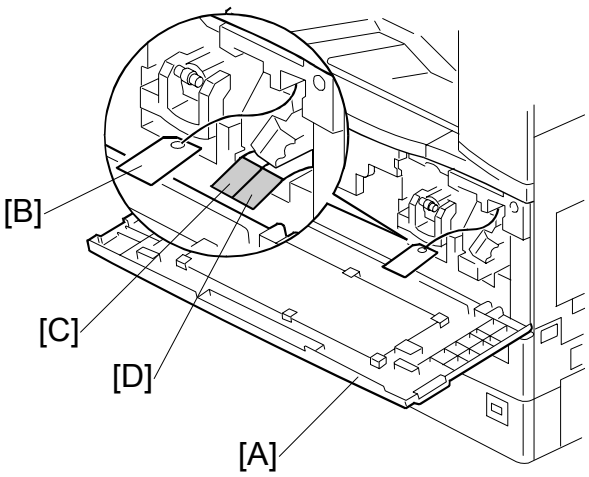
⚠CAUTION

Unplug the machine power cord before starting the following procedure.

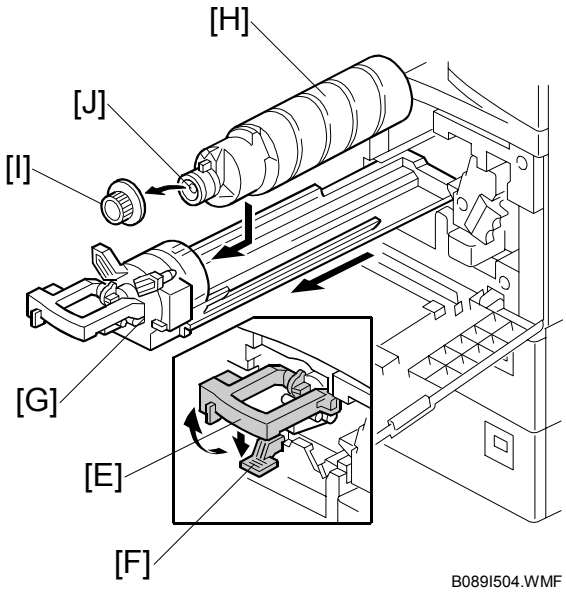
If the optional paper tray or the optional LCT is going to be installed now, put the copier on the paper tray unit or the LCT first, then install these options, then install the copier.

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

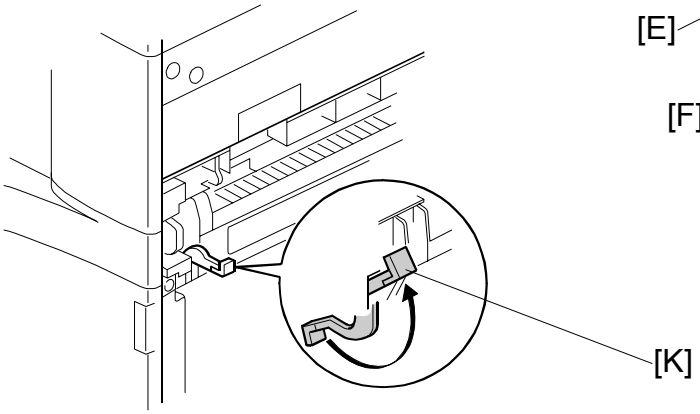
1. Remove the tapes and the shipping retainer [A] on the exterior of the copier.
2. Install the end fence [B].



B089I102.WMF

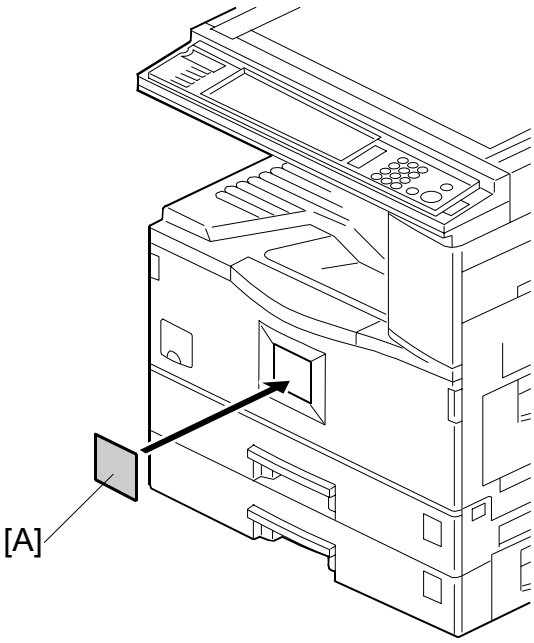


B089I504.WMF

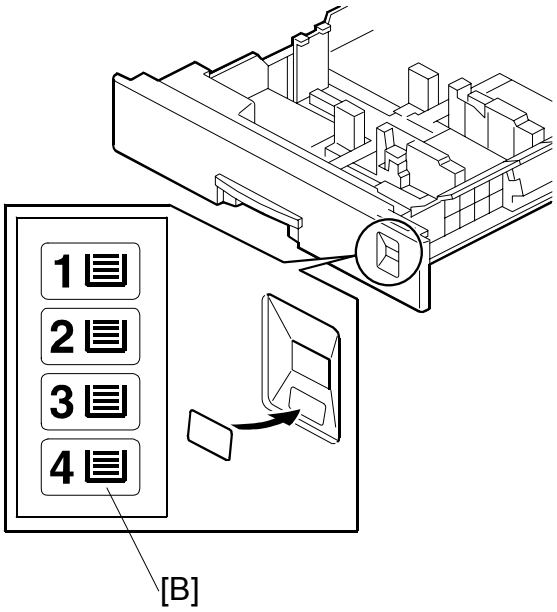


B089I500.WMF

3. Open the front cover [A].
4. Remove the red tag [B] and toner seal [C], then peel the sealing tape [D] off to install the developer.
5. Raise the toner bottle holder lever [E], push lever [F] down, and pull the toner bottle holder [G] out.
6. Shake the toner bottle [H] well.
   NOTE: Do not remove the toner bottle cap [I] until after shaking.
7. Unscrew the bottle cap [I] and insert the bottle into the holder.
   NOTE: Do not touch the inner bottle cap [J].
8. Reposition the holder and press down the holder lever to secure the bottle.
9. Open the right cover.
10. Rotate the green fusing pressure lever [K] to the up position.

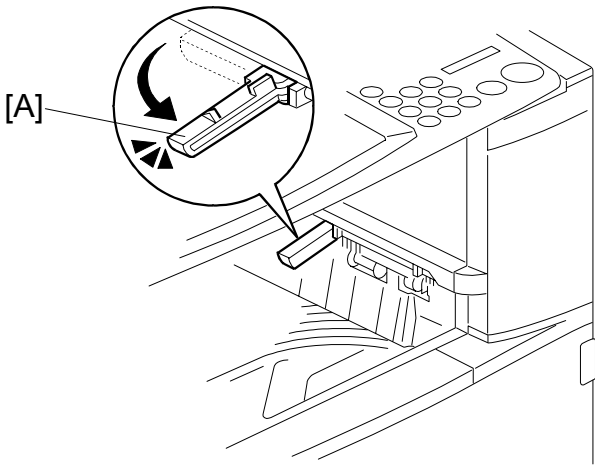


B089I103.WMF

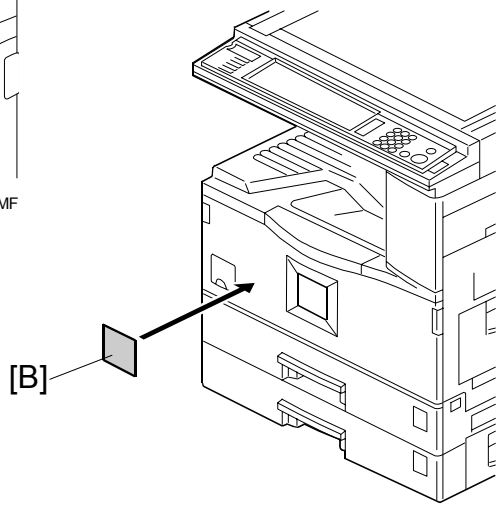


B089I503.WMF

11. Attach the appropriate emblem [A] to the front cover if the emblem is not attached to the front cover.
12. Pull the paper tray out and turn the paper size dial to select the appropriate size. Adjust the side guides and end guide to match the paper size.
    NOTE: To move the side guides, first pull out the tray fully, then push down the green lock at the rear of the tray.
13. Attach the appropriate paper tray number decal [B] to each paper tray.
    NOTE: Paper tray number decals are also used for the optional paper tray or the optional LCT. Keep any remaining decals for use with these optional units.



B089I105.WMF



B089I155.WMF

14. **If the optional bridge unit will not be installed:** Swing the sensor feeler [A] out.
15. Install the optional ARDF or the optional platen cover (see ARDF Installation or Platen Cover Installation).
16. Plug in the machine and turn the main power switch on. The machine automatically performs TD sensor initial setting (approximately 15 seconds).
17. Check the copy quality and copying functions.

HDD Caution Decal (for only –17, -57 models)

18. When installing the optional HDD, attach the HDD caution decal [B] to the front cover.

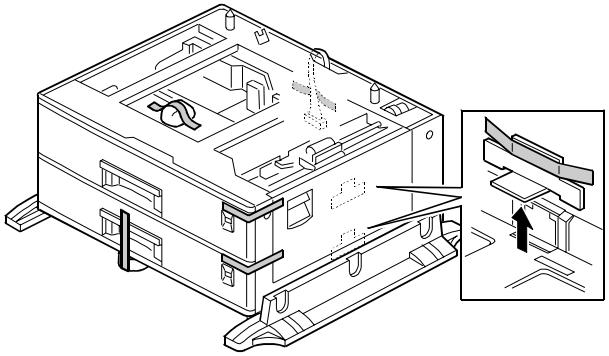
3.3 PAPER TRAY UNIT INSTALLATION

3.3.1 ACCESSORY CHECK

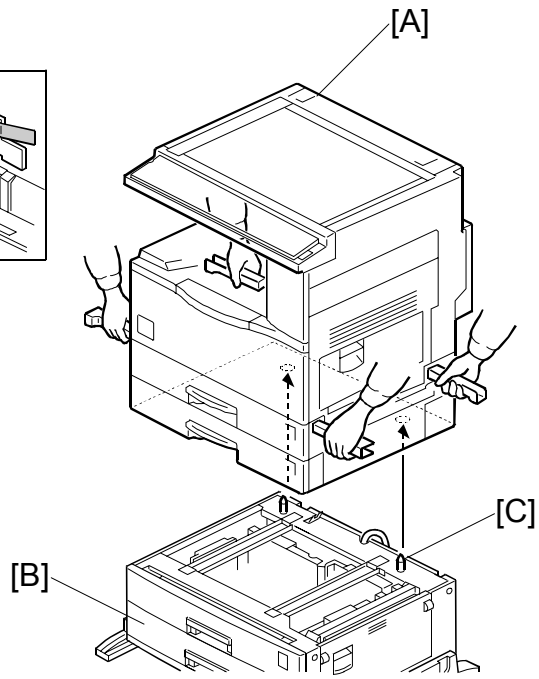
Check the quantity and condition of the accessories against the following list.

Description	Q'ty
1. Securing Bracket	2
2. Screw – M4 x 10	4

3.3.2 INSTALLATION PROCEDURE



B390I603.WMF

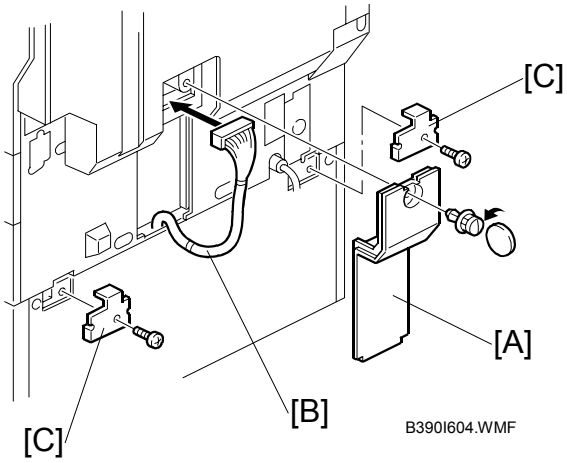


B390I601.WMF

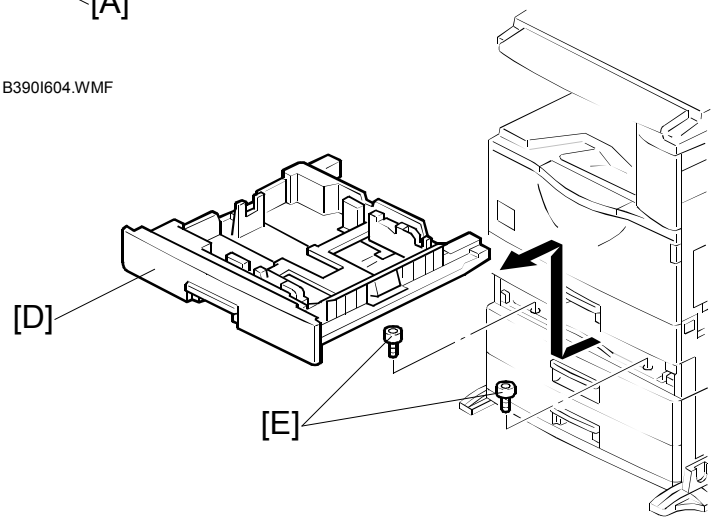
⚠CAUTION

Unplug the machine power cord before starting the following procedure.

1. Remove the strips of tape.
2. Set the copier [A] on the paper tray unit [B].
   NOTE: When installing the copier, be careful not to pinch the cable [C].

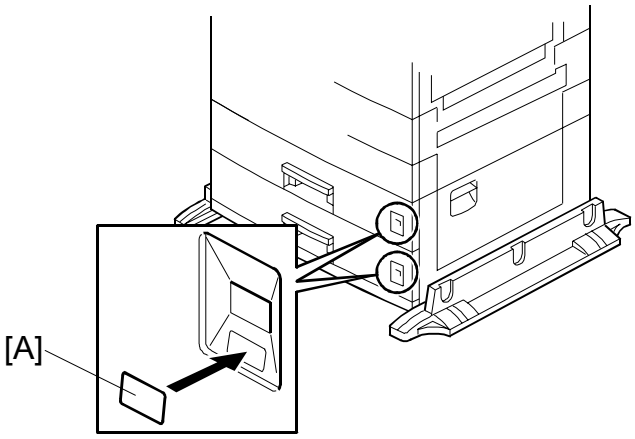


B390I604.WMF

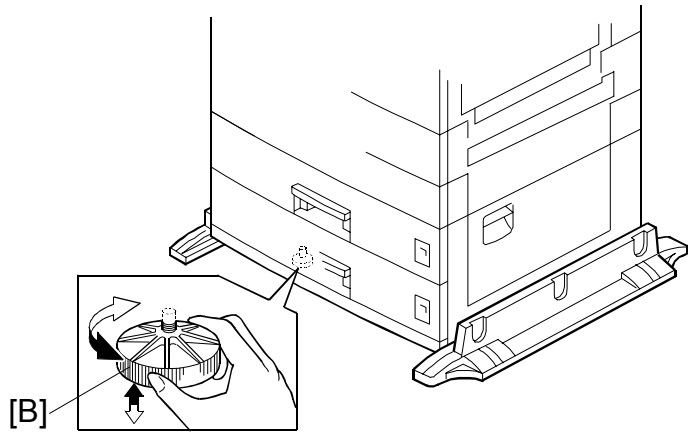


B390I600.WMF

3. Remove the connector cover [A] (🔩 x 1).
4. Connect the cable [B] to the copier, as shown.
5. Attach a securing bracket [C] to each side of the paper tray unit, as shown (🔩 x 1 each).
6. Re-install the connector cover.
7. Remove the 2nd paper tray [D] and secure the paper tray unit [E] (🔩 x 2).



B390I602.WMF



B390I002.WMF

8. Reinstall the 2nd paper tray and attach the appropriate paper tray number decal [A] to the paper tray.
   NOTE: The paper tray number decal is in the accessory box for the main copier.
9. Rotate the adjuster [B] until the machine cannot be pushed across the floor.
10. Loads paper into the paper trays and select the proper paper size.
11. Turn on the main switch.
12. Check the machine's operation and copy quality.

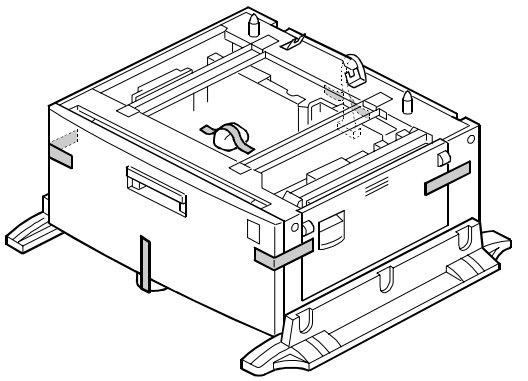
3.4 LCT INSTALLATION

3.4.1 ACCESSORY CHECK

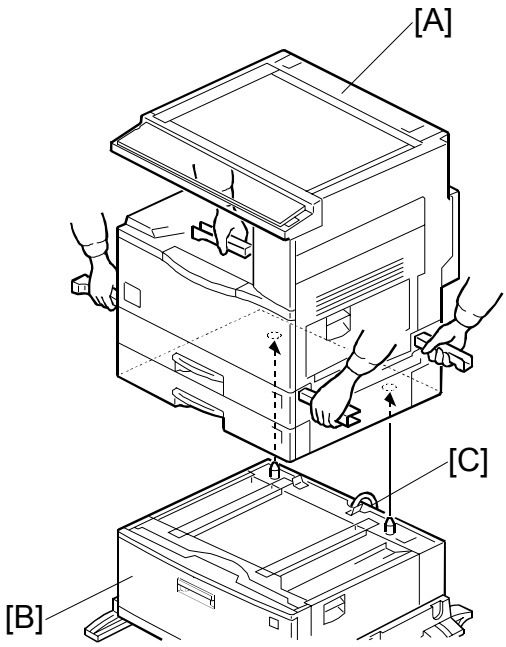
Check the quantity and condition of the accessories against the following list.

Description	Q'ty
1. Securing Bracket	2
2. Screw – M4 x 10	4
3. Paper Size Decal	1

3.4.2 INSTALLATION PROCEDURE



B391I500.WMF

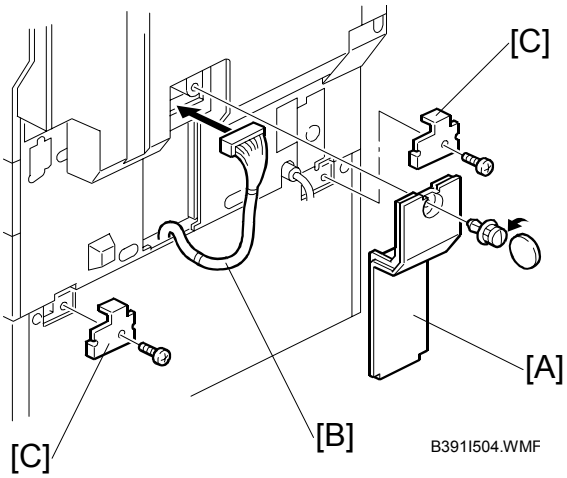


B391I505.WMF

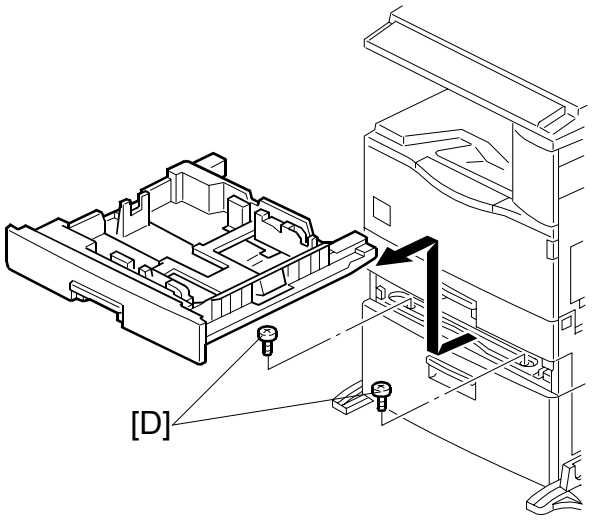
⚠CAUTION

Unplug the machine power cord before starting the following procedure.

1. Remove the strips of tape.
2. Set the copier [A] on the LCT [B].
   NOTE: When installing the copier, be careful not to pinch the cable [C].

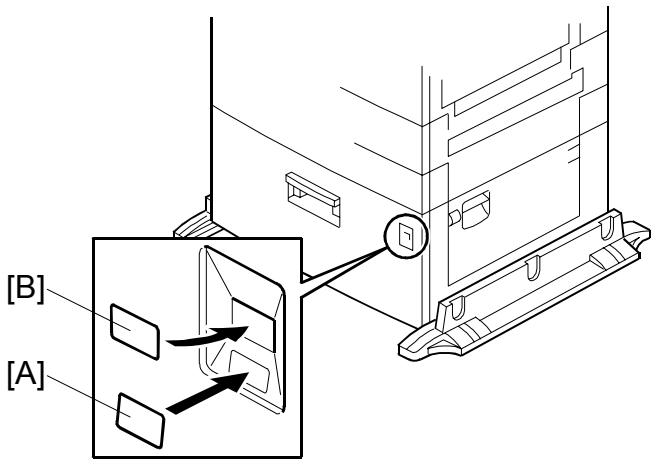


B391I504.WMF

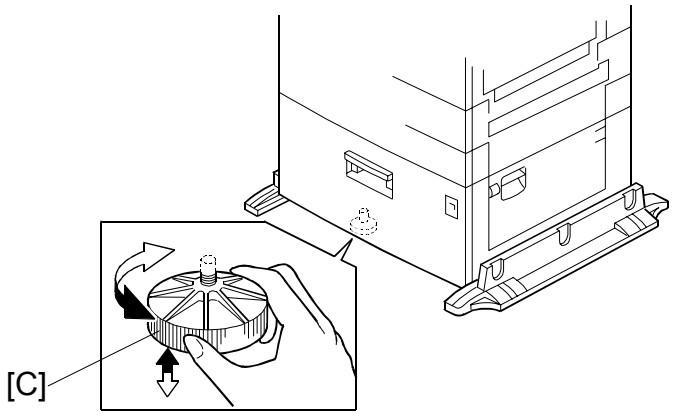


B391I501.WMF

3. Remove the connector cover [A] (x 1).
4. Connect the cable [B] to the copier, as shown.
5. Attach a securing bracket [C] to each side of the LCT, as shown (x 1 each).
6. Re-install the connector cover.
7. Remove the 2nd paper tray and secure the LCT [D] (x 2).



B391I502.WMF



B391I506.WMF

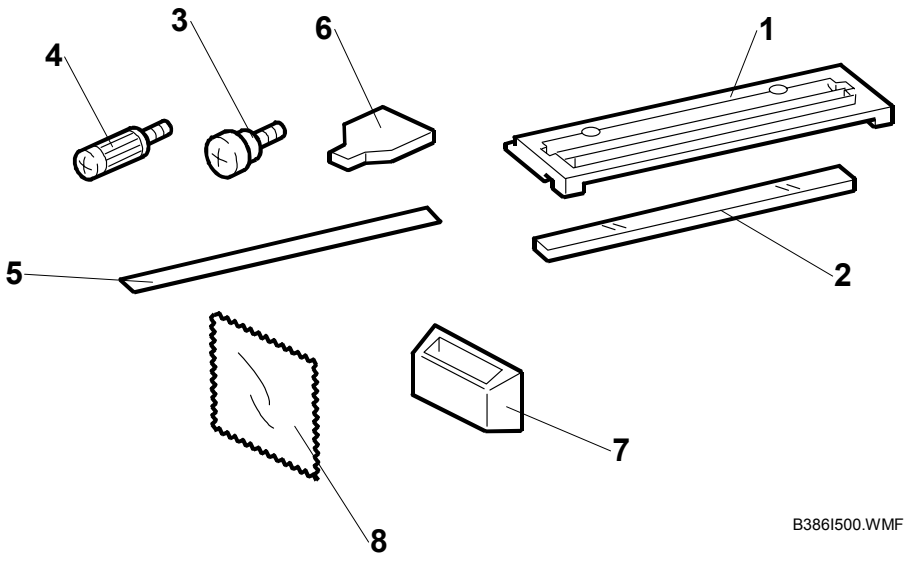
8. Load paper into the LCT.
9. Reinstall the 2nd paper tray and attach the appropriate paper tray number decal [A] and paper size decal [B] to the LCT.
   NOTE: The paper tray number decal is in the accessory box for the main copier.
10. Rotate the adjuster [C] until the machine cannot be pushed across the floor.
11. Loads paper into the paper tray and turn on the main switch.
12. Check the machine's operation and copy quality.

3.5 AUTO REVERSE DOCUMENT FEEDER INSTALLATION

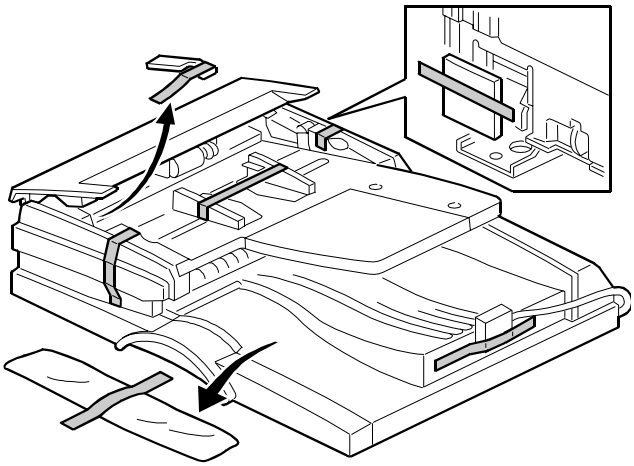
3.5.1 ACCESSORY CHECK

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

Description	Q'ty
1. Scale Guide	1
2. DF Exposure Glass	1
3. Stud Screw	2
4. Knob Screw	2
5. Original Size Decal	2
6. Screwdriver Tool	1
7. Cloth Holder	1
8. Cloth	1
9. Attention Decal – Top Cover	1
10. Attention Decal – Scanner	1



3.5.2 INSTALLATION PROCEDURE

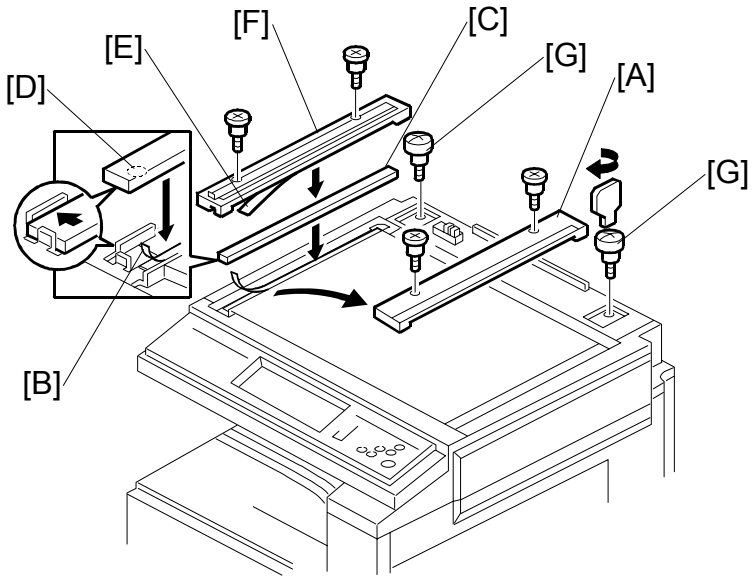


B386I101.WMF

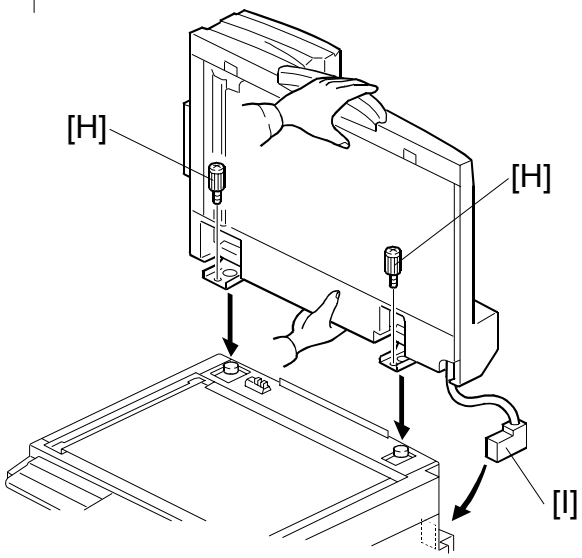
⚠CAUTION

Unplug the copier power cord before starting the following procedure.

1. Remove the strips of tape.

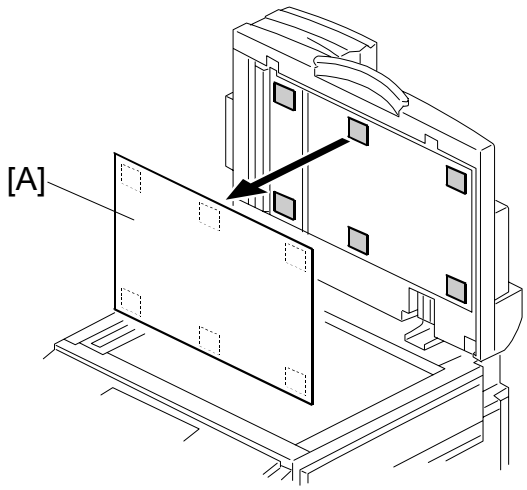


B386I107.WMF

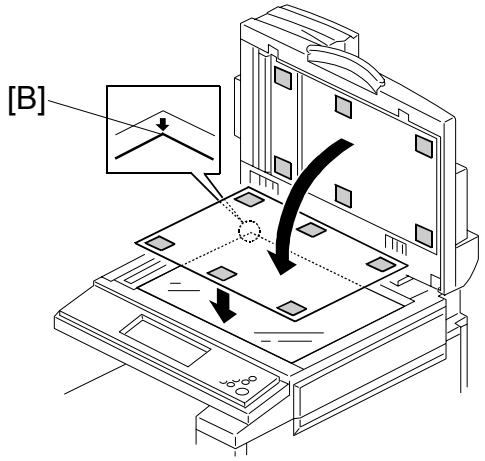


B386I104.WMF

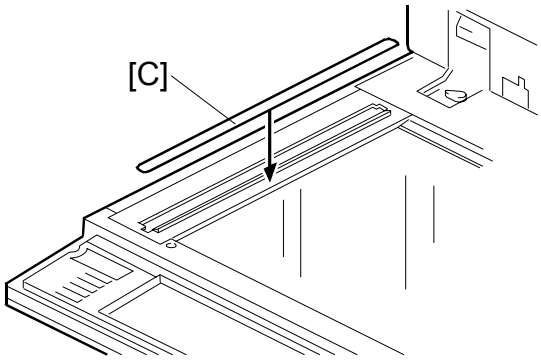
2. Remove the left scale [A] (☞ x 2).
3. Peel off the backing [B] of the double-sided tape attached to the glass holder.
4. Place the DF exposure glass [C] on the glass holder.
   NOTE: When installing the DF exposure glass, make sure that the white point [D] is on the lower front side of the glass, as shown.
5. Peel off the backing [E] of the double-sided tape attached to the rear side of the scale guide [F], then install it (☞ x 2 removed in step 2).
6. Install the two stud screws [G].
7. Mount the DF on the copier, then slide the DF to the front as shown.
8. Secure the DF unit with two screws [H].
9. Connect the cable [I] to the copier.



B386I110.WMF

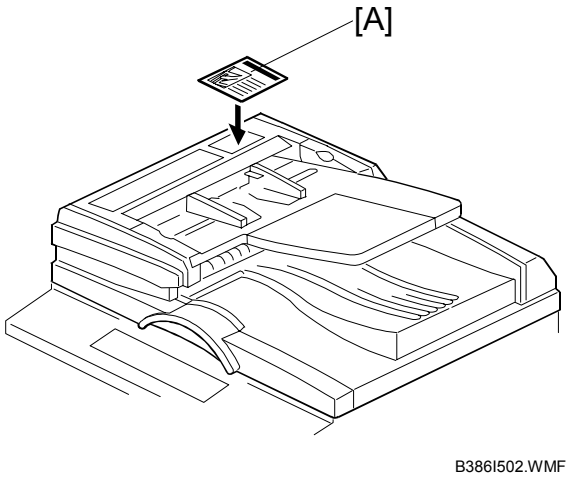


B386I111.WMF

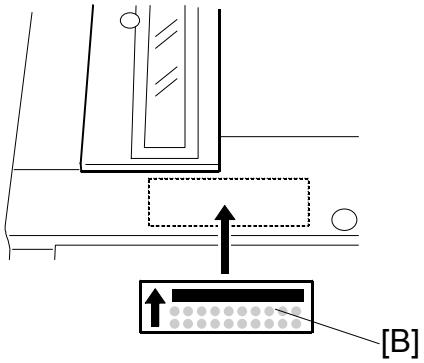


B386I501.WMF

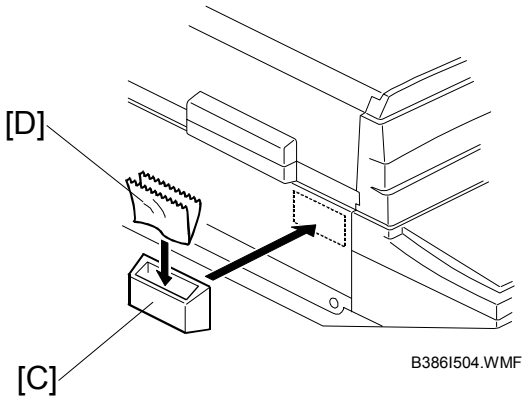
10. Peel off the platen sheet [A] and place it on the exposure glass.
11. Line up the rear left corner of the platen sheet flush against corner [B] on the exposure glass.
12. Close the ARDF.
13. Attach the appropriate scale decal [C] as shown.



B386I502.WMF



B386I503.WMF



B386I504.WMF

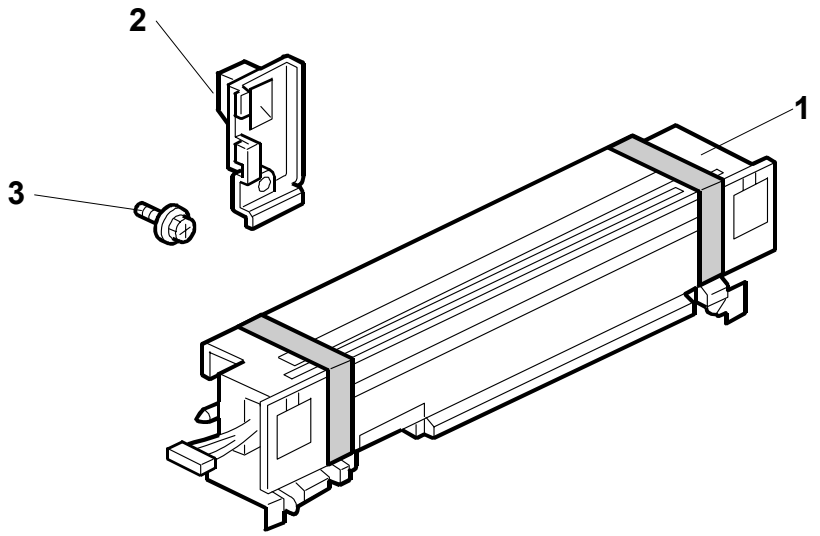
14. Attach the decal [A] to the top cover as shown, choosing the language most suitable for the machine installed.
15. Line up arrow on the decal [B] with the center of the ADF exposure glass as shown, and attach it to the cover. As with step 14, choose the language most suitable for the machine installed.
16. Attach the cloth holder [C] to the left side of the scanner as shown.
17. Insert the cloth [D] in the cloth holder.
18. Turn the main power switch on. Then check if the document feeder works properly.
19. Make a full size copy. Then check to make sure the registrations (side-to-side and leading edge) and image skew are correct. If they are not, adjust the registrations and image skew (refer to the service manual).

3.6 INTERCHANGE UNIT INSTALLATION

3.6.1 COMPONENT CHECK

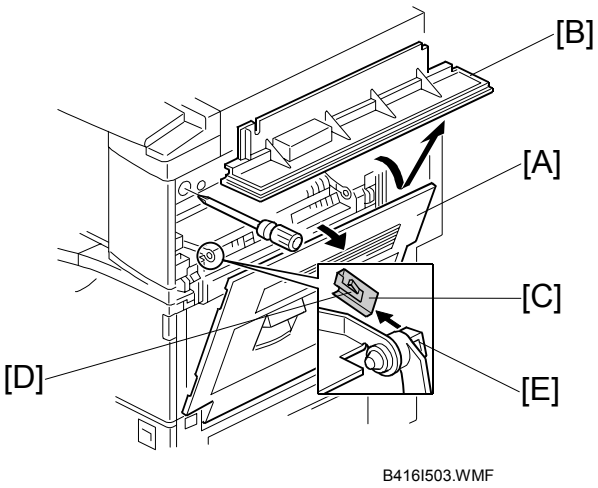
Check the quantity and condition of the components against the following list.

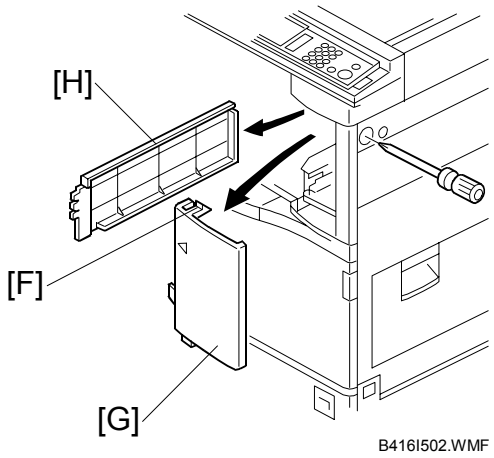
Description	Q'ty
1. Interchange Unit	1
2. Connector Cover	1
3. Tapping Screw M3 x 8	1



B416I101.WMF

3.6.2 INSTALLATION PROCEDURE



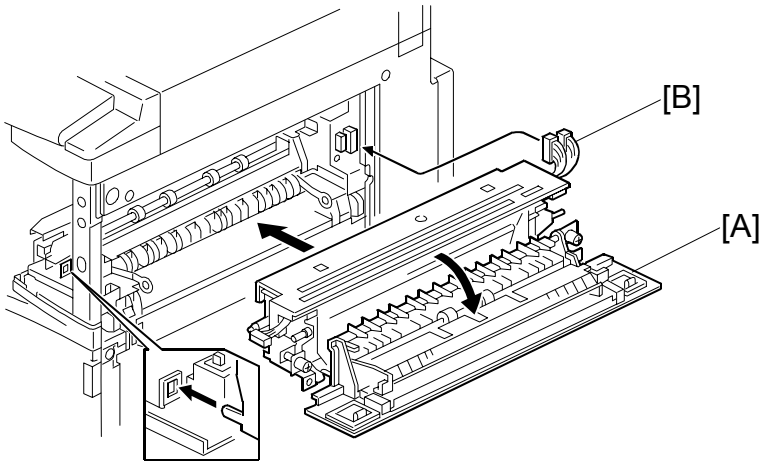


⚠CAUTION
Unplug the copier power cord before starting the following procedure.

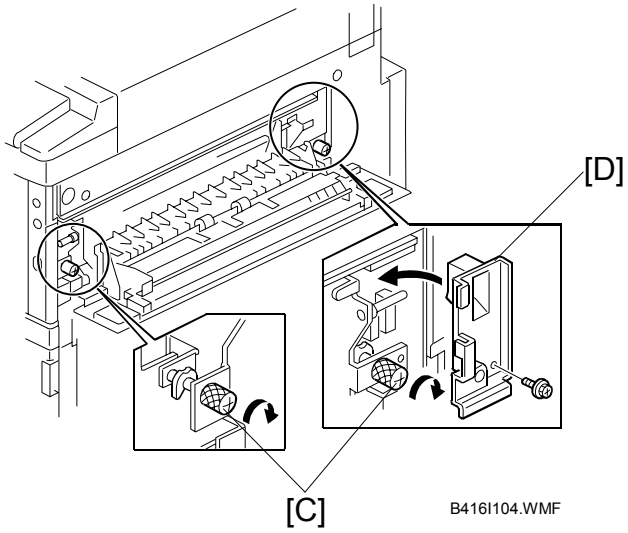
1. Remove all tapes.
2. Open the right cover [A] of the copier.
3. Open cover [B]
4. Remove the metal clip [C].
   NOTE: To remove the clip, push the small tab [D] on the clip into the slot [E], then the clip can be removed.
5. Remove the cover [B].

If the optional 1-bin tray unit (B413) will be installed, do steps 6 and 7.

6. Loosen the screw, push down tab [F] with a screwdriver, and remove the front right cover [G].
7. Slide out the exit cover [H].



B416I103.WMF



B416I104.WMF

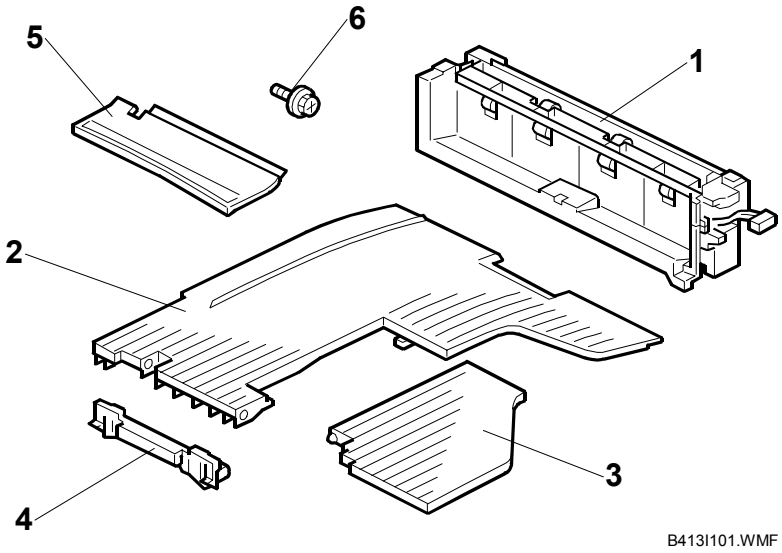
8. Open the cover [A] of the interchange unit.
9. Install the interchange unit (2 connectors) [B].
10. Secure the interchange unit with the knob screws [C].
11. Attach the connector cover [D] (🖉 x 1).

3.7 1-BIN TRAY UNIT INSTALLATION

3.7.1 COMPONENT CHECK

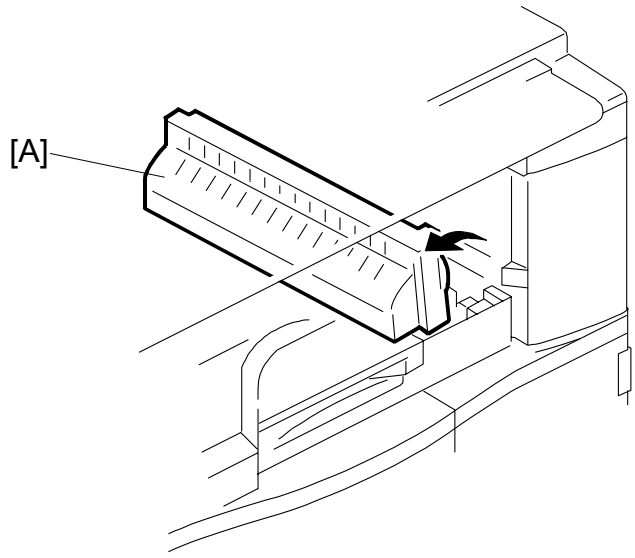
Check the quantity and condition of the components against the following list.

Description	Q'ty
1. 1-Bin Tray Unit	1
2. Tray	1
3. Sub-Tray	1
4. Tray Guide	1
5. Paper Guide	1
6. Tapping Screw M3 x 8	1



B413I101.WMF

3.7.2 INSTALLATION PROCEDURE

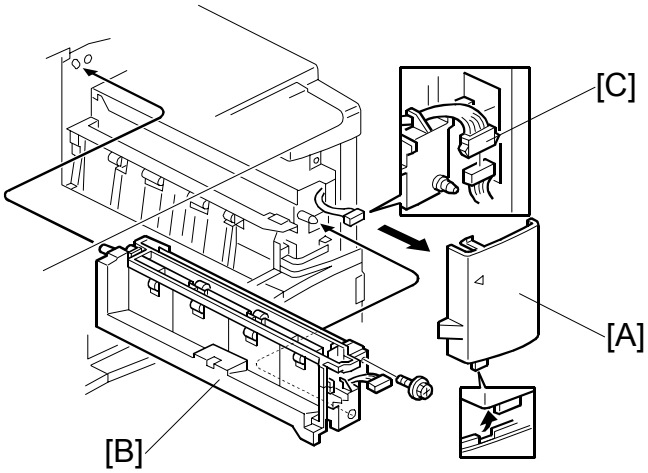


B413I501.WMF

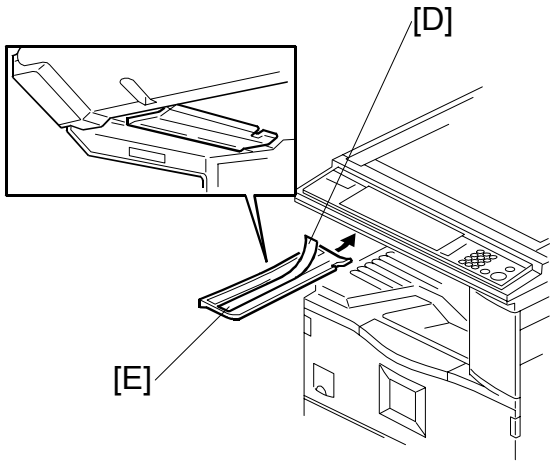
⚠CAUTION
Unplug the copier power cord before starting the following procedure.

NOTE: Before installing this 1-bin tray unit, the optional interchange unit (B416) must be installed.

1. Remove all tapes.
2. If the optional bridge unit has been installed, open the right jam removal cover [A] of the bridge unit.
   If the optional bridge unit is not installed, skip this step.

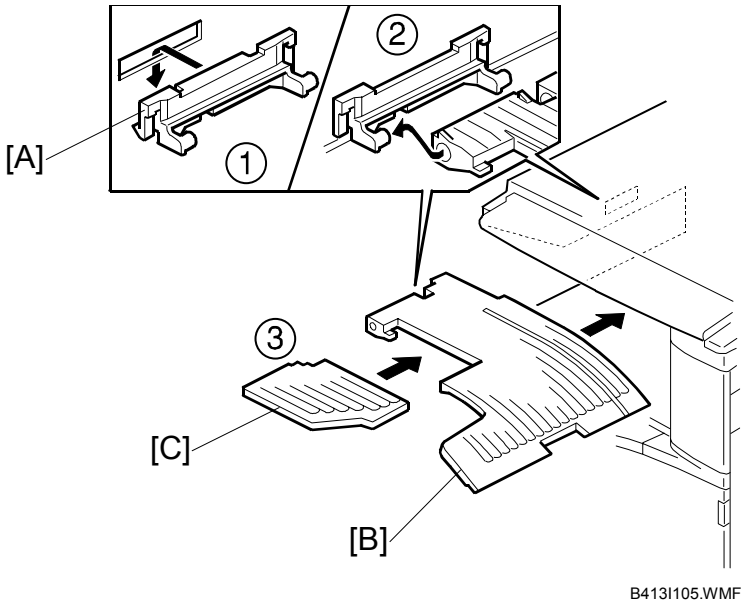


B413I500.WMF



B413I103.WMF

3. If the front right cover [A] is installed, remove it.
4. Install the 1-bin tray unit [B] (🔩 x 1).
5. Connect the connector [C].
6. Reinstall the front right cover.
7. Peel off the backing [D] of the double-sided tape attached to the paper guide [E]. Then attach the paper guide to the underside of the scanner unit as shown.



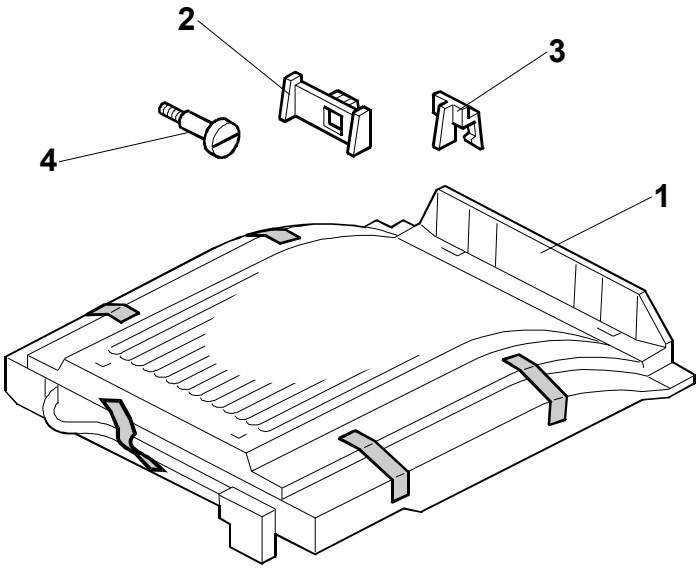
8. Install the tray guide [A].
9. Install the tray [B].
10. Install the sub-tray [C].
11. Turn on the main power switch and check the 1-bin tray unit operation.

3.8 SHIFT TRAY

3.8.1 COMPONENT CHECK

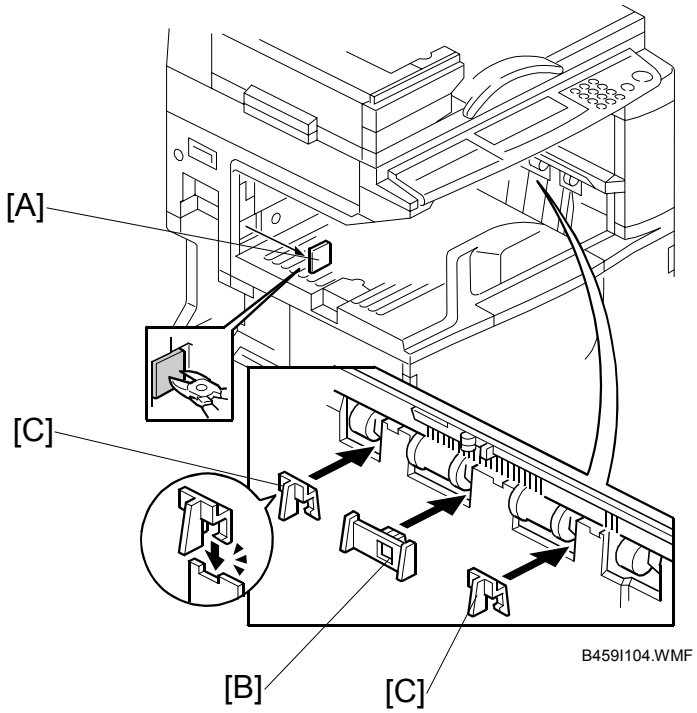
Check the quantity and condition of the components against the following list.

Description	Q'ty
1. Shift Tray Unit	1
2. Paper Guide - Large	1
3. Paper Guide - Small	2
4. Stepped Screw	1



B459I101.WMF

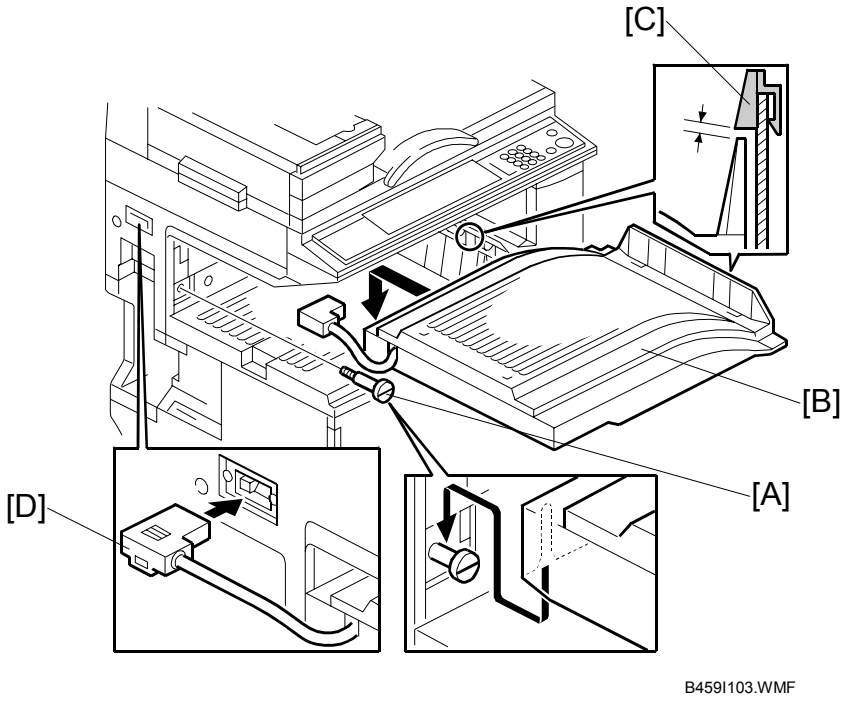
3.8.2 INSTALLATION PROCEDURE



⚠CAUTION

Unplug the copier power cord before starting the following procedure.

1. Remove all tapes.
2. Remove the plate [A].
3. Install the large paper guide [B] and two small paper guides [C], as shown.



B459I103.WMF

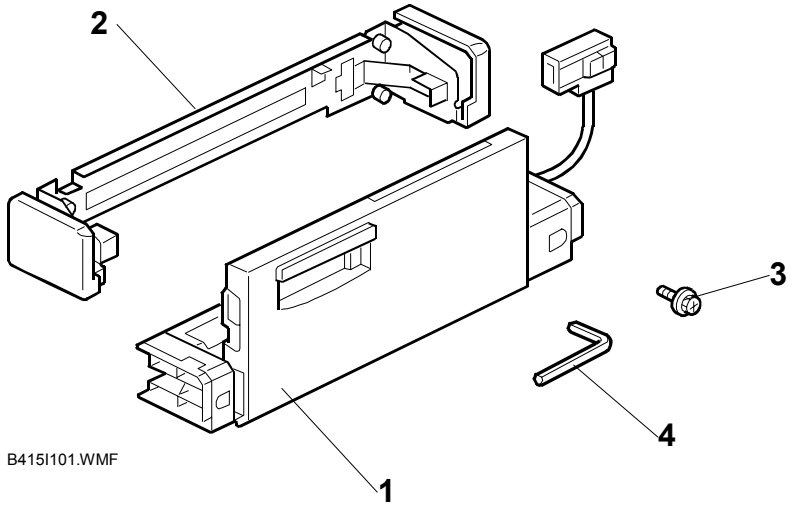
4. Install the stepped screw [A].
5. Install the shift tray unit [B], as shown.
   NOTE: 1) Set the shift tray on the stepped screw.
   2) The shift tray must be installed under the paper guide [C] installed in step 3.
6. Connect the cable [D] to the copier.
7. Turn on the main power switch.
8. Check the shift tray operation.

3.9 BY-PASS FEED UNIT INSTALLATION

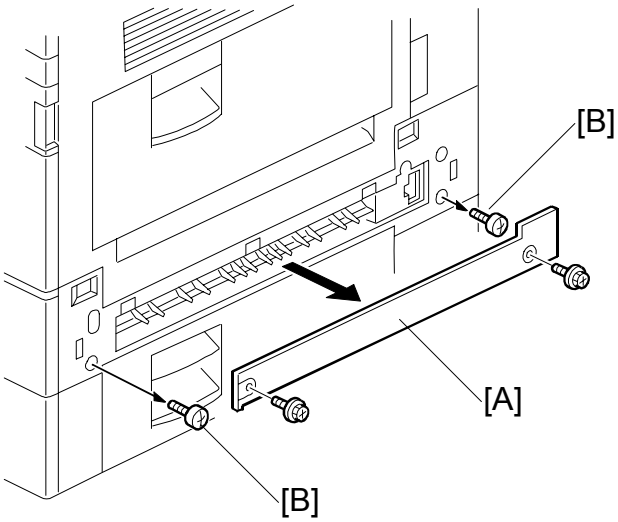
3.9.1 COMPONENTS CHECK

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

Description	Q'ty
1. By-pass Tray Unit	1
2. Unit Holder	1
3. Tapping Screw	2
4. Allen Key	1



3.9.2 INSTALLATION PROCEDURE

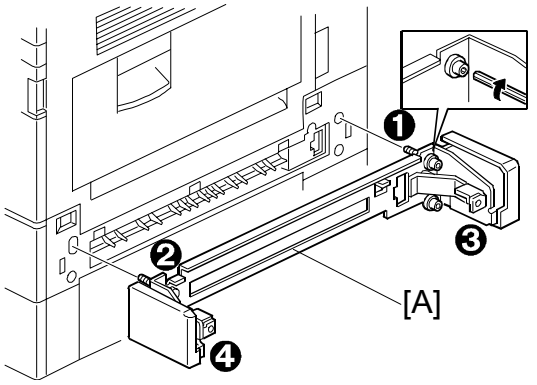


B415I500.WMF

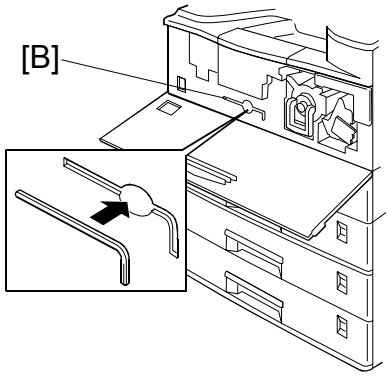
⚠CAUTION

Unplug the copier power cord before starting the following procedure.

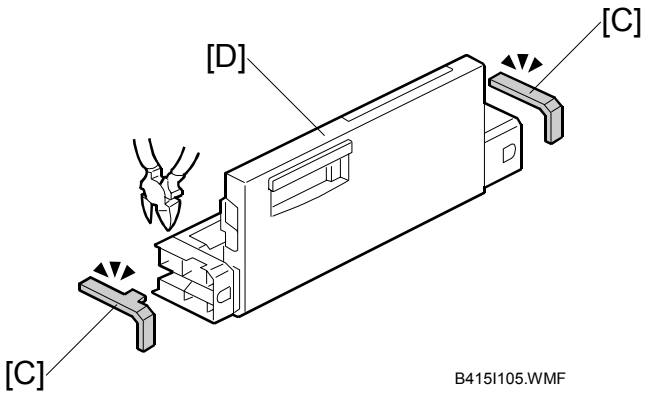
1. Remove all tapes.
2. Remove the entrance cover [A] (☞ x 2) and two screws [B].



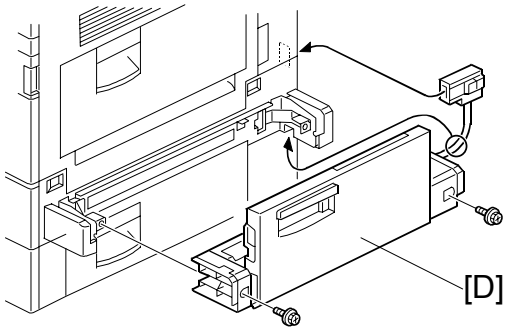
B415I501.WMF



B415I502.WMF



B415I105.WMF



B415I104.WMF

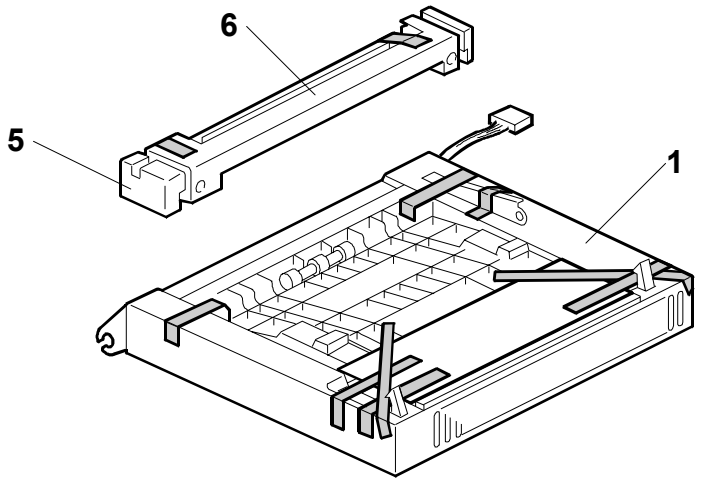
3. Install the unit holder [A] using the Allen key (x 4).
   NOTE: 1) Make sure that the four screws are tightened in the proper order, as shown above. Otherwise, when the optional duplex unit (B414) is installed, it will not properly lock in place.
   2) After securing the unit, store the Allen key in the inner cover [B] for future use.
4. **If the optional duplex unit (B414) will be installed:** Remove the indicated parts [C] of the by-pass tray unit [D].
5. Install the by-pass tray unit (x 2, x 1).
6. Turn the main power switch on and check the by-pass tray function.
7. Make a copy from the by-pass tray. Then check the registration.

3.10 DUPLEX UNIT INSTALLATION

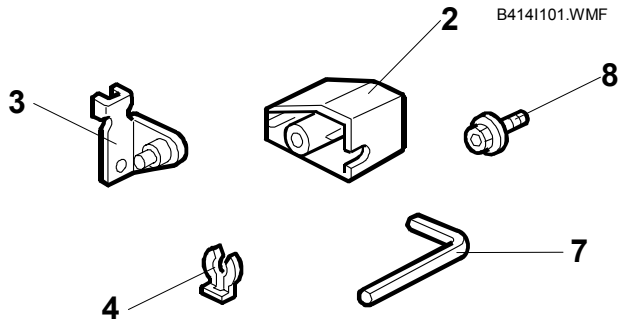
3.10.1 ACCESSORY CHECK

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

Description	Q'ty
1. Duplex Unit	1
2. Connector Cover	1
3. Bracket	1
4. Clip	1
5. Unit Holder	1
6. Unit Holder Cover	1
7. Allen Key	1
8. Tapping Screw - M3 x 8	4

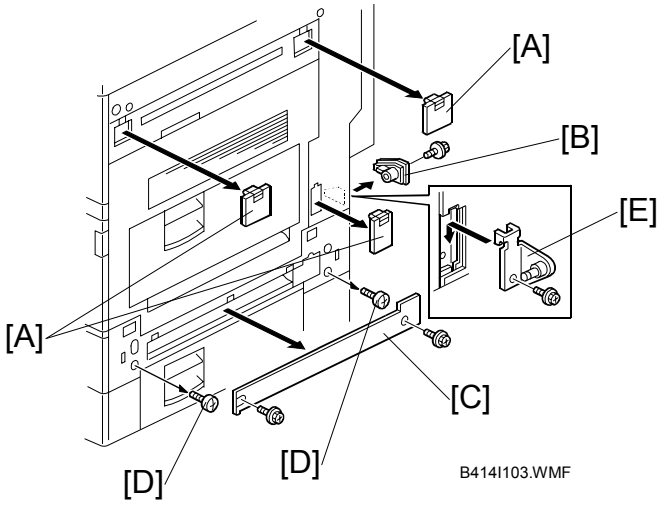


B414I101.WMF

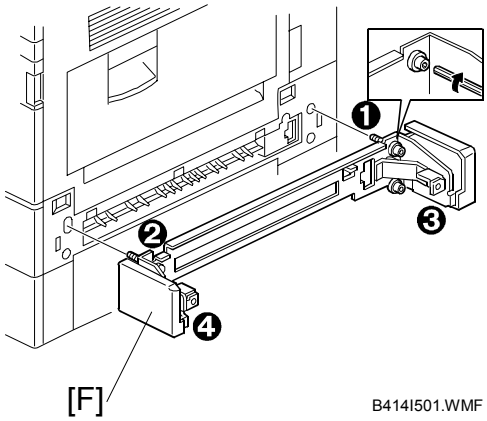


B414I102.WMF

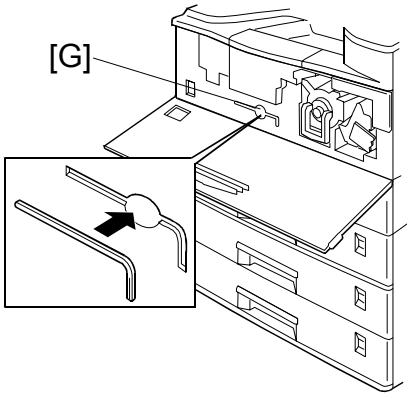
3.10.2 INSTALLATION PROCEDURE



B414I103.WMF



B414I501.WMF



B414I500.WMF

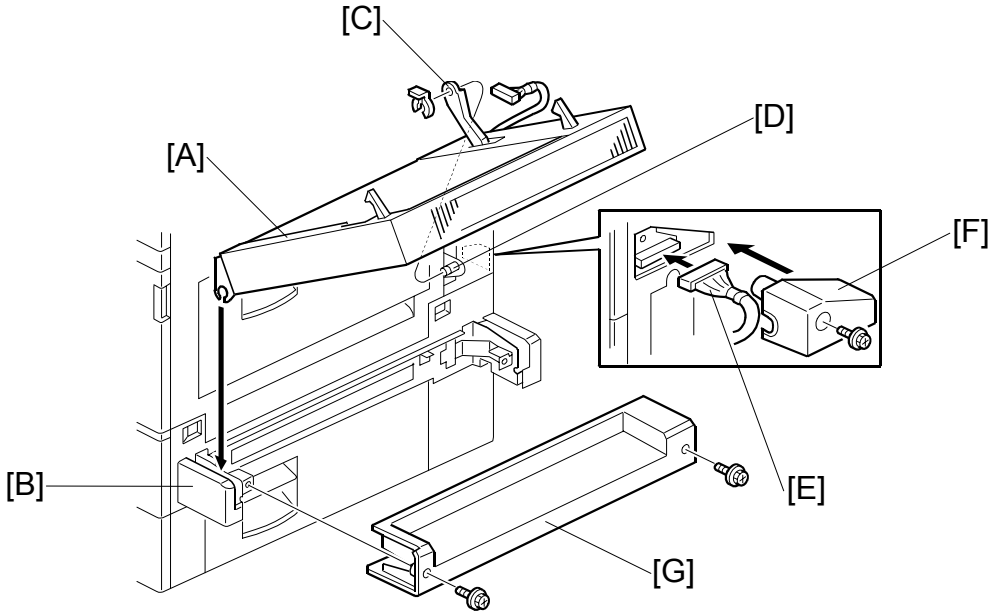
⚠CAUTION

Unplug the copier power cord before starting the following procedure.

NOTE: Before installing the duplex unit, the optional interchange unit (B416) must be installed.

1. Remove all tapes.
2. Remove three covers [A].
3. Remove the connector cover [B] (🔩 x 1), the entrance cover [C] (2 screws if the by-pass tray has not been installed), and two screws [D].
4. Install the bracket [E] (🔩 x 1).
5. **If the by-pass tray has already been installed, skip this step:** Install the unit holder [F] using the Allen key (🔩 x 4).

NOTE: 1) Make sure that the four screws are tightened in the proper order, as shown above. Otherwise, the duplex unit will not properly lock in place.
2) After securing the unit, store the Allen key in the inner cover [G] for future use.



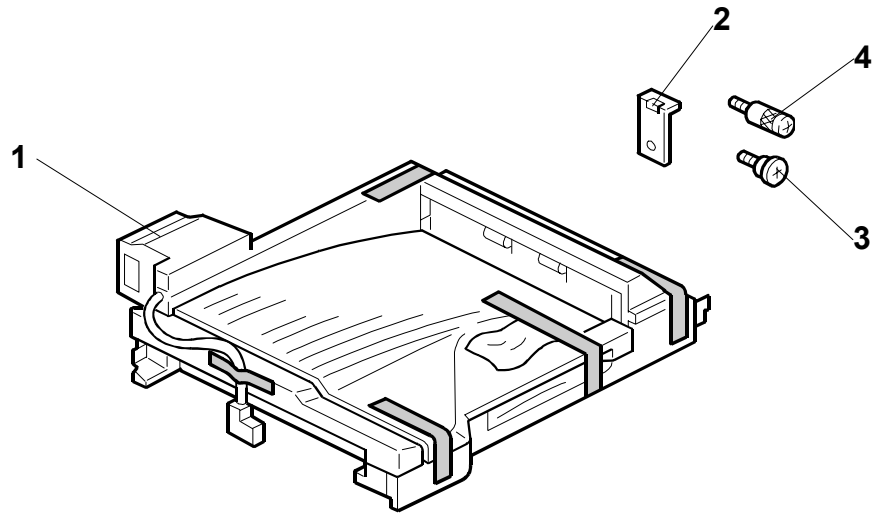
6. Set the duplex unit [A] on the unit holder [B] or on the by-pass tray unit if it has already been installed.
7. Attach the link [C] to the shaft [D] and secure it with the clip.
8. Connect the cable [E] and install the connector cover [F] (☞ x 1).
9. **If the by-pass tray has already been installed, skip this step:** Install the unit holder cover [G] (☞ x 2).
10. Turn on the main power switch and check the duplex unit function.

3.11 BRIDGE UNIT INSTALLATION

3.11.1 ACCESSORY CHECK

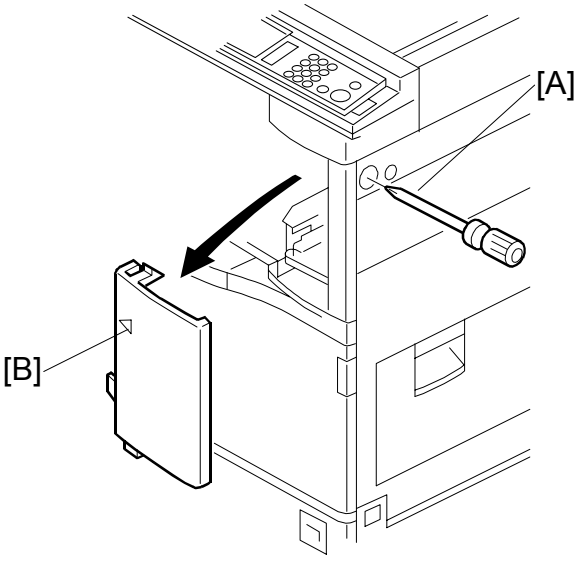
Check the quantity and condition of the accessories against the following list.

Description	Q'ty
1. Bridge Unit	1
2. Securing Plate	1
3. Shoulder Screw	1
4. Knob Screw	1

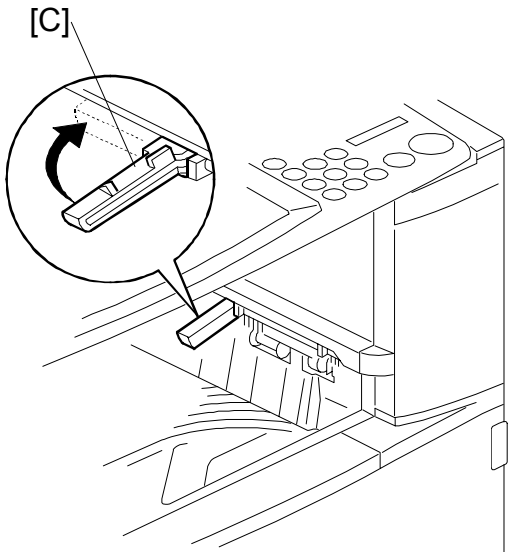


B417I101.WMF

3.11.2 INSTALLATION PROCEDURE



B417I501.WMF

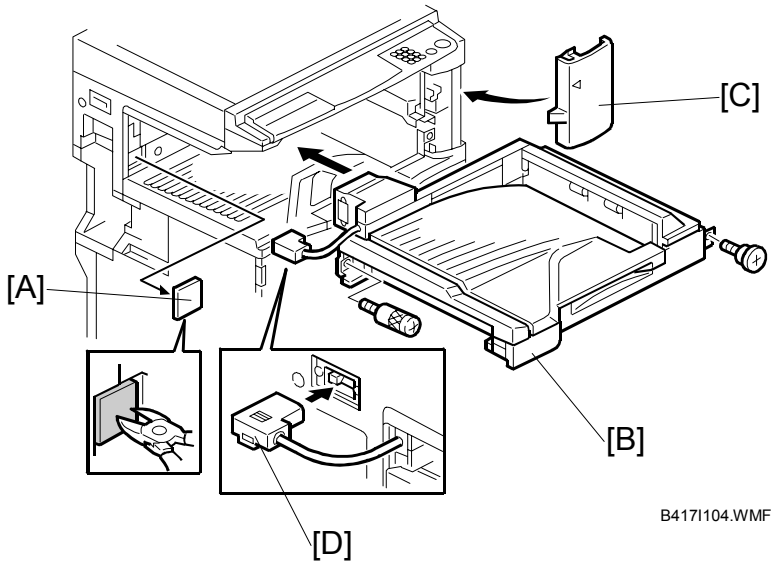


B417I500.WMF

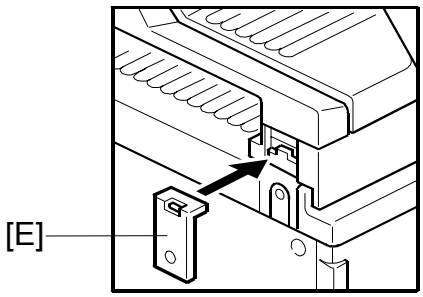
⚠CAUTION

Unplug the copier power cord before starting the following procedure.

1. Remove all tapes.
2. Loosen the screw [A] and remove the front right cover [B].
3. If the sensor feeler [C] is out, fold it away into the machine.



B417I104.WMF



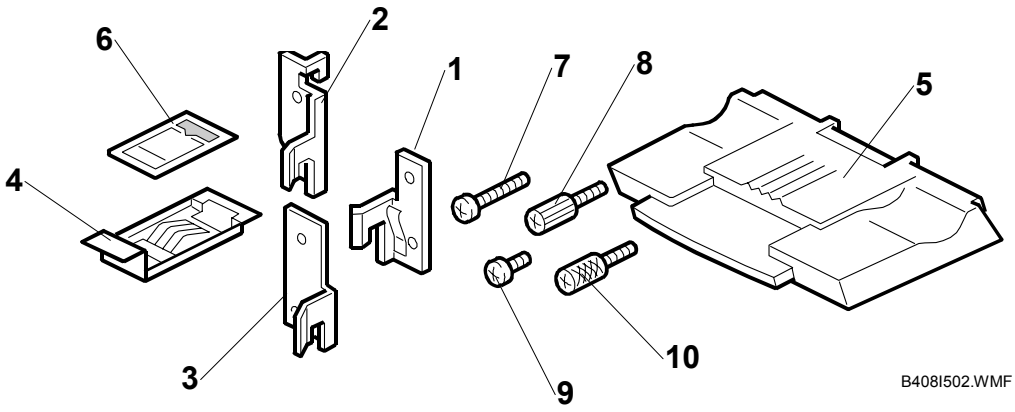
B417I103.WMF

4. Remove the cover [A].
5. Install the bridge unit [B] (☞ x 1 shoulder, ☞ x 1 knob).
6. Reinstall the front right cover [C].
7. Connect the cable [D] to the main machine.
8. Attach the securing plate [E], as shown.
   NOTE: Do not attach it with a screw; this is done when securing the front stand for the optional finisher.
9. Install the optional finisher (refer to the finisher installation procedure).

3.12 1000-SHEET FINISHER INSTALLATION

3.12.1 ACCESSORY CHECK

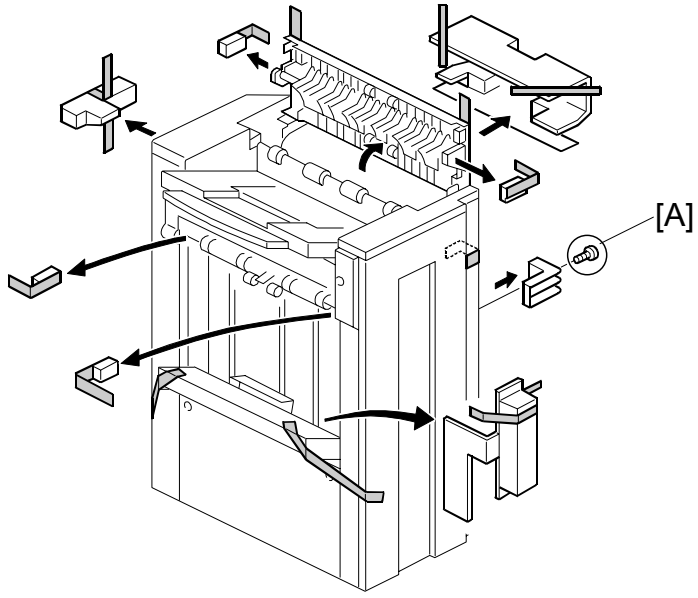
Check the quantity and condition of the accessories against the following list.



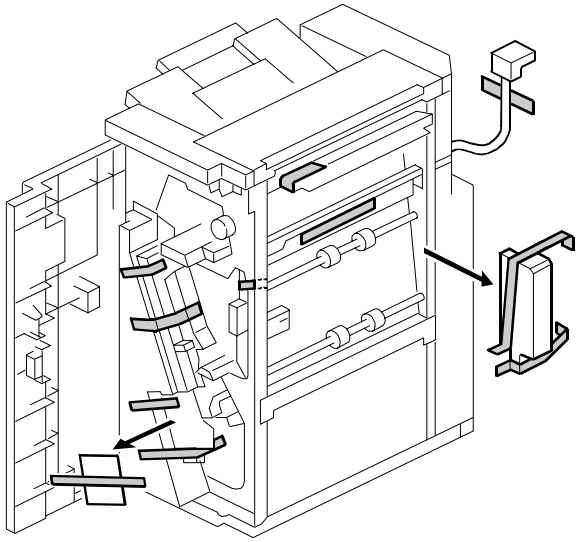
No.	Description	Q'ty	For B022/B027/B031/ B089/B093/B097	For B051/B052	For B079/B082/ B135/B138
1	Front Joint Bracket	1	✓	---	✓
2	Rear Joint Bracket	1	✓	---	---
3	Rear Joint Bracket	1	---	---	✓
4	Grounding Plate	1	✓	---	✓
5	Copy Tray	1	✓	✓	✓
6	Staple Position Decal	1	✓	✓	✓
7	Screw - M4 x 14	4	✓ (Use 3)	---	✓ (Use 4)
8	Knob Screw - M4 x 10	1	✓	✓	✓
9	Screw - M3 x 8	1	✓	---	✓
10	Knob Screw - M3 x 8	1	✓	✓	✓

✓ = Necessary, --- = Not necessary

3.12.2 INSTALLATION PROCEDURE



B408I102.WMF



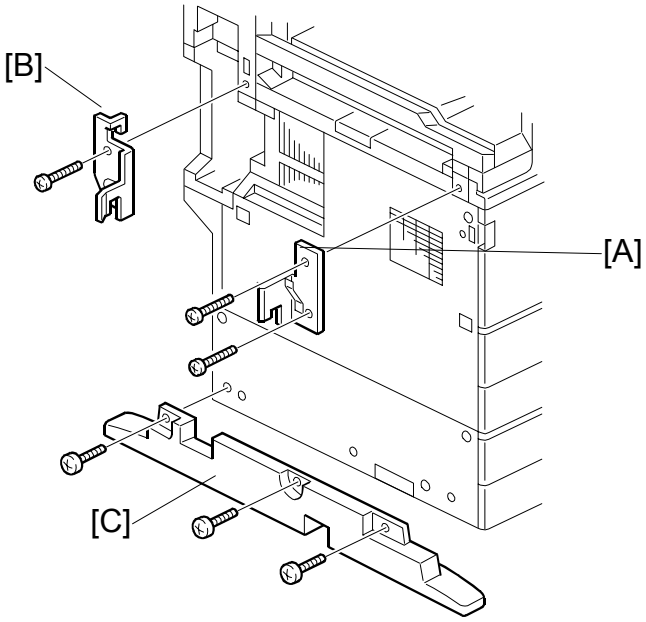
B408I103.WMF

⚠CAUTION

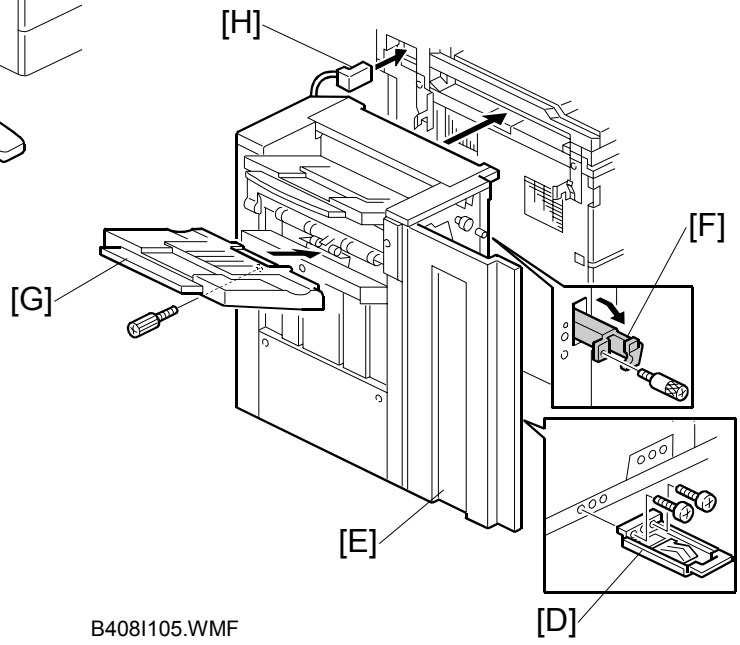
Unplug the main machine power cord before starting the following procedure.

NOTE: The following options must be installed before installing this finisher:
Bridge Unit (B417)
Paper Tray Unit (B390) or LCT (B391)

1. Unpack the finisher and remove the tapes.
   NOTE: Be sure to keep screw [A]. It will be needed to secure the grounding plate in step 4.

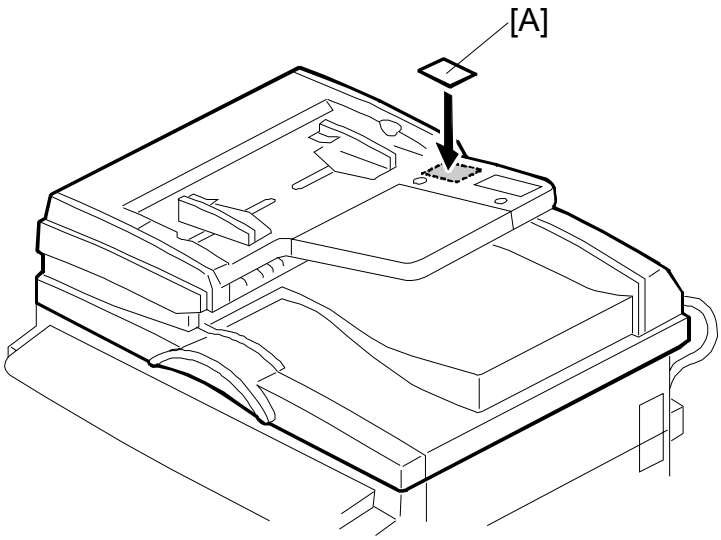


B408I104.WMF



B408I105.WMF

2. Install the front joint bracket [A] (☞ x 2 M4 x 17) and rear joint bracket [B] (☞ x 1 M4 x 17).
3. Remove the left stand [C] (☞ x 3)
4. Install the lower grounding plate [D] on the finisher (☞ x 2 M3 x 8).
   NOTE: Use the screw removed in step 1 and the screw from the accessory box.
5. Open the front door [E]. Then pull the locking lever [F].
6. Align the finisher on the joint brackets, and lock it in place by pushing the locking lever.
7. Secure the locking lever (☞ x 1 knob M3 x 8) and close the front door.
8. Install the copy tray [G] (☞ x 1 knob M4 x 10).
9. Connect the finisher cable [H] to the main machine.



B408I501.WMF

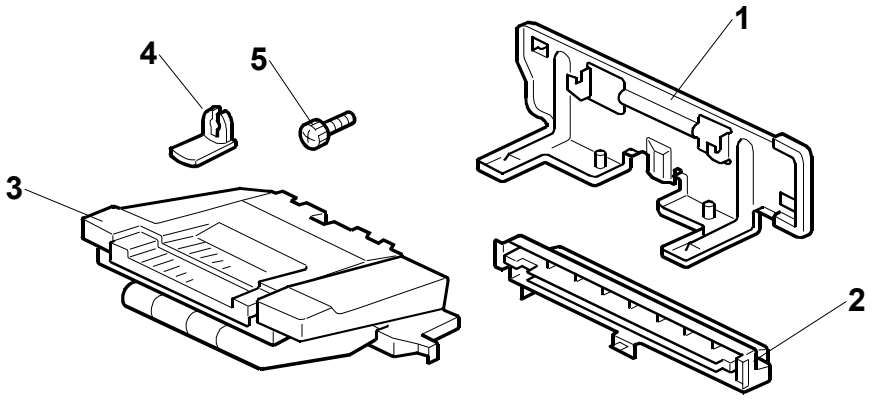
10. Attach the staple position decal [A] to the ARDF as shown.
11. Turn on the ac switch and check the finisher operation.

3.13 500-SHEET FINISHER INSTALLATION

3.13.1 ACCESSORY CHECK

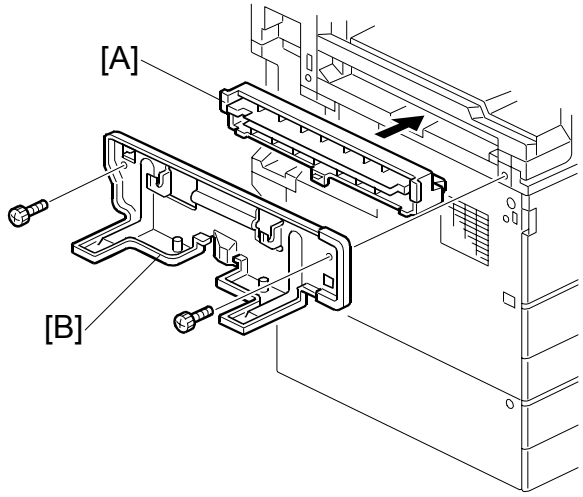
Check the quantity and condition of the accessories against the following list.

Description	Q'ty
1. Unit Holder	1
2. Entrance Guide	1
3. Output Tray	1
4. Snap Ring	2
5. Knob Screw	2

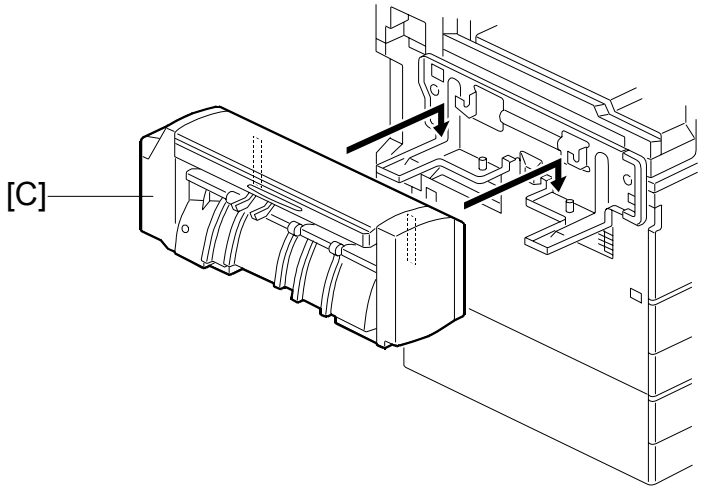


B442I101.WMF

3.13.2 INSTALLATION PROCEDURE



B442I103.WMF



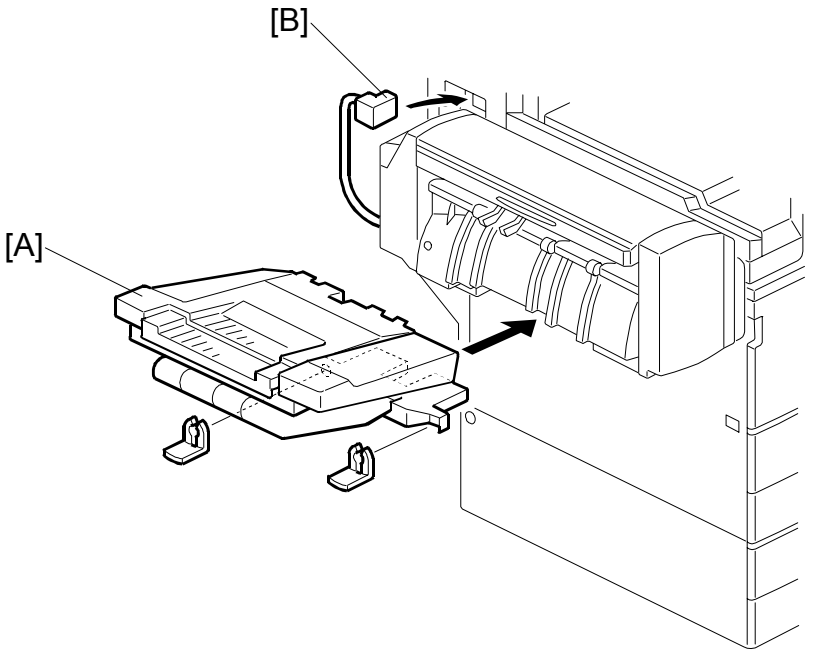
B442I104.WMF

⚠CAUTION

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

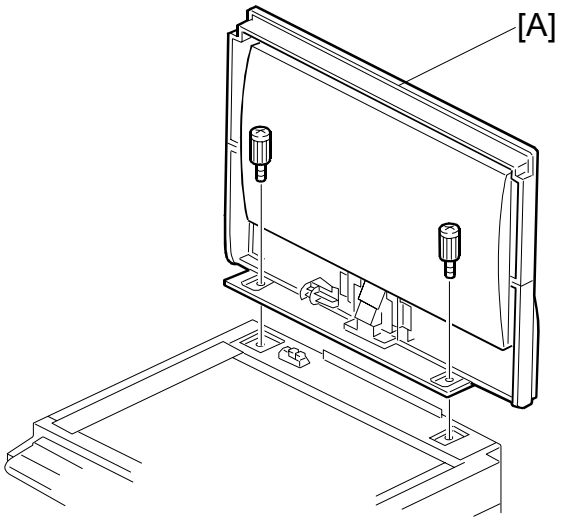
NOTE: Before installing the 500-sheet finisher, the optional bridge unit (B417) must be installed.

1. Unpack the finisher and remove the tapes.
2. Install the entrance guide [A].
3. Install the unit holder [B] (🔩 x 2).
4. Install the 500-sheet finisher [C].



5. Install the output tray [A] as shown (2 snap rings).
6. Connect the finisher cable [B].
7. Turn on the main power switch and check the finisher operation.

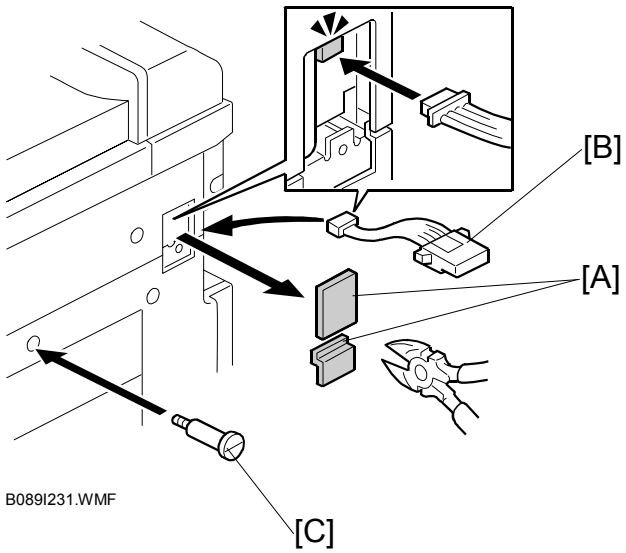
3.14 PLATEN COVER INSTALLATION

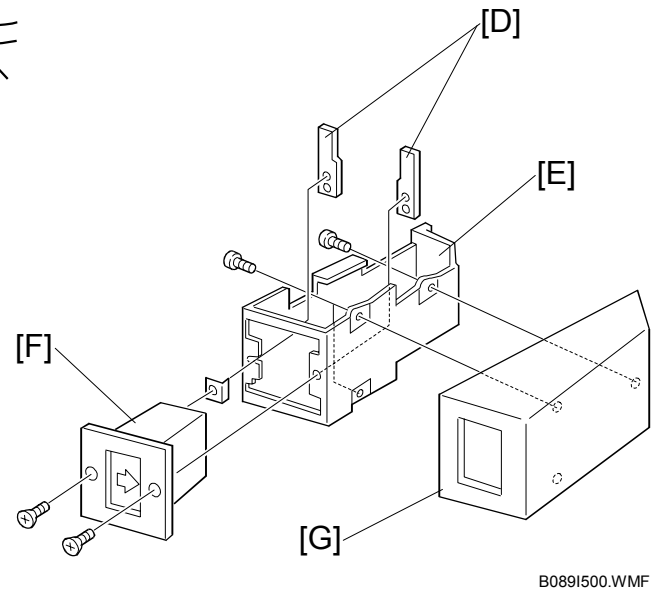


B089I555.WMF

1. Install the platen cover [A] (☞ x 2).

3.15 KEY COUNTER INSTALLATION

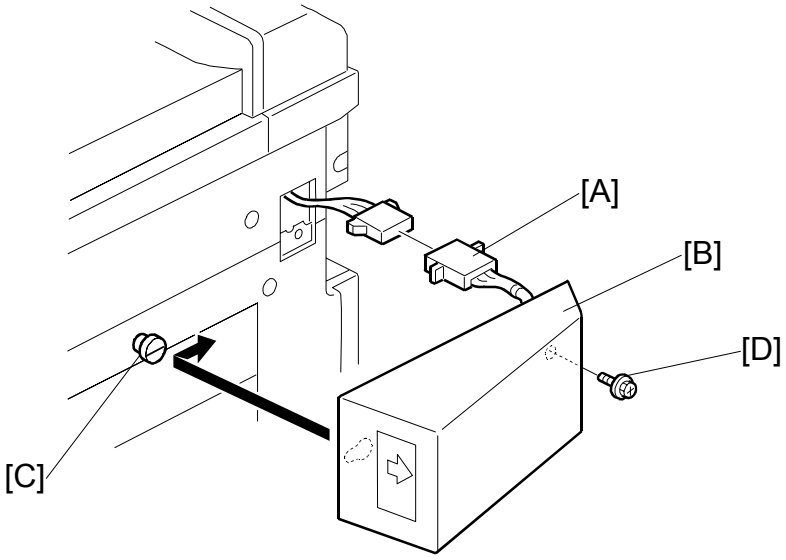




⚠CAUTION

Unplug the machine power cord before starting the following procedure.

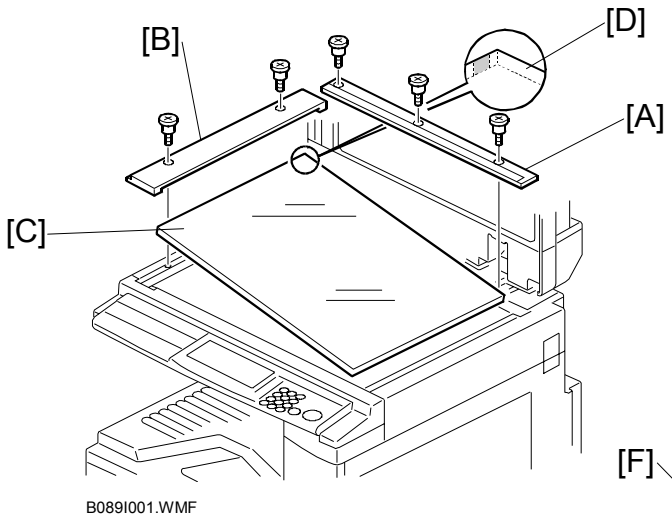
1. Remove two caps [A].
2. Connect the key counter cable [B].
3. Install the stepped screw [C].
4. Hold the key counter plate nuts [D] on the inside of the key counter bracket [E] and insert the key counter holder [F].
5. Secure the key counter holder to the bracket (🔩 x 2).
6. Install the key counter cover [G] (🔩 x 2).



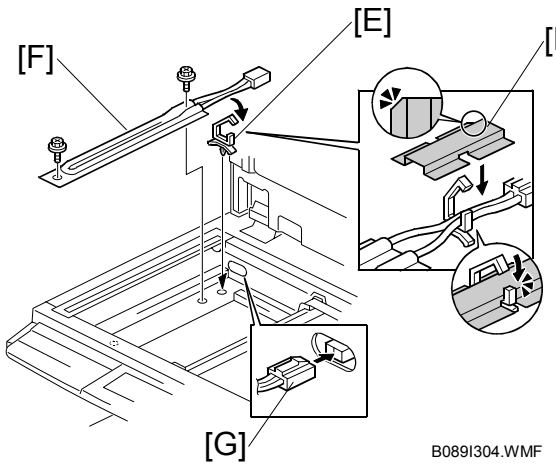
B089I232.WMF

7. Connect the cable [A].
8. Hook the key counter holder assembly [B] onto the stepped screw [C].
9. Secure the key counter holder assembly with a screw [D].
10. Use the User Tools to enable the counter function for the following modes:
    - Copy mode
    - Document server mode
    - Fax mode
    - Scanner mode
    - Printer mode

3.16 OPTICS ANTI-CONDENSATION HEATER



B089I001.WMF



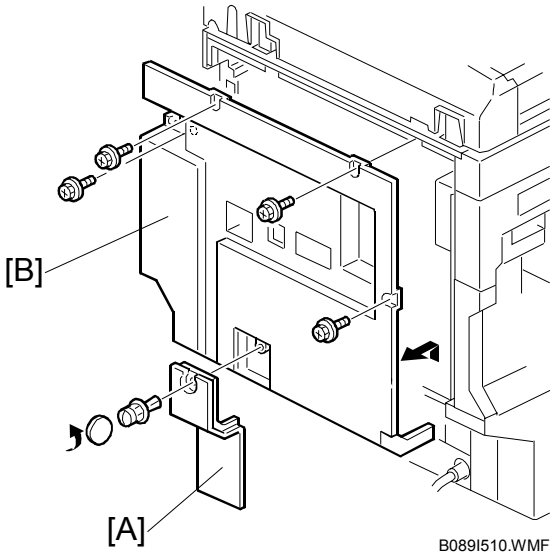
B089I304.WMF

⚠CAUTION

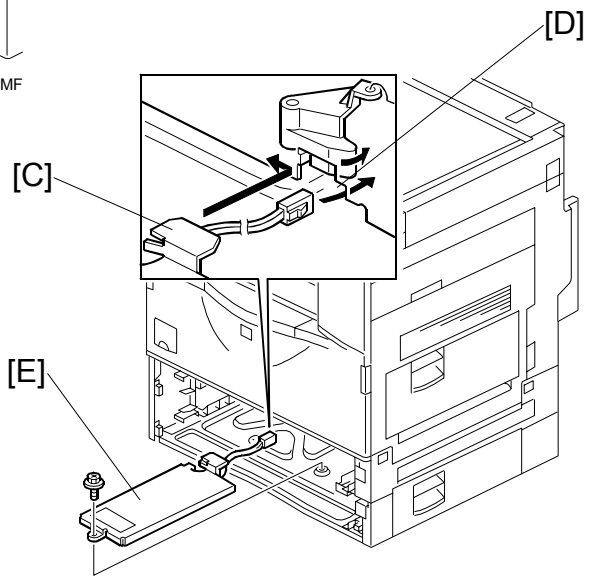
Unplug the machine power cord before starting the following procedure.

1. Remove the rear scale [A] (🔩 x 3), left scale [B] (🔩 x 2), and exposure glass [C].
   NOTE: When reinstalling the exposure glass, make sure that the mark [D] is positioned at the rear left corner, as shown.
2. Move the 1st and 2nd scanners to the right.
3. Install the cable clamp [E].
4. Install the anti-condensation heater [F] (🔩 x 2).
5. Join the connectors [G]
6. Attach the cable cover [H], as shown.

3.17 TRAY HEATER



B089I510.WMF

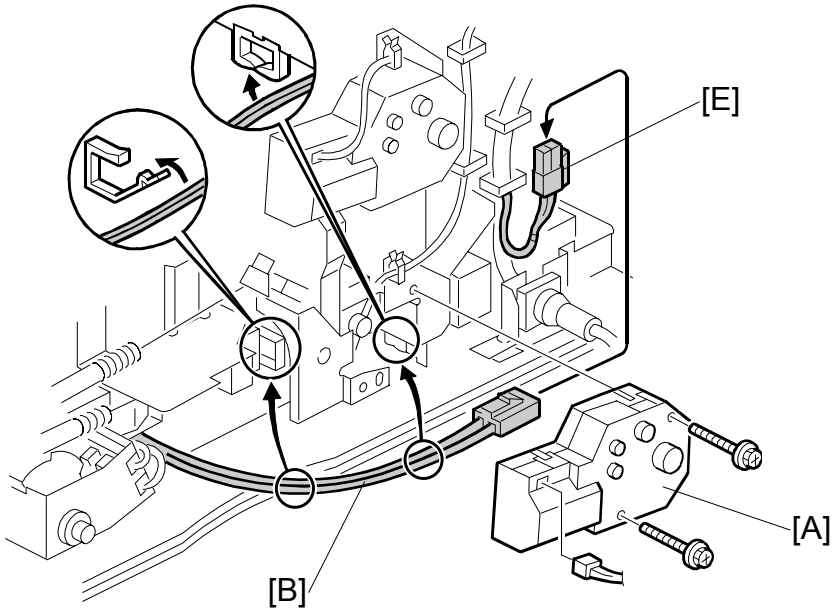


B089I552.WMF

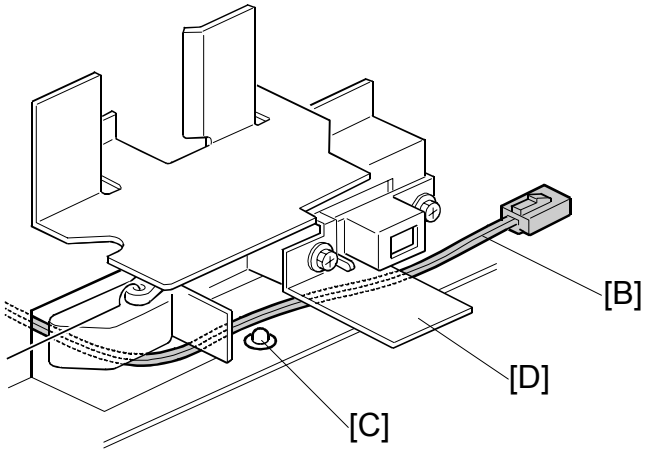
⚠CAUTION

Unplug the machine power cord before starting the following procedure.

1. Remove the connector cover [A] and rear cover [B] (🔩 x 4).
2. Slide out the 1st and 2nd paper trays.
3. Pass the connector [C] through the opening [D].
4. Install the tray heater assembly [E] (🔩 x 1).



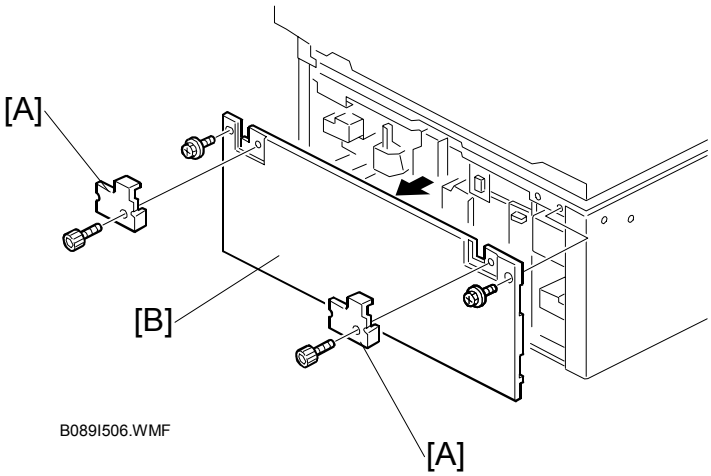
B089I551.WMF



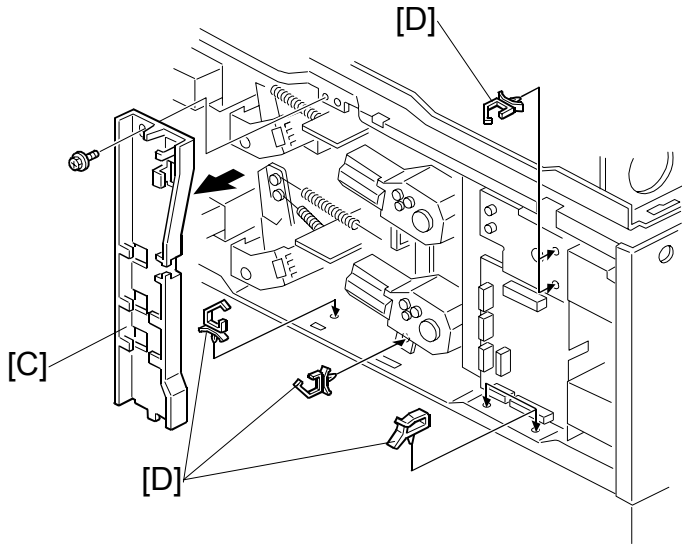
B089I913.WMF

5. Remove the 2nd paper lift motor [A] (x 2, x 1).
6. Route the heater cable [B] to the side of rivet [C] and under bracket [D].
7. Clamp the heater cable [B] as shown.
8. Joint the heater cable and the ac cable [E].
9. Reinstall the paper lift motor [A] and reassemble the machine.

3.18 TRAY HEATER (OPTIONAL PAPER TRAY UNIT)



B089I506.WMF

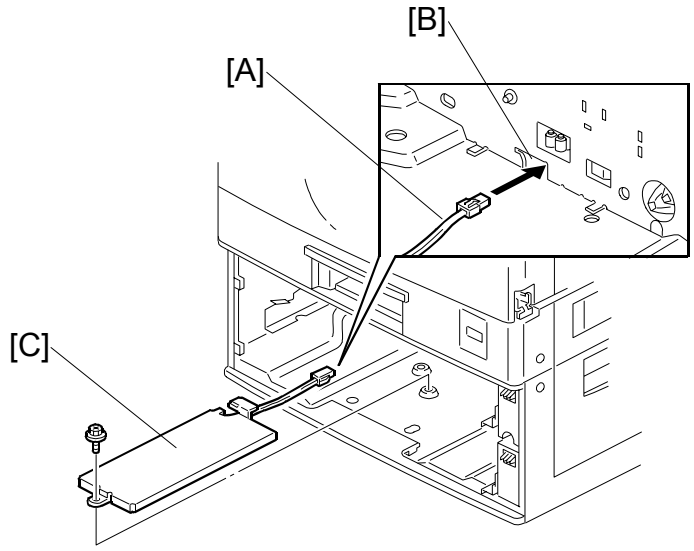


B089I509.WMF

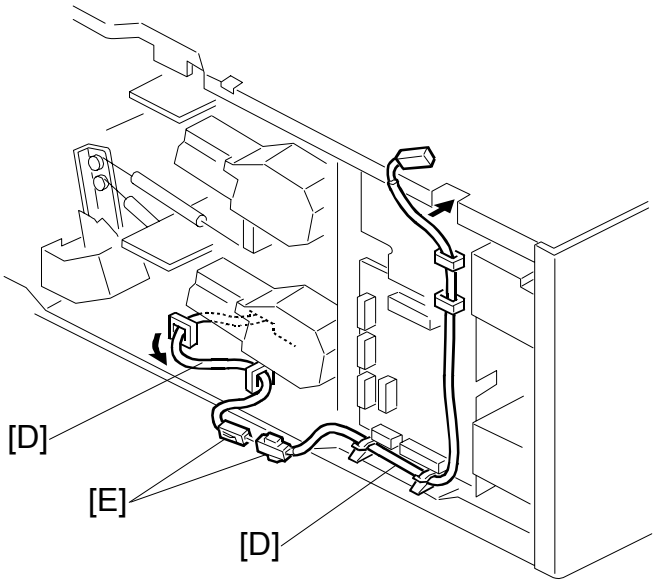
⚠CAUTION

Unplug the machine power cord before starting the following procedure.

1. Remove the joint brackets [A] (☞ x 1 each).
2. Remove the rear cover [B] for the optional paper tray unit (☞ x 2).
3. Remove the cable guide [C] (☞ x 1).
4. Install the clamps [D].

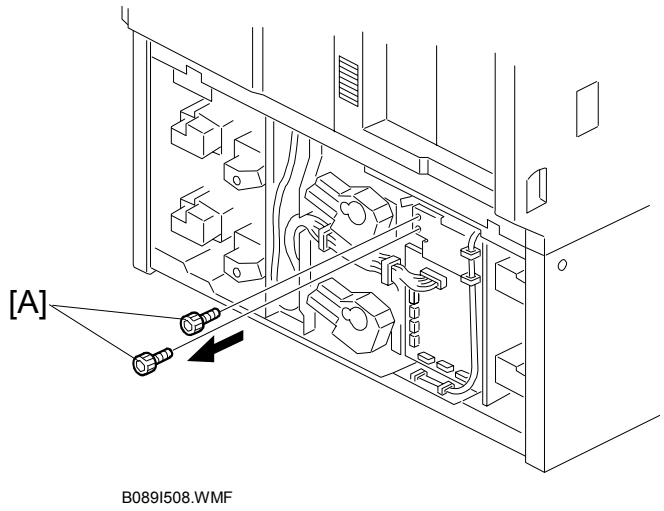


B089I553.WMF

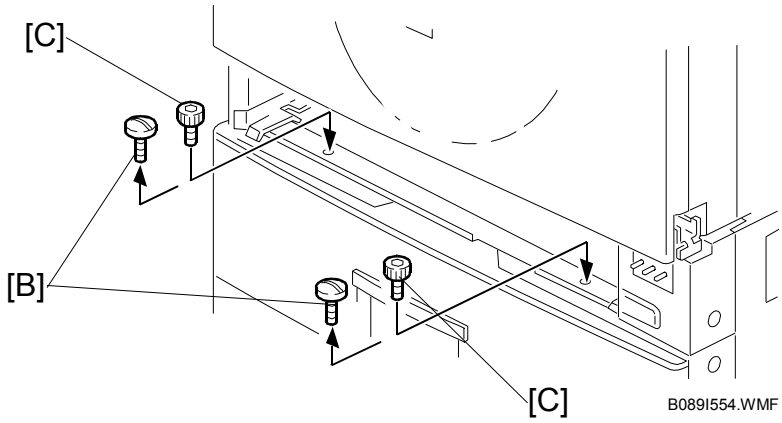


B089I505.WMF

5. Slide out the two paper trays from the optional paper tray unit.
6. Pass the connector [A] through the opening [B].
7. Install the tray heater assembly [C] (☞ x 1).
8. Clamp the cables [D], as shown.
9. Join the connectors [E].
10. Reinstall the cable guide.



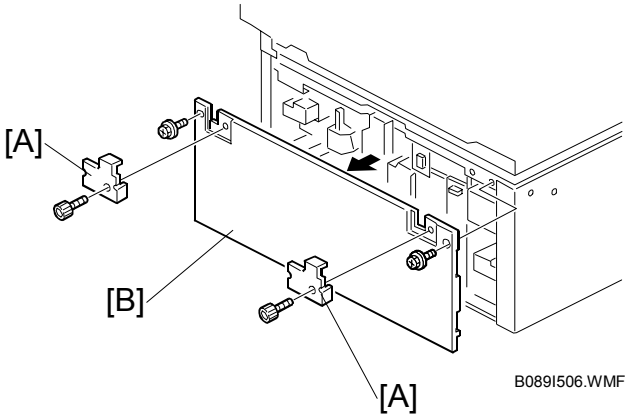
B089I508.WMF



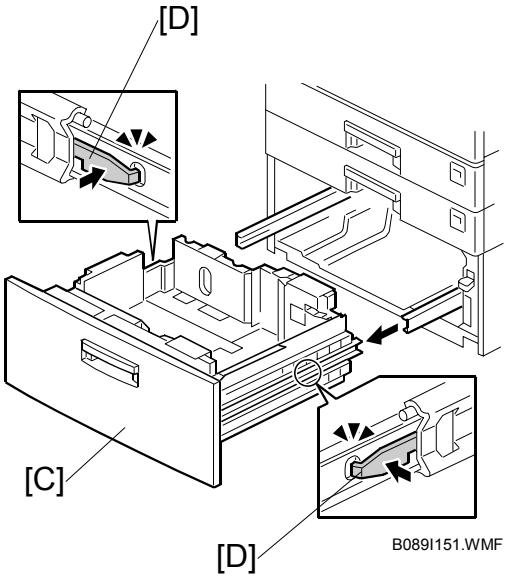
B089I554.WMF

11. Remove two screws [A] from the rear side of the paper feed unit.
12. Reinstall the rear cover for the optional paper tray unit.
13. Reinstall the two paper trays into the optional paper tray unit.
14. Remove the 2nd paper tray of the copier.
15. Remove two screws [B] and install the screws [C] which were removed in step 12.
16. Reinstall the 2nd paper tray of the copier.

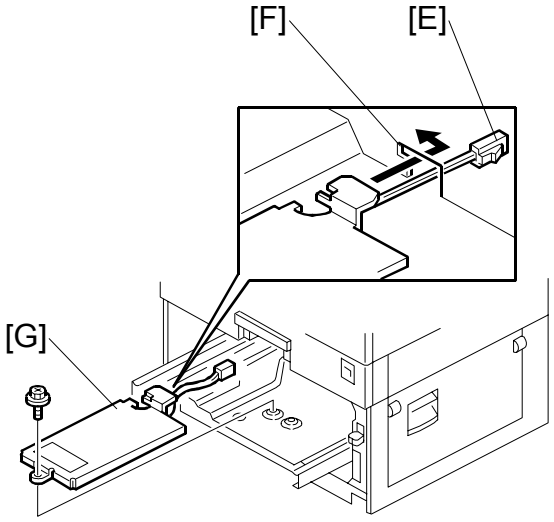
3.19 TRAY HEATER (OPTIONAL LCT)



B089I506.WMF



B089I151.WMF

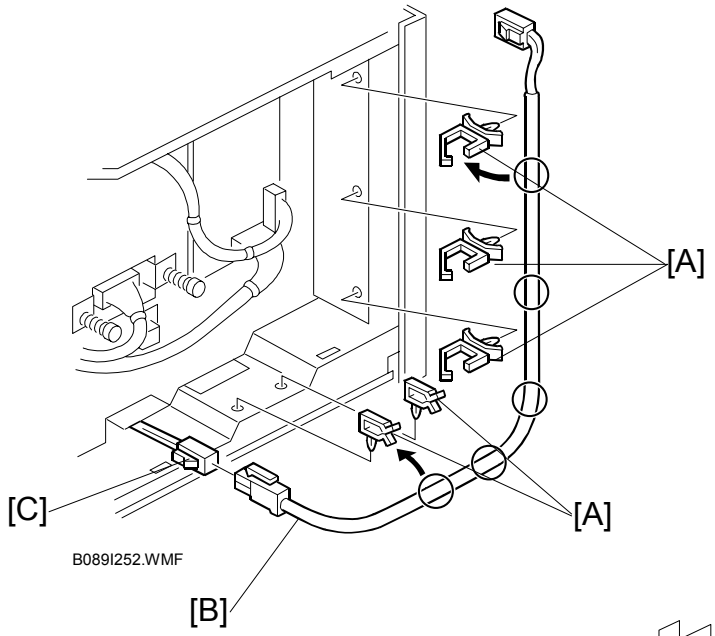


B089I507.WMF

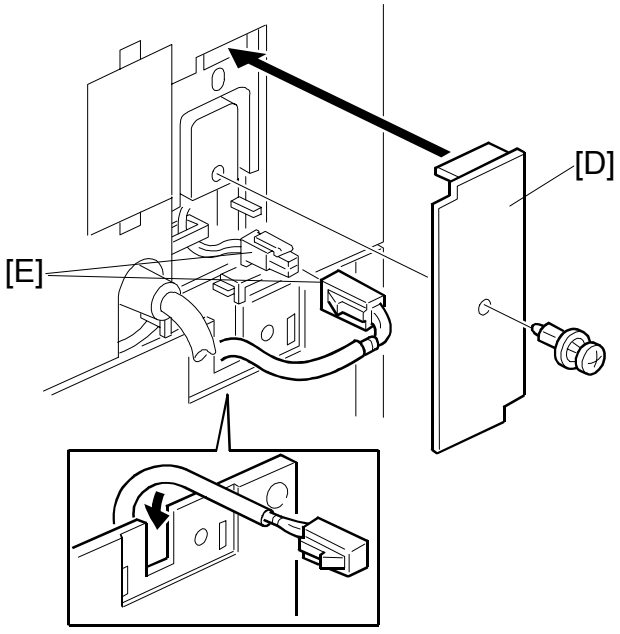
⚠CAUTION

Unplug the machine power cord before starting the following procedure.

1. Remove two joint brackets [A] (🔩 x 1 each).
2. Remove the rear cover for the LCT [B] (🔩 x 2).
3. Slide out the paper tray [C].
4. Push the stopper [D] on both slide rails and remove the paper tray.
5. Pass the connector [E] through the opening [F].
6. Install the tray heater [G] (🔩 x 1).

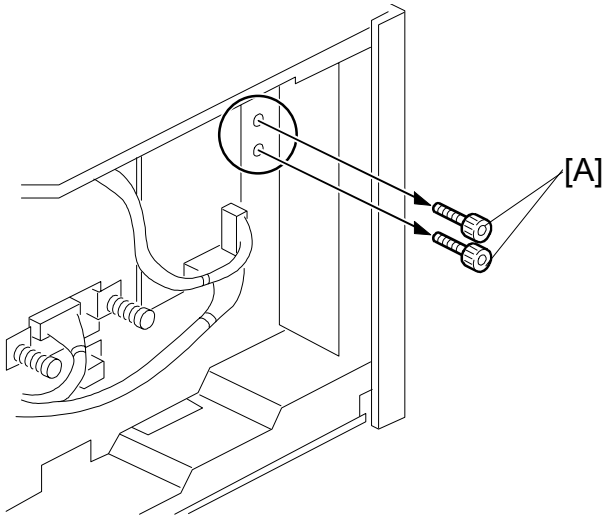


B089I252.WMF

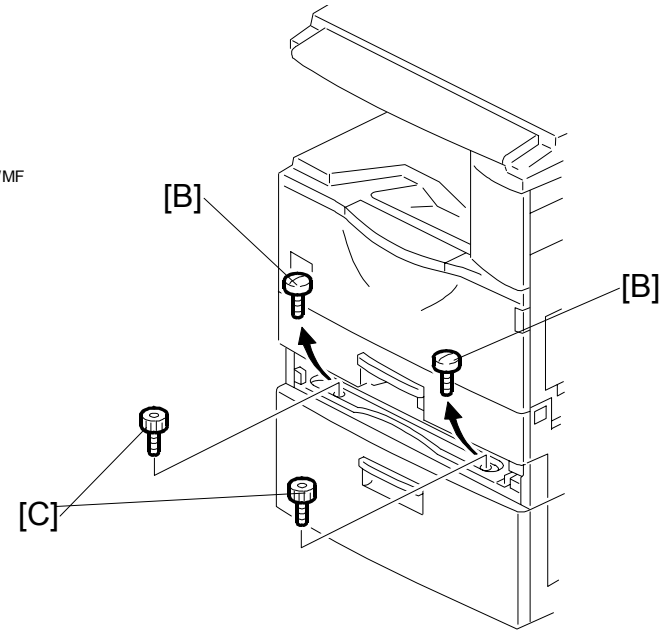


B089I253.WMF

7. Install five clamps [A].
8. Connect the cable [B] to the tray heater cable [C].
9. Route the cable and clamp it.
10. Remove the connector cover of the copier [D].
11. Join the connectors [E].
12. Reinstall the connector cover of the copier.



B089I601.WMF

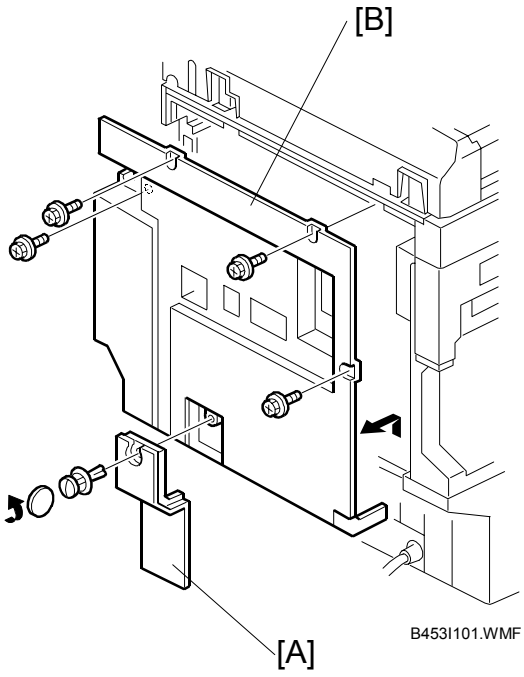


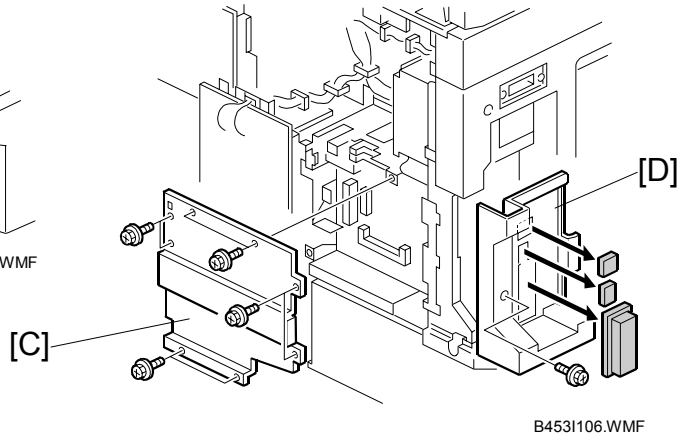
B089I600.WMF

13. Remove two screws [A] from the rear side of the LCT.
14. Reinstall the rear cover of the LCT.
15. Reinstall the paper tray.
16. Remove the 2nd paper tray of the copier.
17. Remove two screws [B] and install the screws [C] which were removed in step 13.
18. Reinstall the 2nd paper tray of the copier.

3.20 OPTIONAL BOARDS AND DIMMS

3.20.1 REMOVING THE COVERS





⚠CAUTION

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

1. If the paper tray unit or LCT is installed, remove the connector cover [A] (🖉 x 1) and disconnect the cable to prevent the cover from damage.
2. Remove the rear cover [B] (🖉 x 4).
3. Remove the controller board cover [C] (🖉 x 8).
4. Remove the knockouts [D] as required.

   Top: NIB, marked “LAN”

   Middle: File Format Converter, IEEE 1394, IEEE 802.11b, USB 2.0, or Bluetooth. (Only one of these can be installed.)

   Bottom: IEEE 1284. (The connector is provided on the controller board.)

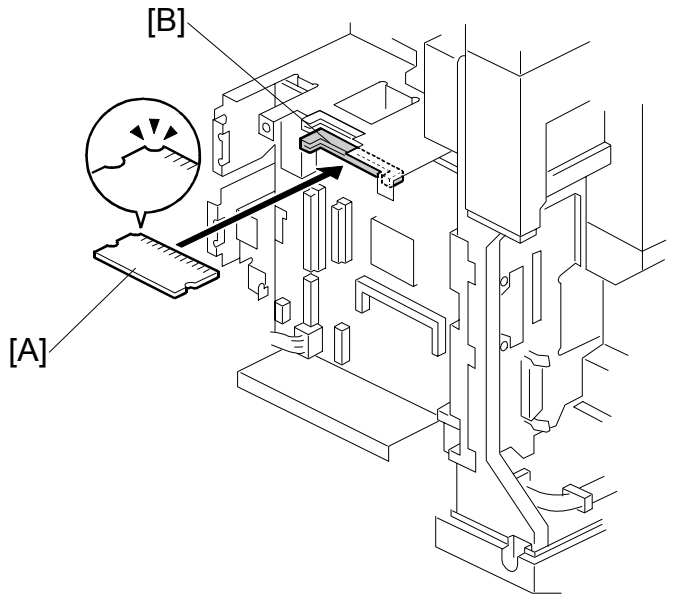
3.20.2 PRINTER/SCANNER MODULE (B577)

Accessories

Check the accessories and their quantities against the following list:

Description	Q'ty
1. HDD	1
2. NIB	1
3. Keytop - Copy	1
4. Keytop – Document Server	1
5. Keytop - Printer	1
6. Keytop – Scanner	1
7. CD-ROM: Printer	1
8. CD-ROM: Scanner	1
9. CD-ROM: Operation Manual	1
10. Operating Instructions	1
11. FCC Label (USA only)	1

Printer/Scanner Module ROM DIMM Installation



B577R109.WMF

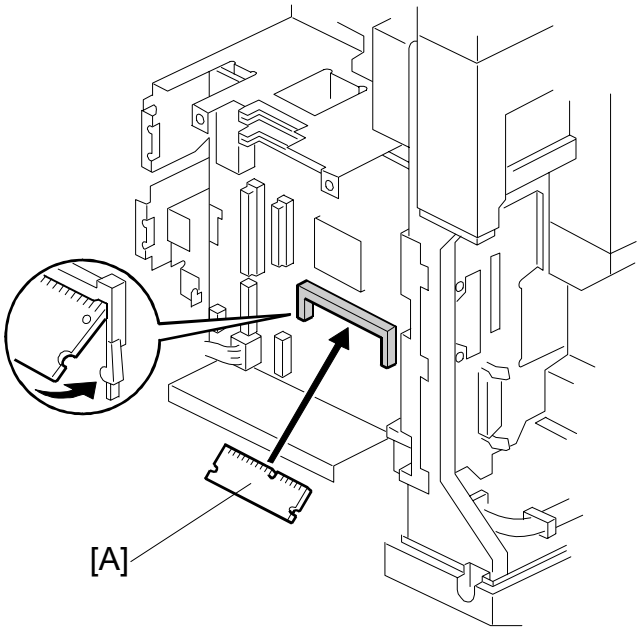
⚠CAUTION

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

1. Remove the machine rear cover and controller board cover. (☛3.20.1)
2. Install the scanner/printer ROM DIMM [A] into the lower slot [B] on the controller board.
3. Install the 128 MB Memory DIMM G331. (☛3.20.3)
4. Install the HDD unit. (☛3.20.4)
5. Install the NIB. (☛3.20.5)
6. Install the interface option.
   NOTE: Only one slot is available for an interface option. You can install only one printer interface option at a time: File Format Converter (B519), IEEE 1394 (G336), IEEE 802.11b (B515), USB 2.0 (B525-01), or Bluetooth (G354). Refer to the sections below for details about how to install each optional interface.

7. Before using the printer/scanner features, connect the copier to a power source, switch it on then execute SP5801 9 Memory Clear – Scanner Applications.
8. Do not connect the parallel cable now. Turn the machine on and check Copier SP mode SP5-907: Plug & Play Name
9. Print out the configuration page to confirm correct installation of the printer controller (User Tools> Printer Settings> List Test Print> Config. Page)
10. To connect the parallel cable, switch the machine off, connect the cable, then switch the machine on again.
11. Execute SP5801 10 (Net File Memory Clear).

3.20.3 128 MB MEMORY (G331)



B577R105.WMF

⚠CAUTION

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

1. Remove the machine rear cover and controller board cover. (☛3.20.1)
2. Install the memory DIMM [A] on the controller board.

3.20.4 HDD (B592)

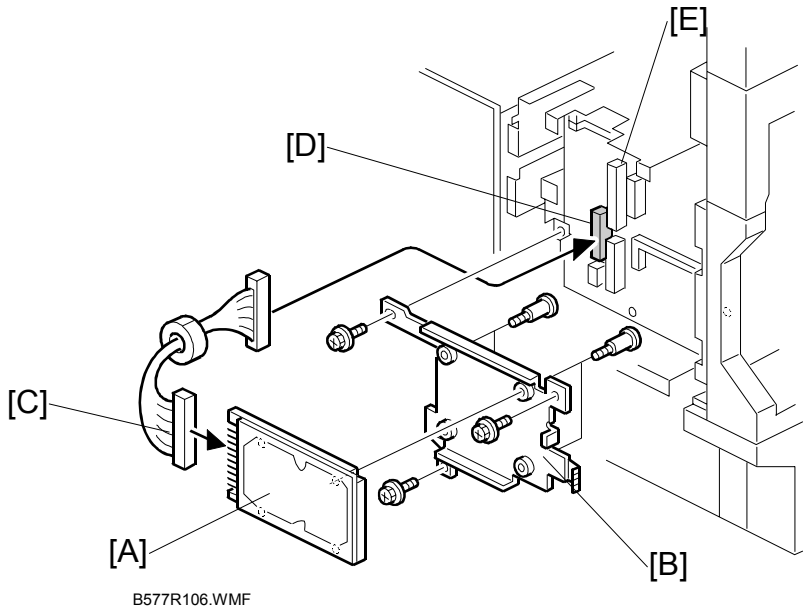
Accessories

Check the accessories and their quantities against the following list:

Description	Q'ty
1. HDD	1
2. Bracket	1
3. Shoulder Screws	4
4. Screws	3
5. Connector Cable	1

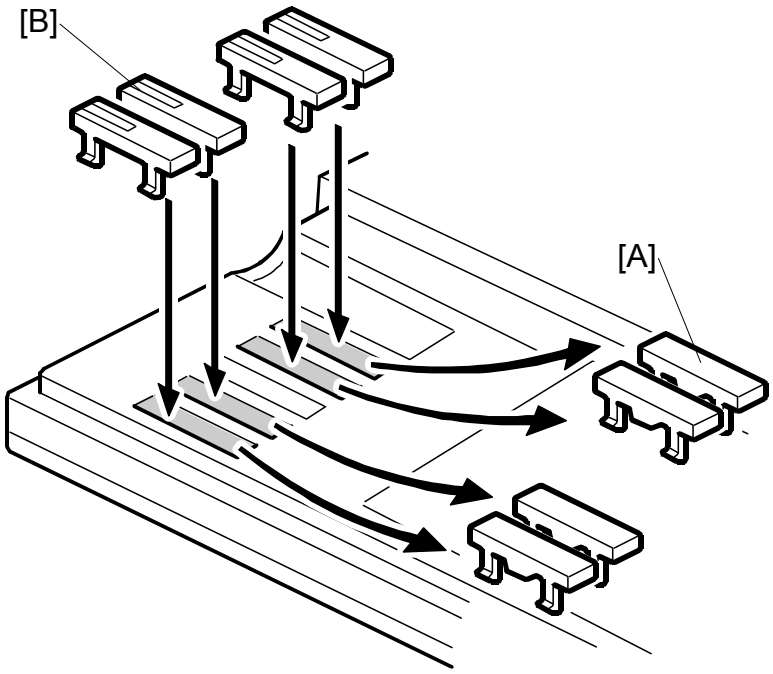
⚠CAUTION

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



B577R106.WMF

1. Remove the machine rear cover and controller board cover. (☛3.20.1)
2. Attach the HDD [A] to the bracket [B] (🖉 x 4 shoulder screws).
3. Attach one end of the connector cable [C] to the HDD.
4. Attach the other end of the connector to CN516 [D] on the controller board.
5. Fasten the bracket with the HDD attached to the controller board [E] (🖉 x 3).



B453I105.WMF

6. Remove the blank keys [A]
7. Replace the blank with the keytops [B] for the appropriate units to be installed in this order from top to bottom:

Copy **Document Server** **Printer** **Scanner**	If you are installing the HDD without the Printer/Scanner DIMM, attach only the Copy and Document Server Keytops. If you are installing the HDD with the Printer/Scanner DIMM, attach all the keytops.

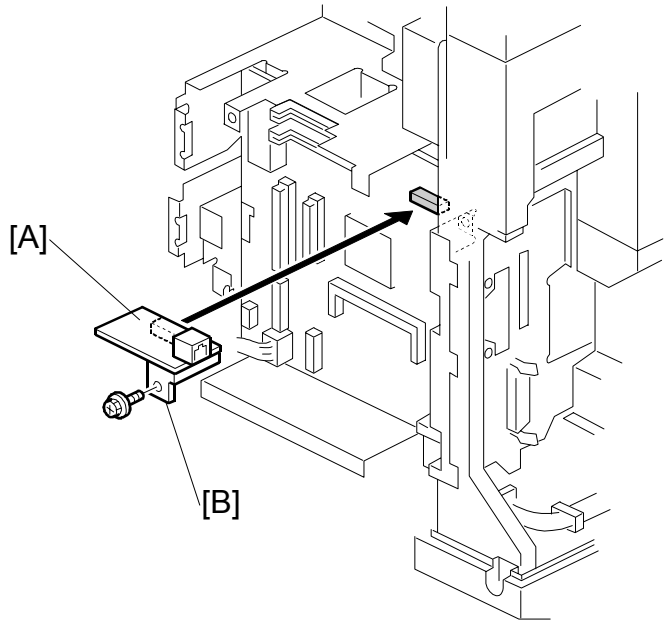
8. Install the stamp data on the hard disk using SP5853.

3.20.5 NIB (B525-17)

Accessories

Check the accessories and their quantities against the following list:

Description	Q'ty
1. NIB Board	1
2. Screw	1



B577R110.WMF

⚠CAUTION

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

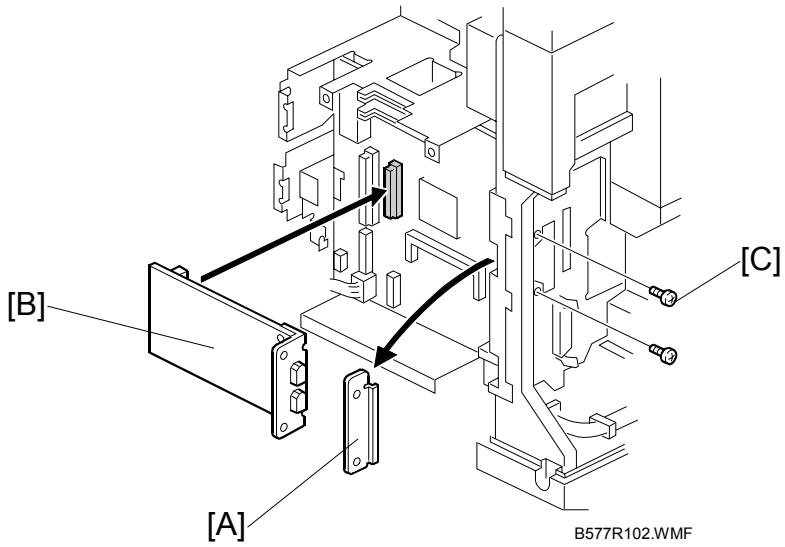
1. Remove the machine rear cover, controller board cover, and remove the top knockout. (☛3.20.1)
2. Attach the NIB [A] to the controller board (🔩 x 1).

3.20.6 IEEE 1394 INTERFACE KIT (G336)

Accessories

Check the accessories and their quantities against the following list:

Description	Q'ty
1. IEEE 1394 Board	1
2. 6-pin/6-pin Cable	1
3. 6-pin/4-pin Cable	1
4. Screws	2



⚠CAUTION

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

NOTE: To install this option, the Printer/Scanner Option must be installed first. (☛3.20.2) Only one slot is available for the interface option. You can install only one printer interface option at a time: File Format Converter (B519), IEEE 1394 (G336), IEEE 802.11b (B515), USB 2.0 (B525-01), or Bluetooth (G354).

1. Remove the machine rear, controller board cover, and middle knockout. (☛3.20.1)
2. Remove the slot cover [A] (🖉 x 2).
3. Attach the IEEE 1394 board [B] to the controller board.
   NOTE: Make sure that the jumper on the board is set to TB2.
4. Fasten the board with the screws [C] (🖉 x 2).
5. Use the appropriate cable provided to connect the machine to the computer.

UP Mode Settings for IEEE 1394

Enter the UP mode and follow the procedure below to perform the initial interface settings for IEEE 1394. These settings take effect every time the machine is powered on.

1. Press User Tools/Counter.
2. On the touch panel, press System Settings.
3. Press Interface Settings/IEEE1394.
4. Press the key and enter the following settings:
   - IP Address
   - Subnet Mask
   - IP Over 1394. Enable or disable this setting as required. This setting enables IP Over 1394 as the default setting for the printing method.
   - SCSI Print. Enable or disable this setting as required. This setting enables SCSI Print as the default setting for the printing method.
   - SCSI Print Bi-directional. Switch bi-directional printing on or off for SCSI print.

SP Mode Settings for IEEE 1394

The following SP commands can be set for IEEE 1394.

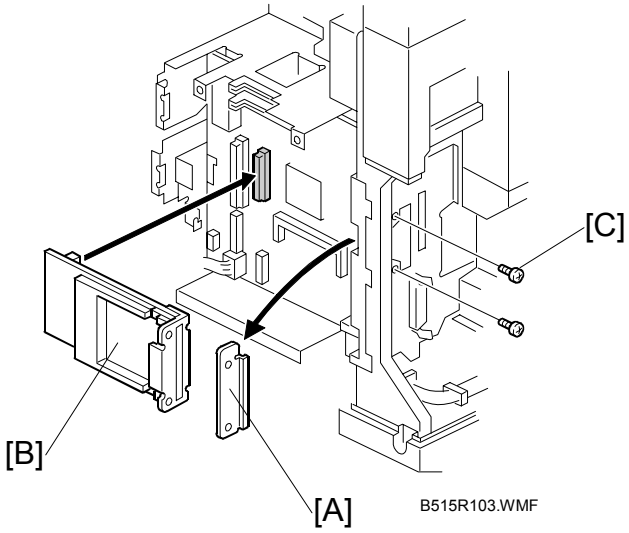
SP No.	Name	Function
5839 004	Host Name	Sets the names for all the physical devices connected ot the IEEE 1394 firewire network.
5839 007	Cycle Master	Enables or disables cycle master function of the IEEE 1394 standard bus.
5839 008	BCR Mode	Sets the BCR (Broadcast Channel Register) setting for the Auto Node operation for the standard IEEE1394 bus for when IRM is not in use. Three settings are available: 00, 01, 11.
5839 009	IRM 1394a Check	Determines whether an IRM check for IEEE 1394 is conducted for the Auto Node when IRM is not used.
5839 010	Unique ID	Enables the “Node_Unique_Id” setting for enumeration on the standard IEEE 1394 bus.
5839 011	Logout	Determines how successive initiator login in requests are handled during login in for SBP-2.
5839 012	Login	Enables or disables exclusive login for SBP-2.
5839 013	Login MAX	Sets the limit for the number of logins for SBP-2. Range: 1 ~ 62.

3.20.7 IEEE 802.11B INTERFACE KIT (B515)

Accessories

Check the accessories and their quantities against the following list:

Description	Q'ty
1. IEEE 802.11b Board	1
2. PCI Card	1
3. Antennas	2
4. Velcro pads	2

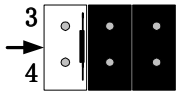


⚠CAUTION

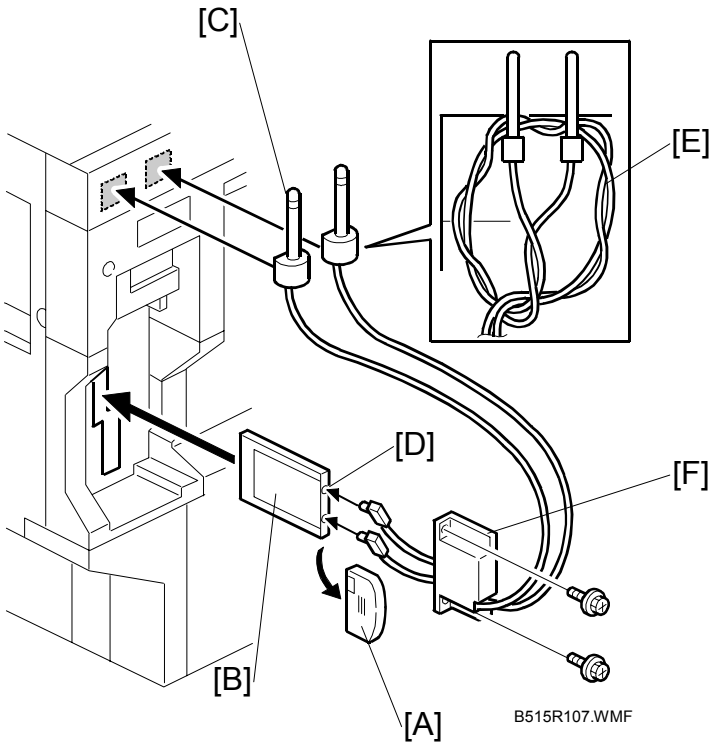
Unplug the main machine power cord before starting the following procedure.

NOTE: To install this option, the Printer/Scanner Option must be installed first. (☛3.20.2) Only one slot is available for the interface option. You can install only one printer interface option at a time: File Format Converter (B519), IEEE 1394 (G336), IEEE 802.11b (B515), USB 2.0 (B525-01), or Bluetooth (G354).

1. Remove the machine rear, controller board cover, and middle knockout. (☛3.20.1)
2. Remove the slot cover [A] (🔩 x 2). Save these screws
3. Attach the IEEE 802.11b Board [B] to the controller board.
   NOTE: Make sure that the jumper at TB1 is set on the left at 3, 4.



4. Fasten the board with the screws [C] removed in Step 2.



5. Pull off the edge connector protector [A] off the card and discard it.
6. With the card label facing left, insert the card [B] into the PCI slot.
7. Use the Velcro pads to install the antennas [C] on the left rear corner of the machine.
   NOTE: The antennas should be separated by at least 40 ~ 60 mm (1.5~2.5”). Always detach the antennas from the corners of the machine and disconnect them before moving the machine.
8. Connect the antennas to the terminals [D].
9. Coil the cables [E] and hang them over the antennas as shown.
10. Attach the cover [F] (🔩 x 2).
11. If reception is poor, you may need to move the machine:
    - Make sure that the machine is not located near an appliance or any type of equipment that can generate a strong magnetic field.
    - Position the machine as close as possible to the access point.

UP Mode Settings for Wireless LAN

Enter the UP mode and follow the procedure below to perform the initial interface settings for IEEE 802.11b. These settings take effect every time the machine is powered on.

NOTE: The wireless LAN cannot be used if Ethernet is being used.

1. Press the User Tools/Counter key.
2. On the touch panel, press System Settings.
   NOTE: The Network I/F (default: Ethernet) must be set for either Ethernet or wireless LAN.
3. Select Interface Settings → Network (tab)
4. Press IEEE 802.11b. The wireless LAN options are displayed.
5. **Transmission Mode**. Select either “Ad Hoc Mode” or “Infrastructure Mode”.
6. **SSID Setting**. Enter the SSID setting. (The setting is case sensitive.)
7. **Channel**. This setting is required when Ad Hoc Mode is selected.
   Range: 1 ~ 14 (default: 11)
   NOTE: The allowed range for the channel settings may vary for different countries.
8. **WEP (Privacy) Setting**. The WEP (Wired Equivalent Privacy) setting is designed to protect wireless data transmission. In order to unlock encoded data, the same WEP key is required on the receiving side. There are 64 bit and 128 bit WEP keys.

   Range of Allowed Settings:

64 bit	10 characters
128 bit	26 characters

9. **Bandwidth Status**. This setting is enabled only for the Infrastructure Mode. Press here to display the current status of the bandwidth. One of the following is displayed to reflect the reception status of the wireless LAN:

Good	76 ~ 100%
Fair	41 ~ 75%
Poor	21 ~ 40%
Unavailable	0 ~ 20%

10. **Transmission Speed**. Press the Next button to display more settings, then select the transmission speed for the mode: Auto, 11 Mbps, 5.5 Mbps, 2 Mbps, 1 Mbps (default: Auto). This setting should match the distance between the closest machine or access point, depending on which mode is selected.
    NOTE: For the Ad Hoc Mode, this is the distance between the machine and the closest PC in the network. For the Infrastructure Mode, this is the distance between the machine and the closest access point.

11 Mbps	140 m (153 yd.)
5.5 Mbps	200 m (219 yd.)
2 Mbps	270 m (295 yd.)
1 Mbps	400 m (437 yd.)

11. To initialize the wireless LAN settings, use page 2/2. Press Execute to initialize the following settings:
    - Transmission mode
    - Channel
    - Transmission Speed
    - WEP
    - SSID
    - WEP Key

SP Mode Settings for IEEE 802.11b Wireless LAN

The following SP commands can be set for IEEE 802.11b

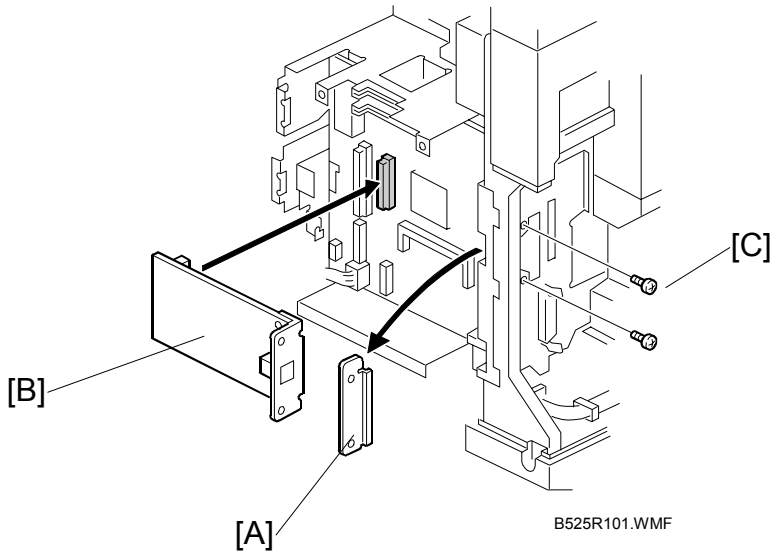
SP No.	Name	Function
5840 4	SSID	Used to confirm the current SSID setting.
5840 6	Channel MAX	Sets the maximum range of the channel settings for the country.
5840 7	Channel MIN	Sets the minimum range of the channels settings allowed for your country.
5840 10	WEP Key	Used to confirm the current WEP key setting.
5840 11	WEP Key Select	Used to select the WEP key (Default: 00).
5840 20	WEP Key Select	Used to display the maximum length of the string that can be used for the WEP Key entry.

3.20.8 USB 2.0 BOARD (B525-01)

Accessories

Check the accessories and their quantities against the following list:

Description	Q'ty
1. USB 2.0 Board	1



⚠CAUTION

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

NOTE: To install this option, the Printer/Scanner Option must be installed first. (☛3.20.2) Only one slot is available for the interface option. You can install only one printer interface option at a time: File Format Converter (B519), IEEE 1394 (G336), IEEE 802.11b (B515), USB 2.0 (B525-01), or Bluetooth (G354).

1. Remove the machine rear, controller board cover, and middle knockout. (☛3.20.1)
2. Remove the slot cover [A] (🔩 x 2). Save these screws
3. Attach the USB 2.0 board [B] to the controller board.
4. Fasten the board with the screws [C] removed in Step 2.
5. Execute SP5990 5 to print a Self-Diagnostic Report with the system settings and confirm that the machine correctly recognizes the interface.

USB SP Settings

The following SP commands are available. However, only one setting may require adjustment and this setting should be performed only if the customer is experiencing USB data transmission errors.

NOTE: Do not change the settings marked “DFU”. These settings are for design and factory use only.

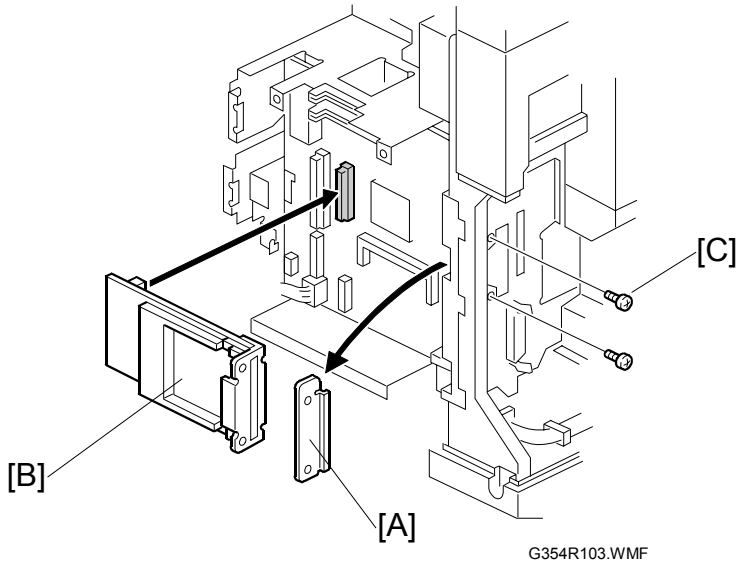
SP No.	Name	Function	
5844 1	Transfer Rate	Adjusts the USB transfer rate. Do not change the setting unless there is a data transfer error using the USB high speed mode.	
		HS/FS:	High speed/Full speed auto adjust (480Mbps/12Mbps)
		FS:	Full speed (12Mbps fixed)
5844 2	Vendor ID	Displays the vendor ID. **DFU**	
5844 3	Product ID	Displays the product ID. **DFU**	
5844 4	Dev. Release Number	Displays the development release version number. **DFU**	

3.20.9 BLUETOOTH UNIT 2045 (G354)

Accessories

Check the accessories and their quantities against the following list:

Description	Q'ty
1. PCI Card	1
2. Bluetooth Board	1
3. Cap	1

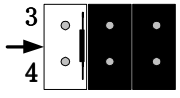


G354R103.WMF

⚠CAUTION
Unplug the main machine power cord before starting the following procedure.

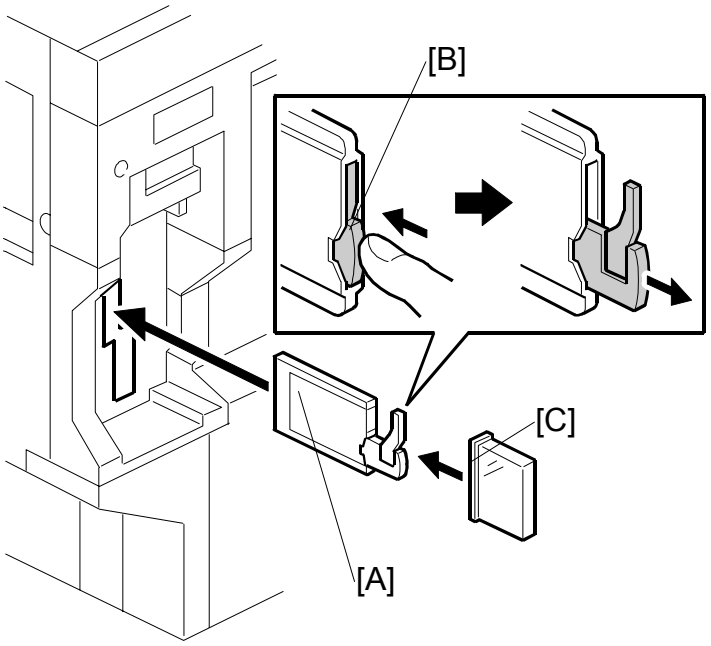
NOTE: To install this option, the Printer/Scanner Option must be installed first. (☛3.20.2) Only one slot is available for the interface option. You can install only one printer interface option at a time: File Format Converter (B519), IEEE 1394 (G336), IEEE 802.11b (B515), USB 2.0 (B525-01), or Bluetooth (G354).

1. Remove the machine rear, controller board cover, and middle knockout. (☛3.20.1)
2. Remove the slot cover [A] (🔩 x 2). Save these screws
3. Attach the Bluetooth Board [B] to the controller board.
   NOTE: Make sure that the jumper at TB1 is set on the left at 3, 4.



G354R900.WMF

4. Fasten the board with the screws [C] removed in Step 2.



G354R108.WMF

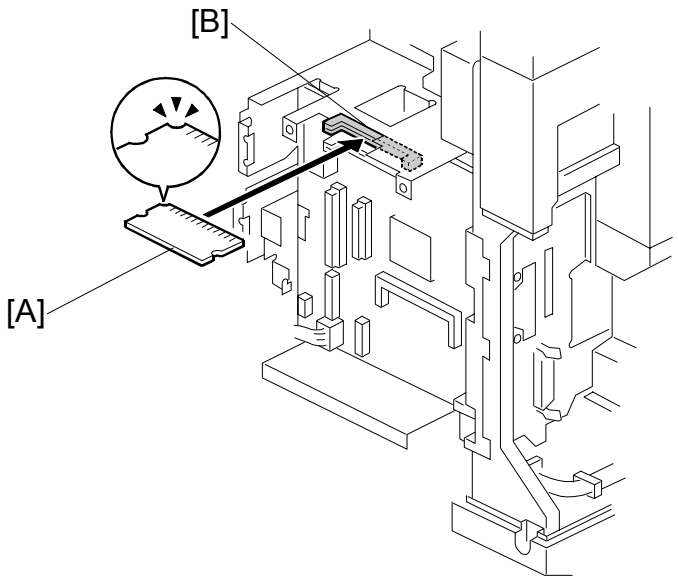
5. Insert the Bluetooth PCI card [A] into the slot.
6. Press the antenna [B] to extend it.
7. Attach the antenna cap [C].

3.20.10 POSTSCRIPT 3 UNIT (G354-05)

Accessories

Check the accessories and their quantities against the following list:

Description	Q'ty
1. PostScript 3 Emulation SD Card	1
2. Decal	1



G354R104.WMF

⚠CAUTION

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

NOTE: To install this DIMM, the Printer/Scanner option must be installed first. (☛3.20.2)

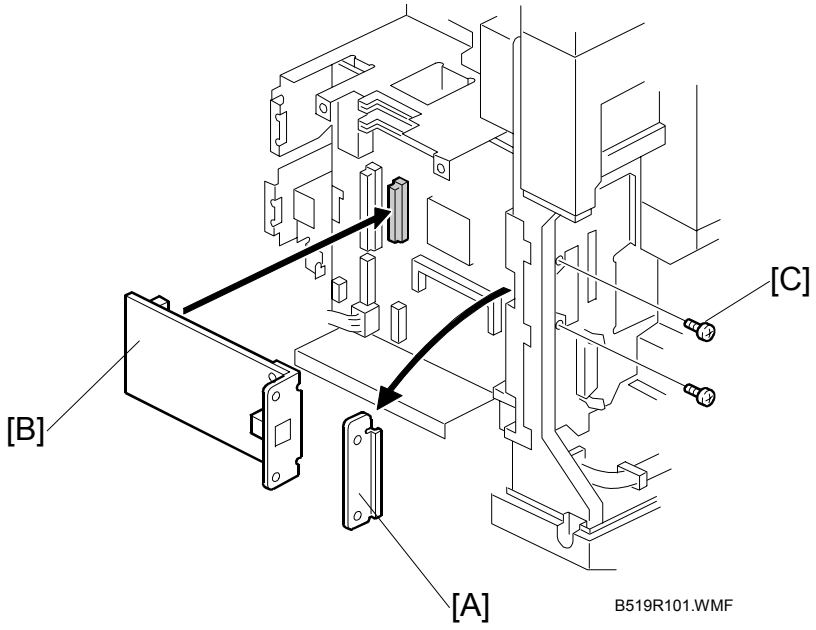
1. Remove the machine rear, controller board cover. (☛3.20.1)
2. Install the Postscript 3 DIMM [A] in the upper slot [B] of the controller board.

3.20.11 FILE FORMAT CONVERTER (B519)

Accessories

Check the accessories and their quantities against the following list:

Description	Q'ty
1. File Format Converter Board.....	1



⚠CAUTION

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

NOTE: Only one slot is available for the interface option. You can install only one printer interface option at a time: File Format Converter (B519), IEEE 1394 (G336), IEEE 802.11b (B515), USB 2.0 (B525-01), or Bluetooth (G354).

1. Remove the machine rear, controller board cover, and middle knockout. (☛3.20.1)
2. Remove the slot cover [A] (🔩 x 2). Save these screws
3. Attach the File Format Converter board [B] to the controller board.
4. Fasten the board with the screws [C] removed in Step 2.

3.20.12 CHECK ALL CONNECTIONS

1. Plug in the power cord and turn on the main switch.
2. Enter the printer user mode and print the configuration page.

   User Tools> Printer Settings> List Test Print> Config. Page

   NOTE: The same data can also be printed by executing SP1-004 – Print Summary. All installed options are listed in the “System Reference” column.

4. SERVICE TABLES

4.1 GENERAL CAUTION

⚠CAUTION

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

NOTE: The main power LED (☀) lights or flashes while the platen cover or ARDF is open, while the main machine is communicating with a fax machine or the network server, or while the machine is accessing the hard disk or memory for reading or writing data.

Do not turn off the main switch while any of the electrical components are active. Doing so might cause damage to units, such as the PCU, when they are pulled out of or put back into the copier.

4.1.1 PCU (PHOTOCONDUCTOR UNIT)

The PCU consists of the OPC drum, development unit, charge roller, and cleaning unit. Follow the cautions below when handling a PCU.

1. Never touch the drum surface with bare hands. When the drum surface is touched or becomes dirty, wipe it with a dry cloth or clean it with wet cotton. Wipe with a dry cloth after cleaning with the cotton.
2. Never used alcohol to clean the drum; alcohol dissolves the drum surface.
3. Store the PCU in a cool, dry place away from heat.
4. Never expose the drum to corrosive gases such as ammonia gas.
5. Never shake the used PCU. Doing so may cause toner and/or developer to spill out.
6. Dispose of used PCUs in accordance with local regulations.

4.1.2 TRANSFER ROLLER UNIT

1. Never touch the transfer roller surface with bare hands.
2. Take care not to scratch the transfer roller as the surface is easily damaged.

4.1.3 SCANNER UNIT

1. Clean the exposure glass with alcohol or with glass cleaner to reduce the amount of static electricity on the surface of the glass.
2. Use a blower brush or a cotton pad with water to clean the mirrors and lens.

3. Do not bend or crease the exposure lamp flat cable.
4. Do not disassemble the lens unit. Doing so will throw the lens and the copy image out of focus.
5. Do not turn any of the CCD positioning screws. Doing so will throw the CCD out of position.

4.1.4 LASER UNIT

1. Do not loosen the screws that secure the LD drive board to the laser diode casing. Doing so will throw the LD unit out of adjustment.
2. Do not adjust the variable resistors on the LD unit, as they are adjusted in the factory.
3. The polygon mirror and F-theta mirror are very sensitive to dust.
4. Do not touch the glass surface of the polygon mirror motor unit with bare hands.

4.1.5 FUSING UNIT

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

4.1.6 PAPER FEED

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

4.1.7 OTHERS

1. The TD sensor initial setting is performed automatically after installing the new PCU and closing the front cover. Never open the front cover or turn off the main switch during this time. The main motor stops when the initial setting has finished.
2. The toner bottle should be replaced while the main switch is on.
3. If the optional tray, drum, and optics anti-condensation heaters have been installed, keep the copier power cord plugged in, even when the copier main switch is turned off. This keeps the heaters energized.

4.2 SERVICE PROGRAM MODE

4.2.1 SERVICE PROGRAM MODE OPERATION

The service program mode is used to check electrical data, change modes, and adjust values. Two service program modes are provided:

- **SP Mode (Service)**. Includes all the options in the SP displays for normal maintenance and adjustments.
- **SSP Mode (Special Service)**. Includes the normal SP modes and *some additional options in the SP displays not required for normal settings and adjustments*. (Most are marked "DFU" in the following tables.) Do not change these important settings needlessly. For details, contact your supervisor.

Entering and Exiting SP mode

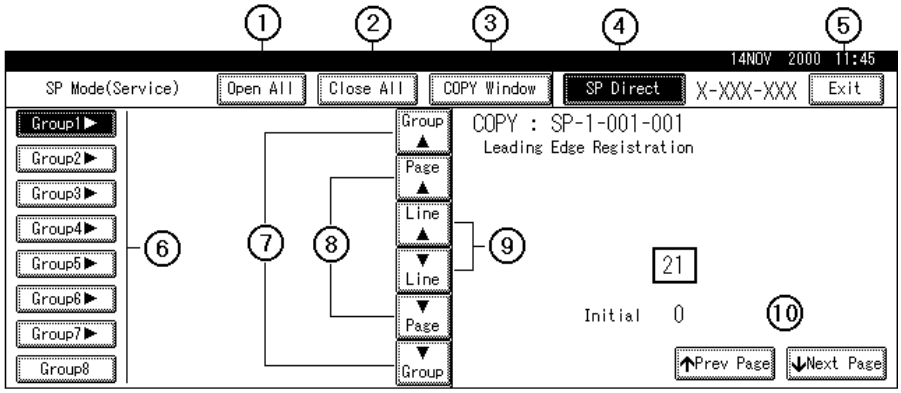
	1.	Press the Clear Mode key.
1 0 7	2.	Use the keypad to enter "107".
C/⊘	3.	Hold down Clear/Stop for at least 3 seconds.
	4.	Enter the Service Mode.
		To enter the Normal Service Mode:
Copy SP		On the touch-panel, press Copy SP.
		To enter the Special Service Mode:
# **Copy SP**		Hold down # and then press Copy SP.
Exit	5.	Press Exit twice to return to the copy window.

NOTE: Use SP2902 to perform test pattern printing. (☛ 4.2.3)

Service Tables

SP Mode Button Summary

Here is a short summary of the touch-panel buttons.



B089S901.WMF

① Opens all SP groups and sublevels.

② Closes all open groups and sublevels and restores the initial SP mode display.

③ Opens the copy window (copy mode) so you can make test copies. To return to the SP mode screen, press SP Mode (highlighted) in the copy window.

④ Enter the SP code directly with the number keys if you know the SP number and then press #. (SP Mode must be highlighted before you can enter the number. Just press SP Mode if it is not highlighted.)

⑤ Press twice to leave the SP mode and return to the copy window to resume normal operation.

⑥ Press any Group number to open a list of SP codes and titles for that group. For example, to open the SP code list for SP1nnn, press Group1. If an SP has sublevels, touch the appropriate button to expand the list.

⑦ Press to scroll the display to the previous or next group.

⑧ Press to scroll to the previous or next display in segments the size of the screen display (page).

⑨ Press to scroll the display to the previous or next line, line by line.

⑩ Press to move the highlight on the left to the previous or next selection in the list.

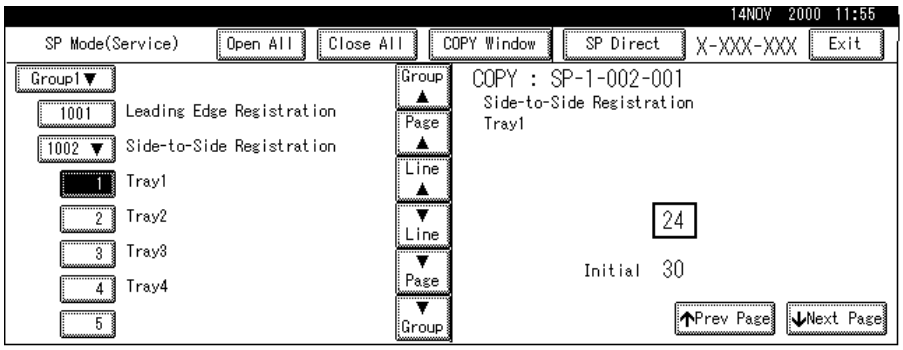
Switching Between SP Mode and Copy Mode for Test Printing

1) In the SP mode, select the test print and then press Copy Window.
2) Use the copy window (copier mode), to select the appropriate settings (paper size, etc.) for the test print.
3) Press Start ⓘ to execute the test print.
4) Press SP Mode (highlighted) to return to the SP mode screen and repeat from step 1.

Selecting the Program Number

Program numbers have two or three levels.

1. Before you begin, refer to the Service Tables to find the SP that you want to adjust. (☛ 4.2.2)
2. Press the Group number on the left side SP Mode window that contains the SP that you want to adjust.
3. Use the scrolling buttons in the center of the SP mode window to display the SP number that you want to open, and then press that number to expand the list.
4. Use the center touch-panel buttons to scroll to the number and title of the item that you want to set and press. The small entry box on the right is activated and displays the default or the current setting below.



B089S902.WMF

NOTE: Refer to the Service Tables for the range of allowed settings. (☛ 4.2.2)

1. To enter a setting
   - Press ⓒ to toggle between plus and minus and then use the keypad to enter the appropriate number. The number you enter writes over the previous setting.
   - Press ⓗ to enter the setting. (If you enter a number that is out of range, the key press is ignored.)
   - When you are prompted to complete the selection, press Yes.
2. If you need to perform a test print, press Copy Window to open the copy window and select the settings for the test print. Press Start ⓘ twice, and then press SP Mode (highlighted) in the copy window to return to the SP mode display.
3. When you are finished, press Exit twice to return to the copy window.

4.2.2 SERVICE PROGRAM MODE TABLES

Service Table Key

Notation	What it means
[range / **default** / step]	Example: [-9 ~ +9 / **+3.0** / 0.1 mm step]. The setting can be adjusted in the range ±9, the setting is reset to +3.0 after an NVRAM reset, and the value can be changed in 0.1 mm steps with each key press.
italics	Comments added for reference.
*	Value stored in NVRAM. After a RAM reset, this default value (factory setting) is restored.
1111	An SP number set in bold-italic denotes a "Special Service Program" mode setting that appears only after entering the SP mode by pressing # and Copy SP together. (☛ 4.2.1)
DFU	Denotes "Design or Factory Use". Do not change this value.
Japan only	The feature or item is for Japan only. Do not change this value.
(S)	Sideways feed direction
(L)	Lengthwise feed direction

SP1XXX: Feed

1001*	Leading Edge Registration	[+9.0 ~ –9.0 / **+0.0** / 0.1 mm/step]
1001 1	Paper Tray Feed	Adjusts the printing leading edge registration from each paper feed station using the Trimming Area Pattern (SP4417, No.15). Use the # key to toggle between + and – before entering the value. The specification is 3 ± 2 mm. *See "Replacement and Adjustment - Copy Adjustment" for details.*
1001 2	By-pass Feed	
1001 3	Duplex, Side2	

1002*	Side-to-Side Registration	[+9.0 ~ –9.0 / **+0.0** / 0.1 mm/step]
1002 1	Tray 1	Adjusts the printing side-to-side registration from each paper feed station using the Trimming Area Pattern (SP4417, No.15). *Use the # key to toggle between + and – before entering the value. The specification is 2 ± 1.5 mm. See "Replacement and Adjustment - Copy Adjustment" for details.*
1002 2	Tray 2	
1002 3	Tray 3 (Optional PFU Tray 1, or LCT)	
1002 4	Tray 4 (Optional PFU Tray 2)	
1002 5	By-pass	
1002 6	Duplex Side 2	

1003*	Paper Feed Timing	
1003 1	Tray 1	Adjusts the paper feed clutch timing at registration. The paper feed clutch timing determines the amount of paper buckle at registration. (A larger setting leads to more buckling.) [0 ~ 10 / **5** / 1 mm/step]
1003 2	Tray 2/3/4 By-pass	
1003 3	Duplex Side 2	[0 ~ 20 / **6** / 1 mm/step]

1007	By-pass Paper Size Display	Displays the by-pass paper width sensor output.

1103	Fusing Idling	[**0 = Off** / 1 = On / 2 = Off plus machine temperature check]
	Switches fusing idling on/off. *Switch on if fusing on the 1st and 2nd copies is incomplete (this may occur if the room is cold.)*	

1105*	Fusing Temperature Adjustment	
1105 1	Roller Center	Adjusts the fusing temperature at the center and both ends of the hot roller for normal printing. [120 ~ 200 / **165** / 1°C/step]
1105 2	Roller Ends	
1105 3	Energy Saver	Adjusts the fusing temperature at the center and both ends of the hot roller for energy saver mode. [0 ~ 160 / **150** / 1°C/step]
1105 4	Thick Paper - Center	Adjusts the additional fusing temperature for thick paper for the 2nd paper tray and for the bypass tray. [0 ~ 30 / **15** / 1°C/step]
1105 5	Thick Paper - Ends	
1105 6	After Warming-up - Center	Adjusts the fusing temperature at the center of the hot roller after the machine has warmed up. [120 ~ 200 / **165** / 1°C/step]
1105 7	After Warming-up - Ends	Adjusts the fusing temperature at both ends of the hot roller after the machine has warmed up. [120 ~ 200 / **175** / 1°C/step]
1105 8	After Warming-up - No. of Pages	In this machine, fusing temperature is kept 10°C higher than the normal temperature for a number of pages after the machine has warmed up. This SP selects the number of pages made at this temperature. See Detailed Section Descriptions – Fusing for more details. [0 ~ 10 / **3** / 1 page/step]
1105 9	After Warming-up - Times	In this machine, fusing temperature is kept 10°C higher than the normal temperature for a short while after the machine been warmed up. This SP selects the length of time that this temperature is used. See Detailed Section Descriptions – Fusing for more details. [0 ~ 180 / **60** / 1s/step]

1106	Fusing Temp. Display	
1106 1	Roller Center	Displays the fusing temperature for the center or both ends of the hot roller.
1106 2	Roller Ends	
1106 3	In the Machine at Power On	Displays the temperature in the machine at power on. *This temperature is monitored by the thermistor on the SBCU board.*

1108*	Fusing Soft Start Setting
	Selects whether the fusing temperature control cycle is 1 or 3 seconds. *If this is "1 (3 s)", the power supply fluctuation caused by the fusing lamp turning on is less often.* [0 = 1 s / 1 = 3 s] Default: 0 = N. America, 1 = Europe/Asia

1109	Fusing Nip Band Check
	Checks the fusing nip band (☛ 4.2.11) [1 = Start / 0 = Stop]

1903*	Feed Clutch Re-energize	
	Adjusts the paper feed amount allowed by the clutch after correcting the skew at registration. When paper jams occur after restarting paper feed after registration, increase the value to help the registration roller feed the paper.	
1903 1	By-pass Feed	[0 ~ 10 / **6** / 1 mm/step]
1903 2	Tray 1 Feed	[0 ~ 10 / **0** / 1 mm/step]
1903 3	Other Trays	

1905*	Tray Paper Full Detection	[0 = No / **1 = Yes**]
	Determines whether or not to detect if the built-in copy tray is full.	

1906*	Tray Paper Full Timer	[100 ~ 5000 / **500** / 10 ms/step]
	Adjusts the time that the paper overflow sensor must remain on before a message appears on the LCD. The sensor may be switched on and off again if the paper is curled, giving a false tray full detection. This SP prevents this problem. *This SP mode is used when SP1905 is set to 1.*	

1908*	**1st Bottom Plate Pressure Adjustment**
1908 1	Normal Size
	If a middle size threshold is not stored with SP1908-9, this SP adjusts the upper paper lift motor reverse time for paper sizes larger than the small size threshold set with SP1908-8. If a middle size threshold is stored with SP1908-9, then this SP adjusts the motor reverse time for sizes larger than the middle size. **Do not input a value greater than 1200.** *Use this SP when a paper feed problem occurs from the 1st paper tray.* *See "Paper Lift Mechanism" for details on SP1908.* [0 ~ 2000 / **200** / 1 ms/step]
1908 2	Small Size
	Adjusts the upper paper lift motor reverse time for paper of the same size as or smaller than the small size threshold set with SP1908-8. **Do not input a value greater than 1200.** *Use this SP when a paper feed problem occurs from the 1st paper tray.* *See "Paper Lift Mechanism" for details on SP1908.* [0 ~ 2000 / **600** / 1 ms/step]
1908 3	Middle Size
	Adjusts the upper paper lift motor reverse time for paper sizes larger than the small size threshold set with SP1908-8, up to and including the middle size threshold set with SP1908-9. If a middle size threshold is not stored with SP1908-9, this SP is not used. **Do not input a value greater than 1200.** *Use this SP when a paper feed problem occurs from the 1st paper tray.* *See "Paper Lift Mechanism" for details on SP1908.* [0 ~ 2000 / **200** / 1 ms/step]

1908	**1st Bottom Plate Pressure Re-adjustment**
1908 4	Small Size
	Adjusts the upper paper lift motor forward rotation time for paper of the same size as or smaller than the small size threshold set with SP1908-8. The motor rotates forward when the remaining paper amount is lower than the value of SP1908-6. *Use this SP when a paper feed problem occurs when paper in the 1st paper tray is running low.* *See "Paper Lift Mechanism" for details on SP1908.* [0 ~ 2000 / **400** / 1 ms/step]
1908 5	Middle Size
	Adjusts the upper paper lift motor forward rotation time for paper sizes larger than the small size threshold set with SP1908-8, up to and including the middle size threshold set with SP1908-9. The motor rotates forward when the amount of remaining paper is lower than the value of SP1908-7. If a middle size threshold is not stored with SP1908-9, this SP is not used. *Use this SP when a paper feed problem occurs when paper in the 1st paper tray is running low.* *See "Paper Lift Mechanism" for details on SP1908.* [0 ~ 2000 / **300** / 1 ms/step]
	1st Paper Amount
1908 6	Small Size
	Selects the remaining paper amount limit for use with SP1908-4. *Set this SP to 2 or 3 when a paper feed problem occurs before near-end.* *See "Paper Lift Mechanism" for details on SP1908.* [0 = None (Empty) / **1 = Near End** / 2 = 25% / 3 = 75%]
1908 7	Middle Size
	Selects the remaining paper amount limit for use with SP1908-5. *Set this SP to 2 or 3 when a paper feed problem occurs before near-end.* *See "Paper Lift Mechanism" for details on SP1908.* [0 = None (Empty) / **1 = Near End** / 2 = 25% / 3 = 75%]
	1st Paper Size
1908 8	1st Small Paper Size Setting
	Selects the small size threshold for the 1st paper tray. "0" means that this setting is not used. *The size used by SP1908 is determined by paper width. See "Paper Lift Mechanism" for details on SP1908.* [0 = None (Not used) / **1 = HLT/A5** / 2 = A4 / 3 = LT / 4 = DLT / 5 = A3]
1908 9	1st Middle Paper Size Setting
	Selects the middle size threshold for the upper tray. "0" means that this setting is not used. *The value must be larger than the small size threshold (SP1908-8). The size used by SP1908 is determined by paper width. See "Paper Lift Mechanism" for details on SP1908.* [**0 = None (Not used)** / 1 = HLT/A5 / 2 = A4 / 3 = LT / 4 = DLT / 5 = A3]

1909*	**2nd Bottom Plate Pressure Adjustment**
1909 1	Normal Size
	If a middle size threshold is not stored with SP1909-9, this SP adjusts the upper paper lift motor reverse time for paper sizes larger than the small size threshold set with SP1909-8. If a middle size threshold is stored with SP1909-9, then this SP adjusts the motor reverse time for sizes larger than the middle size. **Do not input a value greater than 1,200.** *Use this SP when a paper feed problem occurs from the 2nd paper tray.* *See "Paper Lift Mechanism" for details on SP1909.* [0 ~ 2000 / **200** / 1 ms/step]
1909 2	Small Size
	Adjusts the upper paper lift motor reverse time for paper of the same size as or smaller than the small size threshold set with SP1909-8. **Do not input a value greater than 1,200.** *Use this SP when a paper feed problem occurs from the 2nd paper tray.* *See "Paper Lift Mechanism" for details on SP1909.* [0 ~ 2000 / **600** / 1 ms/step]
1909 3	Middle Size
	Adjusts the upper paper lift motor reverse time for paper sizes larger than the small size threshold set with SP1909-8, up to and including the middle size threshold set with SP1909-9. If a middle size threshold is not stored with SP1909-9, this SP is not used. **Do not input a value greater than 1200.** *Use this SP when a paper feed problem occurs from the 2nd paper tray.* *See "Paper Lift Mechanism" for details on SP1909.* [0 ~ 2000 / **200** / 1 ms/step]
	2nd Bottom Plate Pressure Re-adjustment
1909 4	Small Size
	Adjusts the upper paper lift motor forward rotation time for paper of the same size as or smaller than the small size threshold set with SP1909-8. The motor rotates forward when the remaining paper amount is lower than the value of SP1909-6. *Use this SP when a paper feed problem occurs when paper in the 2nd paper tray is running low.* *See "Paper Lift Mechanism" for details on SP1909.* [0 ~ 2000 / **400** / 1 ms/step]
1909 5	Middle Size
	Adjusts the upper paper lift motor forward rotation time for paper sizes larger than the small size threshold set with SP1909-8, up to and including the middle size threshold set with SP1909-9. The motor rotates forward when the remaining paper amount is lower than the value of SP1909-7. If a middle size threshold is not stored with SP1909-9, this SP is not used. *Use this SP when a paper feed problem occurs when paper in the 2nd paper tray is running low.* *See "Paper Lift Mechanism" for details on SP1909.* [0 ~ 2000 / **300** / 1 ms/step]

	2nd Paper Amount
1909 6	Small Size
	Selects the remaining paper amount limit for use with SP1909-4. *Set this SP to 2 or 3 when a paper feed problem occurs before near-end.* *See "Paper Lift Mechanism" for details on SP1909.* [0 = None (Empty) / **1 = Near End** / 2 = 25% / 3 = 75%]
1909 7	Middle Size
	Set this SP to 2 or 3 when a paper feed problem occurs before near-end. *See "Paper Lift Mechanism" for details on SP1909.*
	2nd Paper Size
1909 8	2nd Small Paper Size Setting
	Selects the small size threshold for the 2nd paper tray. "0" means that this setting is not used. *The size used by SP1909 is determined by paper width. See "Paper Lift Mechanism" for details on SP1909.* [0 = None (Not used) / **1 = HLT/A5** / 2 = A4 / 3 = LT / 4 = DLT / 5 = A3]
1909 9	2nd Middle Paper Size Setting
	Selects the middle size threshold for the upper tray. "0" means that this setting is not used. *The value must be larger than the small size threshold (SP1909-8). The size used by SP1909 is determined by paper width. See "Paper Lift Mechanism" for details on SP1909.* [**0 = None (Not used)** / 1 = HLT/A5 / 2 = A4 / 3 = LT / 4 = DLT / 5 = A3]

1910*	**3rd Bottom Plate Pressure Adjustment**
1910 1	Normal Size (Optional PFU)
	If a middle size threshold is not stored with SP1910-9, this SP adjusts the upper paper lift motor reverse time for paper sizes larger than the small size threshold set with SP1910-8. If a middle size threshold is stored with SP1910-9, then this SP adjusts the motor reverse time for sizes larger than the middle size. **Do not input a value greater than 1200.** *Use this SP when a paper feed problem occurs from the 3rd paper tray.* *See "Optional Paper Tray Unit – Paper Lift Mechanism" for details on SP1910.* [0 ~ 2000 / **200** / 1 ms/step]
1910 2	Small Size (Optional PFU)
	Adjusts the upper paper lift motor reverse time for paper of the same size as or smaller than the small size threshold set with SP1910-8. **Do not input a value greater than 1200.** *Use this SP when a paper feed problem occurs from the 3rd paper tray.* *See "Optional Paper Tray Unit – Paper Lift Mechanism" for details on SP1910.* [0 ~ 2000 / **600** / 1 ms/step]
1910 3	Middle Size (Optional PFU)
	Adjusts the upper paper lift motor reverse time for paper sizes larger than the small size threshold set with SP1910-8, up to and including the middle size threshold set with SP1910-9. If a middle size threshold is not stored with SP1910-9, this SP is not used. **Do not input a value greater than 1200.** *Use this SP when a paper feed problem occurs from the 3rd paper tray.* *See "Optional Paper Tray Unit – Paper Lift Mechanism" for details on SP1910.* [0 ~ 2000 / **200** / 1 ms/step]

	3rd Bottom Plate Pressure Re-adjustment
1910 4	Small Size (Optional PFU)
	Adjusts the upper paper lift motor forward rotation time for paper of the same size as or smaller than the small size threshold set with SP1910-8. The motor rotates forward when the remaining paper amount is lower than the value of SP1910-6. *Use this SP when a paper feed problem occurs when paper in the 3rd paper tray is running low.* *See "Optional Paper Tray Unit – Paper Lift Mechanism" for details on SP1910.* [0 ~ 2000 / **400** / 1 ms/step]
1910 5	Middle Size (Optional PFU)
	Adjusts the upper paper lift motor forward rotation time for paper sizes larger than the small size threshold set with SP1910-8, up to and including the middle size threshold set with SP1910-9. The motor rotates forward when the remaining paper is lower than the value of SP1910-7. If a middle size threshold is not stored with SP1910-9, this SP is not used. *Use this SP when a paper feed problem occurs when paper in the 3rd paper tray is running low.* *See "Optional Paper Tray Unit - Paper Lift Mechanism" for details on SP1910.* [0 ~ 2000 / **300** / 1 ms/step]
	3rd Paper Amount
1910 6	Small Size (Optional PFU)
	Selects the remaining paper amount limit for use with SP1910-4. *Set this SP to 2 or 3 when a paper feed problem occurs before near-end.* *See "Optional Paper Tray Unit - Paper Lift Mechanism" for details on SP1910.* [0 = None (Empty) / **1 = Near End** / 2 = 25% / 3 = 75%]
1910 7	Middle Size (Optional PFU)
	Selects the remaining paper amount limit for use with SP1910-5. *Set this SP to 2 or 3 when a paper feed problem occurs before near-end.* *See "Optional Paper Tray Unit - Paper Lift Mechanism" for details on SP1910.* [0 = None (Empty) / **1 = Near End** / 2 = 25% / 3 = 75%]
	3rd Paper Size
1910 8	3rd Small Paper Size Setting (Optional PFU)
	Selects the small size threshold for the 3rd paper tray. "0" means that this setting is not used. *The size used by SP1910 is determined by paper width. See "Optional Paper Tray Unit - Paper Lift Mechanism" for details on SP1910.* [0 = None (Not used) / **1 = HLT/A5** / 2 = A4 / 3 = LT / 4 = DLT / 5 = A3]
1910 9	3rd Middle Paper Size Setting (Optional PFU)
	Selects the middle size threshold for the upper tray. "0" means that this setting is not used. *The value must be larger than the small size threshold (SP1910-8). The size used by SP1910 is determined by paper width. See "Optional Paper Tray Unit - Paper Lift Mechanism" for details on SP1910.* [**0 = None (Not used)** / 1 = HLT/A5 / 2 = A4 / 3 = LT / 4 = DLT / 5 = A3]

1911*	**4th Bottom Plate Pressure Adjustment**
1911 1	Normal Size (Optional PFU)
	If a middle size threshold is not stored with SP19119, this SP adjusts the upper paper lift motor reverse time for paper sizes larger than the small size threshold set with SP19118. If a middle size threshold is stored with SP19119, then this SP adjusts the motor reverse time for sizes larger than the middle size. **Do not input a value greater than 1200.** *Use this SP when a paper feed problem occurs from the 4th paper tray.* *See "Optional Paper Tray Unit – Paper Lift Mechanism" for details on SP1911.* [0 ~ 2000 / **200** / 1 ms/step]
1911 2	Small Size (Optional PFU)
	Adjusts the upper paper lift motor reverse time for paper of the same size as or smaller than the small size threshold set with SP19118. **Do not input a value greater than 1200.** *Use this SP when a paper feed problem occurs from the 4th paper tray.* *See "Optional Paper Tray Unit – Paper Lift Mechanism" for details on SP1911.* [0 ~ 2000 / **600** / 1 ms/step]
1911 3	Middle Size (Optional PFU)
	Adjusts the upper paper lift motor reverse time for paper sizes larger than the small size threshold set with SP19118, up to and including the middle size threshold set with SP19119. If a middle size threshold is not stored with SP19119, this SP is not used. **Do not input a value greater than 1200.** *Use this SP when a paper feed problem occurs from the 4th paper tray.* *See "Optional Paper Tray Unit – Paper Lift Mechanism" for details on SP1911.* [0 ~ 2000 / **200** / 1 ms/step]
	4th Bottom Plate Pressure Re-adjustment
1911 4	Small Size (Optional PFU)
	Adjusts the upper paper lift motor forward rotation time for paper of the same size as or smaller than the small size threshold set with SP19118. The motor rotates forward when the remaining paper amount is lower than the value of SP19116. *Use this SP when a paper feed problem occurs when paper in the 4th paper tray is running low.* *See "Optional Paper Tray Unit – Paper Lift Mechanism" for details on SP1911.* [0 ~ 2000 / **400** / 1 ms/step]
1911 5	Middle Size (Optional PFU)
	Adjusts the upper paper lift motor forward rotation time for paper sizes larger than the small size threshold set with SP19118, up to and including the middle size threshold set with SP19119. The motor rotates forward when the remaining paper amount is lower than the value of SP19117. If a middle size threshold is not stored with SP19119, this SP is not used. *Use this SP when a paper feed problem occurs when paper in the 4th paper tray is running low.* *See "Optional Paper Tray Unit - Paper Lift Mechanism" for details on SP1911.* [0 ~ 2000 / **300** / 1 ms/step]
	4th Paper Amount
1911 6	Small Size (Optional PFU)
	Selects the remaining paper amount limit for use with SP19114. *Set this SP to 2 or 3 when a paper feed problem occurs before near-end.* *See "Optional Paper Tray Unit - Paper Lift Mechanism" for details on SP1911.* [0 = None (Empty) / **1 = Near End** / 2 = 25% / 3 = 75%]

1911 7	Middle Size (Optional PFU)
	Selects the remaining paper amount limit for use with SP19115. *Set this SP to 2 or 3 when a paper feed problem occurs before near-end.* *See "Optional Paper Tray Unit - Paper Lift Mechanism" for details on SP1911.* [0 = None (Empty) / **1 = Near End** / 2 = 25% / 3 = 75%]
	4th Paper Size
1911 8	4th Small Paper Size Setting (Optional PFU)
	Selects the small size threshold for the 4th paper tray. "0" means that this setting is not used. *The size used by SP1911 is determined by paper width. See "Optional Paper Tray Unit - Paper Lift Mechanism" for details on SP1911.* [0 = None (Not used) / **1 = HLT/A5** / 2 = A4 / 3 = LT / 4 = DLT / 5 = A3]
1911 9	4th Middle Paper Size Setting (Optional PFU)
	Selects the middle size threshold for the upper tray. "0" means that this setting is not used. *The value must be larger than the small size threshold (SP19118). The size used by SP1911 is determined by paper width. See "Optional Paper Tray Unit - Paper Lift Mechanism" for details on SP1911.* [**0 = None (Not used)** / 1 = HLT/A5 / 2 = A4 / 3 = LT / 4 = DLT / 5 = A3]

1912*	Tray Motor Reverse Time
	Adjusts the tray motor reverse time. *The tray motor reverses when the tray is pulled out. The tray can be put back in the machine without damage while the motor reverses.* [0 ~ 9000 / **1700** / 1 ms/step]

1994	Punch Hole Detection
	When using paper that has punch holes, the registration sensor may detect the hole and a paper jam will be detected. If you select "1", the machine ignores the registration sensor off signal within 50 mm from the trailing edge of the paper. [**0 = No** 1 = Yes] **DFU**

1995	Paper Height Sensor Check **DFU**
	These sensors display the status of the paper height sensors for the 1st and 2nd Paper Trays.
1995 1	1st Paper Tray 1:OK 0:NG
1995 2	2nd Tray 1:OK 0:NG

1997	Jam Detect for Manual Tray	[0 ~ 1/ **0** / 1]
	Sets the jam detection method for the bypass tray. 0: Normal Detection. Detects a jam if the size of the paper fed is shorter or longer than the size selected for the bypass tray. 1: Simple Detection. Detects a jam if the size of the paper fed is longer than the size set for the bypass tray.	

SP2XXX: Drum

2001*	Charge Roller Bias Adjustment
2001 1*	Printing
	Adjusts the voltage applied to the charge roller during printing. *This value will be changed automatically when the charge roller bias correction is performed.* *Note that if this value is changed, the charge roller voltage will be corrected based on the new voltage.* [2100 ~ 1500 / **–1700** / 1 V/step]
2001 2*	ID Sensor Pattern
	Adjusts the voltage applied to the charge roller when making the Vsdp ID sensor pattern (for charge roller bias correction). *The actual charge roller voltage is this value plus the value of SP20011.* [0 ~ 400 / **200** / 1 V/step]
2001 3	Temporary Input
	Inputs the charge roller voltage temporarily for test purposes. ***Do not change the value.*** [0 ~ –2500 / **0** / 1 V/step]

2005*	Charge Roller Bias Correction
2005 1	Vsdp Min
	Adjusts the lower threshold value for the charge roller correction. *When the value of Vsdp/Vsg is less than this value, the charge roller voltage increases by 50V (e.g. from –500 to –550). The size of the increase depends on SP2005 3.* [0 ~ 100 / **90** / 1%/step]
2005 2	Vsdp Max
	Adjusts the upper threshold value for the charge roller correction. *When the value of Vsdp/Vsg is greater than this value, the charge roller voltage decreases by 50V (e.g. from –550 to –500). The size of the decrease depends on SP2005 3.* [0 ~ 100 / **95** / 1 %/step]
2005 3	Charge Roller Bias Correction
	Adjusts the size of the charge roller voltage correction. [0 ~ 200 / **50** / 1 V/step]

2101*	Erase Margin Adjustment	
2101 1	Leading Edge	
		Adjusts the leading edge erase margin. *The specification is 3 ± 2 mm. See "Replacement and Adjustment - Copy Adjustment" for details.* [0.0 ~ 9.0 / **3.0** / 0.1 mm/step]
2101 2	Trailing Edge – Small Paper	
	Adjusts the trailing edge erase margin for paper of length 216 mm or less. *The specification is 3 ± 2 mm. See "Replacement and Adjustment - Copy Adjustment" for details.* [0.0 ~ 9.0 / **2.0** / 0.1 mm/step]	
2101 3	Trailing Edge – Middle Paper	
	Adjusts the trailing edge erase margin for paper of length 216.1 ~ 297 mm. *The specification is 3 ± 2 mm. See "Replacement and Adjustment - Copy Adjustment" for details.* [0.0 ~ 9.0 / **3.0** / 0.1 mm/step]	
2101 4	Trailing Edge – Large Paper	
	Adjusts the trailing edge erase margin for paper longer than 297 mm. *The specification is 3 ± 2 mm. See "Replacement and Adjustment - Copy Adjustment" for details.* [0.0 ~ 9.0 / **4.0** / 0.1 mm/step]	
2101 5	Left Side	
	Adjusts the left edge erase margin. *The specification is 2 ± 1.5 mm. See "Replacement and Adjustment - Copy Adjustment" for details.* [0.0 ~ 9.0 / **2.0** / 0.1 mm/step]	
2101 6	Right Side	
	Adjusts the right edge erase margin. *The specification is 2 + 2.5/-1.5 mm. See "Replacement and Adjustment - Copy Adjustment" for details.* [0.0 ~ 9.0 / **2.0** / 0.1 mm/step]	
2101 7	Rear – Trailing Edge (Duplex 2nd Side)	
	Adjusts the trailing edge erase margin on the reverse side of duplex copies. The actual trailing edge erase margin on the reverse side is this value plus the value of SP21012 or 3 or 4. *The specification is 3 ± 2 mm. See "Replacement and Adjustment - Copy Adjustment" for details* [0.0 ~ 9.0 / **1.2** / 0.1 mm/step]	
2101 8	Rear – Left Side (Duplex 2nd Side)	
	Adjusts the left side erase margin on the reverse side of duplex copies. The actual left side erase margin on the reverse side is this value plus the value of SP21015. *The specification is 2 ± 1.5 mm. See "Replacement and Adjustment - Copy Adjustment" for details.* [0.0 ~ 9.0 / **0.3** / 0.1 mm/step]	
2101 9	Rear – Right Side (Duplex 2nd Side)	
	Adjusts the right side erase margin on the reverse side of duplex copies. The actual right side erase margin on the reverse side is this value plus the value of SP21016. *The specification is 2 +2.5/–1.5 mm. See "Replacement and Adjustment - Copy Adjustment" for details.* [0.0 ~ 9.0 / **0.3** / 0.1 mm/step]	

2101 10	Printer - Rear Trailing Edge
	In printer mode, adjusts the trailing edge erase margin on the reverse side of duplex copies. The actual trailing edge erase margin on the reverse side is this value plus the value of SP21017. *The specification is 3 ± 2 mm. See "Replacement and Adjustment - Copy Adjustment" for details* [0.0 ~ 9.0 / **0.0** / 0.1 mm/step]

2103*	LD Power Adjustment	[50 ~ 170 / **129** / 1/step]
	Adjusts the LD power. **DFU** ***Do not change the value.***	

2110*	Test Mode dpi
	Sets the scanning resolution (dpi). **DFU** [See below / 8 / 0~18] 0: 400x400 dpi 1: 391x406 dpi 2: 406x391 dpi 4: 300x300 dpi 8: 600x600 dpi 15: 439x430 dpi 16: 476x476 dpi 17: 483x465 dpi 18: 465x483 dpi

2201*	Development Bias Adjustment
2201 1	Printing
	Adjusts the development bias during printing. *This can be adjusted as a temporary measure if faint copies appear due to an aging drum.* [–1500 ~ 2000 / **–650** / 1 V/step]
2201 2	ID Sensor Pattern
	Adjusts the development bias for making the ID sensor pattern. The actual development voltage for the ID sensor pattern is this value plus the value of SP22011. *This should not be used in the field, because it affects ID sensor pattern density, which affects toner supply.* [**0 = N (200V)** / 1 = H (240V) / 2 = L (160V) / 3 = HH (280V) / 4 = LL (120V)]

2210*	Bias Off Time
2210 1	Charge Bias
	Adjusts the charge voltage (-1200V) application time. **DFU** *When the charge voltage and development bias are turned off at the same time, toner or carrier will be attracted to the drum. To reduce the toner or carrier attraction, the machine applies –1200V to the charge roller before the development bias is turned off. This SP adjusts the time for applying the charge.* [0 ~ 150 / **80** / 1 ms /step]
2210 2	Development Bias
	Adjusts the development bias off time. **DFU** [-120 ~ 120 / **0** / 1ms/step]

2211*	PCU Reverse Interval	[0 ~ 999 / **100** / 1 sheet/step] 0: Never cleans during job
	Adjusts the PCU reverse interval for cleaning during a job. When the machine has made this number of copies in the middle of a job, the machine reverses to clean the edge of the cleaning blade. After cleaning, the machine resumes the job. Set to a shorter interval if thin white lines appear on printouts.	

2213*	Copies after Near End	[**0 = 50 pages** / 1 = 20 pages]
	Selects the number of copies that can be made after toner near-end has been detected. *If the user normally makes copies with a high proportion of black, reduce the interval.*	

2220*	Vt/Vsg/Vsp/Vsdp/Vts Display	
2220 1	Vsp	Displays the individual Vt, Vsg, Vsp, Vsdp, and Vts values.
2220 2	Vsg	
2220 3	Vsdp	
2220 4	Vt	
2220 5	Vts	
2220 6	Vsp/Vsg/Vsdp/Vt/Vts	Displays all the data used in process control, separated by slashes (/).

2301*	Transfer Current Adjust
2301 1*	Normal Paper
	Adjusts the current applied to the transfer roller during copying from a paper tray when the user uses the “Normal” paper setting. *If the user normally feeds thicker paper from a paper tray, use a higher setting.* [0 = –2 μA / **1 = 0 μA** / 2 = +2 μA / 3 = +4 μA]
2301 2*	Thick/Thin Paper
	Adjusts the current applied to the transfer roller during copying from the by-pass tray. These settings are also used if the 2nd tray is used and special paper is selected. *If the user normally feeds thicker paper from the by-pass tray/2nd tray (special paper), use a higher setting. If waste toner is re-attracted from the drum (this can occur when using an OHP sheet), use a higher setting.* [0 = –2 μA / **1 = 0 μA** / 2 = +2 μA / 3 = +4 μA]
2301 3*	Duplex, Side2
	Adjusts the current applied to the transfer roller during copying from the duplex unit when the user uses the “Normal” paper setting. *Use this SP when the image on the rear side of the paper has a problem caused by poor image transfer.* [0 = –2 μA / **1 = 0 μA** / 2 = +2 μA / 3 = +4 μA]
2301 4*	Cleaning
	Adjusts the current applied to the transfer roller during roller cleaning. *If toner remains on the roller after cleaning (dirty background appears on the rear side of the paper), increase the current.* [0 ~ 10 / **–4** / 1 μA/step]
2301 5	Input – Front **DFU**
2301 6	Input – Rear **DFU**

2301 7	Temp Inside the Machine
	Displays the temperature measured inside the machine just after power-on (by the thermistor on the SBCU board) the last time that the fusing unit was less than 40°C just after the machine was switched on. *The transfer current is corrected in accordance with this value.*

2801	Developer Initialization
	Initializes the developer and resets the TD and ID sensor outputs to their defaults. *Use this if the machine did not detect the new PCU when it was installed, and the TD/ID sensors were not initialized.*

2802	Developer Mixing
	Mixes the developer and checks Vt. The machine mixes the developer for 2 minutes and while doing this, it reads the TD sensor output (Vt). It does not initialize the TD sensor output. *If the machine has not been used for a long time, prints may have a dirty background. In this case, use this SP mode to mix the developer.*

2803*	Developer Initialization Data
2803 1	Vts
	When the machine detects a new PCU (photoconductor unit) in the machine, it checks the heat seals at the creation of the first ID sensor pattern. After the agitator is rotated for 30 sec., the machine creates the second ID sensor pattern and corrects the reference value of the TD sensor. The corrected reference value for the TD sensor is recorded here.
2803 2	ID Sensor PWM Value
	Displays the PWM value of the ID sensor after performing the developer initialization. This value is added to the value of SP2934 4 (PWM Start Value for Vsg Auto Adjust).
2803 3	Flag **DFU**

2901*	Separation Voltage Adj
2901 1	Front – Leading Edge
	Adjusts the voltage that is applied to the separation plate during printing at the leading edge of the paper on the front side. *If the copies have pawl marks at the leading edge, increase this voltage.* [–1000 ~ 4000 / **–1800** / 1 V/step]
2901 2	Front – Image Area
	Adjusts the voltage that is applied to the separation plate during printing on the image area of the paper on the front side. *If the copies have pawl marks in the image area, increase this voltage.* [–1000 ~ 4000 / **–1800** / 1 V/step]
2901 3	Rear – Leading Edge
	Adjusts the voltage applied to the separation plate, during printing at the leading edge of the paper on the rear side. *See SP29011.* [–1000 ~ 4000 / **–2100** / 1 V/step]
2901 4	Rear – Image Area
	Adjusts the voltage applied to the separation plate, during printing at the image area of the paper on the rear side. *See SP29012.* [–1000 ~ 4000 / **–2100** / 1 V/step]

2902*	Test Pattern	
2902 2	IPU Test Pattern	Prints the test patterns. Select the number of the test pattern that you want to print 2902-2: Not used; to print the IPU Test Pattern – SP 4417 2902-3: (☛ 4.2.3) *When adjusting the printing registration, select no.15 (Trimming Area Pattern).* [0 ~ 41 / **0** / 1 step]
2902 3	Test Pattern Printing	

2906*	Tailing Correction
2906 1	Shift Value
	Shifts the image across the page at the interval specified by SP2906 2. *When making many copies of an original that contains vertical lines (such as a table), separation may not work correctly, then a tailing image will occur (ghosts of the vertical lines will continue past the bottom of the table). This SP prevents this problem.* [0.0 ~ 1.0 / **0.0** / 1 mm/step]
2906 2	Interval
	Changes the interval for the image shift specified by SP2906 1. [1 ~ 10 / **0** / 1 page/step]

2907*	Line Width Correction	
	Adjusts the line width for the copy mode. The default setting disables this function. A number smaller than the default makes lines thinner, a number larger than the default makes lines thicker.	
2907 1	Text Mode	[0 ~ 10 / **5** / 1 step]
2907 2	Photo Mode	[0 ~ 10 / **6** / 1 step]
2907 3	Text/Photo Mode	[0 ~ 10 / **5** / 1 step]
2907 4	Pale Mode	
2907 5	Generation Mode	

2908	Forced Toner Supply
	Forces the toner bottle to supply toner to the toner supply unit. Press Execute on the touch panel to start. *During this process, the machine supplies toner until the toner concentration in the development unit reaches a standard level. However, if the toner concentration does not reach a standard level, the machine supplies toner for 2 minutes maximum.*

2909*	Main Scan Magnification	[-0.5 ~ 0.5 / **0.0** / 0.1%/step]
2909 1	Copy (Short Edge Feed)	
	Adjusts the main scan magnification in copy mode when the machine feeds the paper in the short edge feed orientation.	
2909 2	Printer (Short Edge Feed)	
	Adjusts the main scan magnification in printer mode when the machine feeds the paper in the short edge feed orientation.	
2909 3	Copy –(Long Edge Feed)	
	Adjusts the main scan magnification in copy mode when the machine feeds the paper in the long edge feed orientation.	
2909 4	Printer (Long Edge Feed)	
	Adjusts the main scan magnification in printer mode when the machine feeds the paper in the long edge feed orientation.	

2910*	Margin Adjustment for By-pass
	Adjusts the blank margin at the trailing edge of paper fed from the by-pass table. [-9.0 ~ +9.0 / 0.1 mm / 1mm/step]

2913*	ID Adjustment for Test Pattern	[0 ~ 15 / **15** / 1/step]
	Adjusts the image density level for black pixels on test pattern printouts (patterns are made with SP2902) *This SP affects all test patterns except for the grayscale test patterns.*	

2915*	Polygon Motor Idling Time	[0 = None / **1 = 15 s** / 2 = 25 s]
	Selects the polygon motor idling time. *If the user sets an original, touches a key, or opens the platen cover/DF, the polygon motor starts idling to make a faster first copy. However, with the default (15 s), the motor stops if the user does nothing for 15 s, and stops 15 s after the end of a job.* *If set at "0", the polygon motor never turns off during stand-by. However, when the machine goes into energy saver mode, the polygon motor turns off regardless of this timer.*	

2921*	Toner Supply Mode	[**0 = Sensor 1** / 1 = Sensor 2 / 2 = Fixed 1 / 3 = Fixed 2]
	Selects the toner supply mode. *Normally, only use setting 0. Change to 3 temporarily if the TD sensor is defective. Do not use settings 1 and 2; these are for designer's use only.*	

2922*	Toner Supply Time	[0.1 ~ 5.0 / **0.6** / 0.1 s/step]
	Adjusts the toner supply motor on time for sensor supply mode. This SP is effective only when SP2921 is "0" or "1". *Increasing this value increases the toner supply motor on time. So, use a high value if the user tends to make lots of copies that have a high proportion of black.*	

2923*	Toner Recovery Time	[3 ~ 60 / **30** / 1 s/step]
	Adjusts the toner supply motor on time during recovery from toner near-end/end. This SP is effective only when SP2921 is "0", "1", or "2". *Note that toner recovery is done in a 3-second cycle. So, the input value should be a multiple of 3 (e.g. 3, 6 ,9). See "Toner Density Control" for more details.*	

2925*	Toner Supply Ratio
	Adjusts the toner supply rate for fixed toner supply mode. This SP is effective only when SP2921 is "2" or "3". *Increasing this value increases the toner supply motor on time. So, use a high value if the user tends to make lots of copies that have a high proportion of black. See "Toner Density Control" for more details.* [0 ~ 7 / **0** / 1/step] 0: t 4: 12t 1: 2t 5: 16t 2: 4t 6: On continuously 3: 8t 7: 0 s t: 200 ms

2926*	Standard Vt	[0.00 ~ 5.00 / **2.50** / 0.01 V/step] DFU
	Adjusts Vts (Vt for a new PCU). The TD sensor output is adjusted to this value during the TD sensor initial setting process. This SP is effective only when SP2921 is "0", "1", or "2". **DFU. Do not change this value.**	

2927*	ID Sensor Control	[0 = No / **1 = Yes**]
	Selects whether the ID sensor is used or not for toner density control. *If this value is "0", dirty background may occur after the machine has not been used for a long time.*	

2928*	Toner End Clear
	Clears the toner end condition. Press Execute on the touch panel to clear the toner end condition without adding new toner. When you press Execute, the following are cleared: • Toner end indicator (goes out) • Toner near-end counter • Toner near-end level When making a lot of copies after changing this setting to "1", the carrier may be attracted to the drum when the toner runs out, which may damage the drum.

2929*	Vref Adjustment
2929 1	Upper Limit
	Adjusts the upper limit for Vref. [0.00 ~ 5.00 / **3.10** / 0.01 V/step]
2921 2	Lower Limit
	Adjusts the lower limit for Vref. [0.00 ~ 5.00 / **1.40** / 0.01 V/step]

2930*	TD Sensor Manual Setting
	Adjusts the TD sensor output. **DFU** [0 ~ 5 / **0.0V** / 0.05V/step]

2931*	TD (V/wt%) Setting
	Adjusts the TD sensor sensitivity (coefficient: S) for toner density control. **DFU** [0.01 ~ 1.50 / 0.4 / 0.01/step]

2932*	Toner Density Control Level
	Adjusts the toner density control threshold level. [**0 = Normal** / 1 = Dark / 2 = Light / 3 = Darker / 4 = Lighter] *Use this SP when you want to adjust the image density.*

2933*	ID Sensor Control Correction
	Adjusts the ID sensor control coefficient. **DFU** [0.5 ~ 3 / **1** / 0.1/step]

2934*	ID Sensor PWM Setting	
2934 1	Display	Displays the PWM of the ID Sensor LED.
2934 2	Upper Limit	
	Adjusts the upper limit of the PWM for the ID sensor LED. **DFU** [0 ~ 999 / **0** / 1/step]	
2934 3	Upper Limit Correction	
	Corrects the upper limit of the PWM for the ID sensor LED. **DFU** [0 ~ 999 / **0** / 1/step]	

2935	ID Sensor Initialization
	Performs the ID sensor initial setting. *Press Execute on the touch panel to start. Perform this setting after replacing or cleaning the ID sensor.*

2936*	ID Sensor Pattern Size
	Selects the ID sensor pattern size in the main scan direction. *Set to 1 if white spots or black spots appear on prints. The ID sensor pattern is 290 mm wide, and when this is cleaned off, dirt is removed also.* [**0 = 20 mm** / 1 = 290 mm]

2990	Original Toner ID	
	Displays the ISSUER CODE of the loaded toner. The history of the toner ID codes are stored in NVRAM for display**. South Korea only**	
2990 1	Latest	Most current code (in use).
2990 2	Last 1	Up to four issuer codes of toner lots in the same series can be stored. If toner with a new series code is set, then the new code replaces the history of the previous toner.
2990 3	Last 2	
2990 4	Last 3	
2990 5	Last 4	

2991	Original Toner Counter	[0~65535 / **0** / 1]
	Displays the page counts for the ISSUER CODE history**. South Korea only**	
2991 1	Latest	This SP displays the page counts for each successive issuer code. See SP2990 above.
2991 2	Last 1	
2991 3	Last 2	
2991 4	Last 3	
2991 5	Last 4	

2992*	Copies After TD Sensor Error	[**0 = 100 copies** / 1 = 200 copies]
	Selects the number of copies that can be made after a TD sensor error has been detected. When the machine copies this amount, an SC condition will occur. If the optional fax unit is installed, the SC condition occurs immediately regardless of the number of prints (this is because the sender of the fax cannot check the image quality of the printout).	

2993*	ISSUER CODE Ref	[0~9999 / 0 / 1]
	Sets the standard issuer code, once it has been determined**. South Korea Only**.	

2994*	Vts Limitation - Factory	
2994 1	Upper Limit - Factory Only	**DFU**
2994 2	Lower Limit - Factory Only	**DFU**

2995*	ID Sensor Detection Interval
2995 1	Warming-up
	If the machine starts warming-up after this time has passed since entering energy saver mode or auto off mode, the machine makes an ID sensor pattern. *If this value is greater, there is a greater chance that background will become dirty.* [0 ~ 999 / **30** / 1 minute/step]
2995 2	Number of Page
	The machine makes an ID sensor pattern after the specified number of prints has been made. 0 = this feature is disabled. [0 ~ 999 / **0** / 1 page/step]

2996*	Transfer Roller Cleaning
	Selects whether the transfer roller is cleaned before each copy job. *Set this to '1' when dirty background appears on the reverse side of the first page of a copy job. However, the first copy time will be longer.* *If this SP is at 0, the transfer roller is never cleaned.* *See 'Detailed Section Descriptions – Transfer Roller Cleaning" for more details.* [**0 = No** / 1 = Yes]

2997*	Standard Vt (Factory Only)	**DFU**

2998*	PCU Reverse Rotation Time
2998 1	Wait Time
	Adjusts the waiting time for starting to rotate the drum in reverse after the end of each job. The wait time calculation formula is as follows. This value x 30 ms. 0: Reverses immediately after the end of the job (no waiting) [0 ~ 99 / **10** / 1/step]
2998 2	Reverse Time
	Adjusts the drum reverse rotation time. The reverse rotation time calculation formula is as follows. This value x 30 ms. 0: No reverse at end of job [0 ~ 99 / **1** / 1/step]

2999*	Toner Control Data Display
	Displays the toner density control data on the debug monitor. **DFU** [**0 = No** / 1 = Yes]

SP4-XXX: Scanner

4008*	Scanner Sub Scan Mag	[–0.9 ~ +0.9 / **0.0** / 0.1% step]
	Adjusts the magnification in the sub scan direction. *Use the # key to toggle between + and – before entering the value. The specification is ± 1%. See "Replacement and Adjustment - Copy Adjustment" for details.*	

4009*	Scanner Main Scan Mag	[–0.9 ~ +0.9 / **0.0** / 0.1% step]
	Adjusts the magnification in the main scan direction for scanning. *Use the # key to toggle between + and – before entering the value. The specification is ± 1%. See "Replacement and Adjustment – Copy Adjustment" for details.*	

4010*	Scanner Leading Edge Registration	[–0.9 ~ +0.9 / **0.0** / 0.1 mm step]
	Adjusts the leading edge registration for scanning in platen mode. *(–): The image moves in the direction of the leading edge.* *Use the # key to toggle between + and – before entering the value. The specification is 2 ± 1.5 mm. See "Replacement and Adjustment – Copy Adjustment" for details.*	

4011*	Scanner Side-to-side Registration	[–4.6 ~ +4.6 / **0.0** / 0.1 mm step]
	Adjusts the side-to-side registration for scanning in platen mode. *(–): The image disappears at the left side.* *(+): The image appears.* *Use the # key to toggle between + and – before entering the value. The specification is 2 ± 1.5 mm. See "Replacement and Adjustment – Copy Adjustment" for details.*	

4012*	Scanner Erase Margin	
4012 1	Leading Edge	Adjusts the erase margin at each side for scanning. *Do not adjust this unless the user wishes to have a scanner margin that is greater than the printer margin.* [0 ~ 9.0 / **0.5** / 0.1 mm/step]
4012 2	Trailing Edge	
4012 3	Right Side	
4012 4	Left Side	

4013	Scanner Free Run
	Performs a scanner free run with the exposure lamp on. *Press ON on the touch panel to start this feature. Press the C (Clear/Stop) key to stop.*

4015*	White Plate Scanning
4015 1	Start Position
	Adjusts the scanning start position on the white plate for auto shading. *The default is 10.5 mm from the leading edge. The setting specifies how far scanning starts from the default position.* [–5.0 ~ +5.0 / **0.0** / 0.1 mm/step]
4015 2	Scanning Area
	Adjusts the width of the area on the white plate (in the sub scan direction) that is scanned for auto shading. *The default is 4.76 mm. The current setting specifies the difference from this default.* [–5.0 ~ +5.0 / **0.0** / 0.1 mm/step]

4301	APS Data Display
	Displays the status of the APS sensors and platen/DF cover sensor (☛ 4.2.9).

4303*	APS Small Size Original
	Selects whether the copier determines that the original is A5 size when the APS sensor cannot detect the size. *If "A5 lengthwise" is selected, paper sizes that cannot be detected by the APS sensors are regarded as A5 lengthwise. If "Not detected" is selected, "Cannot detect original size" will be displayed.* [**0 = No (Not detected)** / 1 = Yes (A5 lengthways)]

4305*	Original Size Detection
	Selects whether the machine determines that the original is A4/LT, or 8K/16K. 8K/16K is not available for USA models. [**0 = Normal** (LT for USA models, A4 for Europe/Asia models) 1 = Reversed [A4 for USA models, LT for Europe/Asia models] 2 = 8K/16K]

4417	IPU Test Pattern
	Prints test patterns from the IPU video data outputs. **0. No Print** 1. Vertical Line – 1 dot 2. Vertical Line – 2 dot 3. Horizontal Line – 1 dot 4. Horizontal Line – 2 dot 5. Alternating Dot Pattern 6. Grid Pattern – 1 dot 7. Vertical Bands 8. Grayscale – Horizontal (8 level) 9. Grayscale – Vertical (8 level) 10. Grayscale – 16 level 11. Cross Pattern 12. Slant Pattern 13. Patch Pattern (256 level) 14 Patch Pattern (64 level) 15. Trimming Area 16. Frequency characteristics – Vertical 15. Frequency characteristics – Horizontal *Change to the copy mode display by pressing the (Interrupt) key, then print the test pattern.*

4428	SBU Auto Adjustment
	Performs the auto scanner adjustment. *Using this SP mode after replacing the white plate or erasing the memory on the controller board. See "Replacement and Adjustment – Copy Image Adjustments - Standard White Density Adjustment" for details on how to do this.* *Press Execute on the touch panel to start.*

4901	SBU Adjustment
4901 1	Gain – Even **DFU**
	Checks the difference value of the black level for the EVEN channel after adjusting the black level at power-up. *However, after doing a memory all clear (SP5801), use it to re-input the previous value.* [0 ~ 255 / **40** / 1/step]
4901 2	Gain – Odd **DFU**
	Checks the difference value of the black level for the ODD channel after adjusting the black level at power-up.*. However, after doing a memory all clear (SP5801), use it to re-input the previous value.* [0 ~ 255 / **40** / 1/step]
4901 3	DC Cont – Even **DFU**
	Adjusts the coefficient of the D/A converter for the AGC gain curve for DC cont for the EVEN channel. *However, after doing a memory all clear (SP5801), use it to re-input the previous value.* [0 ~255 / **25** / 1/step]
4901 4	DC Cont – Odd **DFU**
	Adjusts the coefficient of the D/A converter for the AGC gain curve for DC cont for the ODD channel. *However, after doing a memory all clear (SP5801), use it to re-input the previous value.* [0 ~255 / **25** / 1/step]
4901 7	Ref. Cont **DFU**
	Adjusts the coefficient of the D/A converter for the AGC gain curve for scanning the white plate. [0 ~255 / **147** / 1/step]

4902	Exposure Lamp ON
	Turns on the exposure lamp. *Press ON on the touch panel to turn on the lamp. Press OFF to turn off the lamp.*

4903*	Image Quality Adjustment - All	**Note**: These adjustments are effective only for the "Custom Setting" Original type.
4903 1	Text: 25% ~ 34%	Adjusts the image quality in Text mode. *A larger number increases contrast and sharpens the image but moiré may appear.* *A smaller number reduces contrast and moiré but the line may become narrower.* [0 ~ 10 / **4** / 1 step]
4903 2	Text: 35% ~ 66%	[0 ~ 10 / **3** / 1 step]
4903 3	Text: 67% ~ 141%	[0 ~ 10 / **4** / 1/step]
4903 4	Text: 142% ~ 400%	
4903 5	Photo: 25% ~ 34%	Adjusts the image quality in Photo mode. *0 ~ 6 are for a glossy photo image (error diffusion)* *7 ~ 20 are for a printed photo image (dithering)* *If copy quality is not satisfactory, try another setting (trial and error)* [0 ~ 20 / **11** / 1/step]
4903 6	Photo: 35% ~ 66%	
4903 7	Photo: 67% ~ 141%	
4903 8	Photo: 142% ~ 400%	
4903 9	Text/Photo: 25% ~ 34%	Adjusts the image quality in Text/Photo mode. *A larger number increases contrast and sharpens the image but moiré may appear.* *A smaller number reduces contrast and moiré but the line may become narrower.* [0 ~ 10 / **3** / 1 step]
4903 10	Text/Photo: 35% ~ 66%	[0 ~ 10 / **5** / 1 step]
4903 11	Text/Photo: 67% ~ 141%	
4903 12	Text/Photo: 142% ~ 400%	
4903 13	Pale: 25% ~ 34%	Adjusts the image quality in Pale mode. *A larger number increase the number of gradations in low contrast areas.* [0 ~ 10 / **3** / 1 step]
4903 14	Pale: 35% ~ 66%	
4903 15	Pale: 67% ~ 141%	
4903 16	Pale: 142% ~ 400%	
4903 17	Generation: 25% ~ 34%	Adjusts the image quality in Generation mode. *A larger number increases contrast and sharpens the image but moiré may appear.* *A smaller number reduces contrast and moiré but the line may become narrower.* [0 ~ 10 / **3** / 1 step]
4903 18	Generation: 35% ~ 66%	[0 ~ 10 / **5** / 1 step]
4903 19	Generation: 67% ~ 141%	
4903 20	Generation: 142% ~ 400%	

4904*	**Independent Dot Erase**	
4904 1	Text	This adjustment is only effective for the "Custom Setting" original type. *With a larger SP setting, more dots are detected as independent dots and erased. However, dots in mesh-like images may be detected as independent dots mistakenly. If "0" is selected, independent dot erase is disabled.* [0 ~ 10 / **0** / 1 step]
4904 2	Photo	
4904 3	Text/Photo	
4904 4	Pale	
4904 5	Generation	[0 ~ 10 / **3** / 1 step]
	Background Erase -	
4904 6	Text	This adjustment is only effective for the "Custom Setting" original type. *A larger number reduces dirty background. If "0" is selected, background erase is disabled.* [0 ~ 255 / **0** / 1 step]
4904 7	Photo	
4904 8	Text/Photo	
4904 9	Pale	
4904 10	Generation	
	Gamma Selection	
4904 11	Text	This adjustment is only effective for the "Custom Setting" original type. Selects the gamma table for each original type. [0 ~ 2 / **0** / 1/step] *0: Standard gamma table* *1: This gamma table reduces the background of the original and gives sharp characters.* *2: The gamma table increases the number of gradations in high-density areas.*
4904 12	Photo	
4904 13	Text/Photo	
4904 14	Pale	
4904 15	Generation	

4905*	Image Data Path
	Selects one of the following video data outputs which will be used for printing. **DFU** [0 ~ 3 / **0** / 1 step] 0: Normal 1: After black level correction 2: After shading correction without black level correction 3: Shading data

4907*	Gash Adj: Others
4907 1*	Fax 25%, 50% Reduction
	Determines whether 25% and 50% reduction is available in fax mode. [**0 = No**, 1 = Yes]
4907 2	Outline Level **DFU**

4909*	IPU Image Data Path
	Selects one of the following image data outputs, which will be used for printing. **DFU** [0 ~ 255 / **0** / 1 step] Bit 7: Shading Bit 6: Scanner gamma Bit 5: Pre-filtering Bit 4: Magnification Bit 3: Scanner/Printer Mask Bit 2: Gradation Bit 1: Filtering Bit 0: Printer gamma

4920	Scanning (Factory Only) **DFU**

4930*	Sensor Condition	
4930 1	Platen Cover sensor	Checks the following sensors in the scanner unit. [0 = Opened, 1 = Closed]
4930 2	Scanner HP Sensor	[0 = Opened, 1 = Closed]

4999	ADF Scan Glass Dust Check
	This function checks the narrow scanning glass of the ADF for dust that can cause black lines in copies. If dust is detected a system banner message is displayed, but processing does not stop.
4999 1	Check On/Off Change
	Issues a warning if there is dust on the narrow scanning glass of the ADF when the original size is detected before a job starts. This function can detect dust on the white plate above the scanning glass, as well as dust on the glass. Sensitivity of the level of detection is adjusted with SP4999 2. [0 ~ 1 / **0** / 1] 0: Off. No dust warning. 1: On. Dust warning. This warning does not stop the job. **Note**: Before switching this setting on, clean the ADF scanning glass and the white plate above the scanning glass.
4999 2	Detect Level
	Adjusts the sensitivity for dust detection on the ADF scanning glass. This SP is available only after SP49991 is switched on. [0~8 / **4**/ 1] If you see black streaks in copies when no warning has been issued, raise the setting to increase the level of sensitivity. If warnings are issued when you see not black streaks in copies, lower the setting. **Note**: Dust that triggers a warning could be removed from the glass by the originals in the feed path. If the dust is removed by passing originals, this is not detected and the warning remains on.

SP5XXX: Mode

5024*	mm/inch Selection
	Selects whether mm or inches are used in the display. Note: After selecting the number, you must turn the main power switch off and on. **Europe/Asia model:** [**0 = mm** / 1 = inch] **American model:** [0 = mm / **1 = inch**]

5044	Operation Panel Bit SW
5044 1	SW1 **DFU**
5044 2	SW2 **DFU**

5104*	A3/DLT Double Count
	Specifies whether the counter is doubled for A3/11" x 17" paper. *If "Yes" is selected, the total counter (mechanical counter) and the current user code counter counts up twice when A3/11" x 17" paper is used.* [**0 = No** / 1 = Yes]

5106*	ADS Level Selection
	Selects the image density level that is used in ADS mode. [1 ~ 7 / **4** / 1 notch/step]

5113*	Option Counter Type
	Selects the optional counter type. **0 = No** 1 = Key Card1 2 = Key Card2 3 = Pre-paid Card 4 = Coin lock 5 = MF key card 11: MF key card (Increment) 12: MF key card (Decrement)

5118*	Disable Copying	**DFU**

5120*	Mode Clear Opt. Counter Removal
	This SP is for Japan only. Do not change the value. [0 = Yes / 1 = Stand-by / 2 = None]

5121*	Counter Up Timing
	Determines whether the total counter counts up at paper feed-in or at paper exit. [**0 = Feed In** / 1 = Exit]

5127*	APS Off Mode
	Selects whether APS mode is selected as the power-up default. [0 = Enable / **1 = Disabled**]

5129*	F Paper Size Selection
	Selects the “F” paper size. [0 ~ 2 / **0** / 1 step] 0: 8" x 13" 1: 8.5" x 13" 2: 8.25" x 13"

5131*	Paper Size Type Selection
	Selects the paper size (type) for both originals and copy paper. [0~2 / **DIP SW setting** / 1 step] 0: Japan 1: North America 2: Europe *After changing the setting, turn the copier off and on. If the paper size of the archive files stored on the HDD is different, abnormal copies could result. Ask the customer to restore the archive files.*

5150*	By-Pass Length Setting
	Determines whether long paper can be fed from the by-pass tray. **[0 = Off**, 1 = On] *Normally the paper length from the by-pass tray is limited to 600 mm, but this can be extended with this SP to 1260 mm.* *Note that, with either setting, the image quality can only be guaranteed for 432 mm.*

5162*	Application Switch Method	**0**: HW, 1: SW
	Determines whether the application screen is switched with a hardware switch or software switch. 0: Soft Key Set 1: Hard Key Set	

5212*	Page Numbering
5212 3	Duplex Printout Right/Left Position
	Determines how horizontal printing is executed during duplex printing. Set the upper right corner of the front side and the upper left corner of the back side so the starting points for horizontal printing are the same on both sides **DFU.** [–10~+10 / **0** / 1 mm step] –10: Extreme right +10: Extreme left
5212 4	Duplex Printout High/Low Position
	Determines how vertical printing is executed during duplex printing. Set the upper right corner of the front side and the upper left corner of the back side so the starting points for vertical printing are the same on both sides. **DFU** [–10~+10 / **0** / 1 mm step] –10: Extreme top +10: Extreme bottom

5302 2*	Set Time
	Adjusts the RTC (real time clock) time setting for the local time zone. [–1440~+1440 / **see below** / 1 min./step] NA: -300 (New York) EU: +60 (Paris) Asia: +480 (Hong Kong) *Example: For Japan (+9 GMT), enter 540 (9 hours x 60 min.)*

5404	User Code Count Clear
	Clears the counts for the user codes assigned by the key operator to restrict the use of the machine.

5501*	PM Alarm
5501 1	PM Alarm Interval
	Sets the PM interval. *The value stored in this SP is used when the value of SP55012 is "1".* [0 ~ 255 / **0** / 1 k copies/step]
5501 2	Original Count Alarm **DFU**
	Selects whether the PM alarm for the number of scans is enabled or not. *If this is "1", the PM alarm function is enabled.* [0 = **No** / 1 = Yes]

5504*	Jam Alarm
	Sets the alarm to sound for the specified jam level (document misfeeds are not included). **RSS use only** [0~3 / **3** / 1 step] 0: Zero (Off) 1: Low (2.5K jams) 2: Medium (3K jams) 3: High (6K jams)

5505*	Error Alarm Setting
	Sets the error alarm level. **Japan only DFU** [0~255 / **50** / 100 copies per step]

5507*	Supply Alarm	
5507 1	Paper	Switches the control call on/off for the paper supply. **DFU** **0: Off**, 1: On 0: No alarm. 1: Sets the alarm to sound for the specified number transfer sheets for each paper size (A3, A4, B4, B5, DLT, LG, LT, HLT)
5507 2	Staple	Switches the control call on/off for the stapler installed in the finisher. **DFU** **0: Off**, 1: On 0: No alarm 1: Alarm goes off for every 1K of staples used.
5507 3	Toner	Switches the control call on/off for the toner end. **DFU** **0: Of**f, 1: On If you select "1" the alarm will sound when the copier detects toner end.
5507 128*	Others	The "Paper Supply Call Level: nn" SPs specify the paper control call interval for the referenced paper sizes. **DFU** [00250 ~ 10000 / **1000** / 1 Step]
5507 132*	A3	
5507 133*	A4	
5507 134*	A5	
5507 141*	B4	
5507 142*	B5	
5507 160*	DLT	
5507 164*	LG	
5507 166*	LT	
5507 172*	HLT	

5508*	CC Call
5508 1	Jam Remains
	Switches the control call on/off for an unattended jam. **Japan Only** 0: Off, **1: On** If you select “1”, the alarm sound if a jam is left unattended for 15 minutes.
5508 2	Continuous Jams
	Switches the control call on/off for the occurrence of consecutive jams. **Japan Only** 0: Off, **1: On** If you select “1”, the alarm will sound if 5 consecutive jams occur in the copier.
5508 3	Continuous Door Open
	Switches the control call on/off for the cover open alarm. **Japan Only** 0: Off, **1: On** If you select “1”, the alarm will sound if the door remains open for 15 minutes.
5508 4	Low Call Mode
	Selects whether or not the new CC call. **Japan Only** 0: Previous Mode, **1: New Mode**
5508 11	Jam Details: Time Length
	This SP is effective when the value of SP5508-4 is “1”. **Japan Only** [3 ~ 30 / **10** / 1 min/step]
5508 12	Jam Details: Continuous Count
	This SP is effective when the value of SP5508-4 is “1”. **Japan Only** [2 ~ 10 / **5** / 1 time/step]
5508 13	Door Open: Time Length
	This SP is effective when the value of SP5508-4 is “1”. **Japan Only** [3 ~ 30 / **10** / 1 min/step]
5508 21	Jam Operation: Time Length
	This SP is effective when the value of SP5508-4 is “1”. **Japan Only** 0: Auto Call, **1: Alarm**
5508 22	Jam Operation: Continuous Count
	This SP is effective when the value of SP5508-4 is “1”. **Japan Only** 0: Auto Call, **1: Alarm**
5508 23	Door Operation: Time Length
	This SP is effective when the value of SP5508-4 is “1”. **Japan Only** 0: Auto Call, **1: Alarm**

5801	Memory Clear	Resets all correction data for process control and all software counters, and returns all modes and adjustments to their default values. (☛ 4.2.7). *To execute, hold down 1 for over 3 seconds, and then turn the copier off and on again.* *Use this SP only after replacing the NVRAM, or after the copier has malfunctioned due to a damaged NVRAM.*
5801 1	All Clear	Initializes items 2 ~ 12 below.
5801 2	Engine	Initializes all registration settings for the engine and processing settings.
5801 3	SCS	System Control Service. Initializes default system settings, CSS settings, operation display coordinates, and ROM update information. SCS: System Control Service
5801 4	IMH Memory Clr	Image Memory Handler. Initializes the registration setting for the image memory handler.
5801 5	MCS	Memory Control Service. Initializes the automatic delete time setting for stored documents.
5801 6	Copier application	Initializes all copier application settings.
5801 7	Fax application	Initializes the fax reset time, job login ID, all TX/RX settings, local storage file numbers, and the off-hook timer.
5801 8	Printer application	Initializes the printer defaults, programs registered, the printer SP bit switches, and printer CSS counter.
5801 9	Scanner application	Initializes the scanner defaults for the scanner and all the scanner SP modes.
5801 10	Web Service/Network Application	Deletes the network file application management files and thumbnails, and initializes the job login ID.
5801 11	NCS	Network Control Service. Initializes the system defaults and interface settings (IP addresses also), Smart Net Monitor for Admin, Web Status Monitor settings, and the TELNET settings.
5801 12	R-FAX	Initializes the job login ID, SmartNetMonitor for Admin, job history, and local storage file numbers.
5801 14	Clear DCS Settings	Initializes: SP5845 (All), SP5860 (All), SP5861 (All), SP5863, registered scanner documents and subjects.
5801 15	Clear UCS Settings	Initializes: SP5846 (All), SP5801 15

5802	Printer Free Run
	Performs a free run for both the scanner and the printer. *After selecting "1", press "OK" or the # key twice to start this feature. Press the C (Clear/Stop) key to stop.* [**0 = No** / 1 = Yes]

5803	Input Check
	Displays signals received from sensors and switches. Press the ⌧ (Clear Modes) key to exit the program. (☛ 4.2.4)

5804	Output Check
	Turns on electrical components individually for test purposes. (☛ 4.2.5)

5807*	Option Connection Check	
5807 1	ARDF	Checks the connectors to the optional peripheral devices. Execution will return either a "1" or "0" on the display. 1: Device connected correctly. 0: Device not connected correctly.
5807 2	Paper Tray Unit	
5807 3	LCT	
5807 4	Finisher (1000-sheet, Two-Tray finisher)	

5810	SC Code Reset **DFU**
	Resets all level A service call conditions, such as fusing errors. To clear the service call, touch "Execute" on the LCD, then turn the main power switch off/on.

5811	Machine No. Setting	Use to input the machine serial number. (Normally done at the factory.) **DFU** *This serial number will be printed on the SMC report*

5812*	Service Tel. No. Setting
5812 1	Service
	Use this to input the telephone number of the service representative (this is displayed when a service call condition occurs). *Press the ⓽ key if you need to input a pause (–). Press the ⓒ (Clear/Stop) key to delete the telephone number.*
5812 2	Facsimile
	Use this to input the fax number which will be printed on the user counter report. *Press the ⓽ key if you need to input a pause (–). Press the ⓒ (Clear/Stop) key to delete the telephone number.*
5812 3	Supply
	Use this to input the telephone number that the customer uses to order toner (this is displayed in the inquiry menu of UP mode). *Press the ⓽ key if you need to input a pause (–). Press the ⓒ (Clear/Stop) key to delete the telephone number.*
5812 4	Operation
	Use this to input the telephone number of the sales representative (this is displayed in the inquiry menu of UP mode). *Press the ⓽ key if you need to input a pause (–). Press the ⓒ (Clear/Stop) key to delete the telephone number.*

5816*	Remote Service	
5816 1	I/F Setting	Switches the remote diagnostics function off and on. [0~2 / **2** / 1] 0: Remote diagnostics off. 1: Serial (CSS or NRS) remote diagnostics on. 2: Network remote diagnostics.
5816 2	CE Call	Allows the customer engineer to start or end the remote machine check using CSS or NRS by pressing the center report key.
5816 3	Function Flag	Enables and disables remote diagnosis via the NRS network. [0~1 / **0** / 1] 0: Disables remote diagnosis via network. 1: Enables remote diagnosis via network.
5816 4	Communication Test Call	Executes a transmission test call for NRS. The test returns a value in the range 0 to 99. 0: Normal end (center operating) 1: Normal end (center not operating) Other: Abnormal
5816 5	Device Information Call	Executes a call to determine whether the machine is operating. The test returns a value in the range 0 to 99. 0: Normal end (center operating) 1: Normal end (center not operating) Other: Abnormal
5816 6	Device Information Call Display	Determines whether the item for initial setting of the screen for the NRS device information notification call is displayed. **0**: Enabled. Item initial setting not displayed. 1: Disable. Item for initial setting is displayed.
5816 7	SSL Disable	Determines whether RCG (Remote Communication Gate) confirmation is done by SSL during an RCG send for the NRS via a network interface. **0**: Yes. SSL not used. 1: No. SSL used.
5816 8	RCG Connect Timeout	Sets the length of time (seconds) for the timeout when the RCG (Remote Communication Gate) connects during a call via the NRS network. [1~90 / **10** / 1 sec.]
5816 9	RCG Write to Timeout	Sets the length of time (seconds) for the timeout when send data is written to the RCG during a call via the NRS network. [0~100 / **30** / 1 sec.]
5816 10	RCG Read Timeout	Sets the length of time (seconds) for the timeout when send data is written from the RCG during a call via the NRS network. [0~100 / **30** / 1 sec.]

5816 11	Port 80 Enable	Determines whether permission is granted for access to the SOAP method via Port 80 on the NRS network. **0**: No. Access denied 1: Yes. Access granted.

5821	Remote Service Address
5821 1	CSS PI Device Code **DFU. Japan Only**
	Sets the PI device code. After changing this setting, you must switch the machine off and on.
5821 2	RCG IP Address **DFU. Japan Only**
	Sets the IP address of the RCG (Remote Communication Gate) destination for call processing at the remote service center. [00000000h ~ FFFFFFFFh/ **00000000h** /

5824	NVRAM Data Upload
	Uploads the UP and SP mode data (except for counters and the serial number) from the NVRAM on the control board to a flash memory card. (☛ 4.2.8) *While using this SP mode, always keep the front cover open. This prevents a software module accessing the NVRAM during the upload.*

5825	NVRAM Data Download
	Downloads the content of a flash memory card to the NVRAM on the control board. (☛ 4.2.8) *While using this SP mode, always keep the front cover open. This prevents a software module accessing the NVRAM during the download.* *After executing this SP, switch the copier off and on.*

5828*	Network Setting	
5828 66	Job Spooling Clear: Start Time	Determines whether unprinted jobs on the HDD are printed then next time the machine is switched on. Available only the job spooling feature. [0~1 / **1** / 1] 0: Clear spooled jobs from HDD at power on. 1: Print spooled jobs on HDD at power on.
5828 69	Job Spooling: Protocol	Disables and enables protocols used for job spooling. The settings are done by entering a "0" (Off) or a "1" for each bit switch. Defaults: 1 (all enabled).

Bit	Protocol	Comments
0	LPR	
1	FTP	Not used
2	IPP	
3	SMB	
4	BM Links	Japan Only
5	Reserved	Not used
6	Reserved	Not used
7	Reserved	Not used

5828 74	Delete Password	Deletes the NCS password. Sets the Telnet, WSM, and remote ROM update passwords to NULL (empty)
5828 84	Print Settings List	Prints a list of the NCS parameter settings.
5828 90	TELNETs	Disables or enables Telnet operation. If this SP is disabled the Telnet port is closed. [0~1/ **1** / 1] 0: Disable 1: Enable
5828 91	Web	Disables or enables the Web operation. [0~1/ **1** / 1] 0: Disable 1: Enable

5832	HDD Formatting	
	Enter the SP number for the partition to initialize, then press #. When execution ends, cycle the machine off and on.	
5832 1	ALL	Initializes entire content of the HDD.
5832 2	IMH	Initializes 1) documents stored on the document server, 2) stamp print data, 3) scanner delivery images, 4) fax delivery images.
5832 3	Thumbnail	Initializes MCS thumbnail images.
5832 4	Job Log	Initializes job data used by the Poplar server. **Japan Only**
5832 5	Printer Fonts	Initializes printer fonts, overlay forms.
5832 6	User Info.	Initializes user information (UCS)
5832 7	Mail RX Data	Initializes mail receive data (DCS)
5832 8	Mail TX data	Initializes mail send data (DCS)
5832 9	Data for Design	Designer use only.
5832 10	Fax	Initializes the logs (fax history and debug log)
5832 11	Ridoc I / F	Initializes the NetFile management area.

5833*	Job Log Transfer On/Off Setting
	Switches the job log transfer on/off for Poplar server. **DFU** **0: Off (disable),** 1: On (enable)

5834	Operation Panel Image Exposure
	Enables and disables the operation panel read (dump) feature. After powering on the machine, set this option to 1 to enable this feature. **0**: Off (disable), 1: On (enable) **DFU** *To reset the machine to 0, the machine must be turned off and on again. Selecting 0 for this option without cycling the power off and on does not restore the default setting (0).*

5836*	Capture Settings	
5836 1*	Capture Function (0:Off 1:On)	**0**: Disable, 1: Enable
	With this function disabled, the settings related to the capture feature cannot be initialized, displayed, or selected.	
5836 2*	Panel Setting	**0**: Disable, 1: Enable
	Determines whether each capture related setting can be selected or updated from the initial system screen. The setting for SP58361 has priority	
	5836 71 to 5836 76, Copier and Printer Document Reduction The following 6 SP modes set the default reduction for stored documents sent to the document management server via the MLB. [0~2 / **2** / 1] *Enabled only when optional MLB (Media Link Board) is installed*	
5836 71*	Reduction for Copy Color	0: 1to-1, 1: ½, **2**: 1/4
5836 72*	Reduction for Copy B&W Text	0: 1to-1, 1: ½, **0**: 1/4
5836 73*	Reduction for Copy B&W Other	0: 1to-1, 1: ½, **0**: 1/4
5836 74*	Reduction for Printer Color	0: 1to-1, 1: ½, **2**: 1/4
5836 75*	Reduction for Printer B&W	0: 1to-1, 1: ½, **0**: 1/4
5836 76*	Reduction for Printer B&W HQ	0: 1to-1, 1: ½, **0**: 1/4
	5836 81 to 5836 86, Stored document format The following 6 SP modes set Sets the default format for stored documents sent to the document management server via the MLB. *Enabled only when optional MLB (Media Link Board) is installed*	
5836 81*	Format for Copy Color	**0**: JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR
5836 82*	Format for Copy B&W Text	0: JFIF/JPEG, **1**: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR
5836 83*	Format Copy B&W Other	0: JFIF/JPEG, **1**: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR
5836 84*	Format for Printer Color	**0**: JFIF/JPEG, 1: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR
5836 85*	Format for Printer B&W	0: JFIF/JPEG, **1**: TIFF/MMR, 2: TIFF/MH, 3: TIFF/MR
5836 86*	Format for Printer B&W HQ	0: JFIF/JPEG, 1: TIFF/MMR, **2**: TIFF/MH, 3: TIFF/MR
5836 91*	Default for JPEG	[5~95 / **50** / 1]
	Sets the JPEG format default for documents sent to the document management server via the MLB with JPEG selected as the format. *Enabled only when optional MLB (Media Link Board) is installed.*	

5839*	IEEE 1394	
5839 4	Host Name	Enter name
	Enter the name of the device used on the network. Example: RNP0000000000	
5839 7*	Cycle Master	0: Disable (Off), **1**: Enable (On)
	Enables or disables the cycle master function for the 1394 bus standard.	
5839 8*	BCR mode	(Binary 0~3) 00: Off. Writes from the IRM. 01: Copies BCR of the IRM after no data is written from the IRM after the prescribed time has elapsed. 10: Reserved. Not used. 11:BCR normally enabled.
	Determines how BCR (Broadcast Channel Register) operates on the 1394 standard bus when the independent node is in any mode other than IRM. (NVRAM: 2bits)	
5839 9*	IRM 1394a Check	0: Checks whether IRM conforms to 1394a 1: After IRM is checked, if IRM does not conform then independent node switches to IRM.
	Conducts a 1394a check of IRM when the independent node is in any mode other than IRM.	
5839 10*	Unique ID	0: Does not list the Node_Unique_ID assigned by the system administrator. Instead, the Source_ID of the GASP header in the ARP is used. **1:** The Node_Unique_ID assigned by the system administrator is used, and the Source_ID of the GASP header in the ARP is ignored. Also, when the serial bus is reset, extra bus transactions are opened for enumeration.
	Lists the ID (Node_Unique_ID) assigned to the device by the system administrator.	
5839 11*	Logout	0: Disable (refuse login) Initiator retry during login Login refusal on arrival of login request (standard operation) **1**: Enable (force logout) Initiator retry during login Login refusal on arrival of login request, and the initiator forces the login.
	Handles the login request of the login initiator for SBP-2. (1bit)	
5839 12*	Login	0: Disables. The exclusive login (LOGIN ORB exClusvie it) is ignored. **1**: Enables. Exclusive login is in effect.
	Enables or disables the exclusive login feature (SBP-2 related).	
5839 13*	Login MAX	[0~63 / **8** / 1], (0 and 63: Reserved)
	Sets the maximum number of logins from the initiator (6-bits)	

5840	IEEE 802.11b	
5840 4	SSID	Enter ID
	Enters a unique ID (up to 32 characters long) to identify the device when it is operating in an area with another wireless LAN network.	
5840 6	Channel MAX	JA [1~14/ **14** / 1] NA [1~11 / **11** / 1 EU [1~13 / **13** / 1] China, Taiwan (Same as NA)
	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. *Displayed only when the option 802.11b for wireless LAN is installed.*	
5840 7	Channel MIN	JA [1~14 / **1** / 1] NA [1~11 / **1** / 1 EU [1~13 / **1** / 1] China, Taiwan (Same as NA)
	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. *Displayed only when the option 802.11b for wireless LAN is installed.*	
5840 11	WEP Key Select	**00**: Key #1 01: Key #2 (Reserved) 10: Key #3 (Reserved) 11: Key #4 (Reserved)
	Selects the WEP key. [00~11 / 00 / 1 binary]	
5840 18*	SSID Key Check	
	Execute to determine whether the value entered for the SSID setting is correct. If the execution returns “2” the setting is correct. If the returned value is “3”, the setting is not correct.	
5840 20	WEP Mode	**0**: Max. 64-bit (10 characters) 1: Max. 128-bit (10, 26 characters)
	Determines the operation mode of the WEP key. *Displayed only when the option 801.11b for wireless LAN is installed.*	

5841	Supply Name Setting	
	Allows setting the following items with the Soft Keyboard after pressing the "Soft Keyboard" button displayed for this SP code. The items you enter are displayed after pressing "User Tools" and then pressing the "Inquiry" button on the touch-panel display. The items stored in SP 5841-12, 13, and 14 do not appear on the Inquiry screen.	
5841 1	Toner Name Setting: Black	Enter the name of the toner in use.
5841 5	Staple Std	Enter the name of the staples in use for normal stapling (not booklet stapling)
5841 7	Org Stamp	Enter the name of the original stamp that is installed in the document feeder. (This is stamped on originals to indicate that they have scanned.)
5841 11	Staple Std 1	Enter the names of the staples used in the finisher.
5841 12	Staple Std 2	
5841 13	Staple Std 3	
5841 14	Staple Std 4	

5842	Net File Analysis Mode Setting	[8 bits / **0011 1111** / Bit SW]
	Selects each debug output mode for NetFile processing *Bit 8 is reserved. Bit 7 is the debug output switch for each mode.* *Net files are jobs to be printed from the document server using a PC and the DeskTopBinder software*	

5844	USB	
5844 1	Transfer Rate	[0x01~0x04 / **0x04** / 0]
	Sets the speed for USB data transmission. 0x01: Full Speed (12 Mbps fixed) 0x04: High Speed/Full Speed (480 Mbps/12 Mbps auto adjust)	
5844 2	Vendor ID	[0x0000~0xFFFF/ 0x05CA /1], **DFU**
	Sets the vendor ID: Initial Setting: 0x05A Ricoh Company.	
5844 3	Product ID	[0x0000~0xFFFF/0x0403/1], **DFU**
	Sets the product ID.	
5844 4	Device Release Number	[0000~9999/0100/1], **DFU**
	Sets the device release number of the BCD (binary coded decimal) display. *Enter as a decimal number. NCS converts the number to hexadecimal number recognized as the BCD.*	

5845	Delivery Server Setting	
	Provides items for delivery server settings.	
5845 1	FTP Port No.	[0~65535 / **3670** / 1]
	Sets the FTP port number used when image files to the Scan Router Server.	
5845 2	IP Address	[0~0xFFFFFFFF / **0x00**]
	Use this SP to set the Scan Router Server address. The IP address under the transfer tab can be referenced by the initial system setting.	
5845 6*	Delivery Error Display Time Netfiles:	[0~999 / **300** / 1]
	Use this setting to determine the length of time the prompt message is displayed when a test error occurs during document transfer with the NetFile application and an external device.	
5845 8*	IP Address Secondary	Range: **000.000.000.000** ~ 255.255.255.255
	Specifies the IP address assigned to the computer designated to function as the secondary delivery server of Scan Router. This SP allows only the setting of the IP address without reference to the DNS setting.	
5845 9*	Delivery Server Model	[0~4/ **0** / 1]
	Allows changing the model of the delivery server registered by the I/O device. 0: Unknown 1: SG1 Provided 2: SG1 Package 3: SG2 Provided 4: SG2 Package	
5845 10*	Delivery Svr Capability	[0~255 / **0** / 1]
	Changes the capability of the registered that the I/O device registered. Bit7 = 1 Comment information exits Bit6 = 1 Direct specification of mail address possible Bit5 = 1 Mail RX confirmation setting possible Bit4 = 1 Address book automatic update function exists Bit3 = 1 Fax RX delivery function exists Bit2 = 1 Sender password function exists Bit1 = 1 Function to link MK-1 user and Sender exists Bit0 = 1 Sender specification required (if set to 1, Bit6 is set to “0”)	

5846	UCS Settings		
5846 1	Machine ID (For Delivery Server)		Displays ID
	Displays the unique device ID in use by the delivery server directory. The value is only displayed and cannot be changed. This ID is created from the NIC MAC or IEEE 1394 EUI. The ID is displayed as either 6-byle or 8-byte binary.		
5846 2	Machine ID Clear (For Delivery Server)		Clears ID
	Clears the unique ID of the device used as the name in the file transfer directory. Execute this SP if the connection of the device to the delivery server is unstable. After clearing the ID, the ID will be established again automatically by cycling the machine off and on.		
5846 3	Maximum Entries	[2000~50000/2000/1]	
	Changes the maximum number of entries that UCS can handle. If a value smaller than the present value is set, the UCS managed data is cleared, and the data (excluding user code information) is displayed.		
5846 4	Delivery Server Model	**0:** Not used, 1:SG1 Provided, 2: SG1 Package, 3: SG2 Provided 4: SG2 Package	
	Changes the model of the transfer server registered for the I/O device.		
5846 5	Delivery Server Capability	Bit 7 = 1 Comment information Bit 6 = 1 Address direct entry possible Bit 5 = 1 Mail Rx confirmation possible Bit 4 = 1 Address book auto update Bit 3 = 1 Fax Rx function [0~255 / **0** / 2]	
	Changes the capability of the server registered for the I/O device.		
5846 6	Delivery Server Retry Timer		[0~255/ **0** /1]
	Sets the interval for retry attempts when the delivery server fails to acquire the delivery server address book.		
5846 7	Delivery Server Retry Times		[0~255/ **0** /1]
	Sets the number of retry attempts when the delivery server fails to acquire the delivery server address book.		
5846 8	Delivery Server Maximum Entries		[2000~50000 / **2000** / 1]
	Sets the maximum number account entries of the delivery server user information managed by UCS.		
5846 10	LDAP Search Timeout		[1~255 / **60** / 1]
	Sets the length of the timeout for the search of the LDAP server.		
5846 50	Initialize All Directory Info.	Clears all directory information managed by UCS, including all user codes.	
5846 51	Upload All Directory Info.	Uploads all directory information to the IC card.	
5846 52	Download All Directory Info.	Downloads all directory information from the IC card.	
5846 70	LDAP Attribute (Name)	Allows you to enter a search attribute other than the default mail (cn) for the LDAP server search.	
5846 71	LDAP Attribute (Mail)	Allows you to enter a search attribute other than the default mail address (mail) for the LDAP server search.	
5846 72	LDAP Attribute (Fax)	Allows you to enter a search attribute other than the default facsimile telephone number (FacsimileTelephoneNumber) for the LDAP server search.	
5846 73	LDAP Attribute (Organization)	Allows you to enter a search attribute other than the default organization name (o) for the LDAP server search.	

5846	UCS Settings	
5846 74	LDAP Attribute (Organizational Unit)	Allows you to enter a search attribute other than the default organization unit name (ou) for the LDAP server search.
5846 80	Backup FCU	Backs up all directory information on the HDD to the FCU ROM.
5846 90	Plain Data Forbidden	Allows you to prevent the address from plain data. This is a security function that prevents unauthorized access to address book data. **0**: No check. Address book data not protected. 1: Check. Allows operation of UCS without data from HDD or SC card and without creating address book information with plain data.
5846 99	Bit Switches	Sets UCS debug output. **DFU**

5847	Net File Resolution Reduction	
	5847 1 through 5847 6 changes the default settings of image data transferred externally by the Net File page reference function. [0~2 / **2** / 1] 5847 21 sets the default for JPEG image quality of image files handled by NetFile. *"Net files" are jobs to be printed from the document server using a PC and the DeskTopBinder software.*	
5847 2	Rate for Copy B&W Text	0: 1x 1: 1/2x **2**: 1/3x 3: 1/4x
5847 3	Rate for Copy B&W Other	
5847 5	Rate for Printer B&W	
5847 6	Rate for Printer B&W HQ	
5847 21	Network Quality Default for JPEG	
	Sets the default value for the quality of JPEG images sent as NetFile pages. This function is available only with the MLB (Media Link Board) option installed. [5~95 / **50** / 1]	

5848	Web Service (Access Control)	
	5847 2 sets the 4-bit switch assignment for the access control setting. Setting of 0001 has no effect on access and delivery from Scan Router. 5847 100 sets the maximum size allowed for downloaded images. The default is equal to 1 gigabyte.	
5848 1	NetFile (Lower 4 Bits Only)	Bit switch settings.
	0000: No access control 0001: Denies access to DeskTop Binder. Access and deliveries from Scan Router have no effect on capture.	
5848 2	Repository (Lower 4 Bits)	0000: No access control 0001: Denies access to DeskTop Binder.
5848 3	Doc. Svr. Print (Lower 4 Bits)	Switches access control on and off. 0000: OFF
5848 4	User Directory (Lower 4 Bits)	
5848 5	Delivery Input (Lower 4 Bits)	
5848 6	Fax Control (Lower 4 Bits)	
5848 7	Comm. Log Fax (Lower 4 Bits)	No information available.
5848 100	Repository: Max. Size of Download Image	[1~1024 / **1024** / 1K]

5849	Installation Date	
5849 1	Display	**DFU**
5849 2	Switch to Print	**DFU**

5850	Address Book Function
5850 1	User Info. Management Module Setting (Address Book Function)
5850 3	Circuit Conversion
	The machine is sold ready to use with a G3 line. This SP allows you to switch all at once to convert the address book for use with ISDN option. Conversely, if for some reason the ISDN line becomes unusable, you can easily switch back to G3. **Japan only**

5853	Stamp Data Download
	Use this SP to download the fixed stamp data stored in the firmware of the ROM and copy it to the HDD. This SP can be executed as many times as required. This SP must be executed after replacing or formatting the hard disk. **Note**: This SP can be executed only with the hard disk installed.

5856	Remote ROM Update
	When set to “1” allows reception of firmware data via the local port (IEEE 1284) during a remote ROM update. This setting is reset to zero after the machine is cycled off and on. [0~1 / 0 / 1] **DFU** 0: Not allowed 1: Allowed

5857	Debug Log Save Function	
5857 1	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.	
5857 2	Target (1:IC Card 2:HDD)	1:IC Card, 2:HDD
	Select "1" (IC Card) if an HDD unit is not installed in the machine, or if the HDD unit is temporarily out of service. The IC card can store only 4 MB so use the HDD selection.	
5857 3	Initialize IC Card	**DFU**
	Initializes the IC card inserted into the controller slot. Initializing erases all data on the IC card. Use to initialize a new card.	
5857 4	Save to IC Card	**DFU**
	Saves the debug log in memory to the IC card.	
5857 5	Save to HDD	**DFU**
	Saves the debug log in memory to the HDD. *A unique file name is generated to avoid overwriting existing file names on the IC card. Up to 4MB can be copied to an IC card. 4 MB segments can be copied one by one to each IC card.*	
5857 7	HDD to IC Card (Latest 4MB)	
	Copies the latest 4 MB of the debug log on the HDD to the IC card. This function erases all data from the IC card as it copies.	
5857 8	HDD to IC Card (Latest 4MB Any Key)	
	Copies the latest 4 MB of the debug log on the HDD to the IC card, but only those portions of the log specified with a key specified with SP5859 (Debug Save Key No.) This function erases all data from the IC card as it copies. *To enable this SP, the machine must be cycled off and on.*	
5857 11	Erase Debug Data From HDD	**DFU**.
	Erases all debug log data from the IC card.	

5858	Debug Log Save Function	
	These SPs select the content of the debugging information to be saved to the destination selected by SP5857 2. SP5858 3 stores one SC specified by number. *Refer to Section 4 for a list of SC error codes.*	
5858 1	Engine SC Error	Stores SC codes generated by copier engine errors.
5858 2	Controller SC Error	Stores SC codes generated by GW controller errors.
5858 3	Any SC Error	[0~65535 / **0** / 1]
5858 4	Jam	Stores jam errors.

5859	Debug Log Save Function	
5859 1	Key 1	These SPs allow you to set up to 10 keys for log files for functions that use common memory on the controller board. (☛5.3.1) [-9999999~9999999 / 0 / 1]
5859 2	Key 2	
5859 3	Key 3	
5859 4	Key 4	
5859 5	Key 5	
5859 6	Key 6	
5859 7	Key 7	
5859 8	Key 8	
5859 9	Key 9	
5859 10	Key 10	

5860	**SMTP/POP3/IMAP4**	
5860 20	Partial Mail Receive Timeout	[1~168 / **72** / 1]
	Sets the amount of time to wait before saving a mail that breaks up during reception. The received mail is discarded if the remaining portion of the mail is not received during this prescribed time.	
5860 21	MDN Response RFC2298 Compliance	[0~1 / **0** /1]
	Determines whether RFC2298 compliance is switched on for MDN reply mail. 0: No compliance. 1: Compliance. The MAIL FROM (SMTP command) is sent open (< >).	
5860 22	SMTP Auth. From Field Replacement	[0~1 / **1** / 1]
	Determines whether the FROM item of the mail header is switched to the validated account after the SMTP server is authorized.	

5907*	Plug & Play Setting
	Sets the brand name and the production name for Windows Plug & Play. This information is stored in NVRAM. If the NVRAM is defective or has been replaced, these names should be registered again. Allows input of the maker and model on a two-line display. After replacing the NVRAM, the settings can be selected from available maker and model names. To select and enable the maker & model name: 1 Press and hold down #. 2 Enter the number that corresponds to the correct name on the list.

5908*	LCT Paper Size
	Selects the paper size for the LCT. Use this SP after changing the paper size in the optional LCT (i.e., after changing the side plate position for the LCT). [0~1 / **1** / 1] North America 0: A4 **1**: LT [0~1 / **0** / 1] Other Areas (Europe/Asia) **0**: A4 1: LT

5912*	PCU Alarm Setting	
5912 1	Display	Selects whether the PCU alarm message (Change Photoconductor Unit) blinks when the PCU alarm interval expires. *When installing the machine, if the customer requires that the PCU alarm message blink, select "1". If set to "0", there will be no message.* [0 = No / **1 = Yes**]
5912 2	Interval	Sets the PCU alarm interval. *When the machine reaches this value, the PCU alarm will be displayed on the LCD to inform the user. Only used if SP59121 is at "1".* [1 ~ 255 / **60** / 1 k copies/step]

5913	Switchover Permission Time
	Sets the amount of time to elapse while the machine is in standby mode (and the operation panel keys have not been used) before another application can gain control of the display. [3~30 / **3** / 1 s]

5914*	Application Counter Display	[**0 = No** / 1 = Yes]
5914 1	Printer Counter (0:OFF 1:ON	Selects whether the total counters for printer mode and/or copy mode are displayed in user tool mode.
5914 2	Fax Counter (0:OFF 1:ON)	
5914 3	Copy Count (0:OFF 1:ON)	

5915*	Mechanical Counter Detection
	Checks whether the mechanical counter inside the inner cover is connected or not. Display: 0: Not detected 1: Detected 2: Unknown

5918*	A3/DLT Counter Display
	Displays the counter, which counts A3/DLT as double. **0 = No**, 1 = Yes *The A3/DLT counter counts up twice when an A3 or DLT sheet is fed out.*

5920	Low Power Mode Recovery time **DFU**

5921*	Exhaust Fan Control
	Sets the timing for slowing the exhaust fan motor speed or shutting the motor off for normal operation, depending on the following conditions: 1. After the machine has entered energy saver mode or stand-by mode, the machine slows the fan speed after this time runs out. 2. After the machine has entered the auto off mode or an error occurs, the machine stops the fan after this time runs out. [30 ~ 120 / **30 s** / 1 s]

5923*	Border Remove Area Switching
	Toggles between two settings that affect the appearance of the pages for border removal and printed facing pages: (1) Using the original area as the allotted area, or (2) Using only the copy paper as the allotted area. [**0 = Original base**, 1 = Copy base] 0: Original area used as base 1: Copy used as the base

5967	Copy Server: Set Function
	Enables the document server function. This is a security feature. If you set this SP to 1, the machine disables the use of the document server and removes all image data from the temporary area on the HDD. [0~1 / **0** / 1] 0: Enables. Document server can be used. 1: Disables. Document server cannot be used.

5974*	Cherry Server Selection
	Switches writing between the Scan Router V2 Lite application provided and the optional full version. **0: Lite**, 1: Full

5990	SMC Printout (SMC Report)	
5990 1	All (Data List)	Prints all of the system parameter lists for the item selected. (☛ 4.2.6) Input the number for the item that you want to print, then press “Execute” on the touch panel.
5990 2	SP (Mode Data List)	
5990 3	User Program	
5990 4	Logging Data	
5990 5	Diagnosis Report	
5990 7	NIB Summary	
5990 8	Capture Log	
5990 21	Copier User Program	
5990 22	Scanner SP	
5990 23	Scanner User Program	

5995	Factory Mode	**DFU**

5996	Machine State **DFU**	
5996 1	Destination	Shows intended destination of the engine board. 0: Japan 1: North America 2: Europe 3: Mainland China 4: Taiwan
5996 2	SBCU ID	Displays the CPM information for the engine board. For example, 22 (22 cpm), 27 (27 cpm), and so on.
5996 3	IPU ID	Displays the IPU ID (presently fixed at “32”).

SP6XXX: Peripherals

6006*	DF Adjustment	
	These settings adjust the registration and other settings for the ADF mode. Use the ⊛ key to toggle between + and - before entering a value. For more details, see "Replacement and Adjustment - Copy Adjustment" for details.	
6006 1	Side-to-Side (For Simplex)	[–5.0 ~ +5.0 / **0.0** / 0.1 mm/step]
6006 2	Leading Edge	
6006 3	Trailing Edge Erase	Adjusts the trailing edge erase margin. .[–5.0 ~ +5.0 / **1.0** / 0.1 mm/step]
6006 4	Side-to-Side/Rear (For Duplex)	Adjusts the side-to-side registration on the rear side of the original. [–5.0 ~ +5.0 / **0.0** / 0.1 mm/step]
6006 5	Sub Scan Magnification	Adjusts the sub scan magnification. [–5.0 ~ +5.0 / **0.0** / 0.1 % step]
6006 6	Skew Correction	Selects whether skew correction is done. 0 = Off, **1 = On**
6006 7	Original Buckle Adjustment	Adjusts the amount of original buckle at the ARDF registration roller when the ARDF feeds the back side of the original. [–5.0 ~ +5.0 / **0.0** / 0.1 mm/step]

6007	ADF Input Check
	Displays the signals received from sensors and switches of the ARDF.(☛ 4.2.4)

6008	ADF Output Check
	Switches on each electrical component (ARDF motor, solenoid, etc.) of the ARDF for testing. (☛ 4.2.5) Press ① to switch on or ⓪ to switch off.

6009	ADF Free Run
	Performs an ARDF free run in duplex mode. Press ① to start. 1: To Start, 0: To cancel This is a general free run controlled from the copier. For more detailed free run modes, see the ARDF manual.

6010*	Stamp Position Adjustment
	Adjusts the stamp position in the sub-scan direction in fax mode. [–5.0 ~ +5.0 / **0** / 1 mm/step]

6016*	ADF Original Size Detection
	Selects whether the machine determines that the original is A4/LT, or 8K/16K when the APS sensor in the ADF does not detect the original size. 8K/16K is not available for 115V machines. [**0 = Normal** (LT for USA models, A4 for Europe/Asia models) 1 = Reversed [A4 for USA models, LT for Europe/Asia models] 2 = 8K/16K]

6105*	Staple Position Adjustment	[–3.5~+3.5 / **0.0** / 0.5 mm step]
	Adjusts the staple position in the main scan direction when using the two-tray finisher. *Press * to toggle ±. A larger value shifts the staple toward the edge of the paper.*	

6117	Finisher Input Check
	Displays the signals received from sensors and switches in the finisher. (☛ 4.2.4)

6118	Finisher Output Check
	Switches on each electrical component of the finisher for testing. (☛ 4.2.5) Press 1 to switch on or 0 to switch off.

6901	ADF APS Data Display	
	Displays the status of the original size sensors in the ADF. (☛ 4.2.10)	

6910*	ADF Shading Interval Time
	Adjusts the interval for shading processing in DF mode. *Light and heat may affect the scanner response. If copy quality indicates that white level is drifting during a DF copy job, reduce this setting.* [0 ~ 120 / **20s** / 1s/step]

6920	DF Check	
6920 1	DF GATE	**DFU** 0 = Gate, 1 = Asart
6920 2	DF TXD Break	**DFU** 0 = Off, 1 = On
6920 3	Serial Communication	**DFU** 0 = NG, 1 = OK
6920 4	Original Set	**DFU** 0 = Off, 1 = On
6920 5	Serial Check	**DFU**

6925	Bridge/Duplex/By-Pass/Loop Back **DFU**	
6925 1	Practice	**DFU**
6925 2	Result	**DFU**

SP7XXX: Data Log

7001*	Main Motor Operation Time
	The number of prints and drive time for drum revolutions can be obtained by counting the main motor revolution time. If the amount of the time required for the drum to revolve to print 1 copy increases, this data combined with the number of copies can be used to analyze problems and could be useful for future product development. Display: 00000000~99999999 min.

7002*	Total Original Counter	
7002 1	Total	Select a number to display the total original count (number of originals fed) for the selected item.
7002 2	Copy	
7002 3	Fax	
7002 4	Document Svr Applications	
7002 5	Scanner	
7002 6	Others	

7003*	Print Counter	
7003 1	Total Count	Select a number to display the total print count for the selected item.
7003 2	Copy	
7003 3	Fax	
7003 4	Printer	Select a number to display the total print count for the selected item.
7003 5	Others	

7006*	C/O, P/O Counters	
7006 1	C/O	Displays the number of copies per original when making more than 10 copies. (Range: 0 ~ 9,999,999) *For example, if you make 15 copies of a 3 page original document, for a total of 45 sheets, then the counter would be 15 (5 copies counted from 11 to 15 x 3 originals). No count will be returned for 1~10 copies of an original.*
7006 2	P/O	

7007*	Other Counter	
7007 1	Duplex Counter	Displays the count total for the selected item.
7007 2	A3/DLT Counter	
7007 3	Staple Counter	
7007 4	Scan Counter	

7101*	Copy Counter – Paper Size	
7 101 5	A4 LEF	Displays the total number of copies by paper size.
7 101 6	A5 LEF	
7 101 14	B5 LEF	
7 101 38	LT LEF	
7 101 44	HLT LEF	
7 101 132	A3 SEF	
7 101 133	A4 SEF	
7 101 134	A5 SEF	
7 101 141	B4 SEF	
7 101 142	B5 SEF	
7 101 160	DLT SEF	
7 101 164	LG SEF	
7 101 166	LT SEF	
7 101 172	HLT SEF	
7 101 255	Others	

7105	P type Counter	
7105 1	Normal	Displays the count for each type of special paper, up to 99,999,999.
7105 2	Recycled	
7105 3	Special	
7105 4	Colour	
7105 5	(Not used)	
7105 6	Letterhead	
7105 7	Label	
7105 8	Thick	
7105 9	OHP	
7105 10	Used	
7105 11	Index	
7105 255	Others	

7 201*	Total Scan Counter
	Displays the total number of scanned originals.

7 204*	Copy Counter – Paper Tray	
7 204 1	Bypass	Displays the total number of copies fed from each paper feed station.
7 204 2	Tray 1	
7 204 3	Tray 2	
7 204 4	Tray 3	
7 204 5	Tray 4	

7 205*	Total ADF Counter
	Displays the total number of originals fed by the ADF.

7206*	Staple Counter
	Display the total number of staples fired.

7209*	Punch Counter
	Displays the total times the punch has fired. **DFU**

7 401*	Total SC Counter
	Displays the total number of service calls that have occurred.

7 403*	SC History	
7 403 1	Latest	Displays the most recent 10 service calls.
7 403 2	Latest 1	
7 403 3	Latest 2	
7 403 4	Latest 3	
7 403 5	Latest 4	
7 403 6	Latest 5	
7 403 7	Latest 6	
7 403 8	Latest 7	
7 403 9	Latest 8	
7 403 10	Latest 9	

7 502*	Total Paper Jam Counter
	Displays the total number of paper jams.

7 503*	Total Original Jam Counter
	Displays the total number of original jams.

7 504*	Total Jams by Location
	These SPs display the total number of paper jams by location. A “Check-in” (paper late) error occurs when the paper fails to activate the sensor at the precise time. A “Check-out” (“paper lag”) paper jam occurs when the paper remains at the sensor for longer than the prescribed time.
7 504 1	At power on
7 504 3	Upper relay sensor (Lag)
7 504 4	Lower relay sensor (Lag)
7 504 5	Vertical transport sensor (Late) (optional bank)
7 504 6	Relay sensor (Late) (optional LCT)
7504 7	By-pass Non-Feed
7504 10	Duplex Non-Feed
7 504 11	Registration sensor (Late)
7 504 12	Paper exit sensor (Late)
7 504 13	Bridge relay sensor (Late)
7 504 14	Bridge exit sensor (Late)
7 504 15	Duplex entrance sensor (Late)
7 504 16	Duplex exit sensor (Late)
7 504 17	1 bin tray exit sensor (Late)
7 504 20	Finisher entrance sensor
7 504 21	Finisher shift tray exit sensor
7 504 23	Finisher staple tray paper sensor
7 504 24	Finisher stack feed-out belt HP sensor
7 504 26	Finisher paper taking out
7 504 27	Finisher drive error
7 504 28	Finisher tray lift error
7 504 29	Finisher jogger drive error
7 504 30	Finisher tray shift drive error
7 504 31	Finisher stapler error
7 504 32	Finisher stack-feed out error
7 504 33	Finisher feed out error
7 504 34	Finisher no response
7 504 53	Transport Sensor 1 (Off Check)
7 504 54	Transport Sensor 2 (Off Check)
7 504 55	Transport Sensor 3 (Off Check)
7 504 56	LCT Relay Sensor (Off Check)
7 504 57	U Relay Sn (Lag) from Bypass
7 504 61	Registration sensor (Lag)
7 504 62	Paper exit sensor (Lag)
7 504 63	Bridge relay sensor (Lag)
7 504 64	Bridge exit sensor (Lag)
7 504 65	Duplex entrance sensor (Lag)
7 504 66	Duplex exit sensor (Lag)
7 504 67	1 bin tray exit sensor (Lag)

7 505	Total Original Jam by Location
	Displays the total number of original jams by location. These jams occur when the original does not activate the sensors. A Check-in ("paper late") error occurs when the paper fails to activate the sensor at the precise time. a Check-out ("paper lag") paper jam occurs when the paper remains at the sensor for longer than the prescribed time.
7505 1	At Power On
7505 5	Registration Sensor (On Check)
7505 6	Exit Sensor (On Check)
7505 7	Inverter Sensor (On Check)
7505 55	Registration Sensor (Off Check)
7505 56	Exit Sensor (Off Check)
7505 57	Inverter Sensor (Off Check)

7 506*	Jam Count by Copy Size	
7 506 5	A4 LEF	Displays the total number of copy jams by paper size.
7 506 6	A5 LEF	
7 506 14	B5 LEF	
7 506 038	LT LEF	
7 506 044	HLT LEF	
7 506 132	A3 SEF	
7 506 133	A4 SEF	
7 506 134	A5 SEF	
7 506 141	B4 SEF	
7 506 142	B5 SEF	
7 506 160	DLT SEF	
7 506 164	LG SEF	
7 506 166	LT SEF	
7 506 172	HLT SEF	
7 506 255	Others	

7 507*	Plotter (Copy) Jam History				
7507 1	Last	Displays the copy jam history (the most recent 10 jams) Sample Display: CODE: 007 SIZE: 05h TOTAL: 0000334 DATE: Mon Mar 15 11:44:50 2000 where: **CODE** is the SP7504-*** number (see above. **SIZE** is the ASAP paper size code in hex. **TOTAL** is the total jam error count (SP7003) **DATE** is the date the jams occurred.			
7507 2	Latest 1				
7507 3	Latest 2				
7507 4	Latest 3				
7507 5	Latest 4				
7507 6	Latest 5				
7507 7	Latest 6				
7507 8	Latest 7				
7507 9	Latest 8				
7507 10	Latest 9				
Size	**Code**	**Size**	**Code**	**Size**	**Code**
A4 (S)	05	A3 (L)	84	DLT (L)	A0
A5 (S)	06	A4 (L)	85	LG (L)	A4
B5 (S)	0E	A5 (L)	86	LT (L)	A6
LT (S)	26	B4 (L)	8D	HLT (L)	AC
HLT (S)	2C	B5 (L)	8E	Others	FF

7508*	Original Jam History	
7508 1	Last	Displays the original jam history (the most recent 10 jams. Sample Display: CODE: 007 SIZE: 05h TOTAL: 0000334 DATE: Mon Mar 15 11:44:50 2000 where: **CODE** is the SP7505*** number (see above. **SIZE** is the ASAP paper size code in hex. **TOTAL** is the total error count (SP7002001) **DATE** is the date the jams occurred.
7508 2	Last 1	
7508 3	Last 2	
7508 4	Last 3	
7508 5	Last 4	
7508 6	Last 5	
7508 7	Last 6	
7508 8	Last 7	
7508 9	Last 8	
7508 10	Last 9	

7801	ROM No./Firmware Version
	Displays the ROM number and firmware version numbers.

7803*	PM Counter Display
	Displays the PM counter since the last PM.

7804	PM Counter Resets
	Resets the PM counter. To reset, press Execute on the touch panel.

7807	SC/Jam Counter Reset
	Resets the SC and jam counters. To reset, press Execute on the touch panel. This SP does not reset the jam history counters: SP7507, SP7508.

7808	Resets Counters
	Resets all counters except SP7002***, SP7006*** and SP7007***. To reset, press Execute on the touch panel.

7810	Access Code Clear
	Use to clear the key operator code if the key operator forgets the code. After clearing the code is reset for Null and the password entry display does not open. To clear, press Execute on the touch panel.

7811	Original Counter Clear
	Clears the original total display, displayed with SP7002***. To clear, press Execute on the touch panel.

7816	Print Counter Reset by Tray	
7816 1	By-pass	Resets the total copy count by paper tray. To reset, press Execute on the touch panel. Use these SP modes when replacing the pick-up, feed, and separation rollers.
7816 2	Tray 1	
7816 3	Tray 2	
7816 4	Tray 3	
7816 5	Tray 4	
7816 6	LCT	

7825	Total Counter Reset
	Resets all electronic counters. To reset, press Execute on the touch panel. **DFU**

7826	MF Error Counter	
7826 1	Error Total	**Japan only DFU**
7826 2	Error Staple	**Japan only DFU**

7827	MF Device Error Counter Clear	**Japan only DFU**

7832	Self-Diagnosis Result Display
	Execute to open the “Self-Diagnostics Result Display” to view details about errors. Use the keys in the display on the touch-panel to scroll through all the information. If no errors have occurred, you will see the “No Error” message on the screen.

7836	Total Memory Size
	Displays the memory capacity of the controller system.

7852	ADF Scan Glass Dust Check Counter
	Counts the number of occurrences (0 ~ 65,535) when dust was detected on the scanning glass of the ADF. Counting is done only if SP4991 1 (ADF Scan Glass Dust Check) is switched on. Memory All Clear (SP5801) resets this counter to zeror

7901*	Assert Info. **DFU**	
	These SP numbers display the results of the occurrence of the most recent SC code generated by the machine.	
7991 1*	Source File Name	Module name
7991 2*	Line Number	Number of lines
7991 3*	Result	Value

7909	PCU Counter Display
	Displays the value of the PCU counter (number of copies since the last PCU change).

7999	Engine Debug Log Switch
	DFU

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
SP8 211~SP8 216	The number of pages scanned to the document server.
SP8 401~SP8 406	The number of pages printed from the document server
SP8 691~SP8 696	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.)
Full Bleed	No Margins
GenCopy	Generation Copy Mode
GPC	Get Print Counter. For jobs 10 pages or less, this counter does not count up. For jobs larger than 10 pages, this counter counts up by the number that is in excess of 10 (e.g., for an 11-page job, the counter counts up 11-10 =1)
IFax	Internet Fax
ImgEdt	Image Edit performed on the original with the copier GUI, e.g. border removal, adding stamps, page numbers, etc.
K	Black (YMCK)
LS	Local Storage. Refers to the document server.
LSize	Large (paper) Size
Mag	Magnification
MC	One color (monochrome)
NRS	New Remote Service, which allows a service center to monitor machines remotely. "NRS" is used overseas, "CSS" is used in Japan.
Org	Original for scanning
OrgJam	Original Jam
Palm 2	Print Job Manager/Desk Top Editor: A pair of utilities that allows print jobs to be distributed evenly among the printers on the network, and allows files to moved around, combined, and converted to different formats. ~~Currently not available~~.
PC	Personal Computer
PGS	Pages. A page is the total scanned surface of the original. Duplex pages count as two pages, and A3 simplex count as two pages if the A3/DLT counter SP is switched ON.

ABBREVIATION	WHAT IT MEANS
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.
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, or the Counter Reset SP7 808.

8 001	T:Total Jobs	These SPs count the number of times each application is used to do a job. [0~9999999/ **0** / 1] **Note**: The L: counter is the total number of times the other applications are used to send a job to the document server, plus the number of times a file already on the document server is used.
8 002	C:Total Jobs	
8 003	F:Total Jobs	
8 004	P:Total Jobs	
8 005	S:Total Jobs	
8 006	L:Total Jobs	
8 007	O:Total Jobs	

- These SPs reveal the number of times an application is used, not the number of pages processed.
- When an application is opened for image input or output, this counts as one job.
- Interrupted jobs (paper jams, etc.) are counted, even though they do not finish.
- Only jobs executed by the customer are counted. Jobs executed by the customer engineer using the SP modes are not counted.
- When using secure printing (when a password is required to start the print job), the job is counted at the time when either “Delete Data” or “Specify Output” is specified.
- 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 F: counter increments.

8 011	T:Jobs/LS	These SPs count the number of jobs stored to the document server by each application, to reveal how local storage is being used for input. [0~9999999/ **0** / 1] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8 012	C:Jobs/LS	
8 013	F:Jobs/LS	
8 014	P:Jobs/LS	
8 015	S:Jobs/LS	
8 016	L:Jobs/LS	
8 017	O:Jobs/LS	

- When a scan job is sent to the document server, the S: counter increments. When you enter document server mode and then scan an original, the L: counter increments.
- When a print job is sent to the document server, the P: counter increments.
- When a network application sends data to the document server, the O: counter increments.
- When an image from Palm 2 is stored on the document server, the O: counter increments.
- When a fax is sent to the document server, the F: counter increments.

8 021	T:Pjob/LS	These SPs reveal how files printed from the document server were stored on the document server originally. [0~9999999/ **0** / 1] The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel.
8 022	C:Pjob/LS	
8 023	F:Pjob/LS	
8 024	P:Pjob/LS	
8 025	S:Pjob/LS	
8 026	L:Pjob/LS	
8 027	O:Pjob/LS	

- When a copy job stored on the document server is printed with another application, the C: counter increments.
- When an application like DeskTopBinder merges a copy job that was stored on the document server with a print job that was stored on the document server, the C: and P: counters both increment.
- When a job already on the document server is printed with another application, the L: counter increments.
- When a scanner job stored on the document server is printed with another application, the S: counter increments. If the original was scanned from within document server mode, then the L: counter increments.
- When images stored on the document server by a network application (including Palm 2), are printed with another application, the O: counter increments.
- When a copy job stored on the document server is printed with a network application (Web Image Monitor, for example), the C: counter increments.
- When a fax on the document server is printed, the F: counter increments.

8 031	T:Pjob/DesApl	These SPs reveal what applications were used to output documents from the document server. [0~9999999/ **0** / 1] The L: counter counts the number of jobs printed from within the document server mode screen at the operation panel.
8 032	C:Pjob/DesApl	
8 033	F:Pjob/DesApl	
8 034	P:Pjob/DesApl	
8 035	S:Pjob/DesApl	
8 036	L:Pjob/DesApl	
8 037	O:Pjob/DesApl	

- 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.

8 041	T:TX Jobs/LS	These SPs count the applications that stored files on the document server that were later accessed for transmission over the telephone line or over a network (attached to an e-mail, or as a fax image by I-Fax). [0~9999999/ **0** / 1] **Note**: Jobs merged for sending are counted separately. The L: counter counts the number of jobs scanned from within the document server mode screen at the operation panel.
8 042	C:TX Jobs/LS	
8 043	F:TX Jobs/LS	
8 044	P:TX Jobs/LS	
8 045	S:TX Jobs/LS	
8 046	L:TX Jobs/LS	
8 047	O:TX Jobs/LS	

- When a stored copy job is sent from the document server, the C: counter increments.
- When images stored on the document server by a network application or Palm2 are sent as an e-mail, the O: counter increments.

8 051	T:TX Jobs/DesApl	These SPs count the applications used to send files from the document server over the telephone line or over a network (attached to an e-mail, or as a fax image by I-Fax). Jobs merged for sending are counted separately. [0~9999999/ **0** / 1] The L: counter counts the number of jobs sent from within the document server mode screen at the operation panel.
8 052	C:TX Jobs/DesApl	
8 053	F:TX Jobs/DesApl	
8 054	P:TX Jobs/DesApl	
8 055	S:TX Jobs/DesApl	
8 056	L:TX Jobs/DesApl	
8 057	O:TX Jobs/DesApl	

- If the send is started from Desk Top Binder or Web Image Monitor, for example, then the O: counter increments.

8 061	T:FIN Jobs		[0~9999999/ **0** / 1]
	These SPs total the finishing methods. The finishing method is specified by the application.		
8 062	C:FIN Jobs		[0~9999999/ **0** / 1]
	These SPs total finishing methods for copy jobs only. The finishing method is specified by the application.		
8 063	F:FIN Jobs		[0~9999999/ **0** / 1]
	These SPs total finishing methods for fax jobs only. The finishing method is specified by the application. Note: Finishing features for fax jobs are not available at this time.		
8 064	P:FIN Jobs		[0~9999999/ **0** / 1]
	These SPs total finishing methods for print jobs only. The finishing method is specified by the application.		
8 065	S:FIN Jobs		[0~9999999/ **0** / 1]
	These SPs total finishing methods for scan jobs only. The finishing method is specified by the application. Note: Finishing features for scan jobs are not available at this time.		
8 066	L:FIN Jobs		[0~9999999/ **0** / 1]
	These SPs total finishing methods for jobs output from within the document server mode screen at the operation panel. The finishing method is specified from the print window within document server mode.		
8 067	O:FIN Jobs		[0~9999999/ **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	[0~9999999/ **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.		
8 072	C:Jobs/PGS	[0~9999999/ **0** / 1]	
	These SPs count and calculate the number of copy jobs by size based on the number of pages in the job.		
8 073	F:Jobs/PGS	[0~9999999/ **0** / 1]	
	These SPs count and calculate the number of fax jobs by size based on the number of pages in the job.		
8 074	P:Jobs/PGS	[0~9999999/ **0** / 1]	
	These SPs count and calculate the number of print jobs by size based on the number of pages in the job.		
8 075	S:Jobs/PGS	[0~9999999/ **0** / 1]	
	These SPs count and calculate the number of scan jobs by size based on the number of pages in the job.		
8 076	L:Jobs/PGS	[0~9999999/ **0** / 1]	
	These SPs count and calculate the number of jobs printed from within the document server mode window at the operation panel, by the number of pages in the job.		
8 077	O:Jobs/PGS	[0~9999999/ **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	21~50 Pages
8 07x 2	2 Pages	8 07x 9	51~100 Pages
8 07x 3	3 Pages	8 07x 10	101~300 Pages
8 07x 4	4 Pages	8 07x 11	301~500 Pages
8 07x 5	5 Pages	8 07x 12	501~700 Pages
8 07x 6	6~10 Pages	8 07x 13	701~1000 Pages
8 07x 7	11~20 Pages	8 07x 14	1001~ 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.

8 111	T:FAX TX Jobs	[0~9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) sent by fax, either directly or using a file stored on the document server, on a telephone line. **Note**: Color fax sending is not available at this time.	
8 113	F:FAX TX Jobs	[0~9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) sent by fax directly on a telephone line. **Note**: Color fax sending is not available at this time.	
8 116	L:FAX TX Jobs	[0~9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) sent by fax on a telephone line using a file stored on the document server. Documents sent from fax memory are not counted. **Note**: Color fax sending is not available at this time.	

- These counters count jobs, not pages.
- This SP counts fax jobs sent over a telephone line with a fax application, including documents stored on the document server.
- If the mode is changed during the job, the job will count with the mode set when the job started.
- If the same document is faxed to both a public fax line and an I-Fax at a destination where both are available, then this counter increments, and the I-Fax counter (8 12x) also increments.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8 121	T:IFAX TX Jobs	[0~9999999/ **0** / 1]
	These SPs count the total number of jobs (color or black-and-white) sent, either directly or using a file stored on the document server, as fax images using I-Fax. **Note**: Color fax sending is not available at this time.	
8 123	F:IFAX TX Jobs	[0~9999999/ **0** / 1]
	These SPs count the number of jobs (color or black-and-white) sent (not stored on the document server), as fax images using I-Fax. **Note**: Color fax sending is not available at this time.	
8 126	L:IFAX TX Jobs	[0~9999999/ **0** / 1]
	These SPs count the number of jobs (color or black-and-white) sent using a file stored on the document server , as fax images using I-Fax. **Note**: Color fax sending is not available at this time.	

- These counters count jobs, not pages.
- The counters for color are provided for future use; the color fax feature is not available at this time.
- The fax job is counted when the job is scanned for sending, not when the job is sent.

8 131	T:S-to-Email Jobs	[0~9999999/ **0** / 1]
	These SPs count the total number of jobs scanned and attached to an e-mail, regardless of whether the document server was used or not.	
8 135	S:S-to-Email Jobs	
	These SPs count the number of jobs scanned and attached to an e-mail, without storing the original on the document server.	
8 136	L:S-to-Email Jobs	
	These SPs count the number of jobs using a file stored on stored on the document server, and attaching it to an e-mail.	

- These counters count jobs, not pages.
- If the job is stored on the document server, after the job is stored it is determined to be color or black-and-white then counted.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- If several jobs are combined for sending to the Scan Router, Scan-to-Email, or Scan-to-PC, or if one job is sent to more than one destination. each send is counted separately. For example, if the same document is sent by Scan-to-Email as well as Scan-to-PC, then it is counted twice (once for Scan-to-Email and once for Scan-to-PC).

8 141	T:Deliv Jobs/Svr	[0~9999999/ **0** / 1]
	These SPs count the total number of jobs scanned and sent to a Scan Router server.	
8 143	F:Deliv Jobs/Svr	
	These SPs count the number of jobs scanned in fax mode and sent to a Scan Router server.	
8 145	S:Deliv Jobs/Svr	
	These SPs count the number of jobs scanned in scanner mode and sent to a Scan Router server.	

- These counters count jobs, not pages.
- The jobs are counted even though the arrival and reception of the jobs at the Scan Router server cannot be confirmed.
- If even one color image is mixed with black-and-white images, then the job is counted as a “Color” job.
- If the job is cancelled during scanning, or if the job is cancelled while the document is waiting to be delivered, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8 151	T:Deliv Jobs/PC	[0~9999999/ **0** / 1]
	These SPs count the total number of jobs scanned and sent to a folder on a PC (Scan-to-PC). **Note**: At the present time, 8 151 and 8 155 perform identical counts.	
8 155	S:Deliv Jobs/PC	
	These SPs count the total number of jobs scanned and sent with Scan-to-PC.	

- These counters count jobs, not pages.
- If the job is cancelled during scanning, it is not counted.
- If the job is cancelled while it is waiting to be sent, the job is not counted.
- If the job is cancelled during sending, it may or may not be counted, depending on what stage of the process had been reached when the job was cancelled.
- Even if several files are combined for sending, the transmission counts as one job.

8 161	T:PCFAX TX Jobs	These SPs count the number of PC Fax transmission jobs. A job is counted from when it is registered for sending, not when it is sent. [0~9999999/ **0** / 1] **Note**: At the present time, these counters perform identical counts.
8 163	F:PCFAX TX Jobs	

- This counts fax jobs started from a PC using a PC fax application, and sending the data out to the destination from the PC through the copier.

8 191	T:Total Scan PGS	These SPs count the pages scanned by each application that uses the scanner to scan images. [0~9999999/ **0** / 1]
8 192	C:Total Scan PGS	
8 193	F:Total Scan PGS	
8 195	S:Total Scan PGS	
8 196	L:Total Scan PGS	

- SP 8 191 to 8 196 count the number of scanned sides of pages, not the number of physical pages.
- These counters do not count reading user stamp data, or reading color charts to adjust color.
- Previews done with a scanner driver are not counted.
- A count is done only after all images of a job have been scanned.
- Scans made in SP mode are not counted.

Examples:

- If 3 B5 pages and 1 A3 page are scanned with the scanner application but not stored, the S: count is 4.
- If both sides of 3 A4 sheets are copied and stored to the document server using the Store File button in the Copy mode window, the C: count is 6 and the L: count is 6.
- If both sides of 3 A4 sheets are copied but not stored, the C: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8 201	T:LSize Scan PGS	[0~9999999/ **0** / 1]
	These SPs count the total number of large pages input with the scanner for scan and copy jobs. Large size paper (A3/DLT) scanned for fax transmission are not counted. **Note**: These counters are displayed in the SMC Report, and in the User Tools display.	
8 205	S:LSize Scan PGS	[0~9999999/ **0** / 1]
	These SPs count the total number of large pages input with the scanner for scan jobs only. Large size paper (A3/DLT) scanned for fax transmission are not counted. **Note**: These counters are displayed in the SMC Report, and in the User Tools display..	

8 211	T:Scan PGS/LS	These SPs count the number of pages scanned into the document server . [0~9999999/ **0** / 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen
8 212	C:Scan PGS/LS	
8 213	F:Scan PGS/LS	
8 215	S:Scan PGS/LS	
8 216	L:Scan PGS/LS	

- Reading user stamp data is not counted.
- If a job is cancelled, the pages output as far as the cancellation are counted.
- If the scanner application scans and stores 3 B5 sheets and 1 A4 sheet, the S: count is 4.
- If pages are copied but not stored on the document server, these counters do not change.
- If both sides of 3 A4 sheets are copied and stored to the document server, the C: count is 6 and the L: count is 6.
- If you enter document server mode then scan 6 pages, the L: count is 6.

8 221	ADF Org Feeds	[0~9999999/ **0** / 1]
	These SPs count the number of pages fed through the ADF for front and back side scanning.	
8 221 1	Front	Number of front sides fed for scanning: With an ADF that can scan both sides simultaneously, the Front side count is the same as the number of pages fed for either simplex or duplex scanning. With an ADF that cannot scan both sides simultaneously, the Front side count is the same as the number of pages fed for duplex front side scanning. (The front side is determined by which side the user loads face up.)
8 221 2	Back	Number of rear sides fed for scanning: With an ADF that can scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex scanning. With an ADF that cannot scan both sides simultaneously, the Back count is the same as the number of pages fed for duplex rear-side scanning.

- When 1 sheet is fed for duplex scanning the Front count is 1 and the Back count is 1.
- If a jam occurs during the job, recovery processing is not counted to avoid double counting. Also, the pages are not counted if the jam occurs before the first sheet is output.

8 231	Scan PGS/Mode	[0~9999999/ **0** / 1]
	These SPs count the number of pages scanned by each ADF mode to determine the work load on the ADF.	
8 231 1	Large Volume	Selectable. Large copy jobs that cannot be loaded in the ADF at one time.
8 231 2	SADF	Selectable. Feeding pages one by one through the ADF.
8 231 3	Mixed Size	Selectable. Select “Mixed Sizes” on the operation panel.
8 231 4	Custom Size	Selectable. Originals of non-standard size.
8 231 5	Platen	Book mode. Raising the ADF and placing the original directly on the platen.

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.
- The user cannot select mixed sizes or non-standard sizes with the fax application so if the original’s page sizes are mixed or non-standard, these are not counted.
- If the user selects “Mixed Sizes” for copying in the platen mode, the Mixed Size count is enabled.
- In the SADF mode if the user copies 1 page in platen mode and then copies 2 pages with SADF, the Platen count is 1 and the SADF count is 3.

8 241	T:Scan PGS/Org	[0~9999999/ **0** / 1]
	These SPs count the total number of scanned pages by original type for all jobs, regardless of which application was used.	
8 242	C:Scan PGS/Org	[0~9999999/ **0** / 1]
	These SPs count the number of pages scanned by original type for Copy jobs.	
8 243	F:Scan PGS/Org	[0~9999999/ **0** / 1]
	These SPs count the number of pages scanned by original type for Fax jobs.	
8 245	S:Scan PGS/Org	[0~9999999/ **0** / 1]
	These SPs count the number of pages scanned by original type for Scan jobs.	
8 246	L:Scan PGS/Org	[0~9999999/ **0** / 1]
	These SPs count the number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen	
8 247	O:Scan PGS/Org	[0~9999999/ **0** / 1]
	These SPs count the number of pages scanned by original type by Other applications.	

	8 241	**8 242**	**8 243**	**8 245**	**8 246**	**8 247**
8 24x 1: Text	Yes	Yes	Yes	Yes	Yes	Yes
8 24x 2: Text/Photo	Yes	Yes	Yes	Yes	Yes	Yes
8 24x 3: Photo	Yes	Yes	Yes	Yes	Yes	Yes
8 24x 4: GenCopy, Pale	Yes	Yes	No	Yes	Yes	Yes
8 24x 5: Map	Yes	Yes	No	Yes	Yes	Yes
8 24x 6: Normal/Detail	Yes	No	Yes	No	No	No
8 24x 7: Fine/Super Fine	Yes	No	Yes	No	No	No
8 24x 8: Binary	Yes	No	No	Yes	No	No
8 24x 9: Grayscale	Yes	No	No	Yes	No	No

- If the scan mode is changed during the job, for example, if the user switches from ADF to Platen mode, the count is done for the last selected mode.

8 251	T:Scan PGS/ImgEdt	These SPs show how many times Image Edit features have been selected at the operation panel for each application. Some examples of these editing features are: • Erase> Border • Erase> Center • Image Repeat • Centering • Positive/Negative [0~9999999/ **0** / 1] Note: The count totals the number of times the edit features have been used. A detailed breakdown of exactly which features have been used is not given.
8 252	C:Scan PGS/ImgEdt	
8 254	P:Scan PGS/ImgEdt	
8 256	L:Scan PGS/ImgEdt	
8 257	O:Scan PGS/ImgEdt	

The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen.

8 281	T:Scan PGS/TWAIN	These SPs count the number of pages scanned using a TWAIN driver. These counters reveal how the TWAIN driver is used for delivery functions. [0~9999999/ **0** / 1] **Note**: At the present time, these counters perform identical counts.
8 285	S:Scan PGS/TWAIN	

8 291	T:Scan PGS/Stamp	These SPs count the number of pages stamped with the stamp in the ADF unit. [0~9999999/ **0** / 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen
8 293	F:Scan PGS/Stamp	
8 295	S:Scan PGS/Stamp	
8 296	L:Scan PGS/Stamp	

8 301	T:Scan PGS/Size	[0~9999999/ **0** / 1]
	These SPs count by size the total number of pages scanned by all applications. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-441].	
8 302	C:Scan PGS/Size	[0~9999999/ **0** / 1]
	These SPs count by size the total number of pages scanned by the Copy application. Use these totals to compare original page size (scanning) and output (printing) page size [SP 8-442].	
8 303	F:Scan PGS/Size	[0~9999999/ **0** / 1]
	These SPs count by size the total number of pages scanned by the Fax application. Use these totals to compare original page size (scanning) and output page size [SP 8-443].	
8 305	S:Scan PGS/Size	[0~9999999/ **0** / 1]
	These SPs count by size the total number of pages scanned by the Scan application. Use these totals to compare original page size (scanning) and output page size [SP 8-445].	
8 306	L:Scan PGS/Size	[0~9999999/ **0** / 1]
	These SPs count by size the total number of pages scanned and stored from within the document server mode screen at the operation panel, and with the Store File button from within the Copy mode screen. Use these totals to compare original page size (scanning) and output page size [SP 8-446].	
8 30x 1	A3	
8 30x 2	A4	
8 30x 3	A5	
8 30x 4	B4	
8 30x 5	B5	
8 30x 6	DLT	
8 30x 7	LG	
8 30x 8	LT	
8 30x 9	HLT	
8 30x 10	Full Bleed	
8 30x 254	Other (Standard)	
8 30x 255	Other (Custom)	

8 311	T:Scan PGS/Rez	[0~9999999/ **0** / 1]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings.	
8 315	S:Scan PGS/Rez	[0~9999999/ **0** / 1]
	These SPs count by resolution setting the total number of pages scanned by applications that can specify resolution settings. **Note**: At the present time, 8 311 and 8 315 perform identical counts.	
8 31x 1	1200dpi ~	
8 31x 2	600dpi~1199dpi	
8 31x 3	400dpi~599dpi	
8 31x 4	200dpi~399dpi	
8 31x 5	~199dpi	

- Copy resolution settings are fixed so they are not counted.
- The Fax application does not allow finely-adjusted resolution settings so no count is done for the Fax application.

8 321	T:Scan PGS/Comp	[0~9999999/ **0** / 1]
	These SPs count by compression method the total number of pages scanned.	
8 325	S:Scan PGS/Comp	[0~9999999/ **0** / 1]
	These SPs count by compression method the total number of pages scanned by the Scan application. **Note**: At the present time, 8 321 and 8 325 perform identical counts.	
8 32x 1	JPEG	
8 32x 2	JPEG2000	
8 32x 3	TIFF (Comp OFF)	
8 32x 4	TIFF (Comp ON)	
8 32x 5	PDF	
8 32x 6	Other	

8 381	T:Total PrtPGS	These SPs count the number of pages printed by the customer. The counter for the application used for storing the pages increments. [0~9999999/ **0** / 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.
8 382	C:Total PrtPGS	
8 383	F:Total PrtPGS	
8 384	P:Total PrtPGS	
8 385	S:Total PrtPGS	
8 386	L:Total PrtPGS	
8 387	O:Total PrtPGS	

- When the A3/DLT double count function is switched on with SP5104, 1 A3/DLT page is counted as 2.
- When several documents are merged for a print job, the number of pages stored are counted for the application that stored them.
- These counters are used primarily to calculate charges on use of the machine, so the following pages are not counted as printed pages:
    - Blank pages in a duplex printing job.
    - Blank pages inserted as document covers, chapter title sheets, and slip sheets.
    - Reports printed to confirm counts.
    - All reports done in the service mode (service summaries, engine maintenance reports, etc.)
    - Test prints for machine image adjustment.
    - Error notification reports.
    - Partially printed pages as the result of a copier jam.

8 391	LSize PrtPGS	[0~9999999/ **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.	

8 401	T:PrtPGS/LS	These SPs count the number of pages printed from the document server. The counter for the application used to print the pages is incremented. The L: counter counts the number of jobs stored from within the document server mode screen at the operation panel. [0~9999999/ **0** / 1]
8 402	C:PrtPGS/LS	
8 403	F:PrtPGS/LS	
8 404	P:PrtPGS/LS	
8 405	S:PrtPGS/LS	
8 406	L:PrtPGS/LS	

- Print jobs done with Web Image Monitor and Desk Top Binder are added to the L: count.
- Fax jobs done with Web Image Monitor and Desk Top Binder are added to the F: count.

8 411	Prints/Duplex	This SP counts the amount of paper (front/back counted as 1 page) used for duplex printing. Last pages printed only on one side are not counted. [0~9999999/ **0** / 1]

8 421	T:PrtPGS/Dup Comb	[0~9999999/ **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.	
8 422	C:PrtPGS/Dup Comb	[0~9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the copier application.	
8 423	F:PrtPGS/Dup Comb	[0~9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the fax application.	
8 424	P:PrtPGS/Dup Comb	[0~9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the printer application.	
8 425	S:PrtPGS/Dup Comb	[0~9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the scanner application.	
8 426	L:PrtPGS/Dup Comb	[0~9999999/ **0** / 1]
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing from within the document server mode window at the operation panel.	
8 427	O:PrtPGS/Dup Comb	[0~9999999/ **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	
Original Pages	**Count**
1	1
2	2
3	2
4	2
5	3
6	4
7	4
8	4

Magazine	
Original Pages	**Count**
1	1
2	2
3	2
4	2
5	4
6	4
7	4
8	4

8 431	T:PrtPGS/ImgEdt	[0~9999999/ **0** / 1]
	These SPs count the total number of pages output with the three features below, regardless of which application was used.	
8 432	C:PrtPGS/ImgEdt	[0~9999999/ **0** / 1]
	These SPs count the total number of pages output with the three features below with the copy application.	
8 434	P:PrtPGS/ImgEdt	[0~9999999/ **0** / 1]
	These SPs count the total number of pages output with the three features below with the print application.	
8 436	L:PrtPGS/ImgEdt	[0~9999999/ **0** / 1]
	These SPs count the total number of pages output from within the document server mode window at the operation panel with the three features below.	
8 437	O:PrtPGS/ImgEdt	[0~9999999/ **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	[0~9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by all applications.	
8 442	C:PrtPGS/Ppr Size	[0~9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the copy application.	
8 443	F:PrtPGS/Ppr Size	[0~9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the fax application.	
8 444	P:PrtPGS/Ppr Size	[0~9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the printer application.	
8 445	S:PrtPGS/Ppr Size	[0~9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed by the scanner application.	
8 446	L:PrtPGS/Ppr Size	[0~9999999/ **0** / 1]
	These SPs count by print paper size the number of pages printed from within the document server mode window at the operation panel.	
8 447	O:PrtPGS/Ppr Size	[0~9999999/ **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	[0~9999999/ **0** / 1]
	These SPs count the number of sheets fed from each paper feed station.	
8 451 1	Bypass	Bypass Tray
8 451 2	Tray 1	Copier
8 451 3	Tray 2	Copier
8 451 4	Tray 3	Paper Tray Unit (Option)
8 451 5	Tray 4	Paper Tray Unit (Option)
8 451 6	Tray 5	LCT (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	[0~9999999/ **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.	
8 462	C:PrtPGS/Ppr Type	[0~9999999/ **0** / 1]
	These SPs count by paper type the number pages printed by the copy application.	
8 463	F:PrtPGS/Ppr Type	[0~9999999/ **0** / 1]
	These SPs count by paper type the number pages printed by the fax application.	
8 464	P:PrtPGS/Ppr Type	[0~9999999/ **0** / 1]
	These SPs count by paper type the number pages printed by the printer application.	
8 466	L:PrtPGS/Ppr Type	[0~9999999/ **0** / 1]
	These SPs count by paper type the number pages printed from within the document server mode window at the operation panel.	
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	[0~9999999/ **0** / 1]
	These SPs count by magnification rate the number of pages printed.	
8 471 1	~49%	
8 471 2	50%~99%	
8 471 3	100%	
8 471 4	101%~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
8 484	P:PrtPGS/TonSave
	These SPs count the number of pages printed with the Toner Save feature switched on. **Note**: These SPs return the same results as this SP is limited to the Print application. [0~9999999/ **0** / 1]

8 511	T:PrtPGS/Emul	[0~9999999/ **0** / 1]
	These SPs count by printer emulation mode the total number of pages printed.	
8 514	P:PrtPGS/Emul	[0~9999999/ **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	[0~9999999/ **0** / 1]
	These SPs count by finishing mode the total number of pages printed by all applications.	
8 522	C:PrtPGS/FIN	[0~9999999/ **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Copy application.	
8 523	F:PrtPGS/FIN	[0~9999999/ **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Fax application. **Note**: • Print finishing options for received faxes are currently not available.	
8 524	P:PrtPGS/FIN	[0~9999999/ **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Print application.	
8 525	S:PrtPGS/FIN	[0~9999999/ **0** / 1]
	These SPs count by finishing mode the total number of pages printed by the Scanner application.	
8 526	L:PrtPGS/FIN	[0~9999999/ **0** / 1]
	These SPs count by finishing mode the total number of pages printed from within the document server mode window at the operation panel.	
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: 1) If stapling is selected for finishing and the stack is too large for stapling, the unstapled pages are still counted.
2) The counts for staple finishing are based on output to the staple tray, so jam recoveries are counted.

8 531	Staples	This SP counts the amount of staples used by the machine. [0~9999999/ **0** / 1]

8 581	T:Counter	[0~9999999/ **0** / 1]
	These SPs count the total output broken down by color output, regardless of the application used. In addition to being displayed in the SMC Report, these counters are also displayed in the User Tools display on the copy machine. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	

8 591	O:Counter	[0~9999999/ **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	
8 591 3	Staple	

8 631	T:FAX TX PGS	[0~9999999/ **0** / 1]
	These SPs count by color mode the number of pages sent by fax to a telephone number. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
8 633	F:FAX TX PGS	[0~9999999/ **0** / 1]
	These SPs count by color mode the number of pages sent by fax to a telephone number. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	

- If a document has color and black-and-white pages mixed, the pages are counted separately as B/W or Color.
- At the present time, this feature is provided for the Fax application only so SP8631 and SP8633 are the same.
- The counts include error pages.
- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.
- Polling transmissions are counted but polling RX are not.
- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8 641	T:FAX TX PGS	[0~9999999/ **0** / 1]
	These SPs count by color mode the number of pages sent by fax to as fax images using I-Fax. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
8 643	F:FAX TX PGS	[0~9999999/ **0** / 1]
	These SPs count by color mode the number of pages sent by Fax as fax images using I-Fax. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	

- If a document has color and black-and-white pages mixed, the pages are counted separately as B/W or Color.
- At the present time, this feature is provided for the Fax application only so SP8641 and SP8643 are the same.
- The counts include error pages.
- If a document is sent to more than one destination with a Group transmission, the count is done for each destination.
- Polling transmissions are counted but polling RX are not.
- Relay, memory, and confidential mailbox transmissions and are counted for each destination.

8 651	T:S-to-Email PGS	[0~9999999/ **0** / 1]
	These SPs count by color mode the total number of pages attached to an e-mail for both the Scan and document server applications. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
8 655	S:S-to-Email PGS	[0~9999999/ **0** / 1]
	These SPs count by color mode the total number of pages attached to an e-mail for the Scan application only. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
8 656	L:S-to-Email PGS	[0~9999999/ **0** / 1]
	These SPs count by color mode the total number of pages attached to an e-mail for LS applications only. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	

NOTE: 1) The count for B/W and Color pages is done after the document is stored on the HDD. If the job is cancelled before it is stored, the pages are not counted.
2) If Scan-to-Email is used to send a 10-page document to 5 addresses, the count is 10 (the pages are sent to the same SMTP server together).
3) If Scan-to-PC is used to send a 10-page document to 5 folders, the count is 50 (the document is sent to each destination of the SMB/FTP server).
4) Due to restrictions on some devices, if Scan-to-Email is used to send a 10-page document to a large number of destinations, the count may be divided and counted separately. For example, if a 10-page document is sent to 200 addresses, the count is 10 for the first 100 destinations and the count is also 10 for the second 100 destinations, for a total of 20.).

8 661	T:Deliv PGS/Svr	[0~9999999/ **0** / 1]
	These SPs count by color mode the total number of pages sent to a Scan Router server by both Scan and LS applications. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
8 665	S:Deliv PGS/Svr	[0~9999999/ **0** / 1]
	These SPs count by color mode the total number of pages sent to a Scan Router server by the Scan application. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
8 666	L:Deliv PGS/Svr	[0~9999999/ **0** / 1]
	These SPs count by color mode the total number of pages sent to a Scan Router server by LS applications. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	

NOTE: 1) The B/W and Color counts are done after the document is stored on the HDD of the Scan Router server.
2) If the job is canceled before storage on the Scan Router server finishes, the counts are not done.
3) The count is executed even if regardless of confirmation of the arrival at the Scan Router server.

8 671	T:Deliv PGS/PC	[0~9999999/ **0** / 1]
	These SPs count by color mode the total number of pages sent to a folder on a PC (Scan-to-PC) with the Scan and LS applications. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
8 675	S:Deliv PGS/PC	[0~9999999/ **0** / 1]
	These SPs count by color mode the total number of pages sent with Scan-to-PC with the Scan application. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	
8 676	L:Deliv PGS/PC	[0~9999999/ **0** / 1]
	These SPs count by color mode the total number of pages sent with Scan-to-PC function with the LS applications. **Note:** This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	

8 681	T:PCFAX TXPGS	These SPs count the number of pages sent by PC Fax. These SPs are provided for the Fax application only, so the counts for SP8 681 and SP8 683 are the same. [0~9999999/ **0** / 1]
8 683	F:PCFAX TXPGS	

- This counts pages sent from a PC using a PC fax application, from the PC through the copier to the destination.
- When sending the same message to more than one place using broadcasting, the pages are only counted once. (For example, a 10-page fax is sent to location A and location B. The counter goes up by 10, not 20.)

8 691	T:TX PGS/LS	These SPs count the number of pages sent from the document server. The counter for the application that was used to store the pages is incremented. [0~9999999/ **0** / 1] The L: counter counts the number of pages stored from within the document server mode screen at the operation panel. Pages stored with the Store File button from within the Copy mode screen go to the C: counter.
8 692	C:TX PGS/LS	
8 693	F:TX PGS/LS	
8 694	P:TX PGS/LS	
8 695	S:TX PGS/LS	
8 696	L:TX PGS/LS	

NOTE: 1) Print jobs done with Web Image Monitor and Desk Top Binder are added to the count.
2) If several documents are merged for sending, the number of pages stored are counted for the application that stored them.
3) When several documents are sent by a Fax broadcast, the F: count is done for the number of pages sent to each destination.

8 701	TX PGS/Port	[0~9999999/ **0** / 1]
	These SPs count the number of pages sent by the physical port used to send them. For example, if a 3-page original is sent to 4 destinations via ISDN G4, the count for ISDN (G3, G4) is 12.	
8 701 1	PSTN-1	
8 701 2	PSTN-2	
8 701 3	PSTN-3	
8 701 4	ISDN (G3,G4)	
8 701 5	Network	

8 741	RX PGS/Port	[0~9999999/ **0** / 1]
	These SPs count the number of pages received by the physical port used to receive them.	
8 741 1	PSTN-1	
8 741 2	PSTN-2	
8 741 3	PSTN-3	
8 741 4	ISDN (G3,G4)	
8 741 5	Network	

8 771	Dev Counter	[0~9999999/ **0** / 1]
	These SPs count the frequency of use (number of rotations of the development rollers) for black and other color toners. **Note:** For machines that do not support color, the Black toner count is the same as the Total count.	

8 791	LS Memory Remain	This SP displays the percent of space available on the document server for storing documents. [0~100/ **0** / 1]

8 801	Toner Remain	[0~100/ **0** / 1]
	This SP displays the percent of toner remaining for each color. This SP allows the user to check the toner supply at any time. **Note:** • This precise method of measuring remaining toner supply (1% steps) is better than other machines in the market that can only measure in increments of 10 (10% steps). • This SP is expanded for color MFP and color LP machines. For this machine, the count is done for black only.	

8 781	Pixel Coverage Ratio **DFU**
8 831	Pixel Coverage Ratio **DFU**
8 841	Pixel Coverage Ratio **DFU**
8 851	**DFU**
8 861	**DFU**
8 871	**DFU**
8 881	**DFU**
8 901	Pixel Coverage Ratio **DFU**
8 911	Pixel Coverage Ratio **DFU**

8 941	Machine Status	[0~9999999/ **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	Down Time/SC	Total down time due to SC errors.
8 941 7	Down Time/PrtJam	Total down time due to paper jams during printing.
8 941 8	Down Time/OrgJam	Total down time due to original jams during scanning.
8 941 9	Down Time/TonEnd	Total down time due to toner end.

8 951	AddBook Register		
	These SPs count the number of events when the machine manages data registration.		
8 951 1	User Code	User code registrations.	[0~9999999/ **0** / 1]
8 951 2	Mail Address	Mail address registrations.	
8 951 3	Fax Destination	Fax destination registrations.	
8 951 4	Group	Group destination registrations.	
8 951 5	Transfer Request	Fax relay destination registrations for relay TX.	
8 951 6	F-Code	F-Code box registrations.	
8 951 7	Copy Program	Copy application registrations with the Program (job settings) feature.	[0~255 / **0** / 255]
8 951 8	Fax Program	Fax application registrations with the Program (job settings) feature.	
8 951 9	Printer Program	Printer application registrations with the Program (job settings) feature.	
8 951 10	Scanner Program	Scanner application registrations with the Program (job settings) feature.	

4.2.3 TEST PATTERN PRINTING (SP2902-3)

NOTE: Always print a test pattern to confirm correct operation of the machine.

1. Enter the SP mode and select SP2902.
2. Press ③.
3. Enter the number for the test pattern that you want to print and press #. (See the tables below.)
4. Press Copy Window to open the copy window and then select the settings for the test print (paper size, etc.)
5. Press Start ◇ twice. (Ignore the "Place Original" messages) to start the test print.
6. Press SP Mode (highlighted) to return to the SP mode display.

No.	Test Pattern	No.	Test Pattern
0	None	15	Grayscale (Grid)
1	Vertical Line (1dot)	16	Grayscale with White Line (Horizontal)
2	Horizontal Line (1dot)	17	Grayscale with White Line (Vertical)
3	Vertical Line (2dot)	18	Grayscale with White Line (Vertical /Horizontal)
4	Horizontal Line (2 dot)	23	P Pattern
5	Grid Pattern (1dot)	31	Grayscale (Horizontal, 8bit, Odd)
6	Grid Pattern (1dot pair)	32	Grayscale (Vertical, 8bit, Odd)
7	Alternating Dot Pattern	33	Grayscale with White Line (Horizontal 8bit, Odd)
8	Full Dot Pattern	34	Grayscale with White Line (Vertical 8bit, Odd)
9	Black band	35	Grayscale (Horizontal, 8bit, Even)
10	Trimming Area	36	Grayscale (Vertical, 8bit, Even)
11	Argyle Pattern	37	Grayscale with White Line (Horizontal 8bit, Even)
12	Grayscale (Horizontal)	38	Grayscale with White Line (Vertical 8bit, Even)
13	Grayscale (Vertical)	40	Grid (1dot pair) (OR Outside Data 1)
14	Grayscale (Vertical/Horizontal)	41	Trimming Area (OR Outside Data)

Also see SP 4417 in the SP table for a different set of test patterns.

4.2.4 INPUT CHECK

Main Machine Input Check (SP5803)

1. Enter the SP mode and select SP5803.
2. Enter the number (1 – 11) for the item that you want to check. A small box will be displayed on the SP mode screen with a series of 0's and 1's.
   The meaning of the display is as follows.

   0 0 0 0 0 0 0 0

   Bit 7 6 5 4 3 2 1 0
3. Check the status of each item against the corresponding bit numbers listed in the table below.

Number	Bit	Description	Reading	
			0	1
1	7	Paper Height Sensor 2 (2nd Tray)	Activated	Deactivated
	6	Paper Height Sensor 1 (2nd Tray)	Activated	Deactivated
	5	Paper Height Sensor 2 (1st Tray)	Activated	Deactivated
	4	Paper Height Sensor 1 (1st Tray)	Activated	Deactivated
	3	Paper End Sensor (2nd Tray)	Paper End	Paper is present
	2	Upper Relay Sensor	Activated	Deactivated
	1	Lower Right Cover Open	Closed	Open
	0	Not used		
2	7	Paper Exit Sensor	Activated	Deactivated
	6	Fusing Unit	Unit Set	Unit not set
	5	PCU Set	Activated	Deactivated
	4	New PCU Sensor	Activated	Deactivated
	3	Interchange Exit Sensor	Activated	Deactivated
	2	1 bin Tray Unit Set	Unit Set	Unit not set
	1	1 bin Tray Paper Sensor	Activated	Deactivated
	0	Interchange Unit Set	Unit Set	Unit not set
3	7	Bridge Exit Sensor	Activated	Deactivated
	6	Not used		
	5	Bridge Paper Sensor	Activated	Deactivated
	4	Bridge Right Guide Switch	Activated	Deactivated
	3	Bridge Left Guide Switch	Activated	Deactivated
	2	Bridge Unit Set	Unit Set	Unit not set
	1	Bridge Fan Motor Lock	Locked	Unlocked
	0	Shift Tray Unit Set	Unit Set	Unit not set

Number	Bit	Description	Reading	
			0	1
4	7	Wake up Signal	Not detected	Detected
	6	Lower Relay Sensor	Activated	Deactivated
	5	Vertical Transport Sensor (Optional paper tray unit)	Activated	Deactivated
	4	3rd Tray Paper Size	Activated	Deactivated
	3	4th Tray Paper Size	Activated	Deactivated
	2	Motor Lock (Optional paper tray unit)	Not locked	Locked
	1	Height Sensor (Optional paper tray unit)	Activated	Deactivated
	0	Unit Set (Optional paper tray unit)	Unit set	Unit not set
5	7	Fusing Drive Release Solenoid	Activated	Deactivated
	6	Main Motor Brake Signal	Not active	Active
	5	Main Motor On Signal	Activated	Deactivated
	4	Main Motor Rotation Direction Signal	Not active	Active
	3	3rd Paper End Sensor	Paper End	Paper is present
	2	4th Paper End Sensor	Paper End	Paper is present
	1	3rd Paper Height Sensor	Deactivated	Activated
	0	4th Paper Height Sensor	Deactivated	Activated
6	7	Duplex Unit Set	Unit set	Unit not set
	6	Total Counter	Not detected	Detected
	5	By-pass Tray Unit Set	Detected	Not detected
	4	By-pass Paper End Sensor	Paper End	Paper is present
	3	By-pass Paper Size 2	Activated	Deactivated
	2	By-pass Paper Size 1	Activated	Deactivated
	1	By-pass Paper Size 4	Activated	Deactivated
	0	By-pass Paper Size 3	Activated	Deactivated
7	7	Not Used		
	6	Not Used		
	5	Not Used		
	4	Not Used		
	3	Key Counter Set	Detected	Not detected
	2	Key Card Set	Detected	Not detected
	1	Polygon Motor Ready Signal	Ready	Not ready
	0	Not Used		

Number	Bit	Description	Reading	
			0	1
8	7	Dip Switch - 4	On	Off
	6	Dip Switch - 3	Off	On
	5	Dip Switch - 2	Off	On
	4	Dip Switch - 1	Off	On
	3	Not Used		
	2	Front Safety Sw – 5V	On	Off
	1	Front Safety Sw – 24V	Off	On
	0	Main Motor Ready Signal	Ready	Not ready
9	7	Not used		
	6	Relay Off Signal	Not detected	Detected
	5	Toner Bottle Motor Lock	Locked	Not locked
	4	Right Cover Open	Closed	Open
	3	Registration Sensor	Activated	Deactivated
	2	Exhaust Fan Lock	Not locked	Locked
	1	Interchange Cover Open	Closed	Open
	0	Paper Overflow Sensor	Activated	Deactivated
10	7	Not Used		
	8	Not Used		
	5	Not Used		
	4	Upper Relay Sensor	Activated	Deactivated
	3	1st Paper End	Paper End	Paper is present
	2	2nd Paper Lift Sensor	Activated	Deactivated
	1	1st Paper Lift Sensor	Activated	Deactivated
	0	Not Used		
11	7	2nd Paper Size 1	Activated	Deactivated
	6	2nd Paper Size 2	Activated	Deactivated
	5	2nd Paper Size 3	Activated	Deactivated
	4	2nd Paper Size 4	Activated	Deactivated
	3	1st Paper Size 1	Activated	Deactivated
	2	1st Paper Size 2	Activated	Deactivated
	1	1st Paper Size 3	Activated	Deactivated
	0	1st Paper Size 4	Activated	Deactivated

NOTE: Numbers 12 to 14 are not used for this machine.

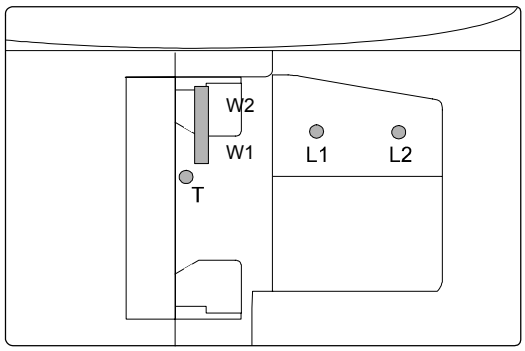
ARDF Input Check (SP6007)

1. Enter the SP mode and select SP6007.
2. Enter the number (1 – 11) for the item that you want to check. A small box will be displayed on the SP mode screen with a series of 0's and 1's, as shown below. However, only bit 0 at the right side of the screen is valid.

0 0 0 0 0 0 0 0

Bit 7 6 5 4 3 2 1 0

3. Check the status of bit 0 for the required item listed in the table below.



B089S903.WMF

No..	Description	Reading	
		0	1
1	Original set sensor	Paper not detected	Paper detected
2	Original width sensor 1 (W1)	Paper not detected	Paper detected
3	Original width sensor 2 (W2)	Paper not detected	Paper detected
4	Original length sensor 1 (L1)	Paper not detected	Paper detected
5	Original length sensor 2 (L2)	Paper not detected	Paper detected
6	Original trailing edge sensor	Paper not detected	Paper detected
7	ADF cover sensor	Cover closed	Cover opened
8	DF position sensor	ADF closed	ADF opened
9	Registration sensor	Paper not detected	Paper detected
10	Exit sensor	Paper not detected	Paper detected
11	Inverter sensor	Paper not detected	Paper detected

Finisher Input Check (SP6117)

1. Enter the SP mode and select SP6117.
2. Enter the number (1 – 4) for the item that you want to check. A small box will be displayed on the SP mode screen with a series of 0's and 1's.
   The meaning of the display is as follows.

   0 0 0 0 0 0 0 0

   Bit 7 6 5 4 3 2 1 0
3. Check the status of each item against the corresponding bit numbers listed in the table below.

For 1000-sheet Finisher

Number	Bit	Description	Reading	
			0	1
1	7	Stack Feed-out Belt HP Sensor	Activated	Deactivated
	6	Not Used		
	5	Jogger Fence HP Sensor	Activated	Deactivated
	4	Stapler HP Sensor	Activated	Deactivated
	3	Stapler Tray Entrance Sensor	Activated	Deactivated
	2	Not Used		
	1	Lower Tray Exit Sensor	Activated	Deactivated
	0	Entrance Sensor	Activated	Deactivated
2	7	Not Used		
	6	Not Used		
	5	Stapler Ready Signal	Activated	Deactivated
	4	Not Used		
	3	Not Used		
	2	Staple Sensor	Activated	Deactivated
	1	Staple Hammer HP Sensor	Activated	Deactivated
	0	Stapler Tray Paper Sensor	Activated	Deactivated
3	7	Not Used		
	6	Lower Tray Lower Limit Sensor	Activated	Deactivated
	5	Not used		
	4	Stack Height Sensor	Activated	Deactivated
	3	Not Used		
	2	Not Used		
	1	Shift HP Sensor	Activated	Deactivated
	0	Exit Guide HP Sensor	Activated	Deactivated

Number	Bit	Description	Reading	
			0	1
3	7	Not Used		
	6	Not Used		
	5	Not Used		
	4	Not Used		
	3	Upper Tray Paper Limit Sensor	Activated	Deactivated
	2	Not Used		
	1	Not Used		
	0	Not Used		

For 500-sheet Finisher

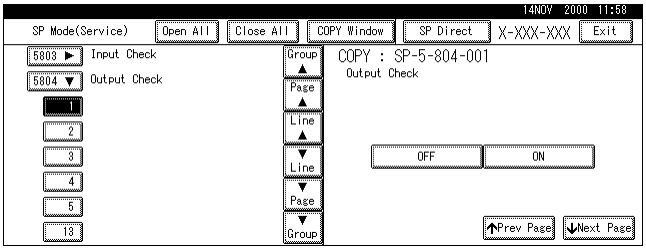
Number	Bit	Description	Reading	
			0	1
1	7	Stack Near-limit Sensor	Activated	Deactivated
	6	Tray Upper Limit Sensor	Activated	Deactivated
	5	Lever Sensor	Activated	Deactivated
	4	Stack Height Sensor	Activated	Deactivated
	3	Top Cover Sensor	Closed	Opened
	2	Jogger HP Sensor	Activated	Deactivated
	1	Exit Sensor	Activated	Deactivated
	0	Entrance Sensor	Activated	Deactivated
2	7	Not Used		
	6	Not Used		
	5	Not Used		
	4	Staple Unit Lock	Locked	Not Locked
	3	Staple Cartridge Sensor	Activated	Deactivated
	2	Staple End Sensor	Activated	Deactivated
	1	Staple Hammer HP Sensor	Activated	Deactivated
	0	Staple Unit Cover Switch	Closed	Opened

4.2.5 OUTPUT CHECK

NOTE: Motors keep turning in this mode regardless of upper or lower limit sensor signals. To prevent mechanical or electrical damage, do not keep an electrical component on for a long time.

Main Machine Output Check (SP5804)

1. Open SP mode 5804.
2. Select the SP number that corresponds to the component you wish to check. (Refer to the table on the next page.)
3. Press On then press Off to test the selected item.
   NOTE: You cannot exit and close this display until you press off to switch off the output check currently executing. Do not keep an electrical component switched on for a long time.



B089S904.WMF

Output Check Table

NOTE: Pull out the tray before performing the output checks 25, 26, 29, and 30.

Number	On Screen	Service Manual Part Name
1	Main Motor (Fwd)	Main motor (forward)
2	Main Motor (Rev)	Main motor (Reverse) **Do not use**
3	Registration CL	Registration clutch
4	Development CL	Not used
5	Toner Bottle Motor	Toner supply motor
6	Exhaust Fan Motor (High Speed)	Exhaust fan (High Speed)
7	Exhaust Fan Motor (Low Speed)	Exhaust fan (Low Speed)
8	By-pass Feed CL	By-pass feed clutch
9	1st Paper Feed CL	Upper paper feed clutch
10	2nd Paper Feed CL	Lower paper feed clutch
11	1st Paper Tray Up	Upper paper lift motor (Up)
12	1st Paper Tray Down	Upper paper lift motor (Down)
13	2nd Paper Tray Up	Lower paper lift motor (Up)
14	2nd Paper Tray Down	Lower paper lift motor (Down)
15	Paper Transport CL	Upper relay clutch
16	Paper Transport CL2	Lower relay clutch
17	Fuser Drive Cancel SOL	Fusing drive release solenoid

Number	On Screen	Service Manual Part Name
21	Paper Transport CL3	Relay clutch (Optional paper tray unit)
22	3rd Paper Feed CL	Upper paper feed clutch (Optional paper tray unit)
23	4th Paper Feed CL	Lower paper feed clutch (Optional paper tray unit)
24	Paper Bank Motor	Tray motor (Optional paper tray unit)
25	3rd/LCT Tray Up	Upper Paper lift motor (Up) (Optional paper tray unit or LCT)
26	3rd/LCT Tray Down	Upper paper lift motor (Down) (Optional paper tray unit or LCT)
27	4th Tray Up	Lower paper lift motor (Up) (Optional paper tray unit)
28	4th Tray Down	Lower paper lift motor (Down) (Optional paper tray unit)
29	Tandem Rear Fence Drive Motor – Fwd	Rear fence motor (forward) (Optional LCT)
30	Tandem Rear Fence Drive Motor – Rev	Rear fence motor (reverse (Optional LCT)
31	Tandem Fence SOL	Side fence solenoid (Optional LCT)
32	Exit Tray Shift Motor	Shift tray motor (Optional shift tray)
33	Exit Junction Gate SOL (Upper Unit)	Exit junction gate (Optional interchange unit)
34	Exit Junction Gate SOL (Lower Unit)	Duplex junction gate (Optional interchange unit)
41	Duplex Inverter Motor (Rev)	Duplex inverter motor (Reverse) (Optional duplex unit)
42	Duplex Inverter Motor (Fwd)	Duplex inverter motor (Forward) (Optional duplex unit)
43	Duplex Transport Motor	Duplex transport motor (Optional duplex unit)
44	Duplex SOL	Inverter gate solenoid (Optional duplex unit)
51	Relay Fan Motor	Bridge cooling fan motor (Optional bridge unit)
52	Relay Transport Motor	Bridge unit drive motor (Optional bridge unit)
53	Relay SOL	Junction gate solenoid (Optional bridge unit)
54	Total Counter	Total counter
60	Polygon Motor	Polygonal mirror motor
61	Polygon Motor/LD	Polygonal mirror motor and laser diode
62	LD ON	Laser diode - **Do not use**
81	Duplex Unit Free Run 1	Duplex unit free run (without paper)
82	Duplex Unit Free Run 2	Duplex unit free run (with paper)

ARDF Output Check (SP6008)

1. Open SP mode SP6008.
2. Select the SP number that corresponds to the component you wish to check. (Refer to the table below.)
3. Press On then press Off to test the selected item. You cannot exit and close this display until you click Off to switch off the output check currently executing.

No.	Description
1	Feed Motor (Fwd)
2	Feed-in Motor (Rev)
3	Transport Motor (Fwd)
4	Feed Clutch
5	Pick-up Solenoid
6	Junction Gate Solenoid
7	Stamp Solenoid

Finisher Output Check (SP6118)

1. Open SP mode SP6118.
2. Select the SP number that corresponds to the component you wish to check. (Refer to the table below.)
3. Press On then press Off to test the selected item. You cannot exit and close this display until you click Off to switch off the output check currently executing.

No.	Description	
	1000-sheet finisher	500-sheet finisher
1	Upper Transport Motor	Main Motor
2	Shift Tray Lift Motor	Output Tray Motor
3	Staple Hammer Motor	Stapler Motor
4	Shift Motor	Jogger Motor
5	Lower Transport Motor	Not Used
6	Shift Tray Exit Motor	Not Used
7	Tray Junction Gate Solenoid	Not Used
8	Jogger Motor	Not Used
9	Stapler Motor	Not Used
10	Stapler Junction Gate Solenoid	Not Used
11	Positioning Roller Solenoid	Not Used
12	Stack Feed-out Motor	Not Used
13	Exit Guide Plate Motor	Not Used
14	Not Used	Paddle Roller Solenoid
15	Not Used	Exit Unit Gear Solenoid
16	Not Used	Stack Height Lever Solenoid
17		

4.2.6 SMC DATA LISTS (SP5990)

1. Open SP mode 5990 and select the number corresponding to the list that you wish to print.

SMC (System Parameter and Data Lists)	
1	All Data List
2	SP Mode Data List
3	UP Mode Data List
4	Logging Data List
5	Self-Diagnostics Results List
7	NIB Summary
8	Capture Log
21	Copy UP Mode List
22	Scanner SP Mode List
23	Scanner UP Mode List

2. Touch “Execute” on the touch panel
3. Select. “Single Face” or “Both Face” then touch “Execute” to start printing.
4. After printing the list, press Exit twice to close the SP Mode screen and return to copy mode.

4.2.7 MEMORY ALL CLEAR (SP5801)

Executing Memory All Clear resets all the settings stored in the NVRAM to their default settings except the following:

SP70021:	Electrical total counter value
SP58111:	Machine serial number
SP5907:	Plug & Play Brand Name and Production Name Setting

Normally, this SP mode should not be used. This procedure is necessary only after replacing the NVRAM, or when the copier malfunctions because the NVRAM is damaged.

Using a Flash Memory Card

1. Upload the NVRAM data to a flash memory card (☛ NVRAM Data Upload).
2. Print out all SMC data lists (SP mode 5990).
   NOTE: Be sure to print out all the lists. If the NVRAM data upload was not completed, it is necessary to change the SP mode settings by hand.
3. Open SP mode 5801.

4. Press the number for the item that you want to initialize. The number you select determines which application is initialized. For example, press 1 if you want to initialize all modules, or select the appropriate number from the table below.

No.	What It Initializes	Comments
1	All modules	Initializes items 2 ~ 12 below.
2	Engine	Initializes all registration settings for the engine and process settings.
3	SCS (System Control Service)/SRAM	Initializes default system settings, CSS settings, operation display coordinates, and ROM update information.
5	MCS (Memory Control Service)	Initializes the automatic delete time setting for stored documents.
6	Copier application	Initializes all copier application settings.
7	Fax application	Initializes the fax reset time, job login ID, all TX/RX settings, local storage file numbers, and off-hook timer.
8	Printer application	Initializes the printer defaults, programs registered, the printer SP bit switches, and the printer CSS counter.
9	Scanner application	Initializes the scanner defaults for the scanner and all the scanner SP modes.
10	Network application	Deletes the network file application management files and thumbnails, and initializes the job login ID.
11	NCS (Network Control Service)	Initializes the system defaults and interface settings (IP addresses also), SmartNetMonitor for Admin, WebStatusMonitor settings, and the TELNET settings.
12	R-FAX	Initializes the job login ID, SmartNetMonitor for Admin, job history, and local storage file numbers.
14	Clear DCS Settings	Initializes: SP5845 (All), SP5860 (All), SP5861 (All), SP5863, registered scanner documents and subjects.
15	Clear UCS Settings	Initializes: SP5846 (All), SP5801 15

5. Press Execute and turn the main switch off and back on.
6. Download the NVRAM data from a flash memory card (☛ NVRAM Data Download).

Without Using a Flash Memory Card

If there is no flash memory card, follow the steps below.

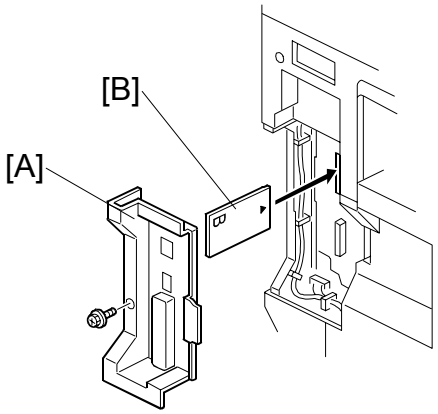
1. Execute SP5990 to print out all SMC Data Lists.
2. Open SP mode 5801.
3. Press the number for the item that you want to initialize.
4. Press Execute and turn the main switch off and back on.
5. Make sure that you do the following:
   - Do the printer and scanner registration and magnification adjustments (☛ 3 Replacement and Adjustment, “Copy Adjustments”).
   - Do the touch screen calibration (☛ 3 Replacement and Adjustment, “touch screen calibration”).
   - Referring to the SMC data lists, re-enter any values, which had been changed from their factory settings.
   - Do SP 20012 (ID Sensor Initial Setting) and SP49111 (HDD media check).
   - Do the white level adjustment (☛ Section 6.8.2 Standard White Density Adjustment)
6. Check the copy quality and the paper path, and do any necessary adjustments.

4.2.8 UPLOADING/DOWNLOADING NVRAM DATA

The content of the NVRAM can be uploaded to and downloaded from a flash memory card.

Uploading NVRAM Data (SP5824)

The contents of the NVRAM in the machine can be uploaded to a flash memory card.



B089S905.WMF

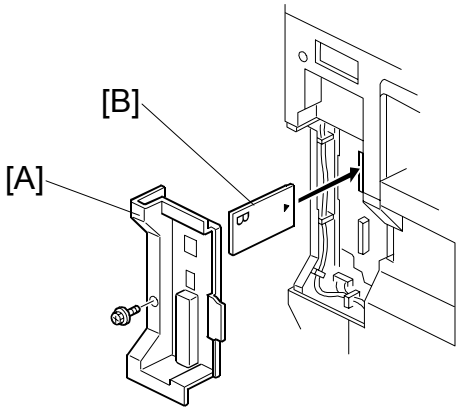
1. Turn off the main switch.
2. Remove the application cover [A].
3. Plug the flash memory card [B] into the card slot.
4. Turn on the main switch.
5. Open SP5824.
6. Touch “Execute” to start uploading the NVRAM data.
7. Turn off the main switch, then remove the IC card.

Downloading NVRAM Data (SP5825)

This downloads data from a flash card to the NVRAM inside the machine.

The following data are not downloaded from the flash card:

- Total count categories (SP7002*** Copy Counter)
- C/O, P/O Counter (SP7006*** C/O, P/O Count Display)
- Duplex, A3/DLT/Over 420 mm, Staple and Scanner application scanning counters (system settings).



B089S906.WMF

1. Turn off the main switch.
2. Remove the application cover [A].
3. Plug the flash memory card [B] into the card slot.
4. Turn on the main switch.
8. Open SP5825.
5. Touch “Execute” to start download the NVRAM data.
6. Turn off the main switch, then remove the IC card.

Note that the following errors could occur during downloading:

- If a card is not installed in the card slot and a message tells you that downloading cannot proceed, you cannot execute downloading, even by pressing “Execute”
- If the correct card for the NVRAM data is not inserted in the card slot, after you press “Execute” a message will tell you that downloading cannot proceed because the card is abnormal and the execution will halt.

4.2.9 APS OUTPUT DISPLAY (SP4301)

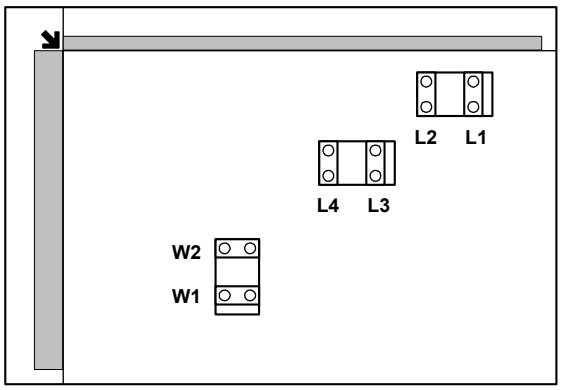
When open this SP, a small box will be displayed on the SP mode screen with a series of 0's and 1's. The meaning of the display is as follows.

0 0 0 0 0 0 0 0

Bit 7 6 5 4 3 2 1 0

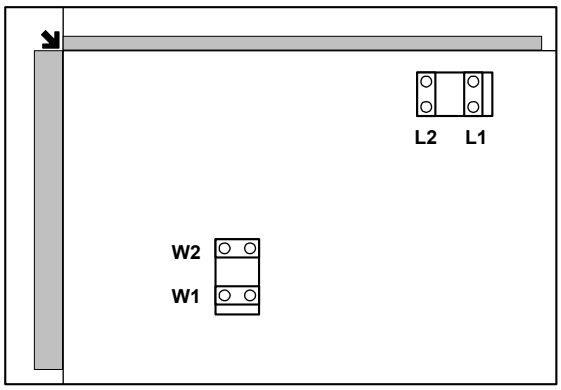
1 = Paper detected

[230V Machine]



B089S907.WMF

[115V Machine]



B089S908.WMF

Bit	Description
7	L1
6	L2
5	L3
4	L4
3	W2
2	W1
1	Not Used
0	Not Used

4.2.10 DF APS SENSOR OUTPUT DISPLAY (SP6901)

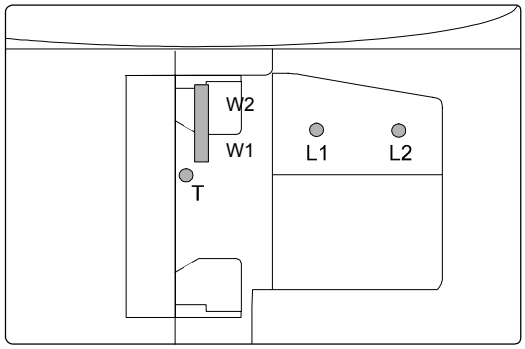
When open this SP, a small box will be displayed on the SP mode screen with a series of 0's and 1's. The meaning of the display is as follows.

0 0 0 0 0 0 0 0

Bit 7 6 5 4 3 2 1 0

1 = Paper detected

illustration to be changed

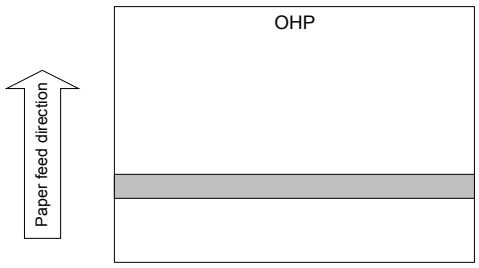


B089S909.WMF

	Large ⟷ Small			
W1	0	0	1	1
W2	0	1	0	1

Bit	Description
7	Not Used
6	Not Used
5	W1
4	W2
3	L1
2	L2
1	L3
0	Not Used

4.2.11 NIP BAND WIDTH MEASUREMENT (SP1109)



B089S910.WMF

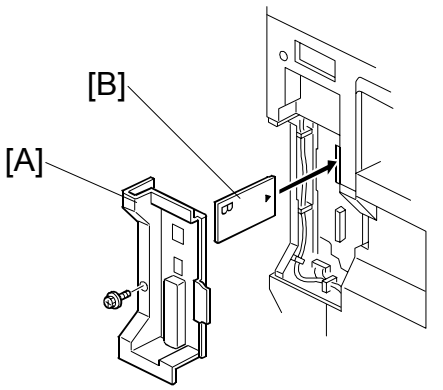
When paper wrinkling or image off-set occurs, the pressure from the pressure roller can be adjusted by changing the position of the pressure springs. At this time, the nip band width can also be checked with SP1109, as follows.

1. Do a free run (SP5802) for about 50 sheets.
2. Access SP1109 and press the “1” key.
3. Press Copy Window to return to the copy window.
4. Place an OHP sheet (A4/8.5”x11” sideways) on the by-pass tray or in the 2nd paper tray.
5. Press the “Start” key.
   The OHP sheet is stopped in the fusing unit for about 20 seconds, then it will be fed automatically.
6. Check the nip band width [A]. The relationship between the position of the pressure spring and the band width is as follows.
   NOTE: Check the nip band width around the center of the OHP.

1. Pressure spring position	**Nip band width**
Upper (default position)	5.2 ± 0.5 mm
Lower	5.3 ± 0.5 mm
2. Envelope feed mode (green lever down) at the default pressure spring position	4.7 ± 0.5 mm

If the width is out of the above specification, the pressure spring should be replaced.

4.3 PROGRAM DOWNLOAD



B089S911.WMF

1. Turn off the main power switch.
2. Remove the application cover [A].
3. Insert the IC card [B] containing the software you wish to download into the card slot of the controller.
4. Turn on the main power.
5. Follow the instructions displayed on the LCD panel
6. Monitor the downloading status on the operation panel.
   - While downloading is in progress, the LCD will display “Writing”. When downloading has been completed, the panel will display “OK”.
   - For operation panel software, the Start key lights red while downloading is in progress, and then lights green again after downloading is completed.

⚠CAUTION

Never switch off the power while downloading. Switching off the power while the new software is being downloading will damage the boot files in the controller.

7. After confirming that downloading is completed, turn off the main power and remove the IC card.
8. If more software needs to be downloaded, repeat steps 1 to 7.
9. Turn the main power on and confirm that the new software loads and that the machine starts normally.

NOTE: If the download failed, an error message will appear on the panel. Then, download the firmware again using the IC card as usual.

4.4 SOFTWARE RESET

The software can be rebooted when the machine hangs up. Use the following procedure.

Turn the main power switch off and on.

-or-

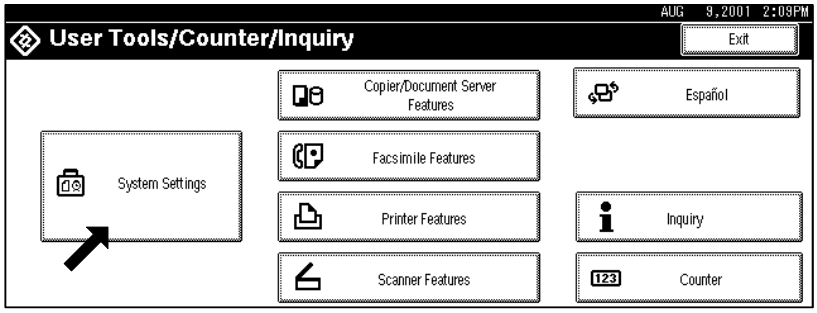
Press and hold down C (#) together for over 10 seconds. When the machine beeps once release both buttons. After “Now loading. Please wait” is displayed for a few seconds the copy window will open. The machine is ready for normal operation.

4.5 SYSTEM SETTINGS AND COPY SETTING RESET

4.5.1 SYSTEM SETTING RESET

The system settings in the UP mode can be reset to their defaults. Use the following procedure.

1. Press User Tools/Counter.
2. Hold down # and then press System Settings.
   NOTE: You must press # first.



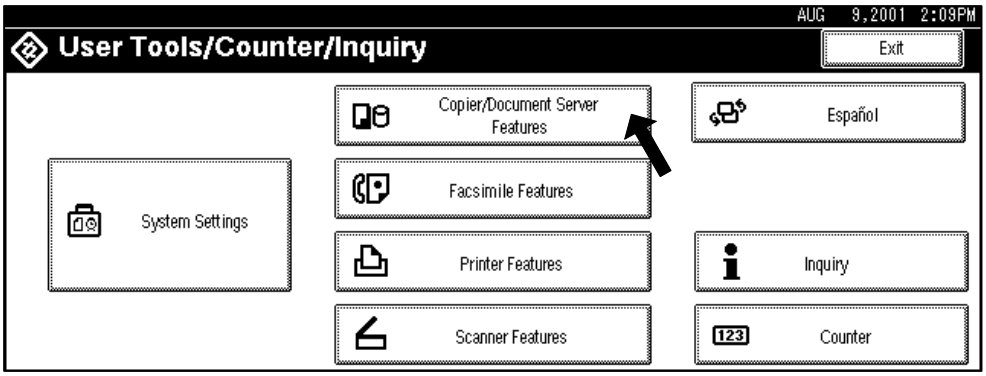
B089S912.WMF

3. When the message prompts you to confirm that you want to reset the system settings, press Yes.
4. When the message tells you that the settings have been reset, press Exit.

4.5.2 COPIER SETTING RESET

The copy settings in the UP mode can be reset to their defaults. Use the following procedure.

1. Press User Tools/Counter.
2. Hold down # and then press Copier/Document Server Settings.
   NOTE: You must press # first.



B089S913.WMF

3. When the message prompts you to confirm that you want to reset the Copier Document Server settings, press Yes.
4. When the message tells you that the settings have been reset, press Exit.

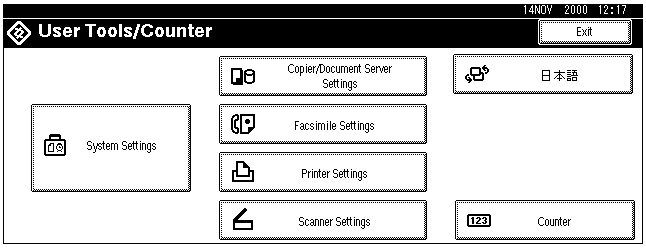
4.6 USER TOOLS

The user program (UP) mode can be accessed by users and operators, and by sales and service staff. UP mode is used to input the copier's default settings. The user can reset the default settings at any time. (☛ 4.5)

4.6.1 HOW TO USE UP MODE

UP Mode Initial Screen: User Tools/Counter Display

To enter the UP mode, press User Tools/Counter.

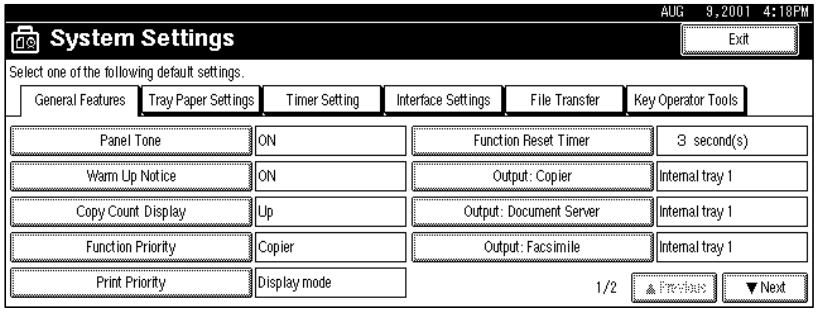


B089S914.WMF

System Settings

In the User Tools/Counter display, press System Settings.

Click a tab to display the settings. If the Next button is lit in the lower right corner, press it to display more options. Perform the settings, press Exit to return to the User Tools/Counter display, and then press Exit to return to the copy window.



B089S915.WMF

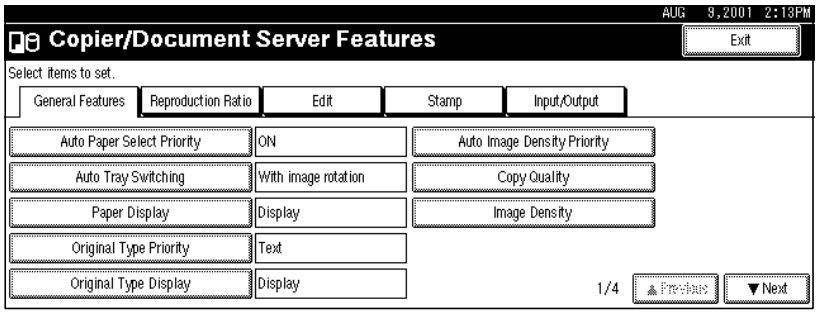
Copier/Document Server Features

In the User/Tools Counter display, press Copy/Document Server Settings.

Click a tab to display the settings. If the Next button is lit in the lower right corner, press it to display more options. Perform the settings, press Exit to return to the User Tools/Counter display, and then press Exit to return to the copy window.

Printer, Facsimile, Scanner Settings

In the User/Tools Counter display, press Printer Settings, Facsimile, or Scanner Settings to open the appropriate screen and then click the tab to display more settings. The screen below shows the Printer Features screen.



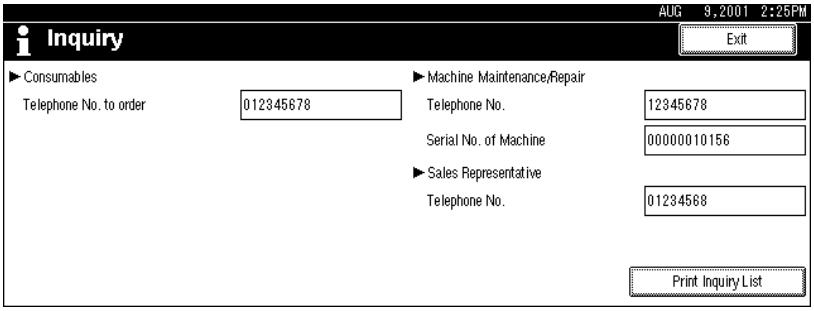
B089S916.WMF

Inquiry

In the User/Tools Counter display, press Inquiry.

The following SP mode settings will be displayed.

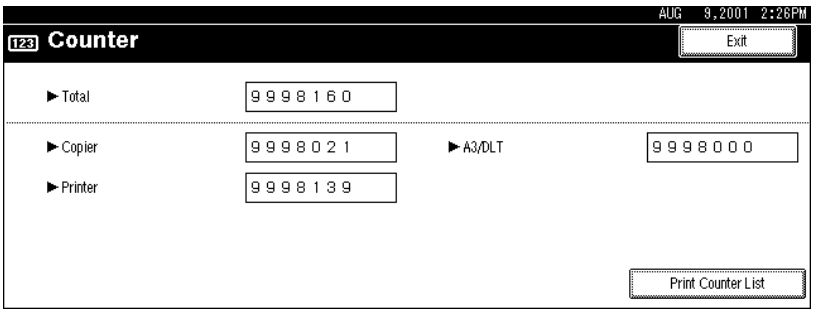
- Service Telephone Number (SP58121)
- Sales Telephone Number (SP8124)
- Consumable Telephone Number (SP8123)
- Toner Name (SP-841)



B089S917.WMF

Counter

In the User/Tools Counter display, press Counter.



B089S918.WMF

The following SP mode counters will be displayed.

- Copy Counter (SP59142)
- A3/DLT Counter (SP5918)
- Printer Counter (SP59141)

View the settings, press Print Counter Exit to return to the User Tools/Counter display, and then press Exit to return to the copy window.

4.7 LEDS

Controller

Number	Normal	Controller Software Download	Error
LED 1	Off	Blinking	Off
LED 2	Blinking	Blinking	Lit or Off
LED 3 (+5V line)	Lit	Lit	Lit

SBCU

Number	Normal	SBCU Software Download	Error
LED 1	Lit	Lit	Off or Blinking
LED 2	Blinking	Lit	Lit (except downloading) or Off

IPU

Number	Normal	Error
LED 1	Lit	Off or Blinking

4.8 DIP SWITCHES

Controller: DIP SW2

DIP SW No.	ON	OFF
1	IC Card Boot	System ROM Boot
2	Keep at “OFF”	
3		
4		

SBCU: DIP SW102

DIP SW No.	DESTINATION					
	JPN	NA	EU	CHINA	TAIWAN	KOREA
1	OFF	ON	OFF	OFF	ON	OFF
2	OFF	OFF	ON	OFF	OFF	ON
3	OFF	OFF	OFF	ON	ON	ON
4	Not used. Do not change.					

4.9 SPECIAL TOOLS AND LUBRICANTS

4.9.1 SPECIAL TOOLS

Part Number	Description	Q'ty
A2929500	S5S Test Chart (10 pcs/set)	1
A0069104	Scanner Positioning Pin (4 pcs/set)	1
A0299387	Digital Multimeter - FLUKE 87	1
A2309351	Case - Flash Memory Card	1
N8036701	Flash Memory Card - 4MB	1
B0229590	NVRAM – Zero Counter	1
A2309003	Adjustment Cam – Laser Unit	1
A2679002	Positioning Pin - Laser Unit	1

4.9.2 LUBRICANTS

Part Number	Description	Q'ty
A0289300	Grease Barrierta - JFE 5 5/2	1
52039501	Silicone Grease G-501	1

4.10 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.

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 IC card.

When a user is experiencing problems with the machine, follow the procedure below to set up the machine so the error information is saved automatically to the HDD.

4.10.1 SWITCHING ON AND SETTING UP SAVE DEBUG LOG

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

1. Enter the SP mode.
   - Press [Clear Modes] (Clear Modes) then use the 10-key pad to enter 1 0 7.
   - Press and hold down [C/Stop] (Clear/Stop) for more than 3 seconds.
   - Press “Copy SP” on the touch-panel.
   - Enter 5 8 5 7 then press #.
2. Under “5857 Save Debug Log”, press 1.

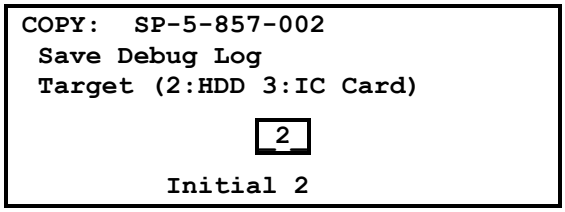
```
COPY:  SP-5857001
 Save Debug Log
 On/Off (1:ON  0:OFF)

              1

    Initial 0
```

3. On the control panel keypad, press “1” then press #. This switches the Save Debug Log feature on.
   NOTE: The default setting is “0” (OFF). This feature must be switched on in order for the debug information to be saved.

4. Next, select the target destination where the debug information will be saved. Under “5857 Save Debug Log”, touch “2 Target”, enter “2” with the operation panel key to select the hard disk as the target destination, then press #.



NOTE: Select “3 IC Card” to save the debug information directly to the IC card if it is inserted in the service slot.

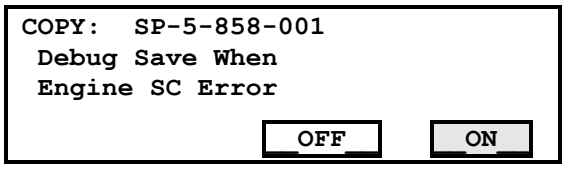
5. Now touch “5858” and specify the events that you want to record in the debug log. SP5858 (Debug Save When) provides the following items for selection.

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

NOTE: More than one event can be selected.

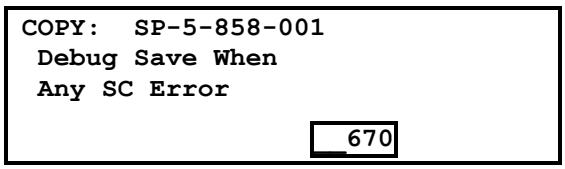
Example 1: To Select Items 1, 2, 4

Touch the appropriate items(s). Press “ON” for each selection. This example shows “Engine SC Error” selected.



Example 2: To Specify an SC Code

Touch “3 Any SC Error”, enter the 3-digit SC code number with the control panel number keys, then press #. This example shows an entry for SC670.



NOTE: For details about SC code numbers, please refer to the SC tables in Section “4. Troubleshooting”.

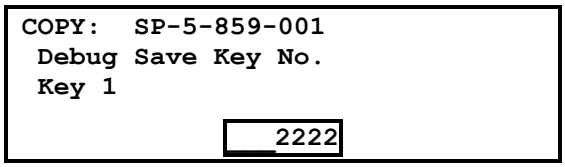
6. Next, select the one or more memory modules for reading and recording debug information. Touch “5859”.

   Under “5859” press the appropriate key item for the module that you want to record.

   Enter the appropriate 4-digit number, then press #.

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

   The example below shows “Key 1” with “2222” entered.



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

4-Digit Entries for Keys 1 to 10

Key No.	Copy	Printer	Scanner	Web
1	2222 (SCS)			
2	2223 (SRM)			
3	256 (IMH)			
4	1000 (ECS)			
5	1025 (MCS)			
6	4848 (COPY)	4400 (GPS)	5375 (Scan)	5682 (NFA)
7	2224 (BCU)	4500 (PDL)	5682 (NFA)	6600 (WebDB)
8		4600 (GPS-PM)	3000 (NCS)	3300 (PTS)
9		2000 (NCS)	2000 (NCS)	6666 (WebSys)
10		2224 (BCU)		2000 (NCS)

NOTE: The default settings for Keys 1 to 10 are all zero (“0”).

Key to Acronyms

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

The machine is now set to record the debugging information automatically on the HDD (the target selected with SP5-857-002) for the events that you selected SP5-858 and the memory modules selected with SP5-859.

Please keep the following important points in mind when you are doing this setting:

- Note that the number entries for Keys 1 to 5 are the same for the Copy, Printer, Scanner, and Web memory modules.
- The initial settings are all zero.
- These settings remain in effect until you change them. Be sure to check all the settings, especially the settings for Keys 6 to 10. To switch off a key setting, enter a zero for that key.
- You can select any number of keys from 1 to 10 (or all) by entering the corresponding 4-digit numbers from the table.
- You cannot mix settings for the groups (COPY, PRINTER, etc.) for 006~010. For example, if you want to create a PRINTER debug log you must select the settings from the 9 available selections for the “PRINTER” column only.
- One area of the disk is reserved to store the debug log. The size of this area is limited to 4 MB.

4.10.2 RETRIEVING THE DEBUG LOG FROM THE HDD

1. Insert the IC card into the copier.
2. Enter the SP mode and execute SP5857 007 (Copy HDD to IC Card (Latest 4 MB) to write the debugging data to the IC card.
   NOTE: The IC card can hold up to 4MB of data. If the debugging data is larger than 4MB, you can switch to another IC card.
3. After you return to the service center, use a card reader to copy the file and send it for analysis to Ricoh by email, or just send the IC card by mail.

4.10.3 RECORDING ERRORS MANUALLY

Since only SC errors and jams are recorded to the debug log automatically, for any other errors that occur while the customer engineer is not on site, please instruct customers to perform the following immediately after occurrence to save the debug data. Such problems would include a controller or panel freeze.

NOTE: In order to use this feature, the customer engineer must have previously switched on the Save Debug Feature (SP5857-001) and selected the hard disk as the save destination (SP5857-002).

1. When the error occurs, on the operation panel, press Clear Modes (Clear Modes).

2. On the control panel, enter “01” then hold down C/⊘ for at least 3 sec. until the machine beeps then release. This saves the debug log to the hard disk for later retrieval with an IC card by the service representatives.

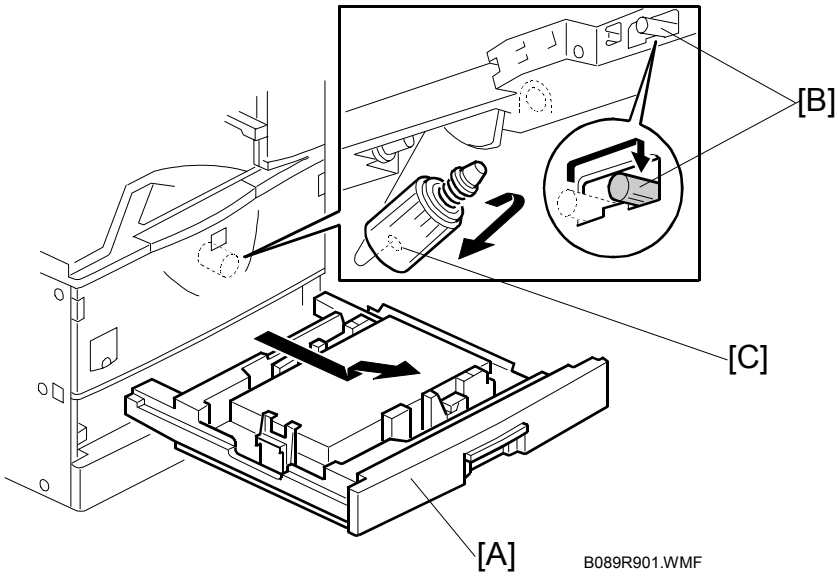
3. Switch the machine off and on to resume operation.

   The debug information for the error is saved on the hard disk so the service representatives can retrieve it on their next visit by copying it from the HDD to an IC card.

6. REPLACEMENT AND ADJUSTMENT

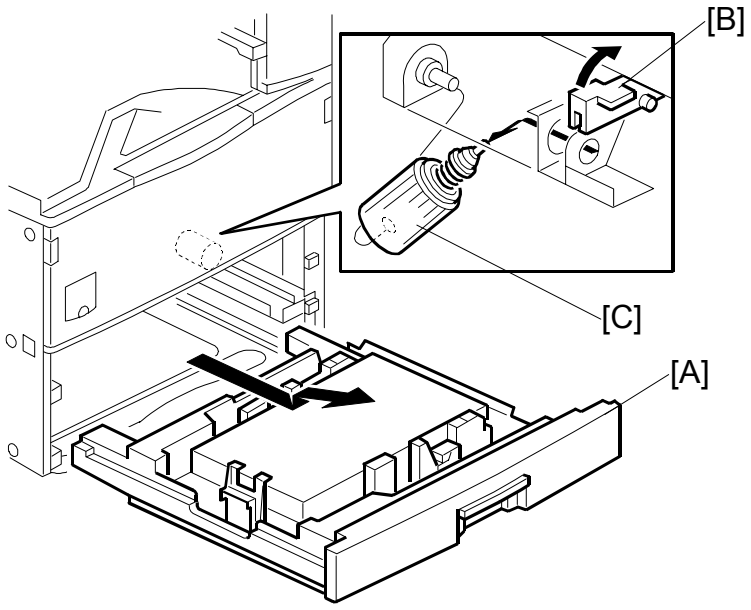
6.6 PAPER FEED

6.6.1 FEED ROLLERS: TRAY 1



1. Remove the paper tray [A].
2. Pull the lever [B].
3. Replace the feed roller [C].
   NOTE: Do not touch the roller surface with bare hands.
   After reinstalling the feed roller, return the lever [B].

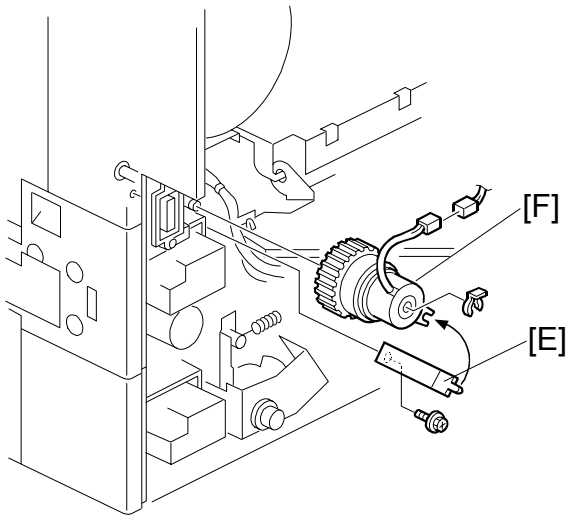
6.6.2 FEED ROLLER: TRAY 2



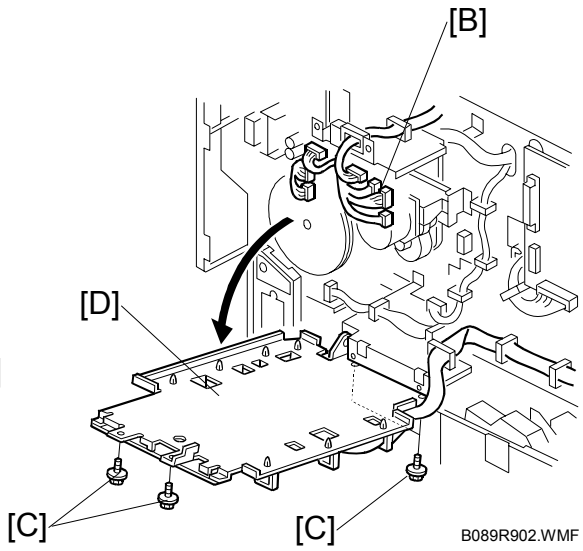
B089R000.WMF

1. Remove the first paper tray.
2. Remove the second paper tray [A].
3. Raise the white Teflon lever [B] to release the roller.
4. Replace the feed roller [C].
   NOTE: Do not touch the roller surface with bare hands.
   After reinstalling the feed roller, reset the lever [B].

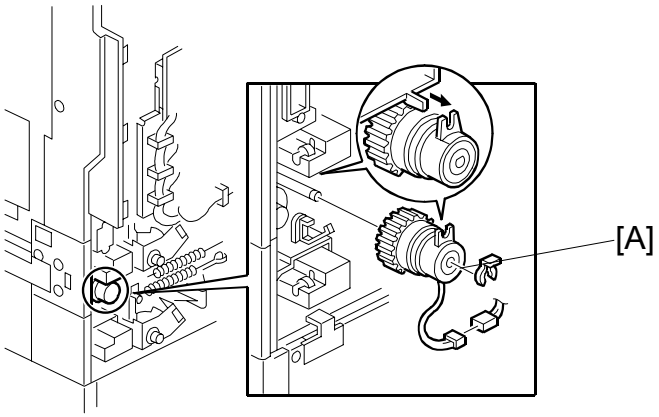
6.6.5 PAPER FEED CLUTCHES



B089R713.WMF



B089R902.WMF



B089R715.WMF

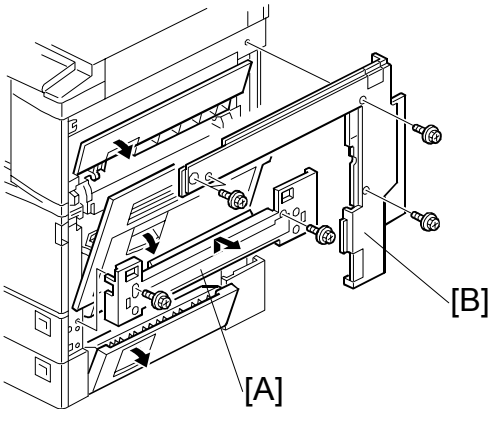
Lower Paper Feed Clutch

1. Remove the rear cover. (☛ B022 service manual, 6.6.3)
2. Remove the lower rear cover. (☛ B022 service manual, 6.6.3)
3. Replace the lower paper feed clutch [A] (x 1, x 1).

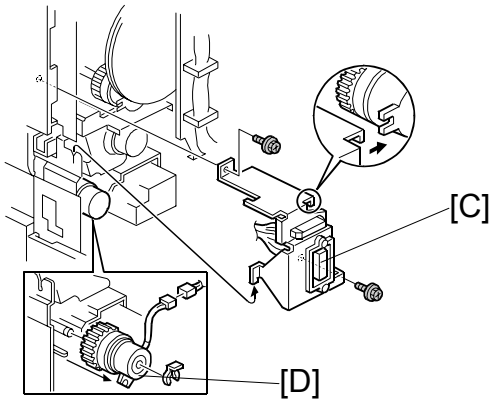
Upper Paper Feed Clutch.

4. Disconnect the connectors [B] for the SBCU board as shown (14 connectors).
5. Remove 4 screws [C] securing the SBCU board bracket then swing down the I/O board bracket [D].
6. Remove the bracket [E] (1 screw).
7. Replace the upper paper feed clutch [F] (x 1, x 1).

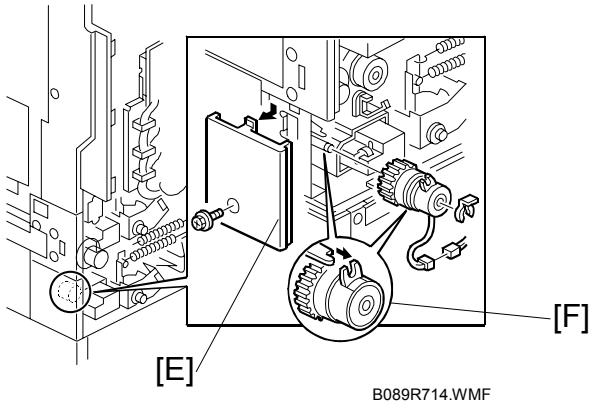
6.6.6 RELAY CLUTCHES



B089R903.WMF



B089R717.WMF

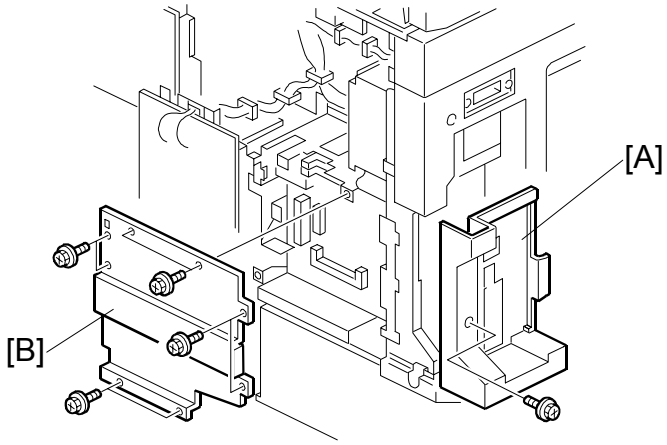


B089R714.WMF

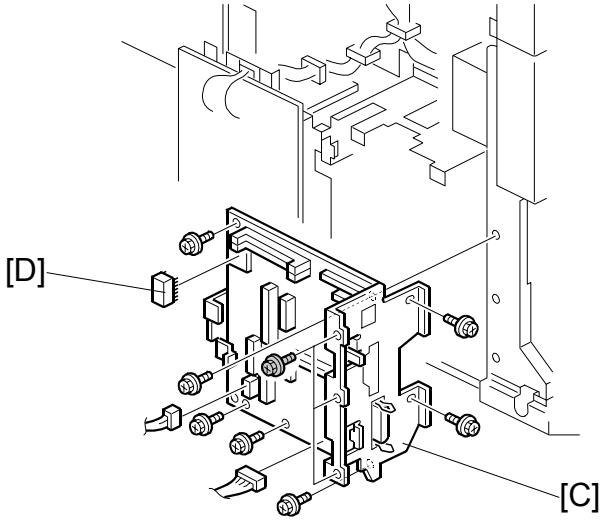
1. Remove the optional duplex unit and/or by-pass tray unit if they have been installed.
2. Remove the rear cover and lower rear cover. (☛ B022 service manual, 6.6.3)
3. Remove the lower right cover [A] (2 screws).
4. Remove the scanner right cover. (☛ B022 service manual, 6.1.2)
5. Remove the right cover [B] (4 screws).
6. Swing down the I/O board bracket. (☛ B022 service manual, 6.6.5)
7. Remove the connector bracket [C] (x 2).
8. Replace the upper relay clutch [D] (x 1, x 1).
9. Remove the right rear cover [E] (1 screw).
10. Replace the lower relay clutch [F] (x 1, x 1).

6.7 PCBS AND OTHER ITEMS

6.7.1 CONTROLLER BOARD



B089R904.WMF



B089R952.WMF

1. Remove the rear cover. (☛B022 service manual, 6.6.3)
2. Remove the optional finisher if it has been installed.
3. Remove the application cover [A] (1 screw).
4. Remove the shield plate [B] (8 screws) or the optional fax unit if it has been installed.
5. Remove the controller board [C] (☞ x 2, 🪛 x 10).
6. Remove the NVRAM [D], DIMM (printer/scanner, memory, etc), and printer options from the old controller board and put them on the new controller board.

7. TROUBLESHOOTING

⚠CAUTION

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

NOTE: The main power LED (☀⏻) lights or flashes while the platen cover or ARDF is open, while the main machine is communicating with a facsimile or the network server, or while the machine is accessing the hard disk or memory for reading or writing data.

7.1 SERVICE CALL CONDITIONS

7.1.1 SUMMARY

There are 4 levels of service call conditions.

Level	Definition	Reset Procedure
A	To prevent damage to the machine, the main machine cannot be operated until the SC has been reset by a service representative (see the note below).	Enter SP mode, and then turn the main power switch off and on.
B	SCs that disable only the features that use the defective item. Although these SCs are not shown to the user under normal conditions, they are displayed on the operation panel only when the defective feature is selected.	Turn the operation switch or main switch off and on.
C	The SC history is updated. The machine can be operated as usual.	The SC will not be displayed. Only the SC history is updated.
D	Turning the main switch off then on resets SCs displayed on the operation panel. These are re-displayed if the error occurs again.	Turn the operation switch off and on.

NOTE: 1) If the problem concerns electrical circuit boards, first disconnect then reconnect the connectors before replacing the PCBs.
2) If the problem concerns a motor lock, first check the mechanical load before replacing motors or sensors.

7.1.2 SC CODE DESCRIPTIONS

Code No.		Symptom	Possible Cause
101	B	Exposure lamp error The standard white level was not detected properly when scanning the white plate.	• Exposure lamp defective • Lamp stabilizer defective • Exposure lamp connector defective • Standard white plate dirty • Scanner mirror or scanner lens out of position or dirty • SBU defective
120	D	Scanner home position error 1 The scanner home position sensor does not detect the on condition during initialization or copying.	• Scanner drive motor defective • Scanner motor defective • Harness between SBCU and scanner drive motor disconnected • Harness between SBCU and scanner drive motor power source disconnected • Scanner HP sensor defective • Harness between SBCU and HP sensor disconnected • Scanner wire, timing belt, pulley, or carriage defective
121	D	Scanner home position error 2 The scanner home position sensor does not detect the off condition during initialization.	• SIB or scanner drive motor defective • Scanner motor defective • Harness between SBCU and scanner drive motor disconnected • Harness between SBCU and scanner drive motor power source disconnected • Scanner HP sensor defective • Harness between SBCU and HP sensor disconnected • Scanner wire, timing belt, pulley, or carriage defective
122	B	Scanner HP Sensor – Error 1 The HP sensor remains on while the carriage is returning to the home position.	• SBCU, scanner motor drive board defective • Scanner motor defective • Harness between the SBCU, scanner motor drive board and scanner motor disconnected • HP sensor defective • Harness between SBCU and HP sensor disconnected. • Scanner wire, timing belt, pulley, or carriage installation incorrect
123	B	Scanner HP sensor – Error 2 The HP sensor does not switch on after the carriage has returned to the home position.	• SBCU, scanner motor drive board defective • Scanner motor defective • Harness between the SBCU, scanner motor drive board and scanner motor disconnected • HP sensor defective • Harness between SBCU and HP sensor disconnected. • Scanner wire, timing belt, pulley, or carriage installation incorrect

Code No.		Symptom	Possible Cause
144	B	SBU connection error The IPU does not detect the SBU connection signal.	Cable between SBU and IPU board disconnected.
192	B	Automatic SBU adjustment error An error is detected during automatic SBU adjustment (SP4-428)	• SBU defective • SBCU board defective • Exposure lamp stabilizer defective • Exposure lamp defective • Dirty white plate
193	B	Image transfer error The IPU board does not finish within 1 minute after the image data has been transferred to the controller board.	• IPU board defective • Controller board defective • Video controller defective
195	B	DFGATE assert error The DFGATE signal does not assert within 30 seconds after the original has been scanned.	• ADF interface cable defective • SBCU board defective • Mismatched firmware between the SBCU board and ADF
196	B	DFGATE negate error The DFGATE signal does not negate within 1 minute after the DFGATE has been asserted.	• ADF interface cable defective • SBCU board defective • Mismatched firmware between the SBCU board and ADF
197	B	DFGATE error The DFGEATE signal has already been asserted at the original scan.	• ADF interface cable defective • SBCU board defective • Mismatched firmware between the SBCU board and ADF
198	B	Memory address error The IPU board does not receive the memory address from the controller board.	• Mismatched firmware between the SBCU board and controller board • Controller defective • SBCU defective • IPU board defective
199	B	DF scanning finish error The original does not finish scanning with in 1 minute	• ADF interface cable defective • SBCU board defective • Mismatched firmware between the SBCU board and ADF
302	B	Charge roller current leak A charge roller current leak signal is detected.	• Charge roller damaged • Charge high voltage supply board defective • Poor connection of the PCU
320	B	Polygon motor error The polygon motor does not reach its operating speed within 10 seconds after the polygon motor on signal, or the lock signal is not detected for more than 200 ms continuously during operation.	• Polygon mirror motor defective • Poor connection between the polygon mirror motor driver and the SBCU board • SBCU board defective
322	B	Laser synchronization error The main scan synchronization detector board cannot detect the laser synchronization signal for more than 10 consecutive 50 ms intervals.	• Poor connection between the laser synchronization detector board and the SBCU board • Laser synchronization detector board out of position • Laser synchronization detector board defective • SBCU board defective • LD unit defective

Code No.		Symptom	Possible Cause
323	B	LD drive current over The LD drive board applies more than 100 mA to the LD.	• LD unit defective (not enough power, due to aging) • Poor connection between the LD unit and the SBCU board • SBCU board defective
350	B	ID sensor calibration - Error 1 One of the following conditions occurred when the ID sensor pattern was calibrated during printing: • Vsp > 2.5V • Vsg < 2.5V • Vsp = 0V • Vsg = 0V	• ID sensor defective or dirty • ID sensor harness disconnected or connector is damaged • SBCU defective • Scanning system or image creation system malfunction • High voltage power supply board (power pack) defective
351	B	ID sensor calibration – Error 2 The following conditions occurred simultaneously when the ID sensor pattern was calibrated during printing: • Vsg = 5V • PWM = 0 (LED current drop)	• ID sensor dirty or defective • ID sensor harness disconnected, or connector damaged • SBCU board defective • High voltage power supply board (power pack) defective
352	B	ID sensor calibration – Error 3 During printing the 2.5V value for edge detection of the ID sensor pattern could not be detected after 800 ms.	• ID sensor dirty or defective • ID sensor harness disconnected, or connector damaged • SBCU defective • High voltage power supply board (power pack) defective
353	B	ID sensor adjustment Error 1 Error occurred during automatic adjustment of Vsg: • Vsg output did not attain 4V, even with PWM = 255 (maximum current for LED) • Vsg output was greater than 4V, even with PWM=0 (no current for the LED)	• ID sensor dirty or defective • ID sensor harness disconnected, or connector damaged • SBCU defective • High voltage power supply board (power pack) defective • Scanning system or image creation system malfunction
354	B	ID Sensor Adjustment Error 2 Error occurred during automatic adjustment of Vsg. Vsg could not be adjusted to 4.0V±0.2V within 50 ms even after 20 attempts.	• ID sensor dirty or defective • ID sensor harness disconnected, or connector damaged • SBCU defective • High voltage power supply board (power pack) defective • Scanning system or image creation system malfunction
355	C	ID sensor error For details about the cause of the problem, please refer to SC350~354 above.	• ID sensor dirty or defective • ID sensor harness disconnected, or connector damaged • SBCU board defective • High voltage power supply board (power pack) defective • Scanning system or image creation system malfunction

Code No.		Symptom	Possible Cause
389	B	TD sensor error TD sensor output was less than 0.5V, or more than 0.5V 10 times in succession. If the fax unit is installed, this SC is issued immediately. If the fax unit is not installed, this SC is issued after the prescribed number of copies has printed.	• TD sensor defective • TD sensor connector damaged.
390	D	TD sensor error The TD sensor outputs less than 0.5V or more than 4.0V 10 times consecutively during copying.	• TD sensor abnormal • Poor connection of the PCU
391	B	Development bias leak A development bias leak signal is detected.	• Poor connection of the PCU • High voltage supply board defective
392	B	TD sensor initial setting error TD sensor output voltage falls out of the adjustment range (2.0 ±<> 0.2 V) after the TD sensor initial setting has been finished.	• Someone forgot to remove the toner seal of the PCU • ID sensor defective • TD sensor abnormal • Drum does not turn • Development roller does not turn • Poor connection of the PCU
399	B	Illegal toner bottle (South Korea only) The toner bottle installed is not intended for use with this machine.	• Install the correct type of toner bottle.
401	B	Transfer roller leak error 1	• High voltage supply board defective • Poor connection of the PCU • Transfer/separation unit set incorrectly • Transfer roller damaged
402	B	Transfer roller leak error 2 A transfer roller current leak signal is detected. The current feedback signal for the transfer roller is not detected.	
411	B	Separation bias leak error A separation bias leak signal is detected.	• High voltage supply board defective • Poor connection of the PCU • Discharge plate defective
490	B	Toner supply motor leak error Over 1 A supplied to the toner supply motor for longer than 200 ms.	Toner supply motor defective
500	B	Main motor lock A main motor lock signal is not detected for more than 500 ms after the main motor starts to rotate, or the lock signal is not detected for more than 500 ms during rotation after the last signal.	• Too much load on the drive mechanism • Main motor defective
501	B	1st paper tray lift motor malfunction	• Paper lift sensor defective • Tray lift motor defective • Too much load on the drive mechanism • Poor tray lift motor connection
502	B	2nd paper tray lift motor malfunction	
503	B	3rd paper tray lift motor malfunction (optional paper tray unit)	
504	B	4th paper tray lift motor malfunction (optional paper tray unit) The paper lift sensor is not activated after the tray lift motor has been on for 18 seconds.	

Code No.		Symptom	Possible Cause
506	B	Paper tray motor lock (optional paper tray unit) A motor lock signal is not detected for more than 1.5 s or the lock signal is not detected for more than 1.0 s during rotation.	• Paper tray unit motor defective • Too much load on the drive mechanism
508	B	Rear fence drive error (optional LCT) The return position sensor is not activated after the rear fence drive motor has been on to lower the tandem tray for 8 seconds.	• Rear fence motor defective • Return position sensor defective • Too much load on the drive mechanism
509	B	Side fence drive error (optional LCT) The side fence positioning sensor is not activated for more 3 seconds when the paper stack in the left tray is moved to the right tray. The side fence close sensor is not activated for more 3 seconds after moving the paper stack to the right tray.	• Side fence motor defective • Side fence position sensor defective • Side fence close sensor defective • Too much load on the drive mechanism
510	B	LCT lower limit error The lower limit sensor does not activate within 8 seconds after the tray has been lowered.	• Tray lift motor defective • Poor connection of the tray lift motor • Lower limit sensor defective • Too much load on the drive mechanism
520	B	Paper tray error An error occurs (i.e motor error, or sensor error, etc) for any paper tray.	• A defective motor • A defective sensor • Too much load on the drive mechanism
541	A	Fusing thermistor open The fusing temperature detected by the thermistor was below 0 °C for 5 seconds. The fusing temperature does not rise +15 °C (center) or +12 °C (at the ends) five times within 2 minutes after the fusing lamps have been turned on.	• Fusing thermistor defective or out of position • Fusing lamp open • Fusing thermostat open • Power supply board defective • Poor connection of the fusing unit
542	A	Fusing temperature warm-up error The fusing temperature does not reach the standby temperature within 20 seconds after the main switch is turned on.	• Fusing thermistor defective or out of position • Fusing lamp open • Fusing thermostat open • Power supply board defective • Poor connection of the fusing unit
543	A	Fusing overheat error 1 A fusing temperature of over 231°C is detected for 5 second by the fusing thermistor.	• Fusing thermistor defective • Power supply board defective • SBCU board defective
544	A	Fusing overheat error 2 A fusing temperature of over 251°C is detected by the fusing temperature monitor circuit in the SBCU board.	• Fusing thermistor defective • Power supply board defective • SBCU board defective

Code No.		Symptom	Possible Cause
545	A	Fusing overheat error 3 After warmup, the hot roller attained full operating temperature and maintained this temperature for 10 sec. without the hot roller rotating.	• Hot roller thermistor is out of position • Fusing lamp broken • Thermostat broken
546	A	Unstable fusing temperature The fusing temperature varies 50°C or more within 1 second twice continuously.	• Thermistor defective • Poor connection of the fusing unit • Power supply unit defective
547	B	Zero cross signal malfunction Zero cross signals are not detected within a certain period.	• Power supply board defective • SBCU board defective
548	A	Fusing unit set error The machine does not detect the fusing unit.	• Poor connection of the fusing unit • The fusing unit is not installed
590	B	Exhaust fan motor error The CPU detects an exhaust fan lock signal for more than 5 seconds.	• Poor connection of the exhaust fan motor • Too much load on the motor drive
611	B	Communication break error between SBCU and ADF The SBCU receives a break signal from the ADF main board.	• Serial line connecting SBCU and ADF unstable • External noise • ADF main board defective • SBCU board defective
612	B	Communication command error between SBCU and ADF The SBCU sends a command to the ADF main board that it cannot execute.	• SBCU board defective • Download SBCU firmware again
620	B	Communication timeout error between SBCU and finisher The SBCU cannot receive a response within 100 ms after 3 attempts after sending data to the finisher.	• Serial line connecting SBCU and finisher unstable • External noise • SBCU board and finisher main board connection defective or loose • Finisher main board defective • SBCU board defective
621	B	Communication timeout error between SBCU and finisher A break (low) signal was received from the finisher.	• Serial line connecting SBCU and finisher unstable • External noise
630	C	Communication failure with CSS (RSS) The communication from the copier was detected as abnormal at the CSS center. This error occurs when the acknowledge signal from the LADP does not complete normally.	• Occurred with an SC call, CC call, supply management call, user call, or CE call. • Timeout while no response from the LADP, and abnormal signal on the RS-485 line between PI and LADP.
632	D	Counter device error 1 **Japan Only** After 3 attempts to send a data frame to the optional counter device via the serial communication line, no ACK signal was received within 100 ms.	• Serial line between the optional counter device, the relay board and copier control board is disconnected or damaged • Make sure that SP5113 is set to enable the optional counter device.

Code No.		Symptom	Possible Cause
633	D	Counter device error 2 **Japan Only** After 3 attempts to send a data frame to the optional counter device via the serial communication line, no ACK signal was received within 100 ms.	• Serial line between the optional counter device, the relay board and copier control board is disconnected or damaged • Make sure that SP5113 is set to enable the optional counter device.
634	D	Counter device error 3 **Japan Only** A backup RAM error was returned by the counter device.	• Counter device control board defective • Backup battery of counter device defective
635	D	Counter device error 4 **Japan Only** A backup battery error was returned by the counter device.	• Counter device control board defective • Backup battery of counter device defective
640	C	SBCU control data transfer checksum error A sampling of control data sent from the SBCU to the controller reveals a checksum error. Only the logging count is performed.	• Controller board defective • External noise • SBCU board defective
641	C	SBCU control data transfer abnormal A sampling of the control data sent from the SBCU reveals an abnormality.	• Controller board defective • External noise • SBCU board defective
650	B	Communication timeout error between SBCU and duplex unit The SBCU cannot receive a response within 1 second from the duplex unit.	• Serial line connecting SBCU and duplex unit unstable • External noise • SBCU board and duplex main board connection defective or loose • Duplex main board defective • SBCU board defective
670	D	Engine response error After powering on the machine, a response is not received from the engine within 30 seconds.	• SBCU installed incorrectly • SBCU defective • Controller board defective
672	D	Controller-to-operation panel communication error at startup After powering on the machine, the communication circuit between the controller and the operation panel is not opened, or communication with controller is interrupted after a normal startup.	• Controller stall • Controller board installed incorrectly • Controller board defective • Operation panel connector loose or defective
720	B	Finisher jogger motor error (500-sheet finisher) The finisher jogger H.P sensor remains de-activated for a certain time when returning to home position. The finisher jogger H.P sensor remains activated for a certain time when moving away from home position.	• Jogger H.P sensor defective • Jogger motor defective

Code No.		Symptom	Possible Cause
722	B	Finisher jogger motor error (1000-sheet finisher) The finisher jogger H.P sensor remains de-activated for a certain time when returning to home position. The finisher jogger H.P sensor remains activated for a certain time when moving away from home position.	• Jogger H.P sensor defective • Jogger motor defective
724	B	Finisher staple hammer motor error (1000-sheet finisher) Stapling does not finish within 600 ms after the staple hammer motor turned on.	• Staple jam • Stapler overload caused by trying to staple too many sheets • Staple hammer motor defective
725	B	Finisher stack feed-out motor error (1000-sheet finisher) The stack feed-out belt H.P sensor does not activate within a certain time after the stack feed-out motor turned on.	• Stack feed-out H.P sensor defective • Stack feed-out motor defective
726	B	Finisher lift motor error (1000-sheet finisher) The stack height sensor does not activate within a certain time after the shift tray lift motor turned on.	• Shift tray lift motor defective • Stack height sensor defective
727	B	Finisher staple hammer motor error (500-sheet finisher) Stapling does not finish within a certain time after staple hammer motor turned on.	• Staple jam • Stapler overload caused by trying to staple too many sheets • Staple hammer motor defective
728	B	Finisher paper stack height error (500-sheet finisher) The stack height detection lever does not return to its home position before going to detect the stack height.	• Stack height lever solenoid defective • Stack height sensor defective • Lever sensor defective • Main control board defective
730	B	Finisher stapler motor error (1000-sheet finisher) The stapler does not return to its home position within a certain time after the stapler motor turned on. The stapler H.P sensor does not activate within a certain time after the stapler motor turned on.	• Stapler motor defective • Stapler H.P sensor defective • Poor stapler motor connection
731	B	Output tray motor error (500-sheet finisher) Exit guide plate motor error (1000-sheet finisher) The tray upper limit sensor does not activate within a certain time after the shift motor turned on. (500-sheet finisher) The exit guide plate open sensor or exit guide plate HP sensor does not activate within a certain time after the exit guide plate motor turned on. (1000-sheet finisher)	500-sheet finisher • Output tray motor defective • Tray upper limit sensor defective 1000-sheet finisher • Exit guide plate motor defective • Exit guide plate HP sensor defective • Exit guide plate open sensor defective

Code No.		Symptom	Possible Cause
732	B	Finisher shift motor error (1000-sheet finisher) Roller shift does not finish within a certain time after the shift motor turned on.	• Shift motor defective • Shift tray HP sensor defective
770	B	Shift tray shift motor error During a shift operation the sensor state did not change (off to on, or on to off) within 2.4 sec.	• Shift sensor defective • Shift motor defective
791	B	Bridge communication error The SBCU cannot communicate with the bridge unit properly when the finisher is installed.	• Poor connection between the main machine and bridge unit • SBCU board defective
792	B	Finisher connection error The SBCU cannot communicate with the finisher properly when the bridge unit is installed.	• Poor connection between the finisher and bridge unit • SBCU board defective
793	B	Interchange communication error The SBCU cannot communicate with the interchange unit properly when the duplex unit is installed.	• Poor connection between the interchange unit and main machine • SBCU board defective
800	D	Startup without video output end error (K) Video transfer to the engine is started, but the engine did not issue a video transmission end command within the specified time.	Controller board defective
804	D	Startup without video input end (K) A video transmission was requested from the scanner, but the scanner did not issue a video transmission end command within the specified time.	Controller board defective
818	D	Watchdog error The CPU does not access the watchdog register within a certain time.	• Controller board defective • Software malfunction – download controller firmware again
819	D	Kernel mismatch error Software bug	Download controller firmware again
820	D	Self-Diagnostic Error: CPU The central processing unit returned an error during the self-diagnostic test.	• Controller board defective • Download controller firmware again
821	D	Self-Diagnostic Error: ASIC The ASIC returned an error during the self-diagnostic test because the ASIC and CPU timer interrupts were compared and determined to be out of range.	Controller board defective
822	D	Self-Diagnostic Error: HDD The hard disk drive returned an error during the self-diagnostic test.	• HDD defective • HDD connector defective • Controller board defective
823	D	Self-diagnostic Error: NIB The network interface board returned an error during the self-diagnostic test.	• Network interface board defective • Controller board defective

Code No.		Symptom	Possible Cause
824	D	Self-diagnostic Error: Resident NVRAM The resident non-volatile RAM returned an error during the self-diagnostic test.	• Replace the resident NVRAM on the controller board • Replace the controller board
825	D	Self-diagnostic Error: Optional NVRAM The resident non-volatile RAM returned an error during the self-diagnostic test.	• Replace the optional NVRAM (user account enhancement unit) on the controller board • Replace the controller board
826	D	Self-diagnostic Error: NVRAM/Optional NVRAM The NVRAM or optional NVRAM returned an error during the self-diagnostic test.	Replace the NVRAM on the controller board
827	D	Self-diagnostic Error: RAM The resident RAM returned a verify error during the self-diagnostic test.	Download controller firmware again
828	D	Self-diagnostic Error: ROM The resident read-only memory returned an error during the self-diagnostic test.	• Controller board defective • Download controller firmware again
829	D	Self-diagnostic Error: Optional RAM The optional RAM returned an error during the self-diagnostic test.	• Replace the optional memory board • Controller board defective
835	D	Self-Diagnostic Error: Parallel Interface Loopback test error.	• Loopback connector not detected • IEEE1284 connector defective • Controller board defective
836	D	Self-diagnostic Error: Resident Font ROM The resident font ROM returned an error during the self-diagnostic test.	Replace the controller board
837	D	Self-diagnostic Error: Optional Font ROM The optional font ROM returned an error during the self-diagnostic test.	Replace the controller board
838	D	Self-diagnostic Error: Clock Generator A verify error occurred when setting data was read from the clock generator via the I2C bus.	Replace the controller board
840	D	EEPROM error 1 During input/output with the EEPROM, one of the following errors occurred: • A read error occurred and continued after 3 retries. • Write error occurred.	• EEPROM defective; replace the controller board • EEPROM has reached the end of its service life
841	D	EEPROM error 2 The values read from the three areas during the mirroring check phase did not match. The data is being written into the three areas differently.	• EEPROM defective; replace the controller board • EEPROM has reached the end of its service life
850	D	Network I/F Abnormal NIB interface error.	• NIB defective • Controller board defective

Code No.		Symptom	Possible Cause
851	D	IEEE 1394 I/F Abnormal IEEE1394 interface error.	• IEEE1384 interface board defective • Controller board defective
853	D	Wireless LAN card error 1 At startup the wireless LAN board could be accessed, but the wireless LAN card (IEEE 802.11b or Bluetooth) could not access the board.	• Wireless LAN card not inserted in the wireless LAN board when machine was switched on
854	D	Wireless LAN card error 2 The board that holds the wireless LAN card can be accessed, but the wireless LAN card (802.11b/Bluetooth) itself cannot be accessed while the machine is operating	• Wireless LAN card has been removed during machine operation.
855	D	Wireless LAN card error 3 An error was detected for the wireless LAN card (802.11b or Bluetooth).	• Wireless LAN card defective • Wireless card connection not tight
856	D	Wireless LAN board error An error is detected for the wireless LAN card (802.11b or Bluetooth).	• Wireless LAN card board defective • PCI connector loose
857	D	USB I/F Error The USB driver is unstable and generated an error. The USB I/F cannot be used. The USB driver can generate three types of errors: RX, CRC, and STALL errors. Only the STALL error can generate this SC code.	• USB 2.0 disconnected • Controller board defective
860	B	Startup without HD connection at main power on The hard disk connection is not detected.	• Cable between HDC and HDD loose or defective • HDD power connector loose or defective • HDD defective • Replace the controller board
861	B	Startup without HD detection at power key on The hard disk connection is not detected.	• Cable between HDC and HDD loose or defective • HDD power connector loose or defective • HDD defective Replace the controller board
862	A	Maximum number of bad sectors detected on HD Up to 101 bad sectors have appeared in the area on the hard disk where image data is archived, and the hard disk may require replacement.	SC863 returned while reading data from the HD and the number of registered bad sectors reached 101.
863	B	Startup without HD data lead Data stored on the hard disk is not read correctly.	A bad sector occurred during operation of the HDD
864	D	HD data CRC error During operation of the HD, the HD responded with a CRC error.	Data transfer was abnormal in the data read from the HDD.

Code No.		Symptom	Possible Cause
870	B	Address Book Data Error Address book data stored on the hard disk was detected as abnormal when it was accessed from either the operation panel or the network.	• Software defective • HDD defective
871	D	FCU Flash ROM Error The address book written into the flash ROM mounted on the FCU is detected as defective.	• Flash ROM device defective • Replace flash ROM on the MBU
880	D	File Format Converter (MLB) Error A request for access to the File Format Converter (MLB -Media Link Board) was not answered within the specified time.	• MLB defective
865	D	HD access error The hard disk detected an error.	Replace the controller board
900	D	Electronic total counter error The value of the total counter has already exceeded 9999999	Replace the NVRAM on the controller board
901	D	Mechanical total count error The SBCU board cannot receive the mechanical total count data.	Mechanical total counter defective
920	D	Printer Error 1 An internal application error was detected and operation cannot continue.	• Software defective • Insufficient memory
925	D	Network File Error The file that manages NetFile is corrupted and operation cannot continue.	• Software defective • Files on the HDD corrupted
951	B	F-gate error at write request After the IPU receives an F-gate signal, it receives another F-gate signal.	• Download controller firmware • SBCU board defective
953	B	Scanner setting error The IPU does not respond with the scanner setting signal required to start scanning processing.	Download controller firmware
954	B	Printer setting error The IPU does not respond with the settings that are required to start image processing by the printer.	• Replace the IPU board • Replace the controller board • Download the controller firmware
955	B	Memory setting error The IPU does not respond with the settings that are required to start image processing using the memory.	• Replace the IPU board • Replace the controller board • Download the controller firmware
964	B	Printer ready error The printer ready signal is not generated within 17 seconds after the IPU received the print start signal.	• Replace the IPU board • Replace the controller board • Download the controller firmware
984	D	Print image data transfer error The image transfer from the controller to the engine via the PCI bus does not end within 15 s after starting.	• Controller board defective • SBCU board defective • Connectors between SBCU and controller loose or defective

Code No.		Symptom	Possible Cause
986	D	Software write parameter setting error An unstable area at the storage destination in the settings table is set at NULL for the parameter received by the write module.	• Download controller firmware again
990	D	Software performance error The software attempted to perform an unexpected operation.	• Software defective • Internal parameter incorrect • Insufficient working memory • When this SC occurs, the file name, address, and data will be stored in NVRAM. This information can be checked by using SP7-403. Note the above data and the situation in which this SC occurs. Then report the data and conditions to your technical control center.
991	C	Software continuity error The software attempted to perform an unexpected operation. However, unlike SC990, the object of the error is continuity of the software.	• No operation required. This SC code does not appear on the panel, and is only logged.
992	D	Unexpected Software Error Software encountered an unexpected operation not defined under any SC code.	• Software defective • An error undetectable by any other SC code occurred
995	D	Machine Type Information Error After the machine is powered on, a mismatch is detected between the CPM information sent from the controller to the engine. The controller boards of the B089 (22 cpm) and B94 (27 cpm) are not interchangeable.	• Replace the controller board with the correct board.
996	B	FCU board error FCU board is connected but not ready.	• FCU board defective and requires replacement • Download FCU firmware
997	B	Application function selection error The application selected by a key press on operation panel does not start or ends abnormally.	• Download the firmware for the application that failed • An option required by the application (RAM, DIMM, board) is not installed
998	D	Application start error After power on, the application does not start within 60 s. (All applications neither start nor end normally.)	• Download controller firmware • Replace the controller board • An option required by the application (RAM, DIMM, board) is not installed

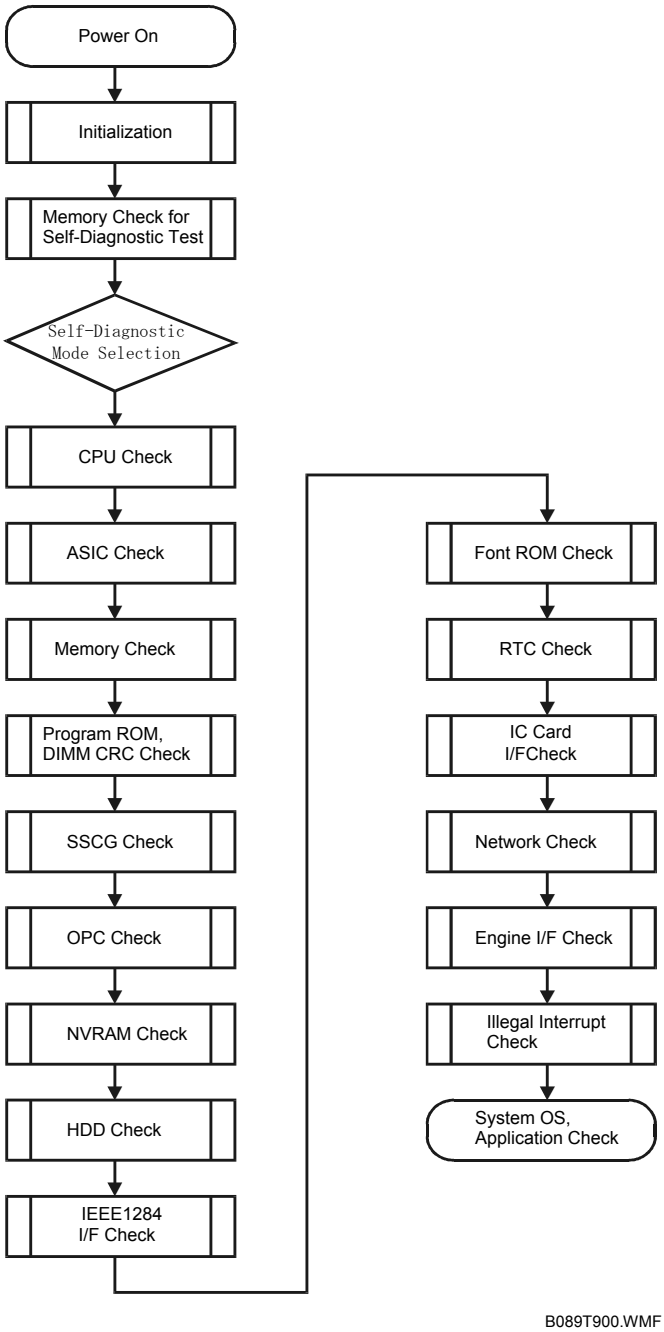
Code No.		Symptom	Possible Cause
999	D	Program download error The download (program, print data, language data) from the IC card does not execute normally.	• Board installed incorrectly • SBCU board defective • Controller board defective • IC card defective • NVRAM defective • Loss of power during downloading • Important Notes About SC999 • Primarily intended for operating in the download mode, logging is not performed with SC999. • If the machine loses power while downloading, or if for some other reason the download does not end normally, this could damage the controller board or the PCB targeted for the download and prevent subsequent downloading. If this problem occurs, the damaged PCB must be replaced.

7.2 SELF-DIAGNOSTIC MODE

7.2.1 SELF-DIAGNOSTIC MODE AT POWER ON

As soon as the main machine is powered on, the controller waits for the initial settings of the copy engine to take effect and then starts an independent self-diagnostic test program. The self-diagnostic test follows the path of the flow chart shown below and checks the CPU, memory, HDD, and so on. An SC code is displayed in the touch panel if the self-diagnostic program detects any malfunction or abnormal condition.

Self-Diagnostic Test Flow



B089T900.WMF

7.2.2 DETAILED SELF-DIAGNOSTIC MODE

In addition to the self-diagnostic test initiated every time the main machine is powered on, you can set the machine in a more detailed diagnostic mode manually in order to test other components or conditions that are not tested during self-diagnosis after power on. The following device is required in order to put the machine in the detailed self-diagnosis mode.

No.	Name
G02119350	Parallel Loopback Connector

Executing Detailed Self-Diagnosis

Follow this procedure to execute detailed self-diagnosis.

1. Switch off the machine, and connect the parallel loopback device to the Centronics I/F port.
2. Hold down #, press and hold down *, and then while pressing both keys at the same time, switch on the machine.

   You will see “Now Loading” on the touch-panel, and then you will see the results of the test.

A report like the one below is printed every time a detailed self-diagnostic test is executed, whether errors were detected or not.

MODEL NAME XXXX

Self-Diagnosis Report

Serial No. : ACLD000034 Firmware P/# : ACP82XXXX [1/1]

Firmware Version : 2.49.01 Wed Nov 22 13:15:30 2000

[System Construction]

Kernel Version : NetBSD 1.3.3 (SHINYOKOHAMA_ROM) #0: Sat Nov 11 16:15:35 JST 2000

CPU System Bus Clock : 100.0 MHz

CPU Pipeline Clock : 200.0 MHz

Board Type : 7

ASIC Version : 1397306160

RTC Existence : existence

RAM Capacity : 100.663296 MB

HDD Existence : existence

HDD Model :

[Total Counter]

0001000

[Program No. @]

MAIN : ACP82XXXX

ENGINE : Ver1.96

LCDC : V1.39

PI :

ADF : B3515620B

SIB : B0045383

FIN :

FIN_SDL :

BANK : A6825150

LCT :

MBX :

FCU :

DPX :

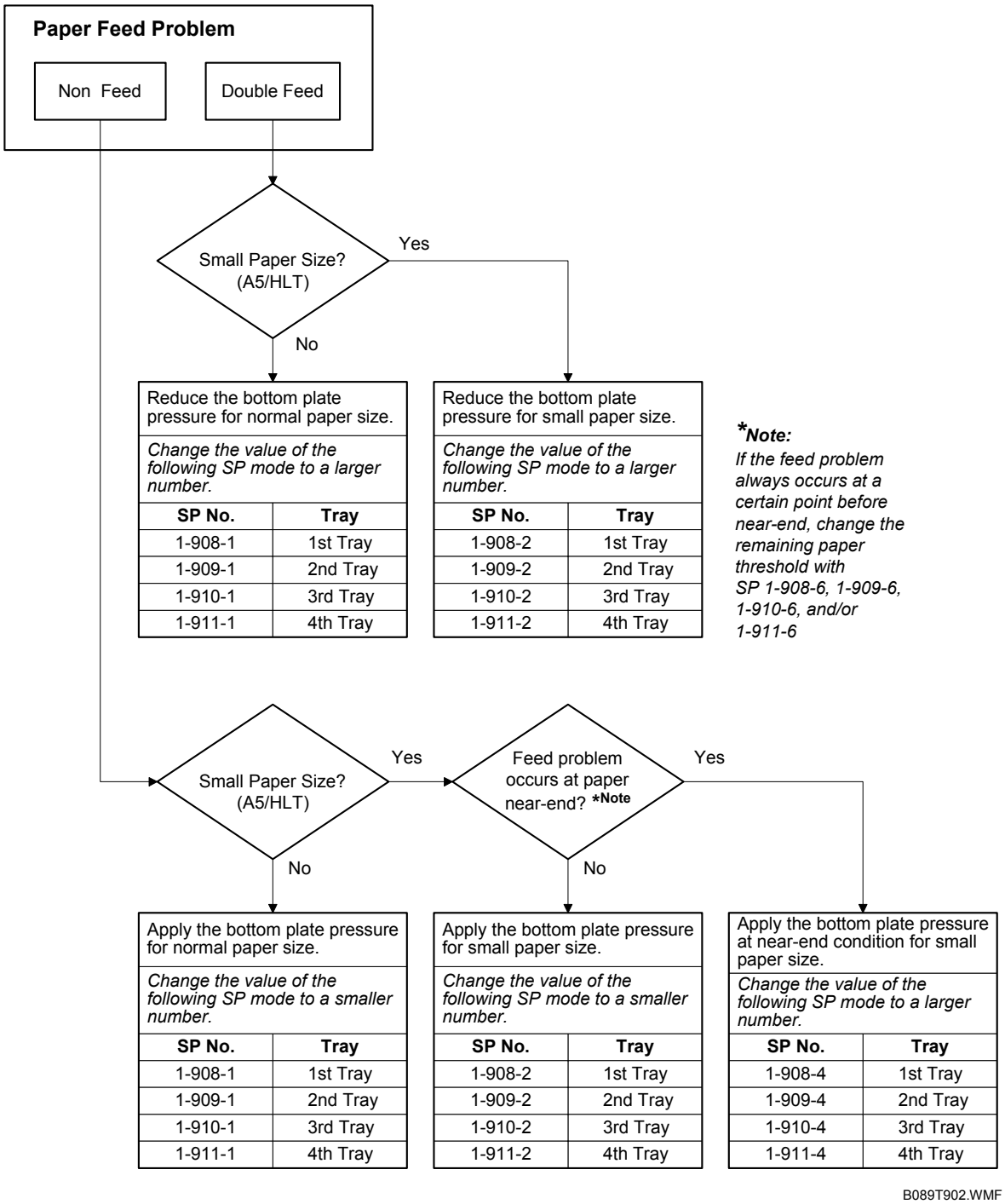
[Error List @@@]

SCCODE (ERROR CODE)	SC CODE (ERROR CODE)	SC CODE (ERROR CODE)	SC CODE (ERROR CODE)
SC835 (110C)	SC820 (0001)	SC820 (0002)	SC820 (0003)
SC820 (0004)	SC820 (0005)		

B089T901.WMF

7.3 PAPER FEED TROUBLESHOOTING

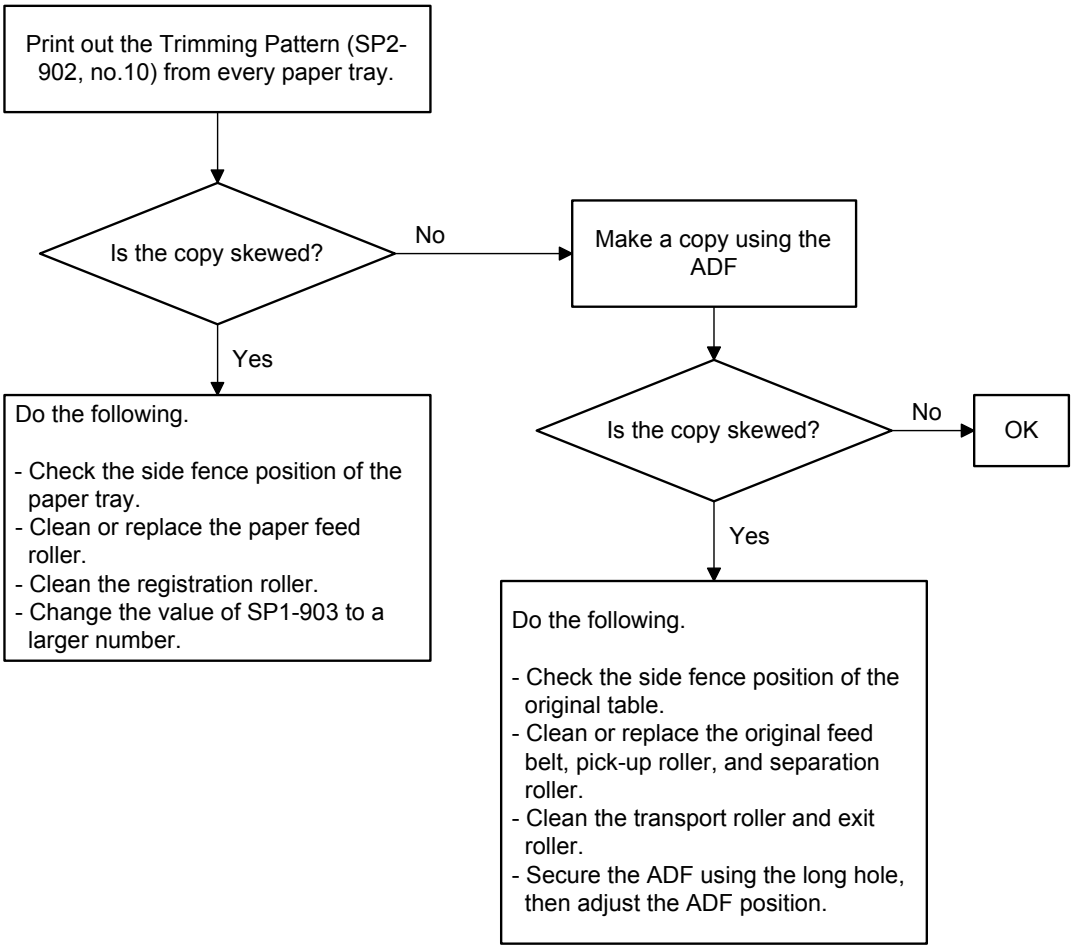
When a paper double feed or paper non feed problem occurs, fix the problem in accordance with the following flow chart.



B089T902.WMF

7.4 SKEWED IMAGE

Do the following to fix a skewed image problem.



B089T903.WMF

7.5 ELECTRICAL COMPONENT DEFECTS

7.5.1 SENSORS

Component (Symbol)	CN	Condition	Symptom
Scanner H.P	337-2 (SBCU)	Open	SC120 is displayed.
		Shorted	The CPU does not detect the scanner home position and the scanner motor does not stop.
Platen Cover	337-5 (SBCU)	Open	APS and ARE do not function correctly.
		Shorted	No symptom
Original Width	335-3, -4 (SBCU)	Open	The CPU cannot detect the original size properly. APS and ARE do not function correctly.
		Shorted	
Original Length-1	335-8, -9 (SBCU)	Open	The CPU cannot detect the original size properly. APS and ARE do not function correctly.
		Shorted	
Original Length-2	336-3, -4 (SBCU)	Open	The CPU cannot detect the original size properly. APS and ARE do not function correctly.
		Shorted	
Toner Density	327-3 (SBCU)	Open	SC390 is displayed
		Shorted	
1st Paper End	306-2 (SBCU)	Open	The Paper End indicator lights even if paper is placed in the 1st paper tray.
		Shorted	The Paper End indicator does not light even if there is no paper in the 1st paper tray.
2nd Paper End	307-A2 (SBCU)	Open	The Paper End indicator lights even if paper is placed in the 2nd paper tray.
		Shorted	The Paper End indicator does not light even if there is no paper in the 2nd paper tray.
Image Density	321-3 (SBCU)	Open	SC392 is displayed (see note)
		Shorted	
Paper Over Flow	324-5 (SBCU)	Open	The paper overflow message is not displayed when the paper overfull condition exist.
		Shorted	The paper overflow message is displayed.
Paper Exit	324-2 (SBCU)	Open	The Paper Jam indicator will light whenever a copy is made.
		Shorted	The Paper Jam indicator lights even if there is no paper.
Upper Relay	306-5 (SBCU)	Open	The Paper Jam indicator will light whenever a copy is made.
		Shorted	The Paper Jam indicator lights even if there is no paper.
Lower Relay	307-A5 (SBCU)	Open	The Paper Jam indicator will light whenever a copy is made.
		Shorted	The Paper Jam indicator lights even if there is no paper.

Component (Symbol)	CN	Condition	Symptom
Registration	321-6 (SBCU)	Open	The Paper Jam indicator will light whenever a copy is made.
		Shorted	The Paper Jam indicator lights even if there is no paper.
1st Paper Lift	305-7 (SBCU)	Open	SC501 will be displayed.
		Shorted	Paper jam will occur during copying.
2nd Paper Lift	305-10 (SBCU)	Open	SC502 will be displayed.
		Shorted	Paper jam will occur during copying.
1st Paper Height – 1	307-B2 (SBCU)	Open	The CPU cannot determine the paper near-end condition properly.
		Shorted	
1st Paper Height – 2	307-B5 (SBCU)	Open	The CPU cannot determine the paper near-end condition properly.
		Shorted	
2nd Paper Height – 1	307-B9 (SBCU)	Open	The CPU cannot determine the paper near-end condition properly.
		Shorted	
2nd Paper Height – 2	307-B12 (SBCU)	Open	The CPU cannot determine the paper near-end condition properly.
		Shorted	

NOTE: An SC condition occurs only when a new PCU is being installed in the machine. During copying, if the ID sensor fails, the image density will be changed.

7.5.2 SWITCHES

Component (Symbol)	CN	Condition	Symptom
Main	281-1,2 (PSU)	Open	The machine does not turn on.
		Shorted	The machine does not turn off.
Right Upper Cover	324-8 (SBCU)	Open	The Cover Open indicator is not lit even if the right upper cover is opened.
		Shorted	The Cover Open indicator is lit even if the right upper cover is closed.
Right Cover	308-9 (SBCU)	Open	The Cover Open indicator is not lit even if the right cover is opened.
		Shorted	The Cover Open indicator is lit even if the right cover is closed.
Right Lower Cover	307-A8 (SBCU)	Open	The Cover Open indicator is not lit even if the right lower cover is opened.
		Shorted	The Cover Open indicator is lit even if the right lower cover is closed.
Upper Paper Size	308-1,2,4,5 (SBCU)	Open	The CPU cannot detect the proper paper size, and misfeeds may occur when a copy is made.
		Shorted	
Lower Paper Size	308-6,7,9,10 (SBCU)	Open	The CPU cannot detect the proper paper size, and misfeeds may occur when a copy is made.
		Shorted	
New PCU Detect	327-7 (SBCU)	Open	The TD sensor initial setting procedure is not performed when a new PCU is installed.
		Shorted	The TD sensor initial setting procedure is performed whenever the front cover is closed.
Front Cover Safety	311-2, 4 (SBCU)	Open	The Cover Open indicator is not lit even if the front cover is opened.
		Shorted	The Cover Open indicator is lit even if the front cover is closed.
Operation	105-1 (IPU	Open	The LCD does not off even if the operation switch is turned off.
		Shorted	The LCD does not on even if the operation switch is turned on.

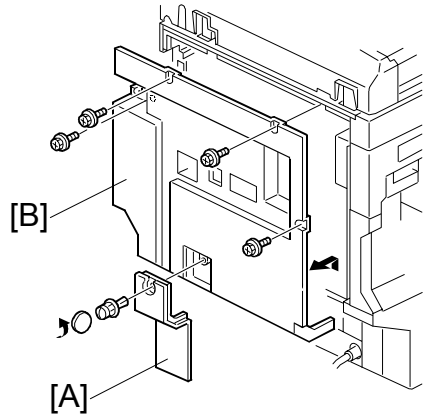
7.6 BLOWN FUSE CONDITIONS

Fuse	Rating		Symptom when turning on the main switch
	115 V	220 ~ 240 V	
Power Supply Board			
FU1	15 A/250 V	----	No response.
FU2	8 A/125 V	5 A/250 V	No response
FU3	2 A/125 V	1 A/250V	Anti-condensation/Tray Heater does not turn on.
FU4	6.3 A/125 V	6.3 A/250V	Optional finisher, bridge unit, and shift tray does not work then SC792 is displayed.
FU5	6.3 A/125 V	6.3 /250 V	Covers Open indicator is lit then SC901 is displayed
FU6	6.3 A/125 V	6.3 A/250V	The touch panel does not turn on.
FU7	4 A/125 V	4 A/250 V	SC990 is displayed

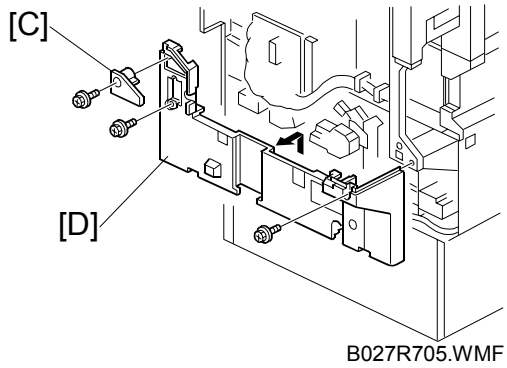
APPENDIX 1 (FOR MODEL R-C3)

1. RSS (REMOTE SERVICE SYSTEM)

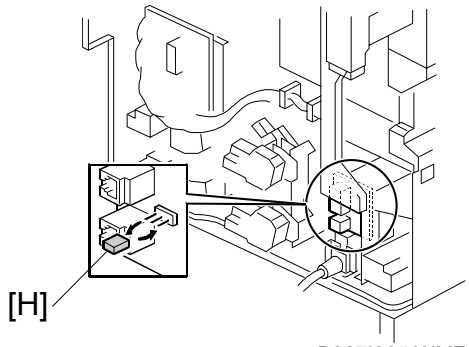
1.1 RSS SET UP



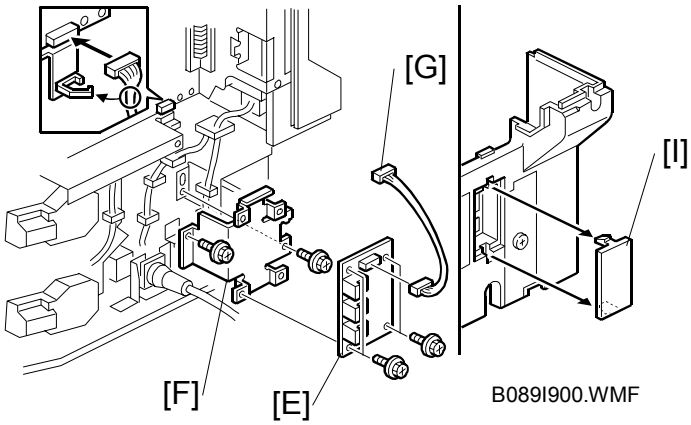
B027R515.WMF



B027R705.WMF



B027I305.WMF



B089I900.WMF

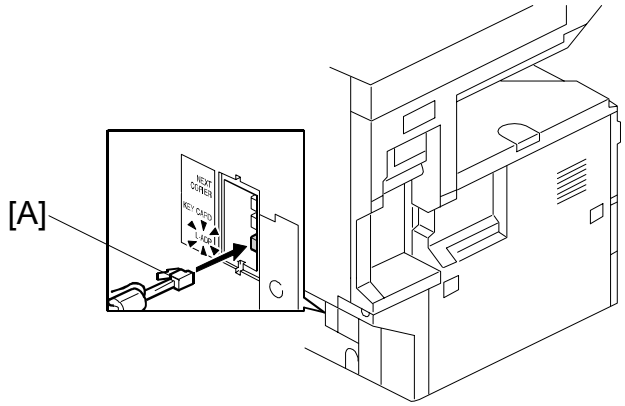
⚠CAUTION

Unplug the machine power cord before starting the following procedure.

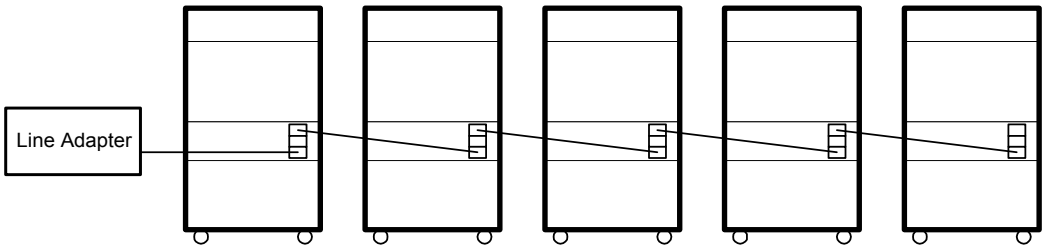
1. Remove the connector cover [A] (1 clip) and disconnect the cable.
2. Remove the rear cover [B] (4 screws).
3. Remove the duplex connector cover [C] (1 screw) and the lower rear cover [D] (2 screws).
4. Install the RSS board [E] to the bracket [F] (4 screws).
5. Install the RSS board assembly to the machine (2 screws).
6. Install the harness [G] between the RSS board and the controller board (CN512).

When connecting only one machine to the line adapter, skip step 6.

7. Set the jumper switch [H] on the RSS board as shown (default setting: 1-2).
8. Remove the cover [I] from the lower rear cover.



B027I901.WMF



B027I902.WMF

Machine No.	1	2	3	4	5
Jumper Set	2-3	2-3	2-3	2-3	1-2
PI device code	0	1	2	3	4

9. Reassemble the machine.
10. Connect the modular cord [A] to the line adapter as shown.
11. Install the line adapter (refer to chapter 2-1 L-ADP Installation Procedure in the CSS Service Manual).
12. Turn on the machine.

When connecting only one machine to the line adapter, skip step 12.

13. Enter the Copier SP mode and set the PI device code with SP5-821 (default 0).
    NOTE: After changing the value, turn the main power switch off and on to enable the PI device code.

1.2 SP MODE SETTINGS

After installing the machine and line adapter, change the value of SP5-816 (CSS Function) to 1.

Check the values of the following SP modes. Ensure they are set correctly.

NOTE: SP5-507 is only for the Japanese version. Do not change.

- SP5-501-1 (PM Alarm Interval): 120k
- SP5-504 (Jam Alarm Setting): 3
- SP5-505 (Error Alarm Setting): 50
- SP5-508-1 (CC Call – Remain of Jam): 1 (On)
- SP5-508-2 (CC Call – Continuous Jam Occurrence): 1 (On)
- SP5-508-3 (CC Call - Cover Open): 1 (On)
- SP5-508-4 (New CC Call Mode): 1 (New Mode)

1.3 CHECKING ITEMS USING RSS

1.3.1 READ ONLY ITEMS

Item
Paper end
Toner end
Staple end
Toner near end
Door open
Paper jam information
Machine condition
Paper size information
System configuration
Vsg, Vsp, Vsdp, Vt data
Fax information (Total No. of Tx, Total No. of Rx, Quick dial, Speed dial, etc)
Printer information (Total No. of print by Emulation, Bit switches, etc)
The related SP modes are; SP7-001~-003, -101, -206, -506, SP8-001~-007, -011~-017, -021~-027, -061~-064, -071~-074, -111, -121, -131, -141, -151, -161, -191~-196, -205, -211~-216, -221, -231, -241, -251, -291, -301, -381~-387, -391, -401~-404, -411, -421, -422, -424, -431, -441~-444, -451, -461~-464, -471, -484, -521, -524, -531, -633, -651, -661, -671, -681, -691, -701, -741, -941

1.3.2 AUTO CALL AND READ ITEMS

SC Calls

The SC calls are generated according to the SC level as follows. Please note that the SC levels of this copier are defined differently from other copiers.

SC Level	Definition	SC Auto Call Condition
A	Fusing unit SCs which cannot be reset by customer.	An SC call is generated immediately
B	SCs that disable only the features which use the defective item.	An SC call is generated when the SC occurs two times within 10 copies.
C	SCs that are not shown on the operation panel.	An SC call is not generated.
D	SCs caused by incorrect sensor detection; these can be reset by turning the main power switch off and on.	An SC call is generated when the SC occurs two times within 10 copies.

CC Manual Calls

The CC manual call may be generated by the customer, when "1: New Mode" is selected with SP5-508-4 (the default is "1"). There are two types of CC manual calls as follows.

CC Code	Definition
Manual Call: CC 101	When the number of jams specified by SP5-508-12 are detected consecutively: a). When "0:Auto Call" is selected with SP5-508-22, CC101 will be generated automatically. b). When "1: Manual Call" is selected with SP5-508-22, the Manual call key appears on the LCD. Upon pressing the key, a "Manual Call: CC101" is generated immediately. "Manual Call:CC101" will be listed as an MC in the Call List screen of the Concorde system, and "Manual Call:CC101" will be indicated in the "Symptom" column of the call detail screen. The default setting of SP5-508-22 is "1: Manual Call".
Manual Call: CC 202	When in a paper jam or an original jam condition and a cover is open for longer than the time specified by SP5-508-13, one of the following will occur after all doors are closed. a). When "0: Auto Call" is selected with SP5-508-23, CC202 will be generated automatically. b). When "1: Manual Call" is selected with SP5-508-23, the Manual call key appears on the LCD. Upon pressing the key, a "Manual Call: CC202" is generated immediately. "Manual Call:CC202" will be listed as an MC in the Call List screen of the Concorde system, and "Manual Call:CC202" will be indicated in the "Symptom" column of the call detail screen. The default setting of SP5-508-23 is "1: Manual Call".

CC Auto Call

The CC auto call will be automatically generated when “0: Previous Mode” is selected with SP5-508-4 (default is “1”). There are three types of CC auto calls as follows.

CC Code	Definition
CC 101	When a paper jam is detected five times consecutively, CC101 is automatically generated.
CC 201	When a paper jam condition is not reset for 15 minutes, CC201 is automatically generated.
CC 202	When a cover is left open for 15 minutes, CC202 is automatically generated.

Alarm Calls

There are four types of Alarm Calls as follows:

Type	Definition
PM	When the PM counter reaches 120,000, a PM Alarm Call is automatically reported to the Concorde system.
Original Count	An alarm call is generated after the specified total number of originals goes through the ARDF.
SC	When the SC alarm counter reaches 5, an SC Alarm Call is automatically generated. The SC alarm counter counts the number of SCs and it decreases when an SC does not occur for a specified number of copies.
Jam	When Jam alarm counter reaches 10, a Jam Alarm Call is automatically generated. The Jam Alarm counter counts the number of paper jams and it decreases when a paper jam does not occur for a specified number of copies.

1.3.3 READ AND WRITE ITEMS

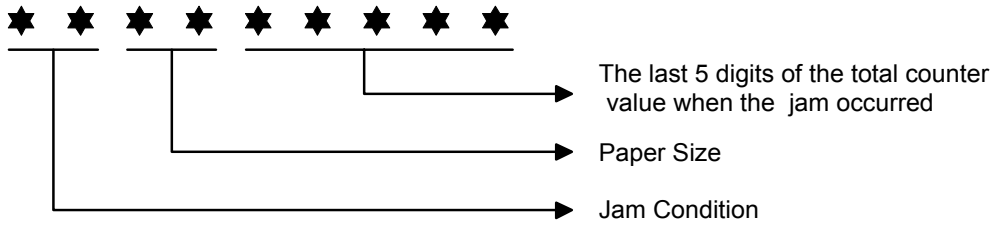
All data for SP modes and UP modes, except for a few modes.

1.3.4 EXECUTE ITEMS

Item	Item
SC reset	Counter reset (all except total counter)
PM counter reset	Original counter reset
SC/Jam counter reset	Reset counters by each paper tray

1.4 JAM HISTORY

The jam history is read as shown below.



B027I903.WMF

1.4.1 JAM CONDITION TABLE

Copier

Code	Meaning
01	Jams at power on.
03	Paper does not reach the upper relay sensor (from paper tray unit)
04	Paper does not reach the lower relay sensor.
05	Paper does not reach the vertical transport sensor (optional paper tray unit).
06	Paper does not reach the LCT relay sensor.
07	Paper does not reach the upper relay sensor (from by-pass)
10	Paper does not reach the registration sensor (from duplex)
11	Paper does not reach the registration sensor.
12	Paper does not reach the paper exit sensor
13	Paper does not reach the bridge relay sensor
14	Paper does not reach the bridge exit sensor
15	Paper does not reach the duplex entrance sensor.
16	Paper does not reach the duplex exit sensor
17	Paper does not reach the 1-bin tray exit sensor.
20	Paper does not reach the finisher entrance sensor
21	Paper does not reach the finisher shift tray exit sensor.
23	Paper does not reach the finisher staple tray paper sensor.
24	The finisher stack feed out belt H.P sensor does not turn on.
26	Finisher paper taking out error
27	Finisher drive error
28	Finisher tray lift error
29	Finisher jogger drive error
30	Finisher tray shift drive error
31	Finisher staple error
32	Finisher stack feed-out error
33	Finisher feed out error
34	Finisher no response
53	Paper caught at the upper relay sensor (from paper tray unit)
54	Paper caught at the lower relay sensor.
55	Paper caught at the vertical transport sensor (optional paper tray unit).
56	Paper caught at the LCT relay sensor.
57	Paper caught at the upper relay sensor (from by-pass)
61	Paper caught at the registration sensor.

Code	Meaning
62	Paper caught at the paper exit sensor.
63	Paper caught at the bridge relay sensor.
64	Paper caught at the bridge exit sensor.
65	Paper caught at the duplex entrance sensor.
66	Paper caught at the duplex exit sensor.
67	Paper caught at the 1-bin tray exit sensor.

Document Feeder

Code	Meaning
01	Jam at power on.
05	Original does not reach the registration sensor.
06	Original does not reach the original exit sensor.
07	Original does not reach the original reverse sensor.
55	Original caught at the registration sensor.
56	Original caught at the original exit sensor.
57	Original caught at the original reverse sensor.

1.4.2 PAPER SIZE

Code	Paper Size	Code	Paper Size
05	A4 sideways	86	A5 lengthwise
06	A5 sideways	87	A6 lengthwise
07	A6 sideways	8D	B4
0E	B5 sideways	8E	B5 lengthwise
0F	B6 sideways	8F	B6 lengthwise
11	Prepaid reply post card sideways	91	Prepaid reply post card lengthwise
12	Post card sideways	92	Post card lengthwise
24	8.5" x 14" sideways	A0	11" x 17"
26	8.5" x 11" sideways	A4	8.5" x 14" lengthwise
2C	8.5" x 5.5" sideways	A6	8.5" x 11" lengthwise
84	A3	AC	8.5" x 5.5" lengthwise
85	A4 lengthwise		

1.5 OTHERS

1.5.1 SC630 [RDS COMMUNICATION ERROR]

Frequent occurrence of SC630 indicates a problem in the customer's communication line or line adapter. To maintain the communications environment in good working order, it is necessary to make planned inspections periodically.

1.5.2 PM PROCEDURE OR OTHER MAINTENANCE

Before beginning PM or other maintenance procedures, SP5-816-2 should be set to "0". This will disable the RSS function. When maintenance is completed, SP5-816-2 should be set to "1". This will re-enable the RSS function.

NOTE: The RSS function will remain disabled for four hours. Therefore, if maintenance for longer than four hours is required, SP5-816-2 should be set to "0" again to disable RSS.