

J2SS-C3
(Machine Code: B047/B048)
Service Manual
– *Insert Version* –

The B047/B048 machines are based on the A163/A251/A252 copiers.

Only the differences from the base copier are described in the following pages. Therefore, this documentation should be treated as an insert version of the base copier's service manual. It should always be utilized together with the base copier's service manual.

INSERTION PROCEDURE OF SERVICE MANUAL

1. Replace the book spine tag with the new one.
2. Insert the B047/B048 service manual after the A163/A251/A252 manual.

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. Note that some components of the copier and the peripherals are supplied with electrical voltage even if the main switch is turned off.
4. If any adjustment or operation check has to be made with exterior covers off or open while the main switch is turned on, keep hands away from electrified or mechanically driven components.
5. The inside and the metal parts of the fusing unit become extremely hot while the copier is operating. Be careful to avoid touching those components with your bare hands.
6. The copier is not attached to the table. Pushing the copier too hard may cause it to drop onto the floor. While moving the copier, push the table.
7. When the main switch is turned on, the machine will suddenly start turning to perform the developer initialization. Keep hands away from any mechanical and electrical components during this period.

HEALTH SAFETY CONDITIONS

1. Never operate the copier without the ozone filters installed.
2. Always replace the ozone filters with the specified ones at the specified intervals.
3. Toner and developer are non-toxic, but if you get either of them in your eyes by accident, it may cause temporary eye discomfort. Try to remove with eye drops or flush with water as first aid. If unsuccessful, get medical attention.

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.

SAFETY AND ECOLOGICAL NOTES FOR DISPOSAL

1. Do not incinerate the toner cartridge or the used toner. Toner dust may ignite suddenly when exposed to open flame.
2. Dispose of used toner, developer, and organic photoconductors according to local regulations. (These are non-toxic supplies.)
3. Dispose of replaced parts in accordance with local regulations.

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ROLL FEEDER UNIT (B435/B436)

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1. OVERALL MACHINE INFORMATION

1.1 SPECIFICATIONS

Configuration:	Table top
Copy Process:	Electrostatic transfer system
Original Feed:	Sheet feed
Original Size:	Maximum: 914 x 3,000 (36" x 118")mm Minimum: A4 (8 1/2" x 11") lengthwise
Copy Size:	Same as "Original Size"
Copying Speed:	4 cpm (A1/D sideways)
First Copy:	21 seconds (A1/D sideways): B047 copier 25 seconds (A1/D sideways): B048 copier
Warm-up Time:	Within 3 minutes (Room temperature 23°C)
Multi-Copy:	B047: Single copies only, B048: Up to 10 copies
Automatic Reset:	2 minutes after copying has finished (can be set to 1, 3, 4, or 5 minutes or to no auto reset)
Photoconductor:	Organic photoconductor drum
Drum Charge:	Scorotron corona wire and grid (Negative Charge)
Reproduction Ratio:	1 : 1 ($\pm 0.5\%$)
Exposure System:	Slit exposure via fiber optic array
Exposure Lamp:	Fluorescent lamp (26 W)
Development:	Dual-component dry toner system
Toner Replenishment:	Cartridge system (750 g toner/cartridge)
Toner Consumption:	1,860 A1 or D copies per cartridge (6% original)
Development Bias:	Negative
Toner Density Control:	Direct toner density detection using an induction sensor
Image Density Adjustment:	Development bias control + exposure control
Paper Separation:	Dual wire AC corona and pick-off pawls
Cleaning:	Cleaning blade
Paper Feeding:	Manual feed (roll feeder optional)
Image Fusing:	Teflon heat roller (upper) and a silicone rubber pressure roller (lower)
Fusing Lamp:	Halogen lamp (115 V: 1,200 W, 230 V: 1,200 W)

Self-diagnostic Codes:	16 codes, displayed on the copy counter
Power Source:	115 V/60 Hz, 12 A 220 ~ 240V/50, 60 Hz, 7A
Power Consumption:	Maximum: 1.4 kW Warm-up: 1.3 kW Ready: 0.04 to 1.3 kW Copy cycle: 1.4 kW
Dimensions (W x D x H):	B047: 1,080 x 570 x 490 mm 42.5" x 22.4" x 19.3" B048: 1,080 x 623 x 480 mm 42.5" x 24.5" x 18.9"
Weight:	B047: 79 kg, 174.0 lbs B048: 80 kg, 176.0 lbs

Optional Equipment and Machine Configuration

Configuration		Additional equipment
Main frame	Optional equipment	
B047 copier	Roll feeder (B435: 1 roll, B436: 2 rolls)	—
	Roll cutting rail (B437)	—
	Table (B439)	—
	Side guides (B438)	—
B048 copier	Roll feeder (B435: 1 roll, B436: 2 rolls)	Copy tray (B440)
	Side guide (B438)	—

NOTE: 1) Roll cutting rail cannot be installed on the B048 copier.
 2) Key counters cannot be installed on these copiers.
 3) The B048 requires a roll feeder (either 1 roll or 2 rolls). While the roll feeders are shipped separately, they are not really optional. One must be installed for the B048 to function properly. .

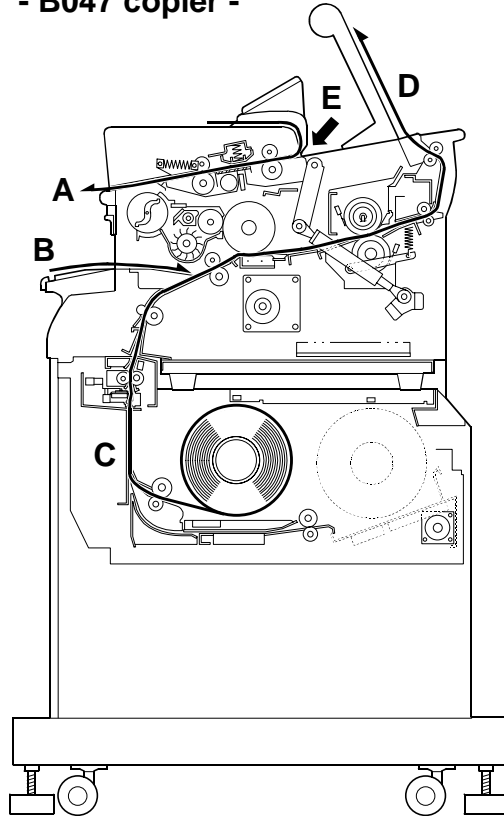
Other Optional Equipment

- Roll Holder Unit (B394)
- Drum anti-condensation heater

Specifications are subject to change without notice.

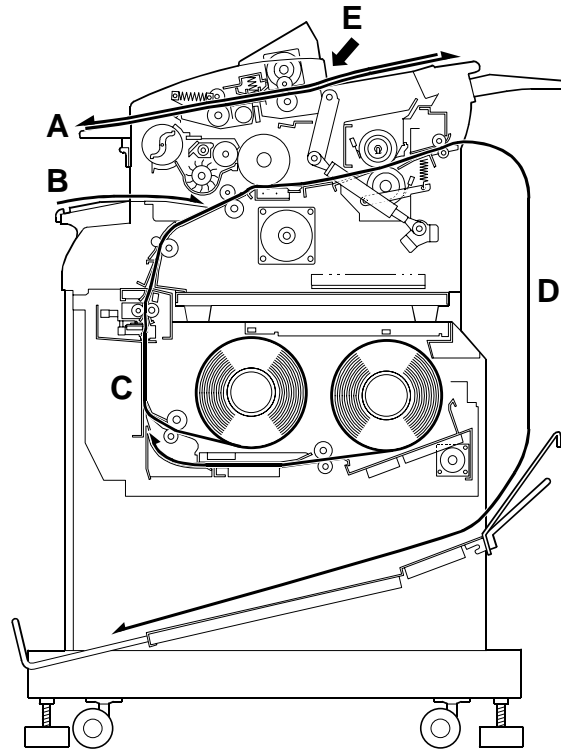
1.2 PAPER PATH

- B047 copier -



B047V102.WMF

- B048 copier -



B048V102.WMF

A: Original Path

B: Manual Feed Path

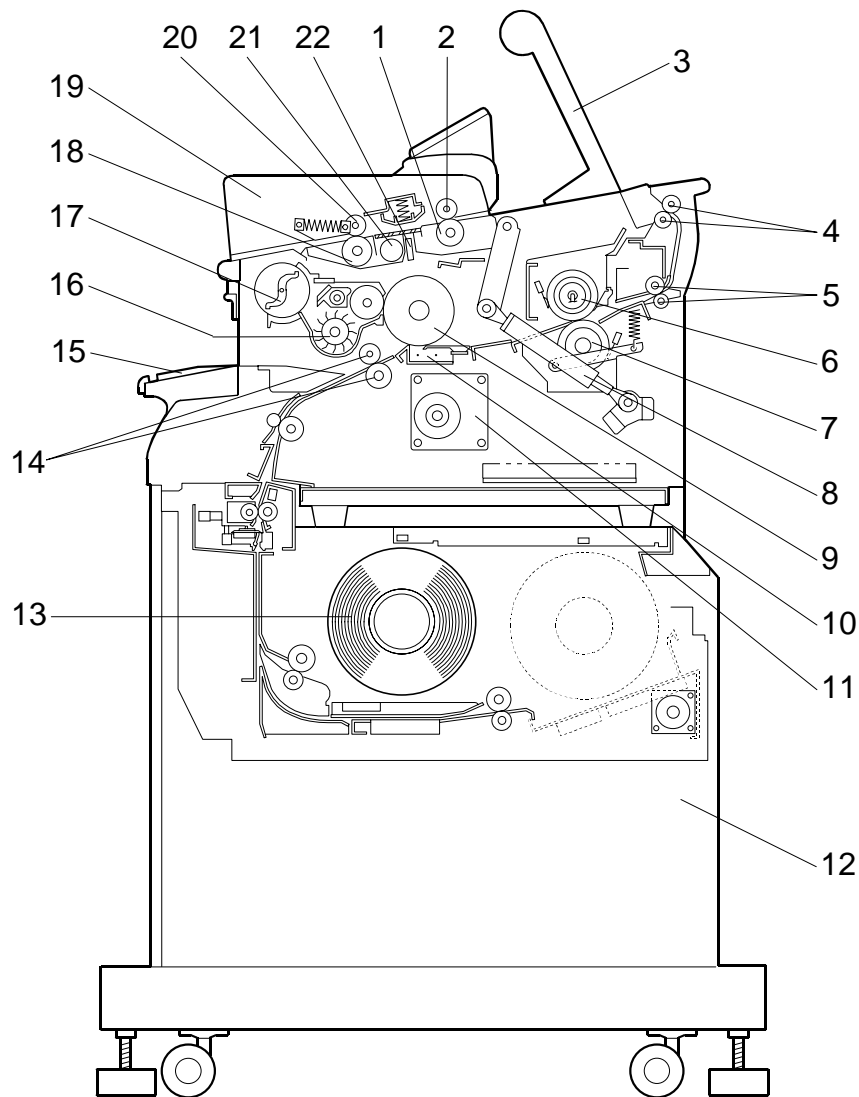
C: Roll Feeder Path

D: Paper Exit

E: Original Path: Rear Feeder

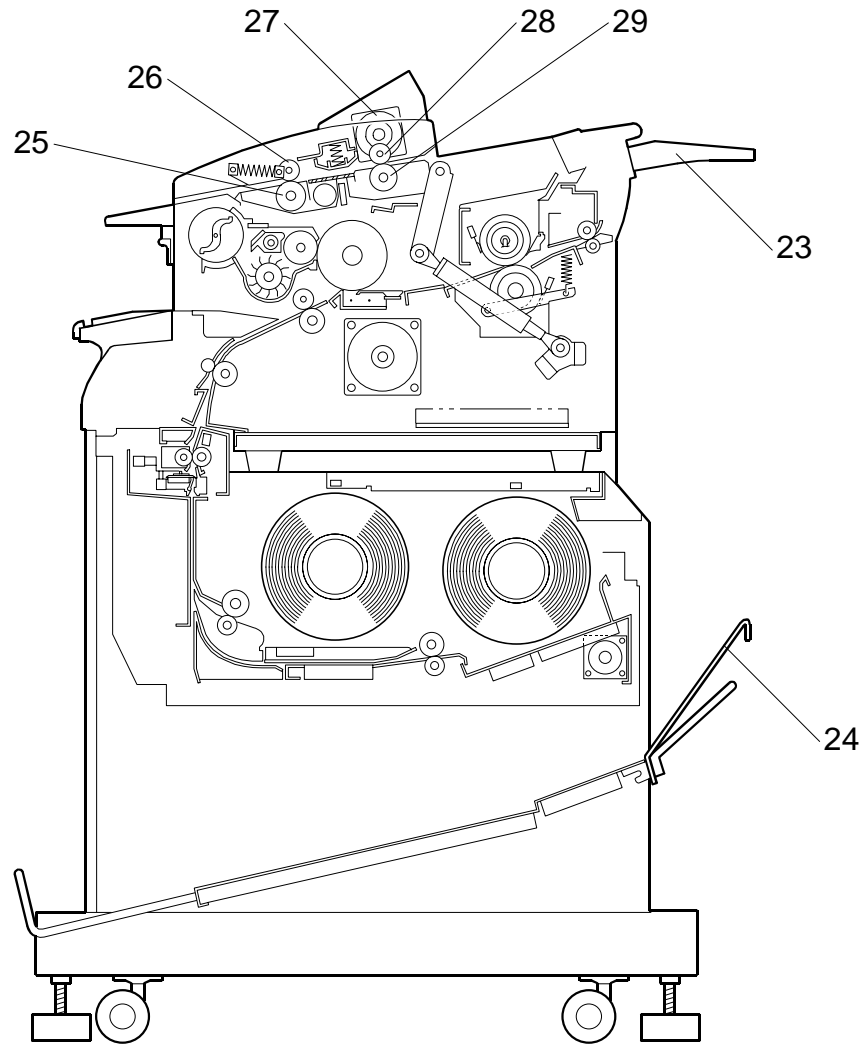
There are two versions of this machine. The B047 is the basic version. It can only make one copy at a time. The B048 is the multi-print version. It can make multiple copies of an original (scanning and copying an original multiple times). Both versions can be equipped with either a single or a double paper roll.

1.4 MECHANICAL COMPONENTS



B047V101.WMF

- | | |
|-----------------------------|--|
| 1. 1st Original Feed Roller | 12. Roll Feed Unit (1 roll or 2 rolls) |
| 2. 1st Press Rollers | 13. Roll Paper |
| 3. Copy Tray | 14. Paper Registration Rollers |
| 4. Exit Rollers | 15. Manual Feed Table |
| 5. Fusing Exit Rollers | 16. Development Unit |
| 6. Hot Roller | 17. Toner Cartridge |
| 7. Pressure Roller | 18. 2nd Original Feed Roller |
| 8. Gas Spring | 19. Original Table |
| 9. OPC Drum | 20. 2nd Original Press Roller |
| 10. T/S Corona Unit | 21. Exposure Lamp |
| 11. Main Drive Unit | 22. Fiber Optic Array |



B048V101.WMF

- | | |
|------------------------------------|--------------------------------|
| 23. Original Guide | 27. Original Roller Feed Motor |
| 24. Optional Copy Tray | 28. Original Rear Press Roller |
| 25. Original Entrance Roller | 29. Original Rear Roller |
| 26. Original Entrance Press Roller | |

1.6 ELECTRICAL COMPONENTS

Refer to the electrical component layout on the reverse side of the Point to Point index (Water proof paper).

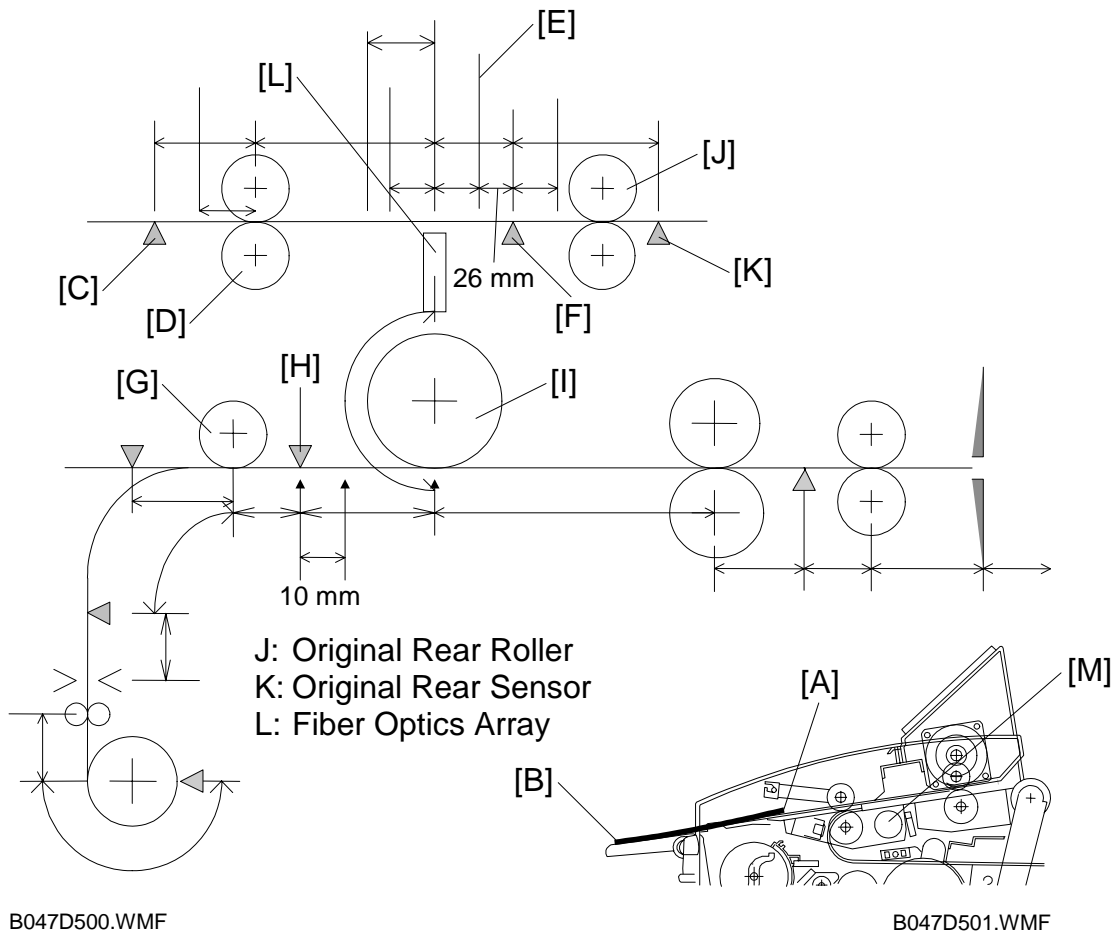
Name	Function	Index. No.
Motors		
Main	Drives all mechanical components except the fans (DC Motor).	32
Exhaust Fan	Removes the ozone built up around the drum section to the ozone filter (DC Motor).	5
Original Feed (B048 only)	Drives the original feed motor (DC Motor).	45
Magnetic Clutches		
Registration	Drives the registration rollers.	30
Toner Supply	Turns on to supply toner to the development unit.	31
Solenoids		
Pick-off Pawl	Moves the pick-off pawls against the drum.	6
Switches		
Main	Supplies power to the copier.	17
Original & Paper Feed Safety	Cuts AC power when the original or paper feed unit are opened.	18
Fusing Exit Safety	Cuts AC power when the fusing exit unit is opened.	12
Used Toner Cover	"Door Open" is displayed on the operation panel when the used toner cover is open.	48
Sensors		
Door Open	Indicates "Door Open" on the operation panel and prevents operation.	29
Toner Density	Detects the density of toner in the developer.	26
Original Registration	Activates when the leading edge of the original passes the front of the exposure glass.	4
Light	Measures the intensity of the exposure lamp's output.	27
Entrance Feed	Activates when copy paper is inserted (jam detector).	24
Registration	Activates when copy paper arrives at the registration rollers (jam detector).	25
Exit	Detects jams through the fusing exit unit.	7
Original Entrance (B048 only)	Measures the original length and detects jams.	43
Original Rear (B048 only)	Detects original jams.	44
Exit Cover Open	Indicates "Door Open" in the operation panel and prevents operation.	47
Toner Overflow	Detects whether the used toner tank is full or not.	46

Name	Function	Index. No.
Printed Circuit Boards		
Main	Controls all copier functions both directly and through other PCBs.	22
PSU	Converts the voltage from AC to DC voltage.	21
AC Drive	Provides AC power to the fusing lamp and PSU.	15
FL Regulator	Stabilizes power to the exposure lamp.	23
Operation Panel	Controls the operation panel display.	10
Lamps		
Exposure	Provides light to reflect the original's image onto the drum (fluorescent lamp).	2
Fusing	Provides heat to the fusing unit.	3
Pre-Transfer (PTL)	Reduces the charge on the drum surface prior to image transfer.	20
Quenching (QL)	Neutralizes any charge remaining on the drum surface after cleaning.	1
Power Packs		
Charge/Bias/ Grid Power Pack	Provides high voltage power for the charge corona, charge grid, and development bias.	19
Transfer/Separation	Provides high voltage power for the transfer corona and separation.	16
Thermistors		
Hot Roller	Monitors the hot roller's surface temperature.	8
Pressure Roller	Monitors the pressure roller's surface temperature.	11
Thermofuses		
Fusing	Protects the fusing unit against overheating.	9
Heaters		
Anti-condensation	Keeps moisture from forming inside the copier (option).	13
Others		
Total Counter	Keeps track of the total length of copies made (Europe) or the total copies made (U.S.A.).	28
Circuit Breaker (Europe, Asia)/ Fuse (U.S.A.)	Guards against voltage surges in the input power.	14

2. DETAILED SECTION DESCRIPTIONS

2.3 EXPOSURE

2.3.2 PAPER AND ORIGINAL FEED (B048 ONLY)



NOTE: For clarity's sake, the following description will refer to the paper's edges as edge [A] (furthest edge from the operator) and edge [B] (closest to the operator).

Original Positioning

In the B048 copier, edge [A] of the original is placed onto the original table. This activates the original entrance sensor [C].

The main motor turns the original entrance rollers [D]. The quenching lamp, development bias and PTL also turn on.

For proper feeding (especially for a thin original), the original entrance rollers rotate backwards (feeding towards the operator) for 300 ms. This ensures that the original is gripped firmly by both of the original entrance rollers [D], feeding it evenly.

4 seconds after the sensor is activated, the original feed motor starts rotating. This delay gives the user time to align edge [A] against the original entrance rollers [D]. This helps prevent skew.

The original is fed through the machine to the scanning start position [E]. This machine scans the original backwards, starting with edge [B] and scanning towards edge [A]. The original is now ready to scan.

Scanning

The original is scanned, moving back towards the operator.

When edge [A] activates the original registration sensor [F], the roll paper feed motor turns on. Copy paper begins to feed, and the registration clutch is activated.

When edge [B] reaches the original feed start position [E] (26 mm ahead of the original registration sensor [F]), the original feed motor stops to wait for the copy paper.

In the copy section, the registration clutch turns off once the copy paper's leading edge is 10 mm past the registration sensor [H]. The voltage is now applied to the charge corona.


The original feed motor begins rotating towards the operator again at 60 mm/s, and the original is delivered to the exposure glass. Light from the exposure lamp [M] is reflected off the paper to the fiber optics array [L].

Once the original's edge [B] passes the original entrance sensor, the registration clutch and roll paper feed motor turn on again. The paper feed resumes and the copy paper is transported to the drum [I].

To measure the original length for cutting, the copier's CPU measures the time from when the original registration sensor detects edge [A] until the original entrance sensor detects edge [B].

The copy paper length is measured by counting the number of steps as the roll paper feed motor (a stepper motor) turns. Just before the paper is cut, the feed motor speed doubles. This creates a buckle at the trailing edge of the copy paper. The feed motor then stops as the cutter unit cuts the paper. Copying, however, continues. The buckle provides the necessary slack while cutting.

When making duplicate copies, the original feed motor pauses, then changes directions again, and the original is fed back to the scanning position 200 mm/s. Once previous paper exits out of the roll feeder, the roll paper feed starts as well, and the process repeats.

After all copies are made, the original is delivered to the original table. If original hold mode is enabled (SP16), the original will stop with edge [A] caught by the original entrance rollers. The original can be fed out by pressing the  key. If original hold mode is not enabled, the original feeds out completely, and is not caught.

Start Key Enable

When the start key enabled (SP34) is set, the start key acts as a starting trigger. In this mode, when the original activates the original registration sensor, edge [B] is delivered to the original registration sensor position. Everything pauses until the user presses the start key. Original feed and paper feed then resume.

2.4 DEVELOPMENT

2.4.4 TONER DENSITY CONTROL

The toner supply amount ratio is determined by the following conditions.

	TS Level	0 ~ 50 sheets (~ 30 m)	51 ~ 100 sheets (30 ~ 60 m)	101 ~ 150 sheets (60 ~ 90 m)	151 ~ 200 sheets (90 ~ 120 m)	201 ~ 250 sheets (120 ~ 150 m)	251 sheets ~ (150 m ~)
N	0	$V_{TS} < 4.00$	$V_{TS} < 3.50$	$V_{TS} < 3.00$	$V_{TS} < 2.50$	$V_{TS} < 2.25$	$V_{TS} < 2.00$
	1	$4.00 \leq V_{TS} < 4.10$	$3.50 \leq V_{TS} < 3.80$	$3.00 \leq V_{TS} < 3.50$	$2.50 \leq V_{TS} < 3.00$	$2.25 \leq V_{TS} < 2.70$	$2.00 \leq V_{TS} < 2.40$
	2	$4.10 \leq V_{TS} < 4.20$	$3.80 \leq V_{TS} < 4.10$	$3.50 \leq V_{TS} < 4.00$	$3.00 \leq V_{TS} < 3.50$	$2.70 \leq V_{TS} < 3.15$	$2.40 \leq V_{TS} < 2.80$
	3	$4.20 \leq V_{TS} < 4.30$	$4.10 \leq V_{TS} < 4.20$	$4.00 \leq V_{TS} < 4.20$	$3.50 \leq V_{TS} < 4.00$	$3.15 \leq V_{TS} < 3.60$	$2.80 \leq V_{TS} < 3.20$
	4	$4.30 \leq V_{TS} < 4.40$	$4.20 \leq V_{TS} < 4.35$	$4.20 \leq V_{TS} < 4.30$	$4.00 \leq V_{TS} < 4.25$	$3.60 \leq V_{TS} < 3.90$	$3.20 \leq V_{TS} < 3.60$
	5	$4.40 \leq V_{TS}$	$4.35 \leq V_{TS}$	$4.30 \leq V_{TS}$	$4.25 \leq V_{TS}$	$3.90 \leq V_{TS}$	$3.60 \leq V_{TS}$
L	0	$V_{TS} < 4.35$	$V_{TS} < 4.30$	$V_{TS} < 4.25$	$V_{TS} < 3.75$	$V_{TS} < 3.25$	$V_{TS} < 2.75$
	1	$4.35 \leq V_{TS} < 4.38$	$4.30 \leq V_{TS} < 4.33$	$4.25 \leq V_{TS} < 4.30$	$3.75 \leq V_{TS} < 4.00$	$3.25 \leq V_{TS} < 3.50$	$2.75 \leq V_{TS} < 3.20$
	2	$4.38 \leq V_{TS} < 4.40$	$4.33 \leq V_{TS} < 4.36$	$4.30 \leq V_{TS} < 4.33$	$4.00 \leq V_{TS} < 4.10$	$3.50 \leq V_{TS} < 3.80$	$3.20 \leq V_{TS} < 3.60$
	3	$4.40 \leq V_{TS} < 4.42$	$4.36 \leq V_{TS} < 4.40$	$4.33 \leq V_{TS} < 4.36$	$4.10 \leq V_{TS} < 4.20$	$3.80 \leq V_{TS} < 4.00$	$3.60 \leq V_{TS} < 3.90$
	4	$4.42 \leq V_{TS} < 4.45$	$4.40 \leq V_{TS} < 4.43$	$4.36 \leq V_{TS} < 4.40$	$4.20 \leq V_{TS} < 4.38$	$4.00 \leq V_{TS} < 4.35$	$3.90 \leq V_{TS} < 4.30$
	5	$4.45 \leq V_{TS}$	$4.43 \leq V_{TS}$	$4.40 \leq V_{TS}$	$4.38 \leq V_{TS}$	$4.35 \leq V_{TS}$	$4.30 \leq V_{TS}$
H	0	$V_{TS} < 4.00$	$V_{TS} < 3.00$	$V_{TS} < 2.50$	$V_{TS} < 2.25$	$V_{TS} < 2.00$	$V_{TS} < 1.80$
	1	$4.00 \leq V_{TS} < 4.10$	$3.00 \leq V_{TS} < 3.50$	$2.50 \leq V_{TS} < 3.00$	$2.25 \leq V_{TS} < 2.70$	$2.00 \leq V_{TS} < 2.40$	$1.80 \leq V_{TS} < 2.00$
	2	$4.10 \leq V_{TS} < 4.20$	$3.50 \leq V_{TS} < 4.00$	$3.00 \leq V_{TS} < 3.50$	$2.70 \leq V_{TS} < 3.15$	$2.40 \leq V_{TS} < 2.80$	$2.00 \leq V_{TS} < 2.50$
	3	$4.20 \leq V_{TS} < 4.30$	$4.00 \leq V_{TS} < 4.20$	$3.50 \leq V_{TS} < 4.00$	$3.15 \leq V_{TS} < 3.60$	$2.80 \leq V_{TS} < 3.20$	$2.50 \leq V_{TS} < 3.00$
	4	$4.30 \leq V_{TS} < 4.40$	$4.20 \leq V_{TS} < 4.30$	$4.00 \leq V_{TS} < 4.25$	$3.60 \leq V_{TS} < 3.90$	$3.20 \leq V_{TS} < 3.60$	$3.00 \leq V_{TS} < 3.50$
	5	$4.40 \leq V_{TS}$	$4.30 \leq V_{TS}$	$4.25 \leq V_{TS}$	$3.90 \leq V_{TS}$	$3.60 \leq V_{TS}$	$3.50 \leq V_{TS}$

TS Level (Toner Supply Ratio)

0: No supply 1: 7.5% 2: 7.5% 3: 7.5% 4: 15% 5: 100%

Toner density control table has been changed for B047/B048 copiers.

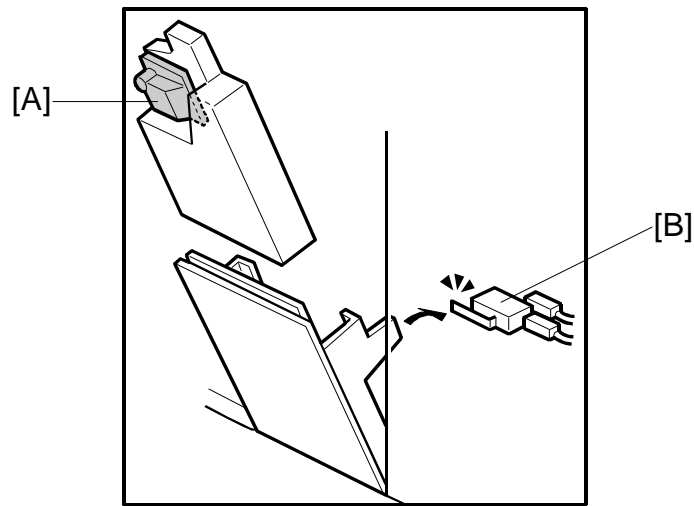
Recovery from Toner End Condition

After replacing the toner cartridge (opening and closing the original feed unit), the main motor rotates the development unit for 60 seconds. During the first 30 seconds, toner is supplied at 100% of the supply amount until TS level reaches 3. The main motor continues to rotate the development unit for another 30 seconds. Then copies can be made.

If the TS level does not reach 3, the CPU stops the machine and displays the toner end condition. This prevents the operator from resetting the toner end condition by simply opening and closing original feed unit.

2.6 CLEANING

2.6.2 USED TONER COLLECTION



B047D101.WMF

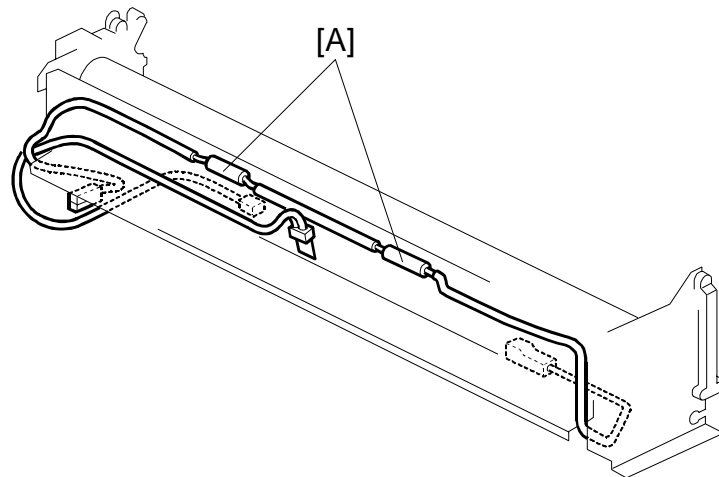
B047/B048 copiers have a used toner overflow sensor [A] and a used toner cover switch [B].

When the used toner overflow sensor detects that the used toner tank is full, the overflow indicator begins blinking on the operation panel. 30 more meters (A1/D size: 50 copies, SP51) can be copied. After that, the used toner overflow indicator stays ON, and the machine will not operate.

The used toner cover switch detects when the used toner cover is open. "Door open" is displayed on the operation panel, and the start key is disabled.

2.8 FUSING AND PAPER EXIT

2.8.1 OVERVIEW



B047D102.WMF

Detailed
Descriptions

Two thermofuses [A] (184°C, 192°C) keep the fusing unit from overheating.

Two thin-film thermistors measure the hot roller and pressure roller's temperature.

The hot roller is a thin-shell, Teflon coated roller. The thinner roller allows a much-shorter warm-up time. However, extra care should be taken while working around the hot roller. It is very easy to damage.

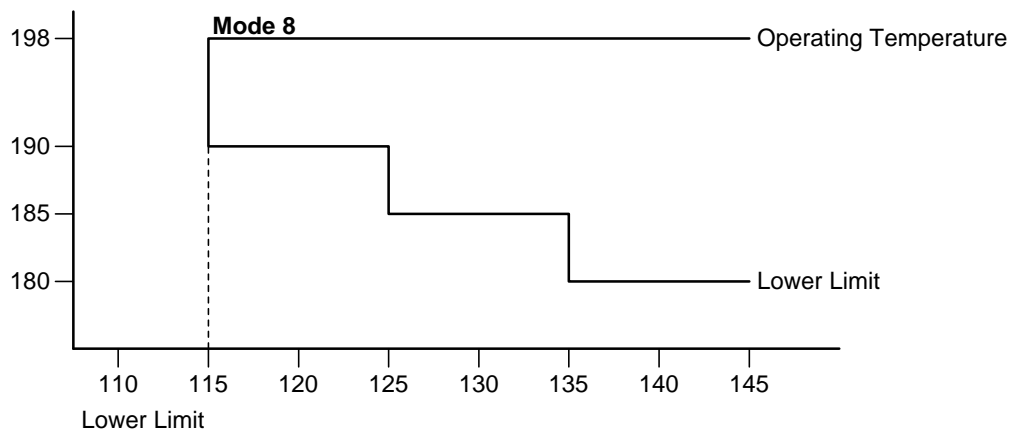
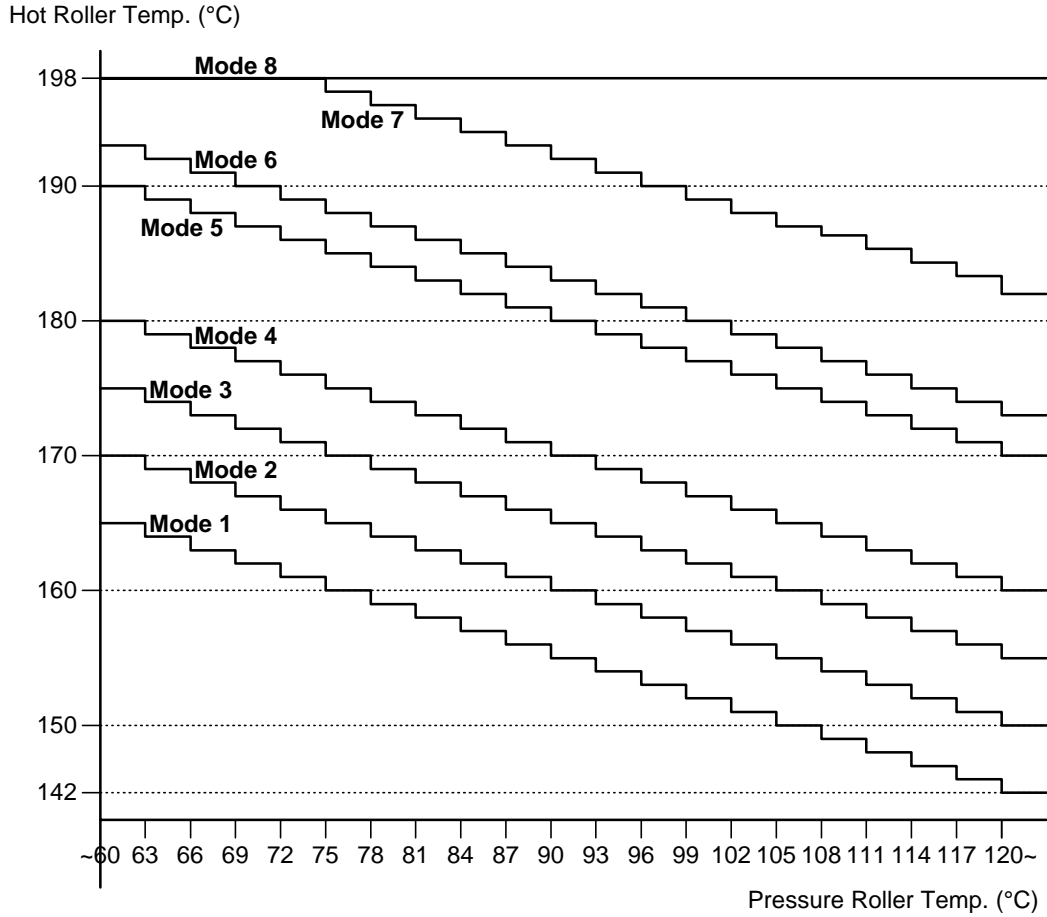
Like the A163/A251/A252 copiers, if the fusing temperature is lower than 60°C when the main switch is turned on, the machine assumes that it has not been used recently, and the main motor must rotate to generate the necessary triboelectric charge on the toner and developer.

In the A163/A251/A252 copiers, the main motor begins rotating immediately. However, the B047/B048 copiers have a thin shell hot roller and a contact thermistor. When cold, the thermistor is hard and might damage the roller. The machine waits until the hot roller temperature reaches 80°C. At that temperature the thermistor softens and the hot roller can rotate safely.

Except for the differences listed above, the B047/B048 copiers are identical to the A251 and A252 copiers. Please refer to A163/A251/A252 copier service manual for additional details.

2.8.3 TEMPERATURE CONTROL

Hot Roller Temperature Control



B047D001.WMF

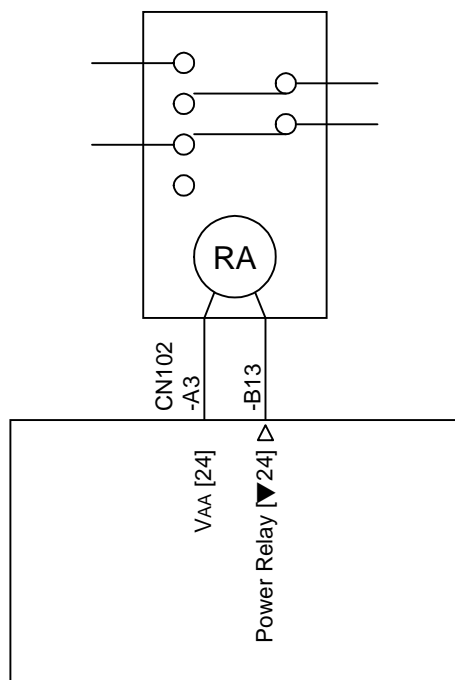
The relationship between the hot roller and pressure roller temperatures has been changed due to the thin-shell, Teflon coated roller.

2.10 ENERGY STAR COMPLIANT MACHINES (ALL THE DESTINATION)

In conjunction with the modification for the Energy Star compliance, field technicians need to understand the new operation modes, and must be able to configure the machine for the customer's specific environment/requirements. This section lists all the differences between the Energy Star compliant machines and the previous models.

Detailed
Descriptions

Mode	Non-Energy Star	Energy Star
Auto Off Mode	Not available	Starts timing once the last copy job is complete. When the specified time has passed, the copier turns off. The time can be adjusted from 1 to 240 minutes. Default: 30 minutes



B047D002.WMF

Mode No.	Function	Data
*15	Auto Shut-off Time Setting	Determines the auto shut-off time. 1 ← 30 → 240
*33	AOF	Auto off enable. 0: Disable 1: Enable

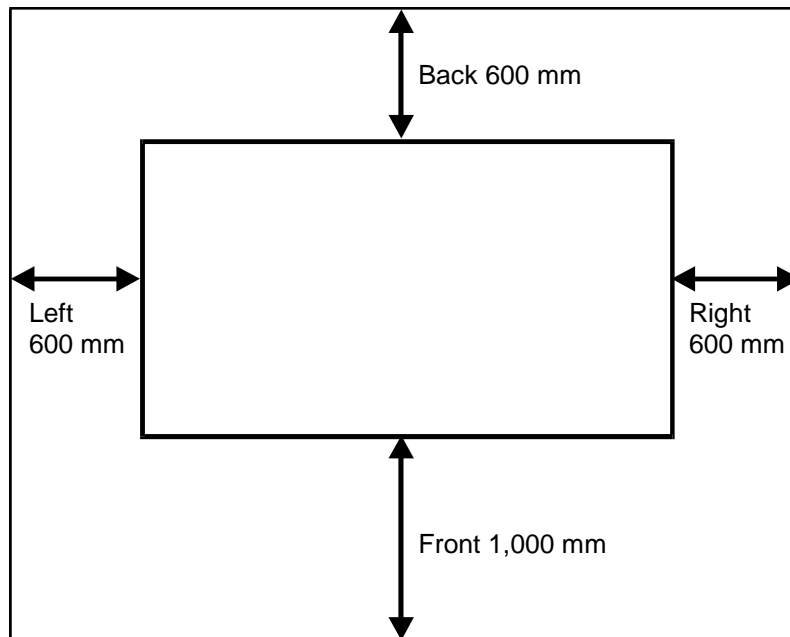
3. INSTALLATION

3.1 INSTALLATION REQUIREMENTS

3.1.1 ENVIRONMENT

1. Temperature Range: 15°C to 30°C (50°F to 86°F)
2. Humidity Range: 20% 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 3 times per hour.
5. Ambient Dust: Less than 0.10 mg/m³ (2.7 x 10⁻⁶ oz/yd³)
6. If the location is air-conditioned or heated, place the machine as follows:
 - a) Where it will not be subjected to sudden temperature changes from low to high, or vice versa.
 - b) Where it will not be directly exposed to cool air from an air conditioner in the summer.
 - c) Where it will not be directly exposed to heat.
7. Avoid exposure to corrosive gases.
8. Avoid installing anywhere higher than 2,000 m (6,500 ft) above sea level.
9. Place the machine on a strong and level base.
10. Avoid any area where the machine may be subjected to frequent, strong vibration.

3.1.2 MINIMUM SPACE REQUIREMENTS



B047I505.WMF

1. Front: 1,000 mm (39 in)
2. Back: 600 mm (24 in)
3. Right: 600 mm (24 in)
4. Left: 600 mm (24 in)

3.1.3 MACHINE LEVEL

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

Make sure that the machine is level using a carpenter's level.

3.1.4 POWER SOURCE

Important:

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

1. Input Voltage Level: 120 V, 60 Hz
 More than 12 A (for U.S.A. version)

 220 ~ 240 V, 50/60 Hz
 More than 7 A (for European version)
2. Permissible Voltage $\pm 10\%$
 Fluctuation:
3. Do not set anything on the power cord.

NOTE: 1) Make sure the plug is firmly inserted in the outlet.
 2) Avoid multi-wiring.

3.2 INSTALLATION PROCEDURE

3.2.1 COPIER

Accessory Check

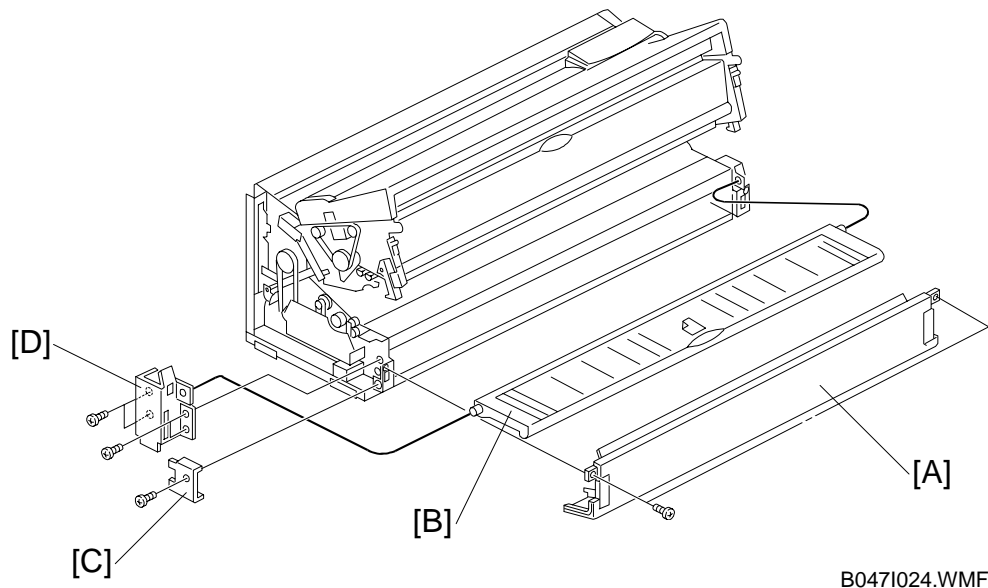
Check the accessories and their quantities according to the following list:

- B048 copier -

Original Guides	6 pcs
Operating Instruction Holder	1 pc
Operating Sheet	1 pc
Caution Decal (-27 only)	1 pc
Operating Instructions (-17 only).....	1 pc
Original Guide Wire	1 pc

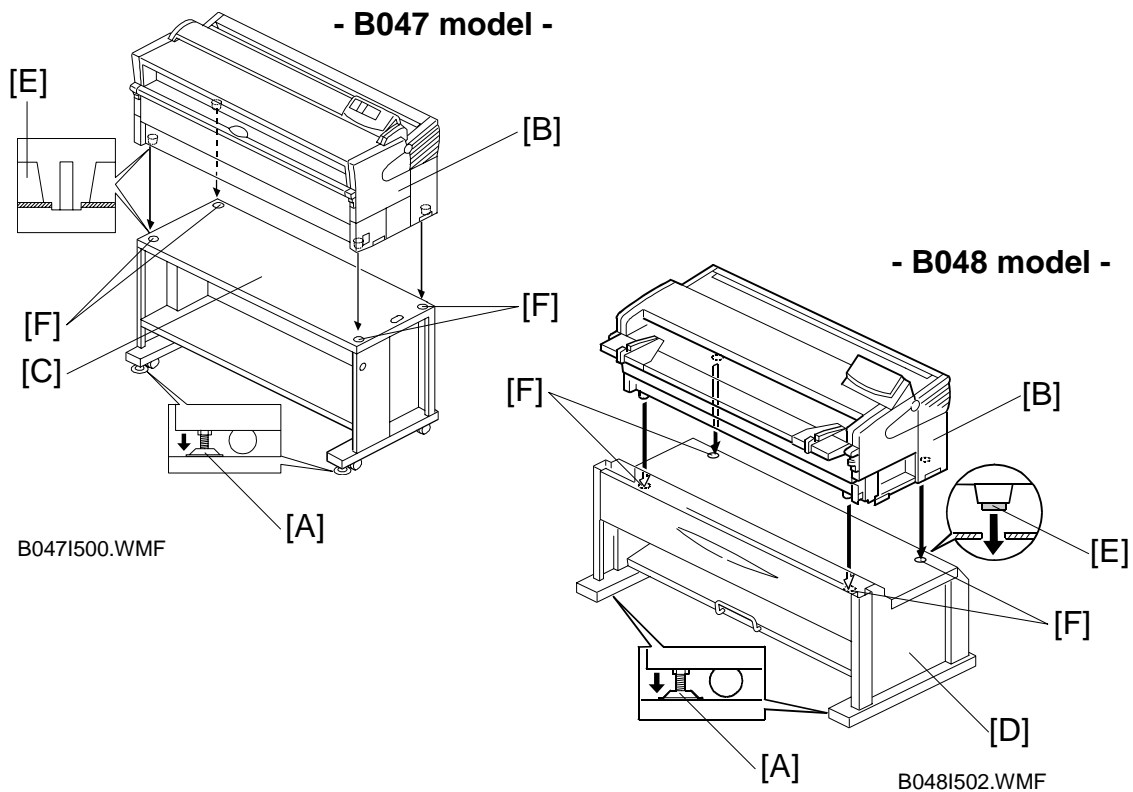
- B047 copier -

Guide Wires	2 pcs
Copy Tray	1 pc
Copy Guide.....	1 pc
Operating Instruction Holder	1 pc
Operating Sheet	1 pc
Caution Decal (-27 only)	1 pc
Operating Instructions (-17 only).....	1 pc

**Preparation for the B047 copier on the roll feeder.**

When B047 copier is placed on the roll feeder, first remove the lower front cover [A] and the manual feed table [B] for installation.

1. Remove the lower front cover [A] (2 screws), reinforcement plate [C] (1 screw), bracket [D] (4 screws) (which is hung by the harness), and the manual feed table [B].
2. Put back the bracket and reinforcement plate.



NOTE: The installation procedures are not shipped with the copier, always bring this manual with you.

⚠ CAUTION

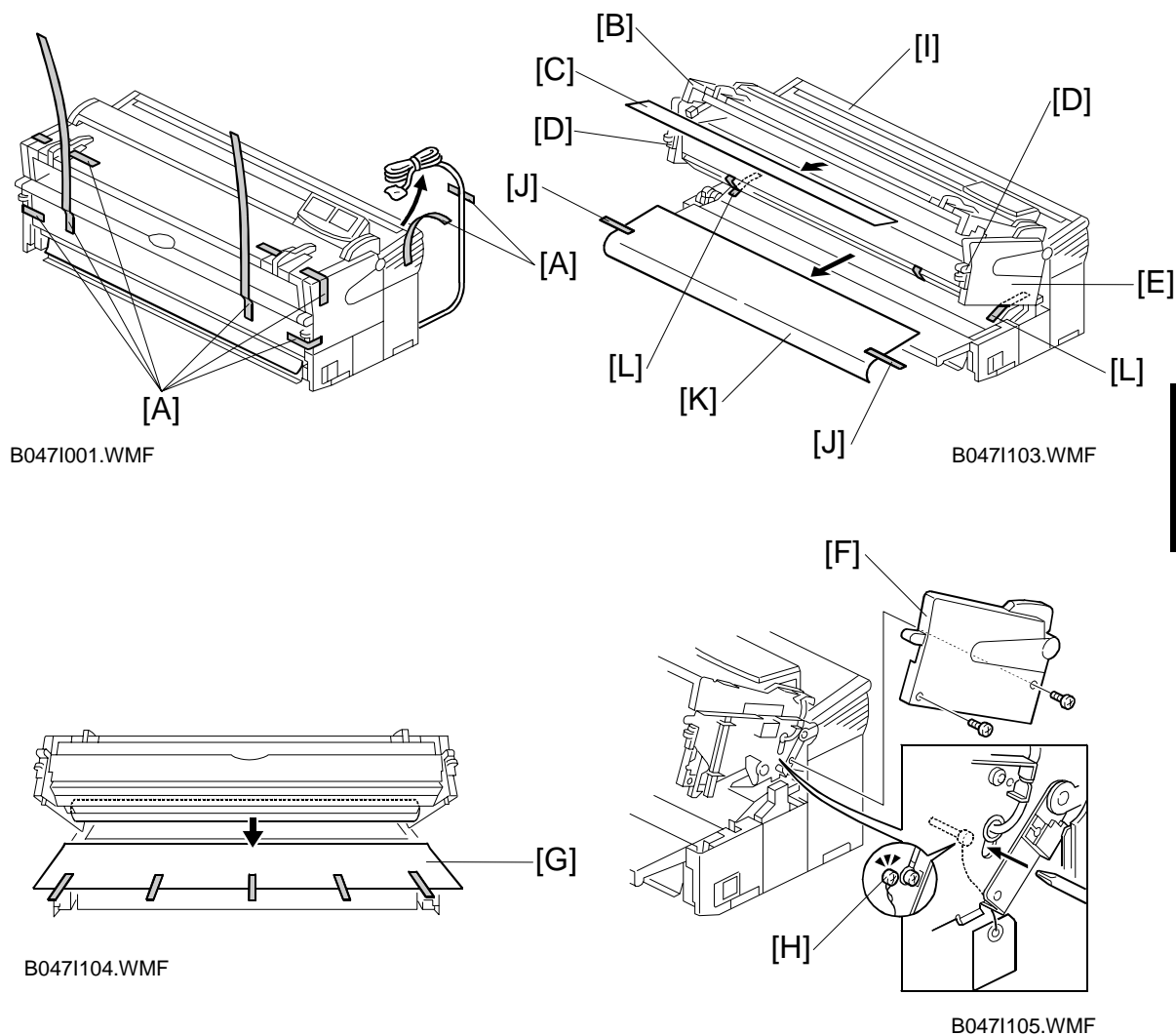
1. **Unplug the power cord before performing the following procedures.**
2. **Before starting the installation, make sure the machine is level.**
3. **The copier is very heavy (85 kg, 187 lbs). To avoid serious injury, make sure that you have a sufficient number of people to assist you. It takes at least two people to lift the copier safely.**
4. **Please be careful not to get your hand caught under the copier as you place the copier onto the table or roll feeder.**

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

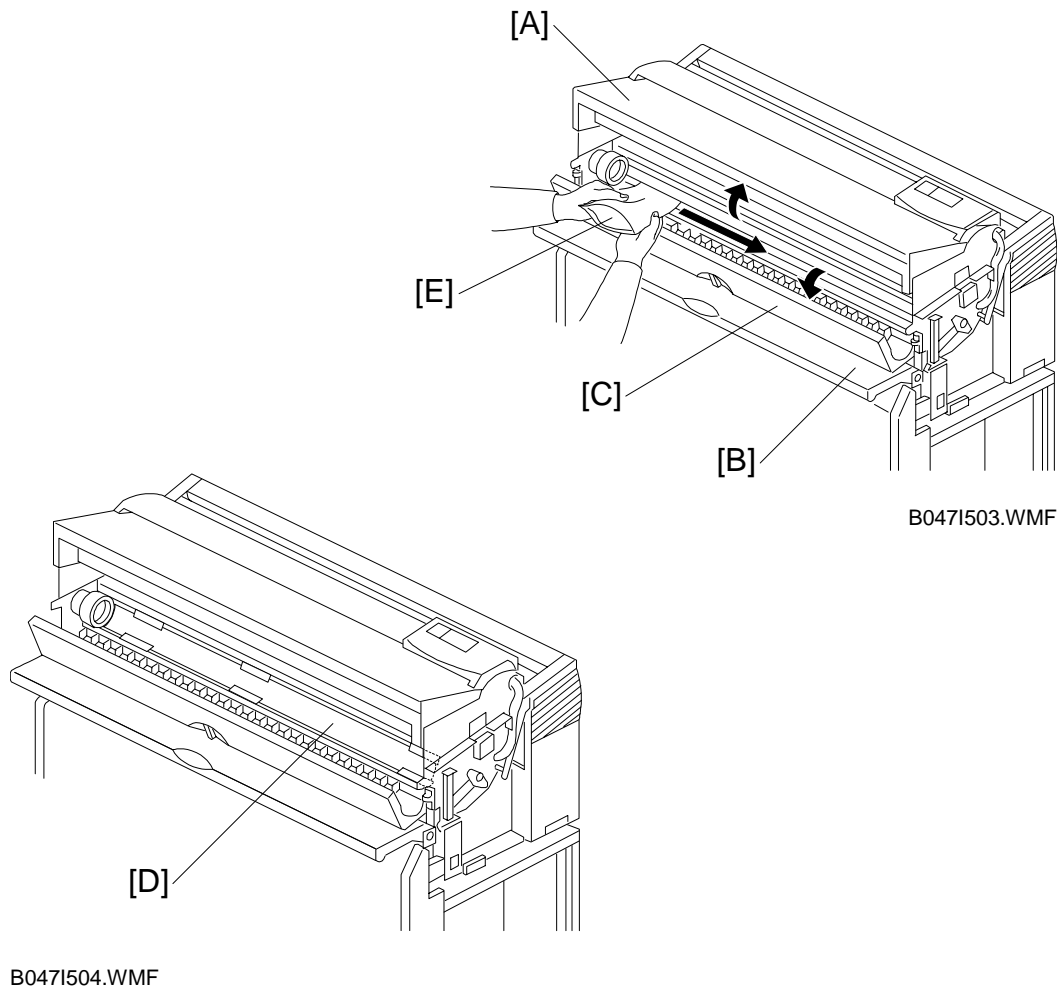
1. For either the table or the roll feeder, lower the feet [A] (table: 2 feet, roll feeder: 4 feet) so that it does not move while the copier is being installed.
2. Place the copier [B] on the table [C] or roll feeder [D] (Place the copier feet [E] into the table holes [F]).

⚠ WARNING

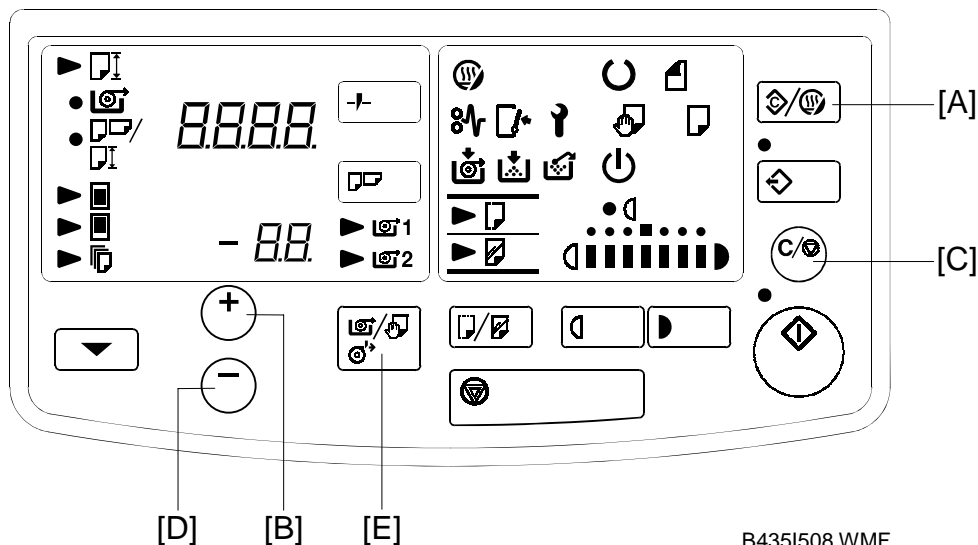
The copier is not attached to the table. Pushing the copier too hard may cause it to fall. While moving the copier, always push the table.



3. Remove all the tape strips [A] as shown.
4. Open the original feed unit [B].
5. Remove the cushion [C] and close the original feed unit.
6. Release the lock levers [D] and open the paper path section [E].
7. Remove the right upper cover [F] (2 screws).
8. Remove the drum protection sheet [G] and remove the screw [H]. This applies cleaning blade pressure to the drum.
NOTE: Be sure to remove the protective sheet before removing the pressure screw. Otherwise, the cleaning blade will clamp the sheet to the drum, and the drum may be damaged.
9. Open the fusing exit section [I]. Remove the two strips of shipping tape [J] and the protection sheet [K].
10. Remove two strips of shipping tape [L]. Close the paper path section and fusing exit section.



11. Open the original feed unit [A], manual feed table [B], and toner supply cover [C]. Remove the sheet [D] covering the developer entrance. Pour 1 kg of the developer [E] into the development unit evenly across its width as shown.
NOTE: Close the paper path section before opening the toner supply cover. If the paper path section is open, the toner supply cover could fall off.
12. Plug in the power supply cord and turn on the main switch.



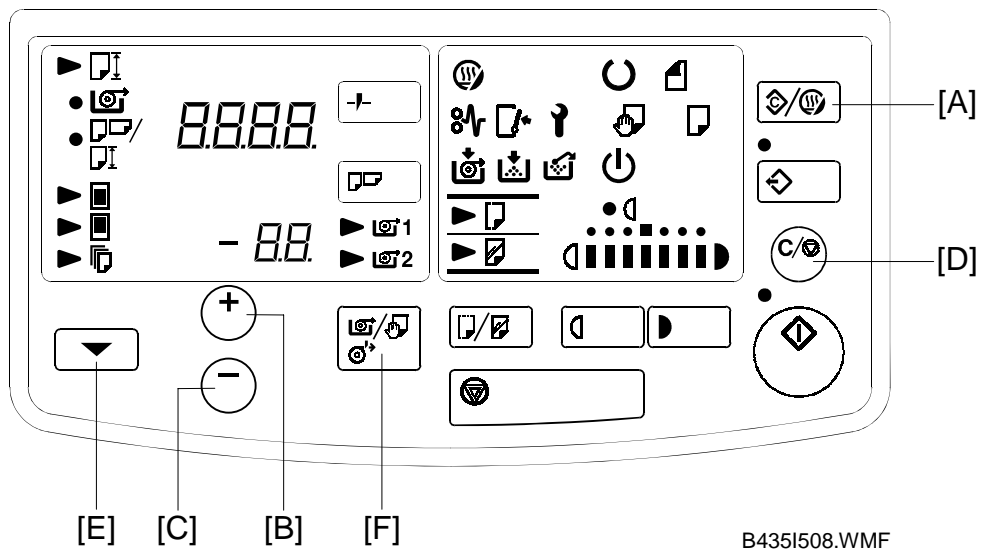
B435I508.WMF

Installation

NOTE: If the fusing temperature is lower than 60°C when the main switch is turned on, the main motor must rotate to generate a triboelectric charge on the developer and toner. However, to prevent damage to the hot roller, the main motor will wait until the hot roller's temperature reaches 80°C before rotating. This may take a few minutes.

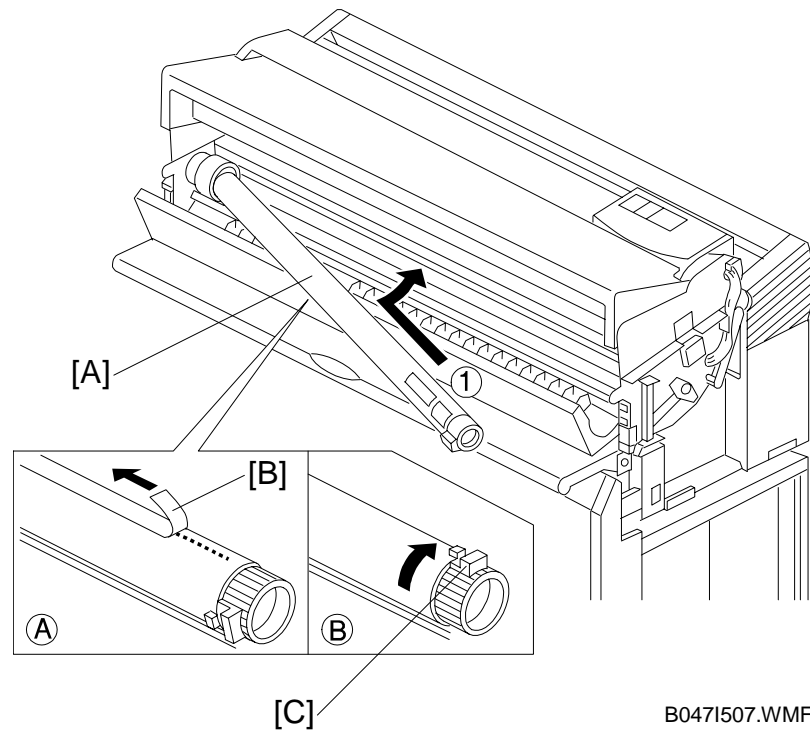
In this case, it is not necessary to use the SP mode to load the developer. Skip steps 13 to 16. After the developer is loaded from the development entrance, turn off the main switch to stop the main motor. Pour in the second 1 kg of developer.

13. To begin main motor rotation, enter the SP INPUT/OUTPUT mode by pressing the following keys on the operation panel:
 Clear Mode key [A]
 + key [B]
 + key [B]
 Clear/Stop key [C]
 Clear/Stop key [C] again and hold for at least 3 seconds.
14. After 3 seconds, the wrench and toner end indicators will blink (SP INPUT/OUTPUT mode).
15. Use the + and – keys [D] to select 23, then press the RF Select key [E]. The main motor will begin rotating.
16. Press the RF Select key to stop the main motor once the developer is loaded from the development entrance. Pour in the second 1 kg of developer into the development unit evenly across its width (Total: 2 kg). Press the Clear Modes/Stand by key 3 times to leave the SP mode.



B4351508.WMF

17. To enter the SP mode, press the following keys on the operation panel:
 Clear key [A]
 + key [B]
 – key [C]
 Clear/Stop key [D]
 Clear/Stop key [D] again and hold for at least 3 seconds.
18. After 3 seconds. The roll paper end and call service indicators will blink (SP mode).
19. Using the + and – keys, select 36. Enter “1” by pressing the following keys.
 Function Select key [E]
 + key
 RF Select key [F]
 This begins the developer initialization. Initialization takes about five minutes, after which the copier will automatically return to the normal operation mode.

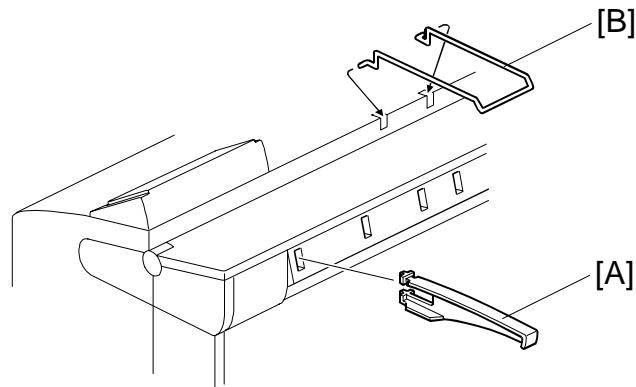


B047I507.WMF

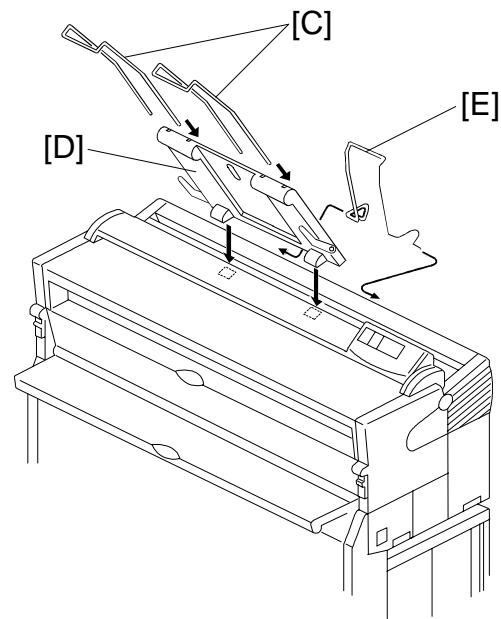
Installation

20. Install the toner cartridge [A] as shown.

- 1) Shake the cartridge 5 to 10 times and insert it into the toner hopper.
- 2) Peel off the green tape [B] from right to left to expose the clear tape and toner supply holes.
- 3) Rotate the knob [C] of the cartridge clockwise until it stops.



B047I506.WMF



B047I509.WMF

B048 copier only (step 21)

21. Install the original guides [A] and original guide wire [B].

B047 copier only (step 22 and 23)

22. Attach the guide wires [C] to the copy tray [D].

23. Install the copy tray [D] and copy guide [E].

Both copiers (step 24 and 25)

24. Reinstall all the covers.



25. Check the copy quality and copier operation.

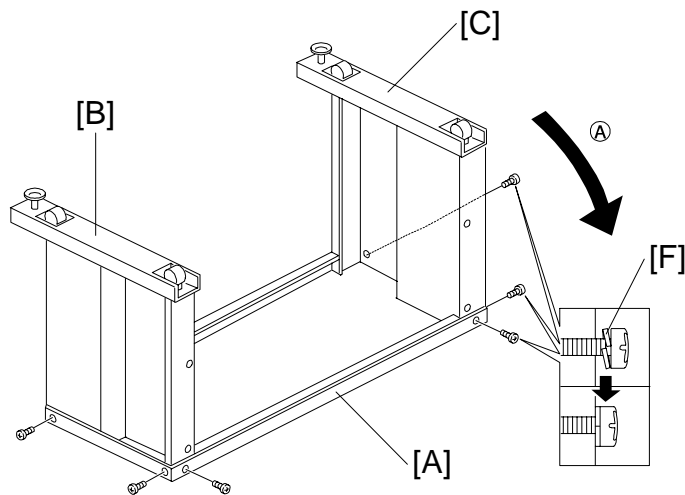
26. Install the optional roll feeder. (Refer to the Roll Feeder 1 and 2 Installation procedures)

NOTE: While the roll feeder is optional for the B047, it is required for the B048. You must install a roll feeder for the B048 to function properly.

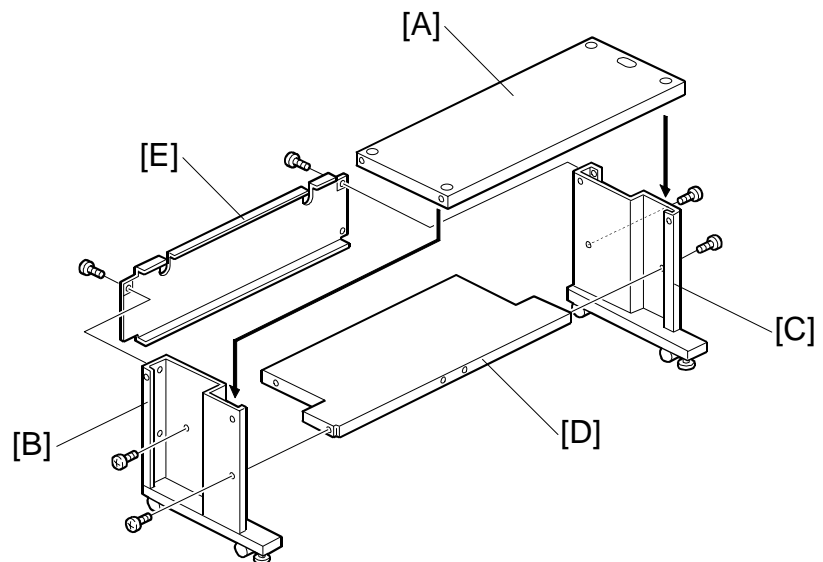
3.2.2 TABLE (B439)***Accessory Check***

Check the accessories and their quantities according to the following list:

Top Plate	1
Left Side Plate	1
Right Side Plate	1
Middle Plate	1
Rear Cover	1
Screws with Spring Washers – M4x8	14



B439I500.WMF



B439I551.WMF

1. Loosely install the top plate [A], left [B], and right side plate [C] (6 screws).
2. Turn the table up-side down. Be sure to rotate it as shown in the illustration.
3. Install the middle plate [D] and rear cover [E] (4 screws each).
4. Tighten all the screws until the spring washers [F] are completely flat.
5. Turn the table right-side up.

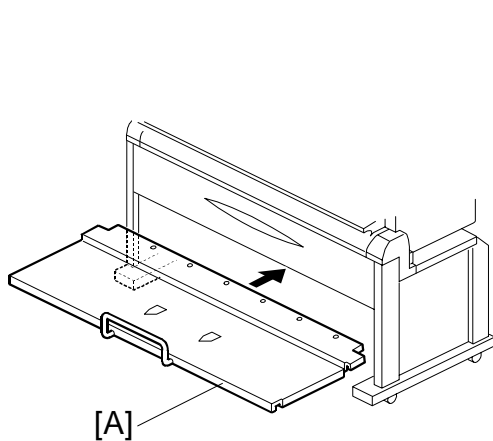
3.2.3 COPY TRAY (B440)

Accessory Check

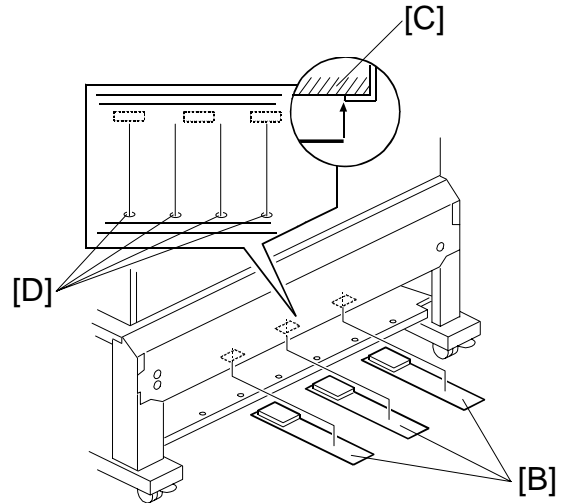
Check the accessories and their quantities against the following list:

Copy Tray Stay	1
Copy Tray Support.....	1
Copy Tray Guides.....	2
Copy Tray Sheets (with rubber pads)	3
Rear Copy Trays.....	3
Copy Tray Stoppers.....	2
Stepped Screws – M4.....	2
Screws with Flat Washers – M4x6.....	6
Tray Sheet Guides.....	3
Rear Copy Tray Sheets (no rubber pads).....	3

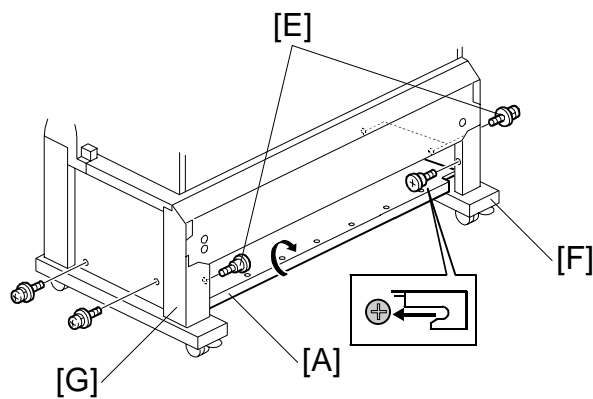
NOTE: The copy tray is an option for the B048 copier. When the copy tray is installed on the copier, the roll feeder (B435/B436) is required.



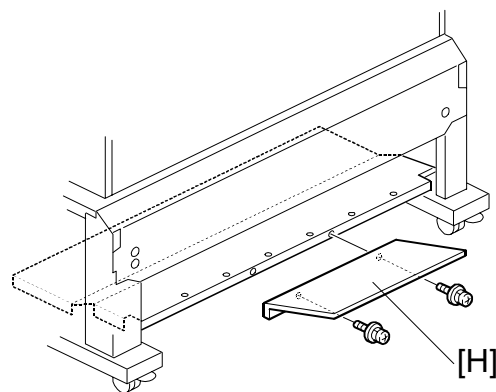
B440I117.WMF



B440I118.WMF

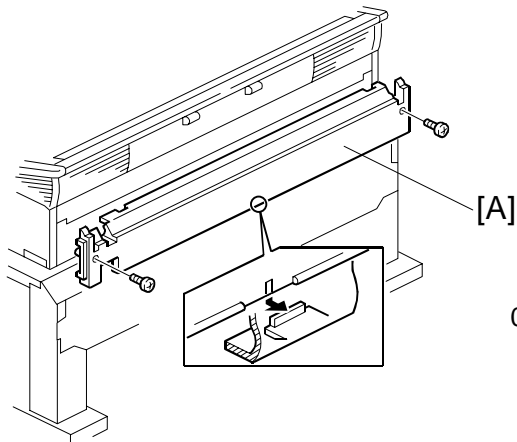


B440I121.WMF

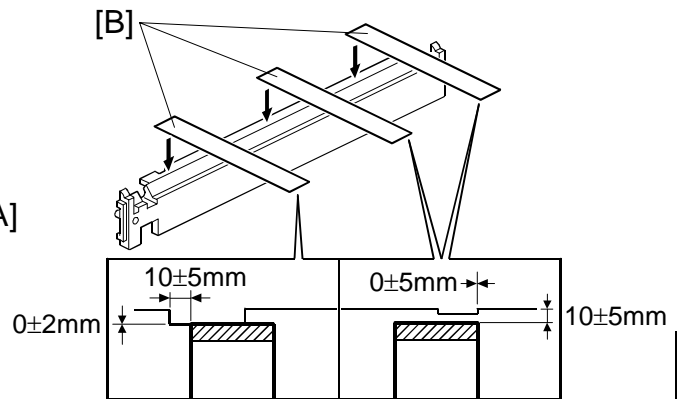


B440I119.WMF

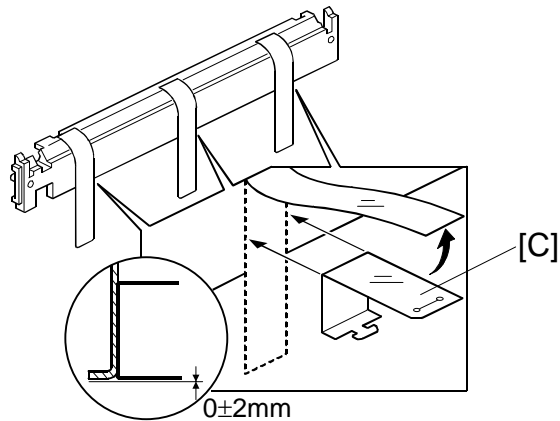
1. Place the copy tray stay [A] under the copy tray as shown.
2. Adhere the copy tray sheets (the Mylar strips with rubber pads) [B] to the table's middle plate [C]. Make sure the center copy tray sheets is positioned between the screw holes [D] on the copy tray as shown. The left and right copy tray sheets should be positioned over the screw holes.
3. Lift the copy tray stay and install the two stepped screws [E] to the left and right side plates [F, G]. After the screws are in place, hook the copy tray stay [A] on the screws. Then secure it to the left and right side plates (2 screws for each: M4x6 with flat washers).
NOTE: Be careful when installing the copy tray stay. Do not scratch the surface of the table.
4. Install the copy tray support [H] (2 screws: M4x6 with flat washers).



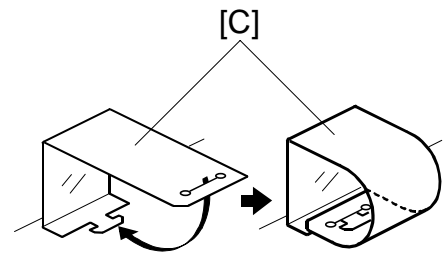
B440I113.WMF



B440I114.WMF

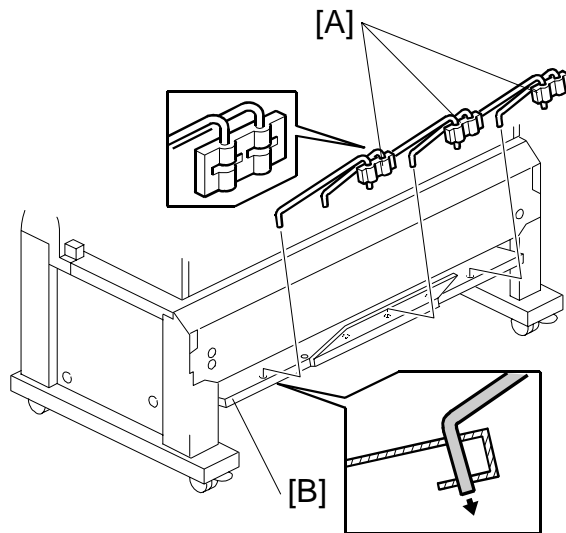


B440I115.WMF

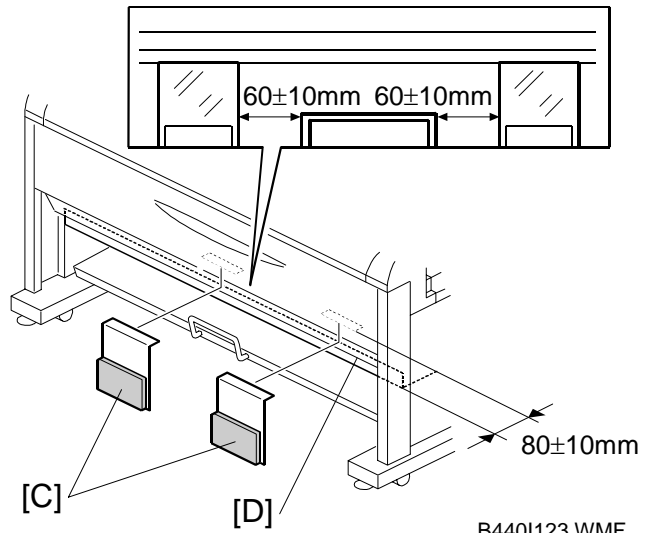


B440I116.WMF

5. Remove the rear cover [A] (2 screws).
6. Attach the rear copy tray sheets [B] and the tray sheet guides [C] to the rear cover as shown.
7. Install the rear cover (2 screws).



B440I120.WMF



B440I123.WMF

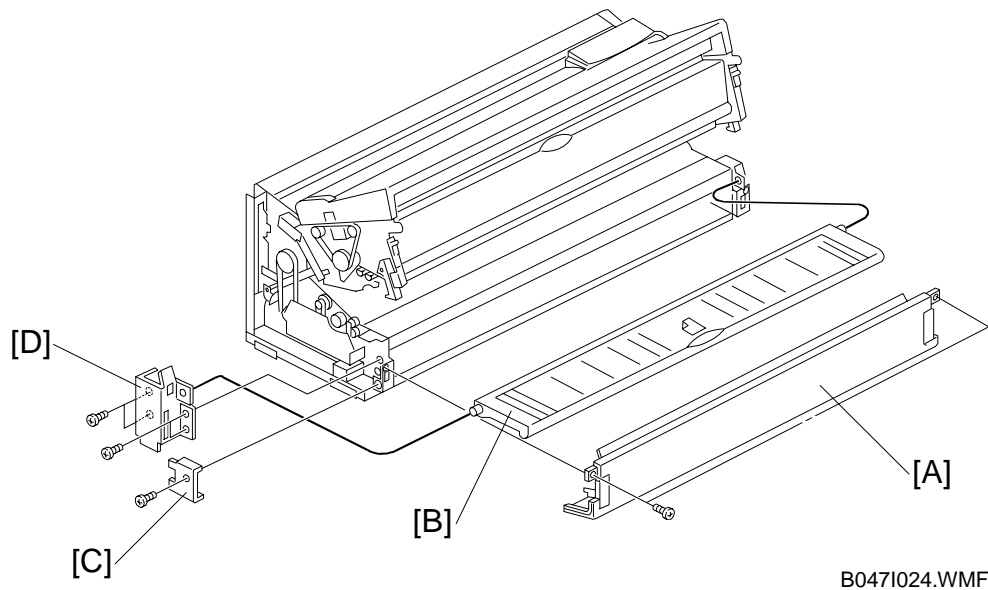
8. Hook the rear copy trays [A] onto the copy tray stay [B].
9. Attach the copy tray stoppers [C] onto the bottom of the middle plate [D].

3.2.4 ROLL FEEDER1 AND 2 (B435/B436)

Accessory Check

Check the accessories and their quantities according to the following list:

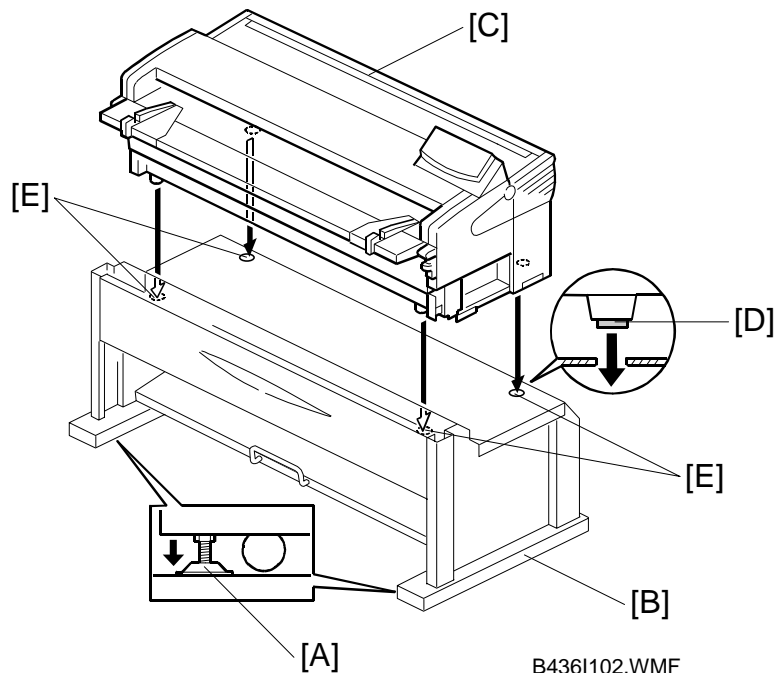
Harness Covers	2 pcs
Ground Plates.....	2 pcs
Roll Feeder Drive Board	1 pc
Left Joint Bracket.....	1 pc
Right Joint Bracket.....	1 pc
Screws – M4x8 (Blue).....	4 pcs
Screws – M4x8 (Silver).....	10 pcs
Screws with Flat Washers – M4x10.....	2 pcs
Screw with a Spring Washer – M4x8.....	1 pc
Screws with Flat Washers – M3x6.....	2 pcs
Left Joint Cover.....	1 pc
Right Joint Cover	1 pc
Harness Clamp	2 pcs
Paper Holder	
1 Roll	2 pcs
2 Roll	4 pcs
Guide Plate	1 pc
Front Joint Cover	1 pc
Cutter Blade Caution Decal (-27 only)	1 pc
Joint Harness.....	1 pc



Preparation for the B047 copier on the roll feeder.

When B047 copier is placed on the roll feeder, first remove the lower front cover [A] and the manual feed table [B] for installation.

1. Remove the lower front cover [A] (2 screws), reinforcement plate [C] (1 screw), bracket [D] (4 screws) (which is hung by the harness), and the manual feed table [B].
2. Put back the bracket and reinforcement plate.



⚠ CAUTION

1. Unplug the main machine's power cord before starting the following procedure.
2. Before starting the installation, make sure the machine is level.
3. The copier is very heavy (85 kg, 187 lbs). To avoid serious injury, make sure that you have a sufficient number of people to assist you. It takes at least two people to lift the copier safely.
4. Please be careful not to get your hand caught under the copier as you place the copier onto the roll feeder.

1. Lower the feet [A] (4 feet) so that the roll feeder [B] does not move while the copier [C] is being installed.

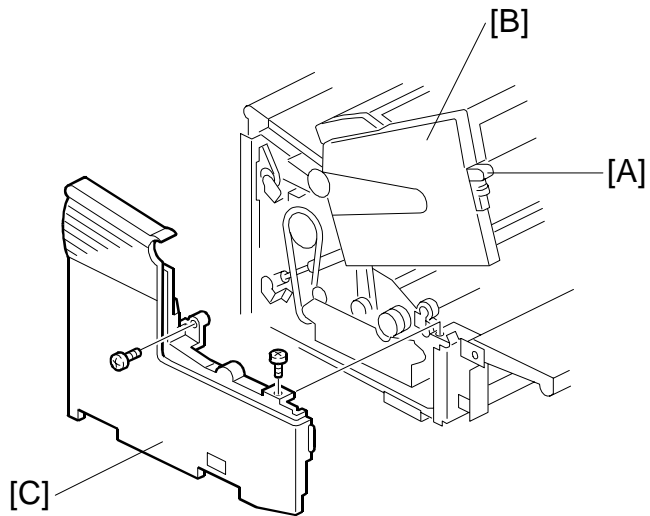
⚠ CAUTION

Do not open the paper tray until the copier is placed on top of the roll feeder. The paper tray drawer is very heavy. Without the copier weight to hold it down, the roll feeder will fall over. The tray is shipped with a safety latch holding the drawer shut.

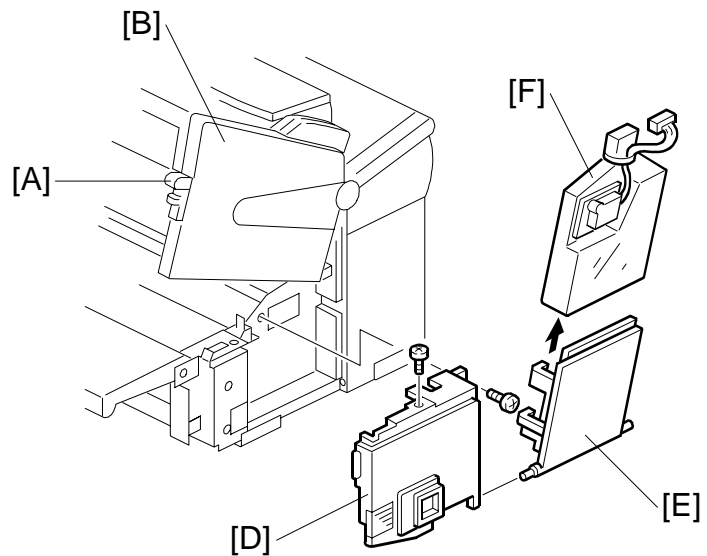
2. Place the copier on the roll feeder. Fit the copier feet [D] into the roll feeder holes [E].

⚠ WARNING

The copier is not attached to the roll feeder. Pushing the copier too hard may cause it to fall. While moving the copier, always push the roll feeder.

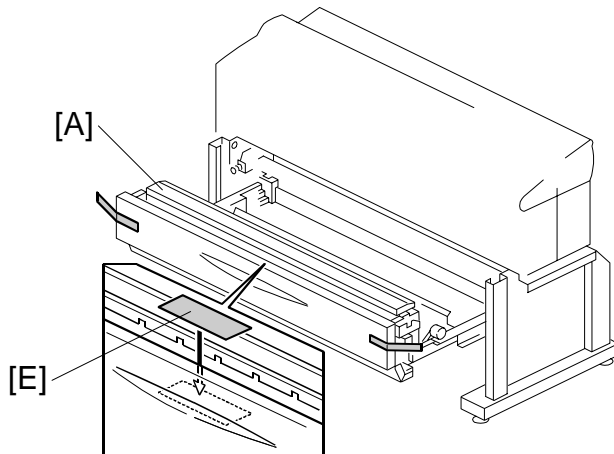


B435I507.WMF

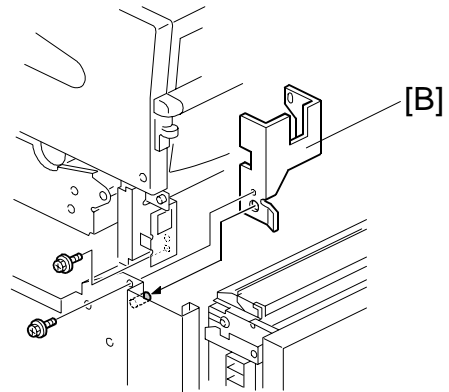


B435I506.WMF

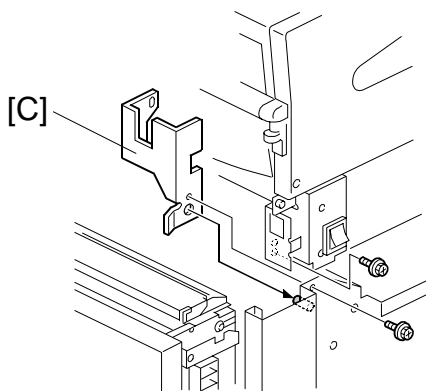
3. Release the lock lever [A] and open the copier paper path section [B].
4. Remove the copier's left lower cover [C] (2 screws), lower right front cover [D] (2 screws), lower right middle cover [E], and toner collection bottle [F] (1 connector).



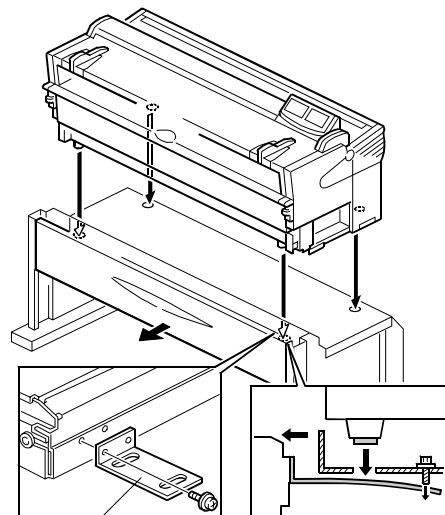
B435I101.WMF



B435I105.WMF



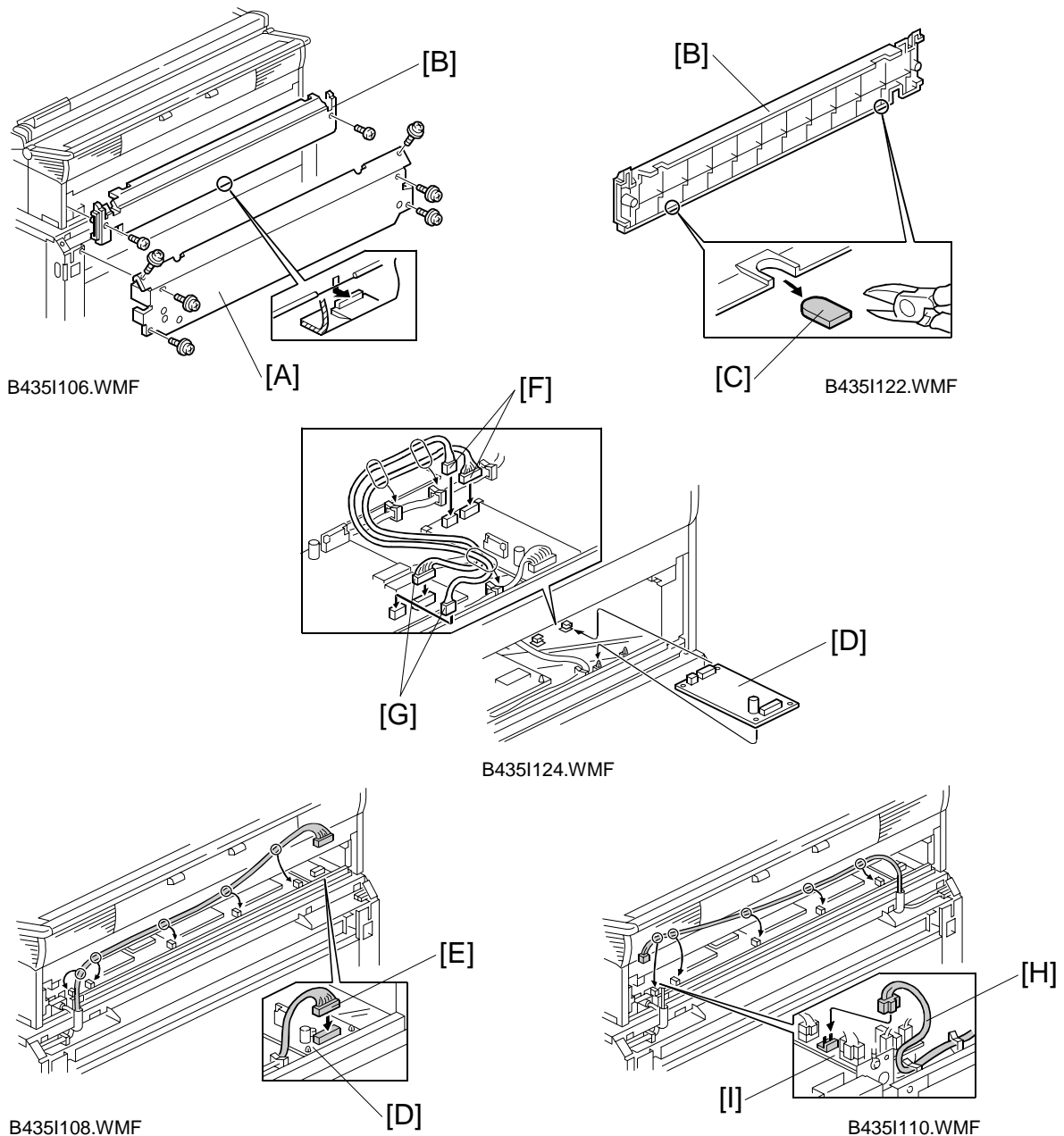
B435I104.WMF



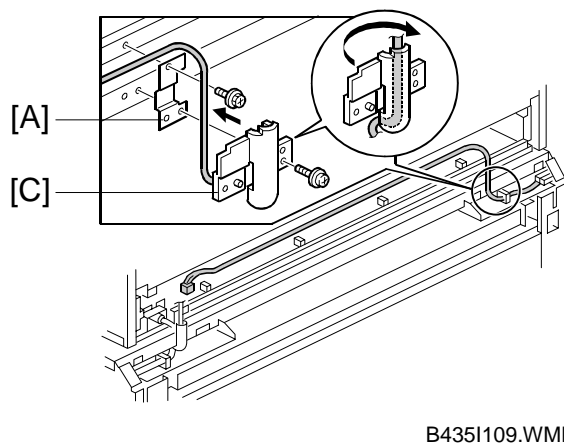
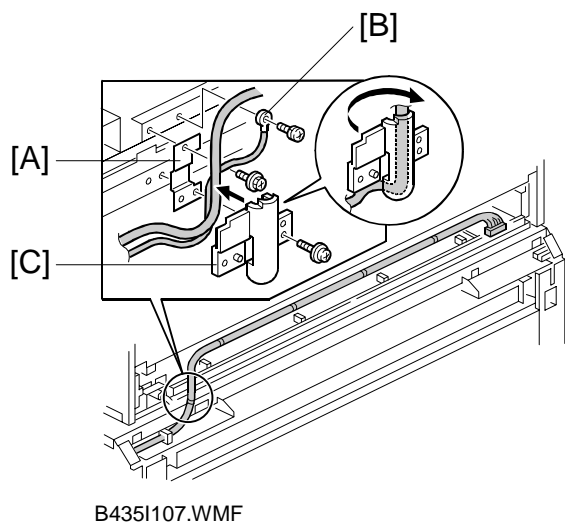
[D]

B435I127.WMF

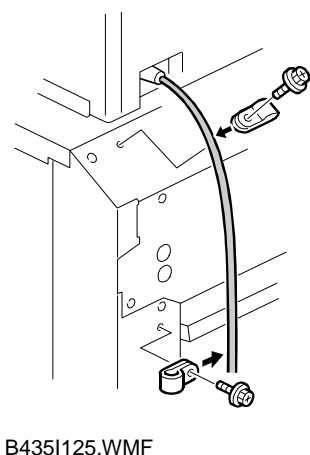
5. Pull out the paper tray [A] and install the left [B] and right [C] joint brackets (2 screws each: blue).
6. Remove the paper tray stopper [D] (1 screw).
NOTE: After the copier has been placed on the roll feeder, the paper tray can be pulled out and the paper tray stopper can be removed.
7. If necessary, adhere the appropriate language cutter blade caution decal [E] over the English decal on the paper tray as shown (-27 only).



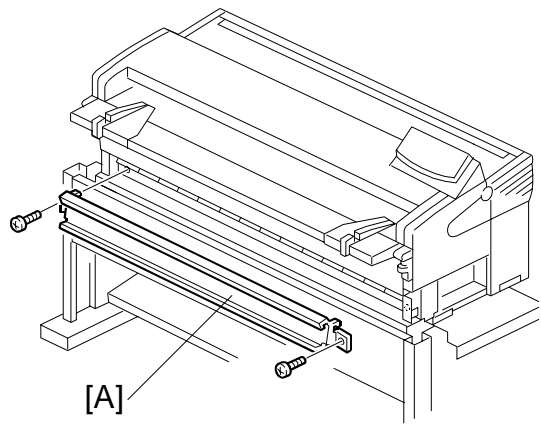
8. Remove the roll feeder's rear cover [A] (6 screws).
9. Remove the copier's rear cover [B] (2 screws).
10. Remove the small caps [C] from the copier's rear cover using cutting pliers.
11. Install the roll feeder drive board [D].
12. Connect the following harness connectors as shown.
 - DC harness [E] — Roll Feeder Drive board
 - Joint harness [F] — Roll Feeder Drive board
 - Joint harness [G] — Copier Main Control board (3 clamps)
 - AC harness [H] — AC Drive board [I]



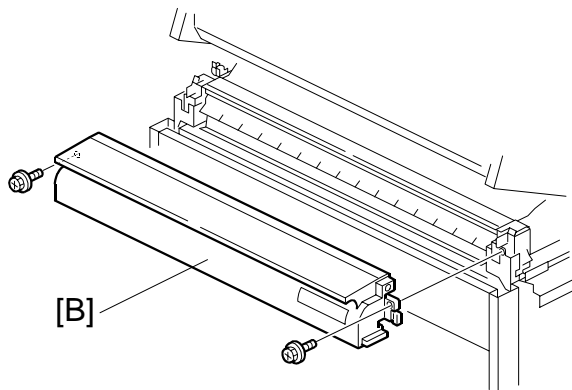
Installation



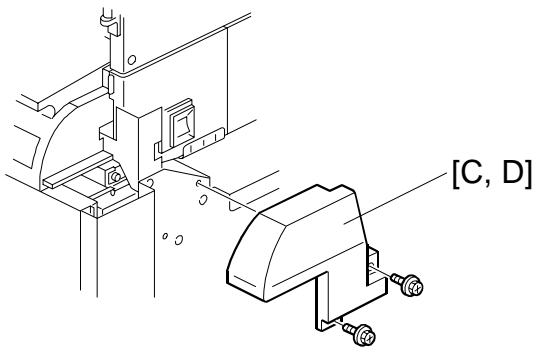
13. Install the grounding plates [A] (1 screw for each: M4x8).
14. Secure the grounding wire [B] (1 screw: M4x8 with a spring washer) to the copier.
NOTE: To ensure proper grounding, tighten the ground wire's screws until the spring washer is completely flat.
15. Install the harness covers [C] (1 screw for each: M4x10 with flat washers).
NOTE: Fold the harness covers around the harness, then attach with a single screw.
16. Reinstall the rear cover of the roll feeder (6 screws).
17. Clamp the power cord to the rear cover of the roll feeder (2 screws: M4x8).
18. Put back the copier's rear cover.



B436I103.WMF

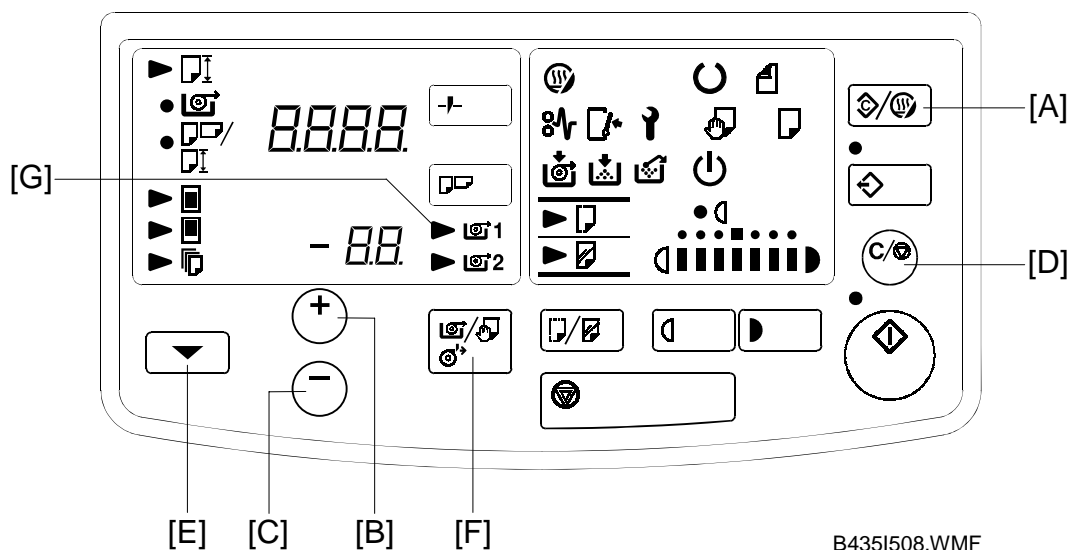


B435I111.WMF



B435I112.WMF

19. Hook the guide plate [A] on the copier and then secure it (2screws: M4x8).
20. Install the front joint cover [B] (2 screws: M3x6 with flat washers).
21. Reassemble the copier.
22. Install the left and right joint covers [C, D] (2 screws for each: M4x8 each).



B435I508.WMF

Length	300	PRG. NO.	1100	PRG. NO.
Temperature				
NORMAL	XX	42	XX	45

23. Plug in the power supply cord and turn on the main switch.
24. To enter the SP mode, press the following keys on the operation panel:
 Clear Modes key [A]
 + key [B]
 - key [C]
 Clear/Stop key [D]
 Clear/Stop key [D] again and hold it for at least 3 seconds.
25. After 3 seconds, the roll paper end and call service indicators will blink (SP mode).
26. Select 40 using the + and - keys. Enter "1" (B435: 1 roll) or "2" (B436: 2 rolls) by pressing the following keys.
 Function Select key [E]
 + key
 RF Select key [F].
27. To set the paper cut length adjustments, input values into SP modes 42 and 45 as listed on the decal attached to the right side plate.
NOTE: 1) When the values for SP modes 42 and 45 are set, the paper cut length adjustment values for vellum and film are automatically entered (SP modes 43, 44, 46 and 47).
 2) In the case of the 2 roll feeder, you must enter values for both the 1st and 2nd roll. The value for the 1st roll can only be entered when the corresponding indicator [G] is blinking (same for 2nd roll). Use the Function Select Key to switch between the two rolls.
28. Press the Clear Modes key 3 times to leave the SP mode.
29. Check the roll feeder operation.

3.2.5 ROLL CUTTING RAIL (B437)

The installation is identical to that of the A163 copier's roll cutting rail (A570). Please refer to the A163 service manual for details. The roll cutting rail and the roll feeder cannot both be installed on the same machine at the same time.

4. SERVICE TABLES


4.3 SERVICE TOOLS

4.3.1 SERVICE PROGRAM MODE

Service Program Mode Table

1. A “*” before the mode number means that the mode can be accessed by customers or sales representative.
2. In the data column, the default value is printed in bold letters.
The default settings for several items depend on the machine destination (refer to page 4-28.).

Mode No.		Function	Data
*1	Fusing Temperature 1 (Normal)	Selects the fusing temperature for plain paper.	0: Mode 1 1: Mode 2 2: Mode 3 3: Mode 4 4: Mode 5 5: Mode 6 6: Mode 7
*2	Fusing Temperature 2 (High)	Selects the fusing temperature for translucent paper.	0: Mode 5 1: Mode 6 2: Mode 7 3: Mode 8
*3	Fusing Temperature 3 (Low)	Selects the fusing temperature for translucent film.	0: Mode 2 1: Mode 3 2: Mode 4 3: Mode 5
*4	Copy Count Up/Down	Select whether the user display panel counts up or down.	0: Up 1: Down
*5	Beeper On/Off	Turns the beeper on and off.	0: On 1: Off 2: Turn the beeper off when holding the button down to rapidly change the edge margin or paper length.
*6	Paper Feed Out Waiting Time Setting	Sets the copy time-out. Begins timing when a sheet of copy paper has been manually fed, or if the Roll Feed Select key is pressed. If a copy is not made within the specified time limit, the copy paper is ejected.	0: 2 minutes 1: 1 minute 2: 3 minutes 3: 4 minutes 4: 5 minutes
*7	Manual Feed Start Time Setting	Sets the manual feed delay. The timer begins when the entrance sensor detects the paper's leading edge. Once the specified time has passed, the registration rollers start rotating.	0: 2 seconds 1: 0.7 second 2: 1 second 3: 3 seconds 4: 4 seconds 5: 5 seconds

Mode No.		Function	Data
*8	Leading Edge Increase/Decrease Speed Setting	This sets the speed at which the leading edge setting increases or decreases. When the customer holds down the + or – key, there is a brief pause. After a selected number of 0.25 second intervals (See SP 12), the values begin to change at the selected speed.	Changes every: 0: 0.1 second 1: 0.50 second 2: 0.25 second 3: 0.05 second 4: 0.02 second
*9	Auto Reset Time Setting	Sets the delay for the auto reset. After finishing a copy job, the machine will wait the specified amount of time. If no other jobs are begun, it will then automatically reset the copy settings to its default values.	0: 2 minutes 1: 1 minutes 2: 3 minutes 3: 4 minutes 4: 5 minutes 5: No auto reset
*10	Auto Energy Saver Mode	Enables and disables the auto energy saver mode. If enabled, the machine will automatically go into energy saver mode after it auto resets.	0: No 1: Auto Energy Saver Mode
*11	Screen Message Setting	Selects one of the options indicated on the display in the energy saver mode.	0: None 1: Pre-HEAt 2: Hello i lovE yoU 3: 0 1 2 3 4 5 6 7 8 9 4: SLEEPinG 5: HavE A Good dAy.
*12	Leading Edge Increase/Decrease Adjustment Preliminary Interval	When the user hold downs the + or – key to change the leading edge margin, print number or paper length, there is a pause before the values begin to change rapidly. This paused is measured in 0.25 second intervals.	0: 3 intervals 1: 1 intervals 2: 2 intervals 3: 10 intervals
*13	Original Feed Out Waiting Time Setting	Sets the original time-out. The timer begins when an original is placed on the original table in manual feed mode (B048 copiers only). After the selected time, the original is automatically ejected.	0: 2 minutes 1: 1 minute 2: 3 minutes 3: 4 minutes 4: 5 minutes 5: No auto feed out
*14	Original Feed Start Time Setting	Sets the delay between when the original entrance sensor or original rear sensor is actuated, and when the original feed roller begins rotating (B048 copier only).	0: 1 second 1: 2 seconds 2: 3 seconds 3: 4 seconds 4: 5 seconds 5: 6 seconds 6: 7 seconds
*15	Auto Shut-off Time Setting	Determines the auto shut-off time.	1 ← 30 → 240
*16	Original Hold Mode	After original scanning is finished, the original exit roller stops before completely feeding out the original. This prevents the original from falling onto the floor after scanning. The original is fed out when the  key is pressed or when the next original is inserted into the rear feed. (B048 copier only).	0: No 1: Original Hold mode

Mode No.		Function	Data
*17	Length Size Magnification	Adjusts the speed of the original feed motor (B048 copier only). The setting can be changed by the key operation.	-1.0 ← 0.0 → 1.0 Shorter Longer
*18	Semi-synchro Cut Original Scanning Mode	Sets the cutting method for semi-synchro cut mode (B047 copiers only). When using the default method, the user must manually press the roll paper cut key as the trailing edge of the original passes the table's edge. When using the alternate method, the user feeds the original once, and the original length is measured. The user then feeds the original a second time, and it is scanned and copied. The copy is automatically cut to the appropriate length.	0: Pressing the roll paper cut key 1: Inserting the original again
*19	Synchro-cut Length Adjustment	Adjusts the cut length in the semi-synchro cut mode (B047 copier). Adjusts the cut length in the synchro cut, preset cut, and variable cut modes (B048 copier). The setting can be changed by a key operation.	-25 ← 0 → 25 Shorter Longer 1 mm/step
*20	Paper Length Count Up/Down Setting	Determines whether the paper length cycles down (to smaller sizes) or up (to larger sizes) when the preset cut key is pressed.	0: Down 1: Up
*21	Paper Length Up/Down Speed Setting	This sets the speed at which the paper length setting increases or decreases. When the customer holds down the + or - key, there is a brief pause. After a selected number of 0.25 second intervals (See SP12), the values begin to change at the selected speed.	0: 0.10 second 1: 0.5 second 2: 0.25 second 3: 0.05 second 4: 0.02 second 5: 0.01 second
*22	Fixed Paper Size Pattern Setting	Selects the fixed paper size pattern chosen when the "Preset Cut" key is pressed.	Refer to page 4-24.
*23 to *32	Optional Paper Size Setting	Up to 10 different paper size can be stored in SPs 23 to 32. If "19" is selected in SP No. 22, these values are used when the "Preset Cut" key is pressed.	UdEF: Undefined
*33	AOF	Auto off enable.	0: Disable 1: Enable
*34	Start Key Enable	Select whether the start key can be used as a start trigger.	0: Disable 1: Enable
35	All Indicators ON	Turns ON all indicators on the operation panel when the Roll Feed Select key is pressed.	0: No 1: All indicators on

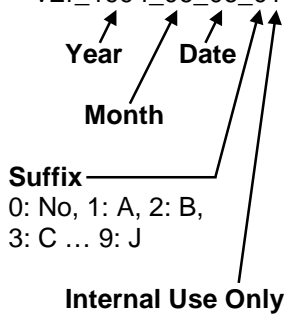
Mode No.		Function	Data																																
36	New Developer Initialization	Carries out the new developer initialization for 5 minutes. The machine counts down the remaining time on the display. After the initialization, the machine automatically adjusts the toner sensor output to 4.0 ± 0.1 V. During the toner sensor adjustment, "Adj" is displayed. When the adjustment is completed, the machine automatically returns to normal operating mode.	If the initialization is canceled before returning to the normal operating mode, do it again from the beginning. If the machine fails to adjust the toner sensor output, "E = 11" is displayed.																																
*37	Darker Image Density	<p>Sets the range of the ID density control to give finer control over darker images. Default level 3 shifts to new ID level 7 (see the chart for the new levels). ID level 8 to 14 cannot be shifted.</p> <p>The light sensor output and development bias will change as follows:</p> <table><tr><td>ID level</td><td>7</td><td>6</td><td>5</td><td>4</td><td>3</td><td>2</td><td>1</td></tr><tr><td>Default ID level</td><td>3</td><td>2.5</td><td>2</td><td>1.5</td><td>1</td><td>—</td><td>—</td></tr><tr><td>Light Sensor Output</td><td>0.9</td><td>0.9</td><td>0.88</td><td>0.84</td><td>0.8</td><td>0.8</td><td>0.8</td></tr><tr><td>Development Bias</td><td>160</td><td>140</td><td>120</td><td>120</td><td>120</td><td>80</td><td>60</td></tr></table>	ID level	7	6	5	4	3	2	1	Default ID level	3	2.5	2	1.5	1	—	—	Light Sensor Output	0.9	0.9	0.88	0.84	0.8	0.8	0.8	Development Bias	160	140	120	120	120	80	60	<p>0: Standard Density 1: Darker Image Density</p>
ID level	7	6	5	4	3	2	1																												
Default ID level	3	2.5	2	1.5	1	—	—																												
Light Sensor Output	0.9	0.9	0.88	0.84	0.8	0.8	0.8																												
Development Bias	160	140	120	120	120	80	60																												
38	Release Fusing Unit Service Call	Recovers from the fusing unit SC condition. After it has been recovered, the machine returns to its initial (power on) condition.	<p>0: Release SC 1: SC condition</p>																																
39	Not Used																																		
40	Roll Feeder Identification	<p>Sets up the installed roll feeder.</p> <p>When this value is changed, the settings in SP42 and SP45 are set to 0. These SPs then update the SPs linked to them. SP42 updates SP43 and SP44. SP45 updates SP46 and SP47. Each SP mode setting (SP43, 44, 45, and 47) can be changed independently in the appropriate SP mode.</p>	<p>0: No 1: Roll Feeder Installed (1 roll) 2: Roll Feeder Installed (2 rolls)</p>																																
41	Roll Feeder Speed Setting (Factory Use)	Adjusts the roll paper's feed speed.	<p>0: Standard -50 ← 0 → 50 Faster Slower</p>																																

Mode No.		Function	Data								
42	Roll Feeder Cutting Length Adjustment (300 mm, Plain Paper)	<p>Adjusts the cutting length of 300 mm in the plain paper mode.</p> <p>When this value is changed, the values for SP43 and SP44 are automatically changed according to the following table:</p> <table><tr><th>Inch versions</th><th>Meter versions</th></tr><tr><td>SP42 X</td><td>SP42 X</td></tr><tr><td>SP43 X</td><td>SP43 X - 0.4</td></tr><tr><td>SP44 X + 0.5</td><td>SP44 X + 0.5</td></tr></table> <p>If the settings in SP43 or SP44 exceed the maximum and/or minimum values, the maximum or minimum values are used instead.</p> <p>Note: The value for the 1st roll feed can only be input when the corresponding indicator is blinking (same for 2nd roll feed). Use the Function Select Key to switch between the two indicators.</p>	Inch versions	Meter versions	SP42 X	SP42 X	SP43 X	SP43 X - 0.4	SP44 X + 0.5	SP44 X + 0.5	<p>0: Standard</p> <p>-9.9 ← 0 → 9.9 mm</p> <p>Longer Shorter</p>
	Inch versions	Meter versions									
SP42 X	SP42 X										
SP43 X	SP43 X - 0.4										
SP44 X + 0.5	SP44 X + 0.5										
43	Roll Feeder Cutting Length Adjustment (300 mm, Translucent Paper)	<p>To adjust the cutting length of 300 mm in the translucent paper mode.</p> <p>Note: The value for the 1st roll feed can only be input when the corresponding indicator is blinking (same for 2nd roll feed). Use the Function Select Key to switch between the two indicators.</p>									
44	Roll Feeder Cutting Length Adjustment (300 mm, translucent Film)	<p>To adjust the cutting length of 300 mm in the translucent film mode.</p> <p>Note: The value for the 1st roll feed can only be input when the corresponding indicator is blinking (same for 2nd roll feed). Use the Function Select Key to switch between the two indicators.</p>									

Mode No.		Function	Data								
45	Roll Feeder Cutting Length Adjustment (1,100 mm, Plain Paper)	Adjusts the cutting length of 1,100 mm in the plain paper mode. When this value is changed, the values for SP46 and SP47 are automatically changed according to the following table:	0: Standard -50 ← 0 → 50 mm Longer Shorter								
		<table><tr><th>Inch versions</th><th>Meter versions</th></tr><tr><td>SP45 X</td><td>SP45 X</td></tr><tr><td>SP46 X - 1.0</td><td>SP46 X - 2.4</td></tr><tr><td>SP47 X + 0.8</td><td>SP47 X + 0.8</td></tr></table>		Inch versions	Meter versions	SP45 X	SP45 X	SP46 X - 1.0	SP46 X - 2.4	SP47 X + 0.8	SP47 X + 0.8
		Inch versions		Meter versions							
		SP45 X		SP45 X							
SP46 X - 1.0	SP46 X - 2.4										
SP47 X + 0.8	SP47 X + 0.8										
If the settings in SP46 or SP47 exceed the maximum and/or minimum values, the maximum or minimum values are used instead.											
Note: The value for the 1st roll feed can only be input when the corresponding indicator is blinking (same for 2nd roll feed). Use the Function Select Key to switch between the two indicators.											
46	Roll Feeder Cutting Length Adjustment (1,100 mm, Translucent Paper)	To adjust the cutting length of 1,100 mm in the translucent paper mode. Note: The value for the 1st roll feed can only be input when the corresponding indicator is blinking (same for 2nd roll feed). Use the Function Select Key to switch between the two indicators.									
47	Roll Feeder Cutting Length Adjustment (1,100 mm, Translucent Film)	To adjust the cutting length of 1,100 mm in the translucent film mode. Note: The value for the 1st roll feed can only be input when the corresponding indicator is blinking (same for 2nd roll feed). Use the Function Select Key to switch between the two indicators.									
48	Semi-synchro-cut Length Adjustment	Adjusts the cut length in the semi-synchro cut mode (B047 copier only).	-10 ← 0 → 10 Shorter Longer 0.1 %/step								
49	Main Motor Speed Adjustment	Changes the main motor speed.	0: Standard -9 ← 0 → 11 Slower Faster When making long copies, if the main motor speed is incorrect, rJ98 or rJ99 error messages will be displayed. Use this SP to make the necessary adjustments.								
50	Toner End Detection Setting	Determines the maximum number of copies (when A1 paper is used) that can be made after the toner near end condition has been detected.	0: 27 sheets 1: 9 sheets 2: 18 sheets 3: 36 sheets								


Mode No.		Function	Data
51	Toner Overflow Detection Setting	Determines the maximum copy length that can be made after the toner near overflow condition has been detected.	0: 30 m 1: 6 m 2: 53 m 3: 77 m 4: 100 m 5: 142 m
52	Used Toner Counter	Indicates the maximum copy length that can be made before the used toner near overflow condition is triggered This counter is automatically cleared when the toner overflow condition is cleared after emptying the used toner in the bottle.	tF=XX,XXX (Beeper)
53	Used Toner Counter Clear	Manually clear the used toner counter.	0: Full toner condition is not detected 1: Full toner condition is detected. To clear the counter, input "0" even if "0" is already indicated.
54	Developer Warm-up Setting	Sets the developer agitation time. If the fusing temperature is lower than 60°C when the main switch is turned on, the main motor rotates for the set amount of time, generating a triboelectric charge on the developer and toner.	0: 50 seconds 1: 2 minute 2: 3 minute 3: None
55	Paper Length Limit Setting	Determines the maximum paper length. Note: If paper longer than 2,000 mm is used, you may experience skewed or creased copies, poor fusing, or damage to the original.	(In mm mode) 0: 3,000 mm 1: 3,600 mm 2: 5,200 mm 3: 6,800 mm 4: 8,400 mm 5: 9,999 mm (In inch mode) 0: 118.0 inch 1: 160.0 inch 2: 240.0 inch 3: 320.0 inch 4: 400.0 inch 5: 480.0 inch
56	Copy Number Limit Setting	Determines the maximum number of copies. The default settings for the B047 and B048 copiers are different.	0: 99 sheets (B047) 1: 10 sheets (B048) 2: 20 sheets 3: 30 sheets 4: 40 sheets 5: 50 sheets 6: 60 sheets 7: 70 sheets 8: 80 sheets 9: 90 sheets

Mode No.		Function	Data
57	Emergency Stop Key Function Setting	<p>Determines how the emergency stop key functions.</p> <p>When set to 0, the emergency stop key only stops the original drive.</p> <p>When set to 1, it stops the original drive, main motor drive, and roll feed drive (B048 copier only).</p> <p>When a roll runs out of paper, if a layer of white paper remains wrapped around the core, the machine might not detect the paper end condition. This can cause a noise or a Wrong Paper Feed error. If this SP is set to 1, you can use the emergency stop key to recover from this error.</p>	<p>0: Only original drive 1: Original, main motor, roll feed drives.</p>
58	Repeat Copy Length Limit Setting	Determines the maximum copy length for multiple copies (B048 copier only).	<p>0: 1,200 mm/48 inch 1: The maximum paper length determined by SP55.</p>
59	Misfeed Special Recovery Mode	While the Emergency Stop key is held down, power is still supplied to the main motor and registration clutch.	<p>0: No 1: Misfeed Special Recovery Mode</p>
60	Fixed Paper Length Special Mode	Adjusts the size of the selected preset paper size. Each time the +/- keys are pressed while holding down the Preset Cut key, the preset paper size is adjusted by the amount selected in SP 61.	<p>0: Normal 1: Fixed Paper Length Special Mode</p>
61	Fixed Paper Length Special Mode	Selects the interval of each step for SP60.	<p>(In mm mode) 0: 100 mm 1: 50 mm 2: 60 mm 3: 120 mm 4: 200 mm 5: 240 mm 6: 250 mm 7: 500 mm 8: 600 mm</p> <p>(In inch mode) 0: 10.0 inch 1: 5.0 inch 2: 6.0 inch 3: 12.0 inch 4: 20.0 inch 5: 24.0 inch 6: 25.0 inch 7: 50.0 inch 8: 60.0 inch</p>

Mode No.		Function	Data
62	Special Toner Supply Mode	In the energy saver mode, 10% toner supply is done while the "Emergency Stop" key is pressed. Toner sensor voltage is displayed on the "Paper Length" indicator. If the voltage is lower than 1 V, toner is not supplied.	0: No 1: Special Toner Supply Mode
63	Not Used		
64	SP Mode Display Speed Setting	Sets the display speed.	0: 300 ms/letter 1: 100 ms/letter 2: 200 ms/letter 3: 400 ms/letter 4: 500 ms/letter
65	ROM Version Display	Indicates the ROM version.	Example: vEr_1994_06_06_01  <p>Suffix 0: No, 1: A, 2: B, 3: C ... 9: J</p> <p>Internal Use Only</p>
66	RAM Abnormal Condition Check	The value is set based on the RAM check. Shows the condition of the back-up RAM.	The condition of the RAM is checked when the machine is powered on. 0: Normal 1: Abnormal
67	Machine Operation Counter	Displays the total time (hours) that the machine has been in operation (total time the motor has been rotating).	dc = X,XXX
68	Not Used		
69	Total Copy Length/Number Display (Feet)	Displays the total copy length in feet.	SP69: t6 =XXX,XXX
70 to 75	Total Copy Length/Number Display	Displays the total copy length/number according to the following units. SP70 = Yard SP71 = meter SP72 = 100 inches SP73 = 50 inches SP74 = A1 length (594 mm) SP75 = sheet (any size)	SP70: t0 = XXX,XXX SP71: t1 = XXX,XXX SP72: t2 = XXX,XXX SP73: t3 = XXX,XXX SP74: t4 = XXX,XXX SP75: t5 = XXX,XXX
76	OPC Counter	Displays the total length of copies (in meters) on the current OPC drum.	d0 = XX,XXX This counter should be cleared when the OPC drum is replaced. (SP#-1)
77	Developer Counter Display	Displays the total length of copies (in meters) on the current developer.	dE = XX,XXX This counter is automatically cleared when new developer is initialized.

Mode No.		Function	Data
78	Toner Counter Display	Displays the total length of copies (in meters) on the current toner cartridge	dT = XX,XXX This counter is automatically cleared when a new toner cartridge is installed.
79	Toner Supply Level Indication	Indicates the present toner sensor level.	dL = ab - - c a: Toner density setting n, H, L b: TS level 0 ~ 5 c: Copy number step 0: ~ 30 m 1: ~ 60 m 3: ~ 90 m 4: ~ 120 m 5: ~ 150 m 6: 150 m ~
80	Developer Initialization Number Counter	Displays the total number of times the developer has been initialized (SP36). Also displays the value of the developer counter (SP77) when the last developer initialization was performed.	dnF = XX (total number of developer initializations) Hde = XX,XXX (developer counter at the last developer initialization)
81	Toner End Number Counter	Displays the total number of toner end conditions (dtE). Also, displays the toner counter (SP78) at the last toner end condition (Hdt).	dtE = XX Hdt = XX,XXX
82	Toner Near End Counter	Displays the total number of toner near end conditions (dtn). Also, displays the toner counter (SP78) when the last toner end condition was triggered (Hdt).	dtn = XX Hdt = XX,XXX
83	Roll Feed Speed Adjustment (translucent paper)	Adjust the roll feed speed for translucent paper.	-50.0 ← 0 → 50.0 10 steps = 0.09%
84	Roll Feed Speed Adjustment (film)	Adjust the roll feed speed for film.	-50.0 ← 0 → 50.0 10 steps = 0.09%
85	Number of Misfeeds by Location	Displays the total number of jams by location.	Jt = X,XXX (Total Jam) J1 ~ J8 (initial jam) J10 ~ J45 (original jam) J51 ~ J72 (copy paper jam) J80 ~ J99 (roll feeder paper jam)

Mode No.		Function	Data
86	Misfeed Record Display	Displays the locations of the last five misfeeds. Locations are displayed one at a time.	J1 = XX (Last jam) ↓ J2 = XX (1 before the last jam) ↓ J3 = XX (2 before the last jam) ↓ J4 = XX (3 before the last jam) ↓ J5 = XX (4 before the last jam) ↓ Beeper (XX = Jam Location)
87	Preset Cut Adjustment (3,000 mm, plain paper)	Adjust the cutting length of 3,000 mm.	-20 ← 0 → 20 1 step = 1 mm
88	Preset Cut Adjustment (3,000 mm, translucent paper)	Adjust the cutting length of 3,000 mm.	-20 ← 0 → 20 1 step = 1 mm
89	Preset Cut Adjustment (3,000 mm, film)	Adjust the cutting length of 3,000 mm.	-20 ← 0 → 20 1 step = 1 mm
90	Number of Service Call by Location	Displays the total number of service calls (SC) and lists the SCs by location.	Et = X,XXX (total SCs) E1 ~ E15 (each SC)
91	Service Call Records	Displays the last five service calls. SCs are displayed one at a time.	E1 = XX (The last SC Xcode) E2 = XX (1 before the last SC code) E3 = XX (2 before the last SC code) E4 = XX (3 before the last SC code) E5 = XX (4 before the last SC code) Beeper (XX = SC code)
92 to 99	Not Used		


Mode No.		Function	Data
-1	RAM Clear	<p>Clears selected data items from the RAM. To clear the memory, input the number of the item you want to delete, then press the  key.</p> <p>Note: If all the memory is cleared (if a number from 20 to 28 is selected), you must reenter the roll cutter settings from the decal attached inside the upper right cover. Please refer to page 4-14 for the default settings for each destination. (When No. 10 to 26 is selected.)</p>	0: Not Used
			1: Machine Operation (The memory for SP67)
			2: Copy Length Counter (SP69 to 75)
			3: OPC Counter (SP76)
			4: Developer Counter (SP77) ^(*Note1) / Developer Initialization Number (SP80)
			5: Toner Counter (SP78)/ Toner End Number (SP81)/Toner Near End Number (SP82)
			6: Counter for toner density step. ^(*Note2)
			7: Clear data No.1 to 9 and 53.
			8: SC Counter (SP90 to 91)
			9: Jam Counter (SP85 to 86)
			10: Change the settings to the Japan version
			11: Change the settings to the U.S.A. version
			12: Change the settings to the Europe version
			13: Change the settings to the Asia version
			14: Change the settings to the NRG version
			15: Change the settings to other version 1
			16: Change the settings to other version 2
			17: Change the settings to other version 3
			18: Not Used
			19: Not Used
			20: Clear all the memory and change the settings to the Japanese version

***Note1:**

This counter is not used for the toner density step control (described on page 2-16 in the A163 manual).

***Note2:**

For the toner density step control, this counter counts down from 150 (m) to 0 (m) after the developer initialization. When the developer initialization is done, this counter is set to 150 and after 150 m of copies, the counter stays at 0. If this counter is cleared, the counter is set to 0.

Mode No.		Function	Data
-1	RAM Clear	<p>Clears selected data items from the RAM.</p> <p>To clear the memory, input the number of the item you want to delete, then press the  key.</p> <p>Note: If all the memory is cleared (if a number from 20 to 28 is selected), you must reenter the roll cutter settings from the decal attached inside the upper right cover. Please refer to page 4-25 for the default settings for each destination. (When No. 10 to 26 is selected.)</p>	<p>21: Clear all the memory and change the settings to the U.S.A. version</p> <p>22: Clear all the memory and change the settings to the Europe version</p> <p>23: Clear all the memory and change the settings to the Asia version</p> <p>24: Clear all the memory and change the settings to the NRG version</p> <p>25: Clear all the memory and change the settings to other Other 1 version</p> <p>26: Clear all the memory and change the settings to other Other 2 version</p> <p>27: Clear all the memory and change the settings to other Other 3 version</p> <p>28: Not Used</p> <p>29: Not Used</p> <p>30: Clear all the memory</p>
-2	Total Counter Unit Setting	Selects the unit which the total counter counts by.	<p>0: 1 yard</p> <p>1: 1 m</p> <p>2: 100 inches</p> <p>3: 50 inches</p> <p>4: A1 length (594 mm)</p> <p>5: Sheet (Any size)</p> <p>6: 1 foot</p>
-3	Inch/mm Exchange	Selects the unit in which the edge margin and paper length is indicated by.	<p>0: mm</p> <p>1: Inch</p>
-4	Not Used		
-5	Registration Adjustment	Adjusts the paper registration for the by-pass feed. When this setting is changed, the same setting will be set for SP#-45 (Roll Feeder Registration).	<p>0: Standard</p> <p>–9.9 ← 0 → 9.9 mm</p> <p>Advance Delay</p>
-6	Light Sensor Adjustment	<p>Change the settings for the light sensor.</p> <p>While in this mode, the exposure lamp can be turned ON and OFF using the Copy Media key.</p> <p>Tracing paper: ON</p> <p>Film: OFF</p>	<p>50: Standard</p> <p>0 ← 50 → 99</p> <p>Darker Lighter</p>

Mode No.		Function	Data
-7	Hot Roller Temperature Adjustment	Change the hot roller temperature setting.	0: Standard -9 ← 0 → 9°C Decrease Increase
-8	Pressure Roller Temperature Adjustment	Change the pressure roller temperature setting.	0: Standard -9 ← 0 → 9°C Decrease Increase
-9	Hot Roller/ Pressure Roller Temperature Display	Displays the hot roller temperature and pressure roller temperature. Even after the SP mode is canceled, the temperature will be displayed during the copy cycle and in standby mode To stop this, turn the main switch off and on.	Fu = XXX Pr = XXX Fu: Hot roller temperature Pr: Pressure roller temperature If the hot roller temperature is lower than 80°C (pressure roller temperature is lower than 50°C), "LLL" is displayed. If the hot roller temperature is higher than 220°C (pressure roller temperature is higher than 180°C), "HHH" is displayed.
-10	Drum Charge Setting	Determines the drum charge voltage. In this mode, the charge corona can be turned on and off using the Copy Media key. Translucent paper = ON Translucent Film = OFF	200: Standard 150 ← 200 → 249 Low High
-11	Copy Grid Setting	Determines the copy grid voltage. In this mode, the grid voltage can be turned on and off using the Copy Media key. Translucent paper = ON Translucent Film = OFF	9: Standard 0 ← 13 → 15 Low High
-12	Transfer Corona Voltage Setting	Determines the transfer corona voltage. In this mode, the transfer corona can be turned on and off using the Copy Media key. Translucent paper = ON Translucent Film = OFF To facilitate setting SP modes, when SP#-12 is entered, SP#-13 will be automatically set to (SP#-12's value X 1.5)	80: Standard 40 ← 80 → 120 Low High
-13	Transfer Voltage at the Paper's Trailing Edge	Determines the transfer corona voltage at the paper trailing edge. In this mode, the transfer corona can be turned on and off using the Copy Media key. Translucent paper = ON Translucent Film = OFF	120: Standard 40 ← 120 → 249 Low High

Mode No.		Function	Data
-14	Separation AC Voltage setting	<p>Determines the AC separation corona voltage. In this mode, the separation corona can be turned on and off using the Copy Media key.</p> <p>Translucent paper = ON Translucent Film = OFF</p> <p>To facilitate setting SP modes, when SP#-14 is entered, SP#-15 will be automatically set to (SP#-14's value X 1.12).</p>	170: Standard 130 ← 170 → 220 Low High
-15	Separation AC Voltage at the Paper's Leading Edge	<p>Determines the AC separation corona voltage at the paper's leading edge. In this mode, the separation corona can be turned on and off using the Copy Media key.</p> <p>Translucent paper = ON Translucent Film = OFF</p>	190: Standard 130 ← 190 → 220 Low High
-16	Separation DC Voltage setting	<p>Determines the DC separation corona's voltage. In this mode, the separation corona can be turned on and off using the Copy Media key.</p> <p>Translucent paper = ON Translucent Film = OFF</p> <p>To facilitate setting SP modes, when SP#-16 is entered, SP#-17 will be automatically set to (SP#-16's value X 1.5)</p>	200: Standard 0 ← 200 → 249 Low High
-17	Separation DC Voltage at the Paper Leading Edge	<p>Determines the DC separation corona's voltage at the paper leading edge. In this mode, the separation corona can be turned on and off using the Copy Media key.</p> <p>Translucent paper = ON Translucent Film = OFF</p>	200: Standard 0 ← 200 → 249 Low High
-18 to -19	Not Used		
-20	Bias Voltage for the Image Area	<p>Determines the development bias voltage for the image area. In this mode, the bias voltage can be turned on and off using the Copy Media key.</p> <p>Translucent paper = ON Translucent Film = OFF</p>	3: Standard 0 ← 3 → 8 Low High

Mode No.		Function	Data																												
-21	Bias Voltage for Non-image Area Setting	<p>Determines the development bias voltage for the non-image area. In this mode, the bias voltage can be turned on and off using the Copy Media key.</p> <p>Translucent paper = ON Translucent Film = OFF</p>	<p>4: Standard</p> <p>0 ← 4 → 8 Low High</p>																												
-22	Toner Density Setting	<p>Selects the toner density setting. The toner density changes according to the copy length after the developer is replaced.</p> <table border="1"> <thead> <tr> <th>Copy Length (A4 size)</th><th>Std.</th><th>Low</th><th>High</th></tr> </thead> <tbody> <tr> <td>~ 30m (~ 50 sheets)</td><td>4.00V</td><td>4.35V</td><td>4.00V</td></tr> <tr> <td>~ 60m (~ 100 sheets)</td><td>3.50V</td><td>4.30V</td><td>3.00V</td></tr> <tr> <td>~ 90m (~ 150 sheets)</td><td>3.00V</td><td>4.25V</td><td>2.50V</td></tr> <tr> <td>~ 120m (~ 200 sheets)</td><td>2.50V</td><td>3.75V</td><td>2.25V</td></tr> <tr> <td>~ 150m (~ 250 sheets)</td><td>2.25V</td><td>3.25V</td><td>2.00V</td></tr> <tr> <td>150m ~ (251 sheets ~)</td><td>2.00V</td><td>2.75V</td><td>1.80V</td></tr> </tbody> </table>	Copy Length (A4 size)	Std.	Low	High	~ 30m (~ 50 sheets)	4.00V	4.35V	4.00V	~ 60m (~ 100 sheets)	3.50V	4.30V	3.00V	~ 90m (~ 150 sheets)	3.00V	4.25V	2.50V	~ 120m (~ 200 sheets)	2.50V	3.75V	2.25V	~ 150m (~ 250 sheets)	2.25V	3.25V	2.00V	150m ~ (251 sheets ~)	2.00V	2.75V	1.80V	<p>0: Standard</p> <p>1: Low 2: High</p>
Copy Length (A4 size)	Std.	Low	High																												
~ 30m (~ 50 sheets)	4.00V	4.35V	4.00V																												
~ 60m (~ 100 sheets)	3.50V	4.30V	3.00V																												
~ 90m (~ 150 sheets)	3.00V	4.25V	2.50V																												
~ 120m (~ 200 sheets)	2.50V	3.75V	2.25V																												
~ 150m (~ 250 sheets)	2.25V	3.25V	2.00V																												
150m ~ (251 sheets ~)	2.00V	2.75V	1.80V																												
-23	Toner Supply Periods in Toner End Condition	Selects the length of time that the machine adds toner after clearing the toner end condition.	<p>0: 60 s 1: 70 s 2: 80 s 3: 90 s</p>																												
-24	Original Feed Motor Speed Adjustment	Adjusts the speed of the original feed motor (B048 copier only).	<p>-50 ← 0 → 50 Faster Slower 0.030%/step</p>																												
-27	Original Repeat Skew Check Mode	<p>Used to check skew when printing multiple copies (B048 only). When using this mode to make multiple copies, only the first and last copies are actually printed. The other copies are just scanned. By comparing the two copies, you can check for skew.</p> <p>Procedure</p> <ol style="list-style-type: none"> 1. Select 1 in this mode. 2. Exit from SP mode. 3. Select the manual feed and enter the copy quantity to 3 or more. 4. Place the sheet on the manual feed table and place the original on the original table. 5. After all the copies are made, change SP#-27 to 0 or turn the main switch off and on. (This mode will be canceled.) 	<p>0: Off 1: On</p>																												

Mode No.		Function	Data
-28	Length Size Magnification Compensation on Leading Edge	The fusing roller's speed is slightly higher than the drum speed. The speed of the copy paper transport will increase slightly after the leading edge of the copy paper enters the fusing unit. To compensate for this, the speed of the original feed motor is corrected from the leading edge to 183 mm (B048 copier only).	-100 ← 10 → 100 Shorter Longer -2.5% +2.5%
-29	Registration Adjustment for the Rear Feed	Adjusts the paper registration for the rear original feed (B048 only). If the setting of SP#-74 is 1, this setting is used for the paper registration for the front original feed as well as the rear original feed. In this case, this adjustment is automatically set for the SP#-5 adjustment.	0: Standard -9.9 ← 0 → 9.9 mm Advance Delay
-30	Toner Density Sensor Voltage Setting	Changes the toner density sensor voltage. Normally, the value is automatically adjusted when the new developer initialization (SP36) is done. In this mode, PTL, main motor, QL and the bias voltage for non-image area can be turned on and off using the Copy Media key. Translucent paper = ON Translucent Film = OFF	80: Standard 50 ← 80 → 120 Low High
-31	Toner Sensor Voltage Display (Last Copy)	Displays the toner sensor output voltage for the last copy.	A = X,XX (Beeper)
-32	Toner Sensor Voltage Display (Real Time)	Displays the real time toner sensor output voltage. In this mode, the PTL, main motor, QL and the bias voltage for non-image areas can be turned on and off using the Copy Media key. Translucent paper = ON Translucent Film = OFF When this SP mode is canceled, the voltage will be continually displayed during the copy cycle and in standby mode (the toner sensor output voltage, paper length and copy counter are displayed one at a time). To stop this, turn the main switch off and on.	A = X,XX A = Toner Sensor Voltage During the stand-by condition, and copy cycling the following data is displayed. A = X,XX ↓ LE = X,XXX ↓ CO = XX ↓ (Beeper) LE = Paper Length (ex. 297 mm: LE=0.297 12 inch: LE=0.120) CO = Copy counter
-33 to -34	Not Used		

Mode No.		Function	Data
-35	Synchro-cut Length Auto Adjustment (297 mm)	Adjusts the original cut length in Synchro Cut mode based on a 297 mm sheet (standard length). Insert the 297 mm length original five times (this number displayed on the copy number indicator can be changed : 1 to 10). If the actual original length is different from the standard length, input the following value in the cut length indicator before inserting the original: Actual Length - Standard Length Then the machine automatically calculates the correct value, and the value of SP#-38 is changed.	-9.9 ← 0 → 9.9 1 step = 0.1 mm
-36	Synchro-cut Length Auto Adjustment (1,189 mm)	Adjusts the original cut length in Synchro Cut mode at 1,189 mm. Insert the 1,189 mm length original five times (this number displayed on the copy number indicator can be changed: 1 to 10). If the actual original length is different from the standard length, input the following value in the cut length indicator before inserting the original: Actual Length - Standard Length Then the machine automatically calculates the correction value. The data is overwritten on SP#-39.	-50 ← 0 → 50 1 step = 0.1 mm
-37	Not Used		
-38	Synchro-cut Length Manual Adjustment (297 mm)	Adjusts the synchro cut length for a 297 mm original. Increasing the number will shorten the paper cut length.	-9.9 ← 0 → 9.9 1 step = 0.1 mm (This value is over written when SP#-35 is performed.)
-39	Synchro-cut Length Manual Adjustment (1,189 mm)	Adjusts the synchro cut length for a 1,189 mm original. Increasing the number will shorten the paper cut length.	-50.0 ← 0 → 50 1 step = 0.1 mm (This value is over written when SP#-36 is performed.)
-40 to -44	Not Used		
-45	Roll Feeder Registration	Adjusts the paper registration from the roll feederS. When SP#-5 (Registration Adjustment) is carried out, this data will be automatically set with that data.	0: Standard -9.9 ← 0 → 9.9 Delay Advance
-50	Forced Ready Condition (Factory Use)	Forces the machine into the "Ready" condition regardless of the fusing temperature. This mode cannot be used during the start-up development agitation.	0: Normal 1: Forced Ready Condition
-51	Lamp Off Mode	Fluorescent lamp does not turn on during the copy cycle.	0: Normal 1: Lamp off

Mode No.		Function	Data
-52	No Misfeed Detection Mode	Ignores jam error signals, except for initial jams. The setting automatically resets to "0" when the main switch is turned off.	0: Normal 1: No Misfeed Detection
-53	Free Run Mode	The machine carries out copy operation without an original. This mode can be used if the optional roll feeder is installed and selected paper length is more than 594 mm. The machine starts operation when the roll feed select key is pressed, and stops when the Emergency Stop key is pressed.	0: Normal 1: Next Paper is fed when the fusing exit sensor is deactivated. 2 ~ 250: Next paper is fed (X-1) seconds after the fusing exit sensor is deactivated. X = Input Number
-54	Not Used		
-55	Toner End Recovery	Sets the process for toner end recovery. When set to the default value, the toner density is checked as described in the Toner Density Control section 2.4.2. Forced recovery skips this testing procedure, and just clears the toner end condition.	0: Normal 1: Forced recovery
-56	Used Toner Full Condition Detection	When the toner overflow counter is used, this sets the maximum copy length. Once the counter reaches this value, the used toner full condition is triggered.	0: Toner overflow sensor 1: 840 m 2: 480 m 3: 1,180 m
-57	Roll Feed Speed Correction (Plain Paper)	Not used. Do not change this setting	0 ← 5 → 10 Slower Faster
-58	Roll Feed Speed Correction (Translucent Paper)	The fusing section's transport speed is slightly faster than the roll feeder's. This is done to stretch the copy paper. However, due to over-stretching, creases may develop along the trailing edge when the copy paper is longer than 1,200 mm. To prevent this, the roll feeder's speed is increased slightly every second once the paper feed length exceeds 1,200 mm. The speed is changed 5 times. 5 in this SP can be used to set the final roll feed speed equal to the fusing section's. Do not change this value in the field. It is for designer use only.	0 ← 5 → 10 Slower Faster
-59	Roll Feed Speed Correction (Film)	Not used. Do not change this setting.	0 ← 5 → 10 Slower Faster
-60	Fluorescent Lamp Abnormal Time Check 1	Tracks the amount of time that the exposure sensor is more than 1 V higher than the target value.	0 ~ 250: The total time (seconds) that the lamp voltage is more than 1 volt higher than the target value.

Mode No.		Function	Data
-61	Fluorescent Lamp Abnormal Time Check 2	Tracks the amount of time that the fluorescent lamp is at full power during the copy cycle.	0 ~ 250: The total time (seconds) that the fluorescent lamp is at full power.
-62	Light Sensor Voltage Display (Factory use)	Displays the real time light sensor output voltage. In this mode, the PTL, main motor, QL and the bias voltage for non-image areas can be turned on and off using the Copy Media key. Translucent paper = ON Translucent Film = OFF Even if the SP mode is canceled, the voltage is displayed while copying and when in standby mode. To stop this, turn the main switch off and on.	Fd = X,XX Fd = Light Sensor Voltage
-63	Factory Use Only		
-64	Manual Feed Attention Mode 1	Beeper sounds if a sheet is set on the manual feed table before the "Set Paper" indicator comes on.	0: No 1: Manual Feed Attention Mode 1
-65	Manual Feed Attention Mode 2	Beeper sounds when the manual table is ready to accept the next sheet.	0: No 1: Manual Feed Attention Mode 2
-66	Partial copy Leading Edge Margin	Allows the user to set a larger or smaller leading edge margin in partial copy mode. B047 can only increase the margin, while B048 can both increase and decrease it.	0: No 1: A new margin can be set in the partial copy mode
-67	Toner Full Supply Mode	In the Special Toner Supply mode (SP62), if both the clear/stop key and the Emergency Stop key are pressed, toner is supplied at 100%.	0: No 1: Toner Full Supply Mode
-68	Combine Originals Mode	Normally the copy process stops at the trailing edge of paper or original which ever comes first. If this mode is selected, copy process continues to the copy's trailing edge even if the original trailing edge comes first. Use this mode to combine several originals onto a single copy.	0: Normal 1: Combine Originals Mode
-69	Not Used		
-70	Synchro-cut Rear Feed Mode	Normally, an original cannot be inserted into the rear feeder while in Synchro-cut mode. If 1 is selected, an original can be inserted from the rear side even if Synchro-cut mode is used. This cannot be used with the trailing edge margin function. In this mode, the copy will be about 200 mm longer than the original (B048 copier only).	0: Normal 1: Synchro-cut Rear Feed Mode

Mode No.		Function	Data
-71	Cut Length Display Mode	<p>In semi-synchro cut mode, the machine stores the 1st original cut length and displays it in the paper length counter.</p> <p>The paper cut mode will automatically be changed to the Preset/Variable cut mode.</p> <p>For the 2nd copy, it is not necessary to press the cut key at the trailing edge of the original. Also, before the 2nd original is inserted, the cut length in the cut length counter can be changed using the "+"/"-" keys. The value can be changed within the normal range of the semi-synchro cut (410 mm ~ 3,000, 16.5' ~ 118.0') (B047 copier only).</p>	<p>0: Non-Length Display</p> <p>1: Length Display</p>
-72	Original Feed Motor Returning Speed Setting	Selects the speed of the original feed motor in returning original mode. A slower speeds may be necessary for thinner originals (B048 copier only).	<p>0: 200 mm/s</p> <p>1: 150 mm/s</p> <p>2: 100 mm/s</p>
-73	Roll Feeder Start Timing	<p>Determines the timing of the roll feeder.</p> <p>The default value begins the roll feeder just after the original registration sensor is activated.</p> <p>It can also be set to start after the trailing edge passes the original entrance sensor.</p> <p>The default value provides a faster first copy and increases 1 to 1 CPM.</p> <p>If the emergency stop key is pressed while the original is being transported to the scanning start position, copy paper is cut and fed out of the copier.</p> <p>Whichever setting is selected, the first copy and 1 to 1 CPM are within specification.</p>	<p>0: Trailing edge is detected.</p> <p>1: Original insertion</p>
-74	Original Transport Mode	<p>Select whether the original is transported from the original table to the scanning start position directly, or whether the original is returned to the scanning start position after the trailing edge of the original passes through the original registration sensor (B048 copier only).</p> <p>The default setting (= 0) handles curled originals better. If the setting is changed from 0 to 1, perform the synchro-cut length auto adjustment (SP#-35, #-36).</p>	<p>0: Original is transported directly to the start position.</p> <p>1: Original is returned to the start position after the original passes through the original registration sensor.</p>

Mode No.		Function	Data
-75	Fusing Temperature Recovery Setting	Determines how the machine recovers when the fusing temperature drops below the target value. This is only triggered when making multiple copies using fusing mode 8 (highest temperature mode) (B048 copier only).	0: No recovery (The machine simply continues copying, ignoring the fusing temperature.) 1: Stops copying and feeds out the original. 2: Stops copying but the original is not fed out. Copying starts again after the fusing temperature recovers.
-76	Original Transport Torque Down	Sets the operation of the original transport torque.	0: No 1: Down during transport forward 2: Down during transport both forward and backwards


4.3.2 INPUT/OUTPUT CHECK MODE


Input Check Mode Table

The on/off status of the selected electrical component is displayed in the paper length indicator ("ON" or "OFF" is displayed). If the selected program number is not used, "NOT" is displayed.

Program No.	Sensor/Switch/Signal
-1	Registration Sensor
-2	Exit Sensor
-3	Original Registration Sensor
-4	Entrance Sensor
-5	Main Motor LOC Signal (Status is "ON" when the main motor is rotating normally.)
-6	Door Switch (Status is "ON" when the door is open.)
-7	Original Entrance Sensor (B048 copier only)
-8	Original Rear Sensor (B048 copier only)
-9	Not Used
-10	R/F Leading Edge Sensor
-11	Roll Feeder Door Switch
-12	Right Cutter Switch
-13	Left Cutter Switch
-14	Paper End Sensor (1st Roll)
-15	Paper End Sensor (2nd Roll)
-16	Exit Cover Open (Status is "ON" when the door is open.)
-17	Used Toner Cover Switch
-20	Toner Overflow Sensor
-21	Toner Overflow Sensor Connection
-24	Total Counter
-26	Fusing SC Detection

Output Check Mode Table

Press the  key to turn on the selected electrical component. The status of the component is displayed in the paper length indicator.

To turn off the component, press the  key again.


Program No.	Electrical Component	Note
0	Main Motor	
1	Toner Supply Clutch	
2	Pick off solenoid	
3	Registration Clutch	
4	Total Counter	
5	Pre-transfer Lamp	
6	Quenching Lamp	
7	Fusing Lamp	


Program No.	Electrical Component	Note
8	Exposure Lamp (100% duty ratio)	
9	Exposure Lamp (selected ID level)	
10	Main Charge Corona	
11	Grid Voltage	
12	Transfer Charge Corona	
13	Not Used	
14	Separation Charge Corona	
15	Exhaust Fan	
16 to 19	Not Used	
20	Bias Voltage for the Image Area	
21	Bias Voltage for the Non-image Area	
22	Main Charge Corona + Grid Voltage	
23	Main Motor + PTL + Bias Voltage for the Non-image Area + Quenching Lamp	
24	Original Feed Motor (Forward) (B048 copier only)	
25	Original Feed Motor (Reverse) (B048 copier only)	
26	Roll Feeder Dehumidity Heaters	
27	Roll Feeder Cutter Motor ^{*Note}	
28	Roll Feeder Paper Feed Motor (Forward)	
29	Roll Feeder Paper Feed Motor (Reverse)	
30	Roll Feed Clutch 1	
31	Roll Feed Clutch 2	
32	Fusing SC Release	
33	Original Feed Motor (Forward and Reverse) (B048 copier only)	Original feed motor operation changes every time the roll feed key is pressed. 1st time: Forward 2nd time: Stop 3rd time: Reverse 4th time: Stop
34	Main Switch OFF (Energy Star)	Turn off the main switch.

NOTE: The cutter unit continuously moves between the left and right cutter switches. The number of the movements (0 ~ 9999) is displayed in the paper length indicator. When the roll feeder is pulled out during this operation, the operation will stop.

4.4 JAM CODE LIST

4.4.2 JAM CODE TABLE



Code	Cause of Jam	Remarks
dJ01	Initial misfeed at the original entrance sensor.	B048 only
dJ02	Initial misfeed at the original registration sensor.	
dJ03	Initial misfeed at the original rear sensor.	B048 only
dJ05	Initial misfeed at the entrance sensor.	
dJ06	Initial misfeed at the registration sensor.	
dJ07	Initial misfeed at the exit sensor.	
dJ08	Initial misfeed at the leading edge sensor of the roll feeder.	
dJ10	Original entrance sensor OFF check during the original scanning process.	B048 only
dJ11	Original entrance sensor ON check during the original scanning process.	B048 only
dJ17	Original entrance sensor OFF check during the original returning process.	B048 only
dJ18	Original entrance sensor ON check during the original returning process.	B048 only
dJ21	Original registration sensor leading edge ON check during the original scanning process.	B048 only
dJ22	Original registration sensor trailing edge OFF check during the original scanning process.	B048 only
dJ23	Original registration sensor trailing edge ON check during the original scanning process.	B048 only
dJ25	Original registration sensor leading edge OFF check during the original returning process.	B048 only
dJ26	Original registration sensor leading edge ON check during the original returning process.	B048 only
dJ27	Original registration sensor trailing edge OFF check during the original returning process.	B048 only
dJ28	Original registration sensor trailing edge ON check during the original returning process.	B048 only
dJ32	Original rear sensor trailing edge OFF check during the original scanning process.	B048 only
dJ33	Original rear sensor trailing edge ON check during the original scanning process.	B048 only
dJ35	Original rear sensor leading edge OFF check during the original returning process.	B048 only
dJ36	Original rear sensor leading edge ON check during the original returning process.	B048 only
dJ40	Emergency stop key pressed	
dJ41	Original registration sensor OFF during the original scanning process.	B048 only
dJ42	Original rear sensor OFF during the original returning process.	B048 only
dJ43	Original rear sensor ON when clearing the original hold mode by pressing the  key.	B048 only

Code	Cause of Jam	Remarks
dJ45	Original registration sensor does not turn off after paper is fed 3,500 mm.	
pJ51	Registration sensor OFF is detected just after starting the copy process.	
pJ52	Registration sensor OFF is detected before starting the roll feeder again.	B047 only
pJ53	Entrance sensor ON is detected during roll feeding.	
pJ55	Registration sensor does not turn off after paper is fed 3,500 mm.	
pJ60	Registration sensor OFF is detected at the paper leading edge.	
pJ61	Registration sensor ON is detected at the paper leading edge.	
pJ62	Registration sensor OFF is detected at the paper trailing edge.	
pJ63	Registration sensor ON is detected at the paper trailing edge.	
pJ70	Exit sensor OFF is detected at the paper leading edge.	
pJ71	Exit sensor ON is detected at the paper leading edge.	
pJ72	Exit sensor OFF is detected at the paper trailing edge.	
rJ80	Leading edge sensor OFF is detected at the paper leading edge.	
rJ81	Leading edge sensor ON is detected at the paper leading edge.	
rJ90	Paper cutter failure	
rJ91	Door open during roll feeding	
rJ95	Roll feeder. Motor does not turn off after paper is fed 600 mm more than the maximum paper length.	
rJ98	Leading edge sensor ON is detected at the paper trailing edge during roll feeding.	
rJ99	Leading edge sensor OFF is detected at the paper trailing edge during roll feeding.	

Fixed Paper Size Pattern Data (SP No. 22)

In mm Mode	
0:	1189, 841, 594, 420, 297
1:	3000, 2000, 1189, 841, 594, 420, 297, 280
2:	3000, 2400, 2000, 1900, 1800, 1700, 1600, 1500, 1400, 1300, 1200, 1100, 1000, 900, 800, 700, 600, 500, 400, 300, 280
3:	3000, 2400, 2000, 1900, 1800, 1700, 1600, 1500, 1400, 1300, 1200, 1189, 841, 594, 420, 297, 280
4:	3000, 2400, 2000, 1800, 1456, 1189, 1030, 841, 728, 594, 515, 420, 364, 297, 280
5:	3000, 2500, 2000, 1500, 1230, 880, 625, 450, 330, 280
6:	1456, 1030, 728, 515, 364
7:	3000, 2000, 1456, 1030, 728, 515, 364, 280
8:	3000, 2500, 2000, 1500, 1189, 1100, 841, 594, 420, 300, 297, 280
9:	3000, 2400, 2000, 1456, 1200, 1189, 1091, 1085, 1030, 1016, 1000, 939, 900, 880, 841, 813, 788, 765, 762, 758, 728, 679, 636, 625, 594, 591, 546, 515, 508, 420, 364, 297, 280
10:	3000, 2400, 2000, 1800, 1600, 1400, 1200, 1000, 800, 600, 400, 280
11:	3000, 2400, 2000, 1750, 1500, 1250, 1000, 750, 500, 280
12:	3000, 2400, 2000, 1950, 1900, 1850, 1800, 1750, 1700, 1650, 1600, 1550, 1500, 1450, 1400, 1350, 1300, 1250, 1200, 1150, 1100, 1050, 1000, 950, 900, 850, 800, 750, 700, 650, 600, 550, 500, 450, 400, 350, 300, 280
13:	3000, 2400, 2000, 1800, 1500, 1189, 1100, 1050, 1000, 950, 900, 841, 800, 750, 700, 650, 594, 550, 500, 420, 297, 280
14:	3000, 2400, 1800, 1456, 1200, 1189, 1085, 1030, 900, 880, 841, 765, 728, 625, 594, 515, 420, 364, 297, 280
15:	3000, 2400, 2000, 1800, 1500, 1200, 1189, 594, 280
16:	3000, 2400, 2000, 1800, 1500, 1200, 1000, 841, 420, 280
17:	3000, 2400, 2000, 1800, 1500, 1220, 1189, 915, 841, 610, 594, 458, 420, 305, 297, 280
18:	3000, 2400, 2000, 1800, 1500, 1189, 1118, 864, 841, 594, 559, 432, 420, 297, 280
19:	The data stored in SP23 to 32
In inch Mode	
0:	48.0, 42.0, 36.0, 24.0, 18.0, 12.0
1:	44.0, 42.0, 34.0, 22.0, 17.0, 11.0
2:	118.0, 96.0, 80.0, 72.0, 64.0, 48.0, 42.0, 36.0, 24.0, 18.0, 12.0, 11.0
3:	118.0, 96.0, 80.0, 72.0, 64.0, 44.0, 42.0, 34.0, 22.0, 17.0, 11.0
4:	118.0, 96.0, 80.0, 72.0, 64.0, 48.0, 44.0, 36.0, 34.0, 24.0, 22.0, 18.0, 17.0, 12.0, 11.0
5:	118.0, 96.0, 80.0, 70.0, 60.0, 50.0, 40.0, 30.0, 20.0, 11.0, 10.0
6:	118.0, 96.0, 80.0, 75.0, 70.0, 65.0, 60.0, 55.0, 50.0, 45.0, 40.0, 35.0, 30.0, 25.0, 20.0, 15.0, 11.0, 10.0
7:	118.0, 96.0, 80.0, 75.0, 70.0, 65.0, 60.0, 55.0, 50.0, 48.0, 42.0, 36.0, 24.0, 18.0, 12.0, 11.0
8:	118.0, 96.0, 80.0, 75.0, 70.0, 65.0, 60.0, 55.0, 50.0, 44.0, 42.0, 34.0, 22.0, 17.0, 11.0
9:	118.0, 96.0, 80.0, 75.0, 70.0, 65.0, 60.0, 55.0, 50.0, 48.0, 44.0, 42.0, 36.0, 34.0, 24.0, 22.0, 18.0, 17.0, 12.0, 11.0

10:	118.0, 96.0, 80.0, 77.5, 75.0, 72.5, 70.0, 67.5, 65.0, 62.5, 60.0, 57.5, 55.0, 52.5, 50.0, 47.5, 45.0, 42.5, 40.0, 37.5, 35.0, 32.5, 30.0, 27.5, 25.0, 22.5, 20.0, 17.5, 15.0, 12.5, 11.0, 10.0
11:	118.0, 96.0, 80.0, 77.5, 75.0, 72.5, 70.0, 67.5, 65.0, 62.5, 60.0, 57.5, 55.0, 52.5, 50.0, 48.0, 42.0, 36.0, 34.0, 24.0, 22.0, 18.0, 17.0, 12.0, 11.0
12:	118.0, 96.0, 80.0, 77.5, 75.0, 72.5, 70.0, 67.5, 65.0, 62.5, 60.0, 57.5, 55.0, 52.5, 50.0, 48.0, 42.0, 36.0, 24.0, 18.0, 12.0, 11.0
13:	118.0, 96.0, 80.0, 77.5, 75.0, 72.5, 70.0, 67.5, 65.0, 62.5, 60.0, 57.5, 55.0, 52.5, 50.0, 44.0, 42.0, 34.0, 22.0, 17.0, 11.0
14:	118.0, 96.0, 80.0, 78.0, 76.0, 74.0, 72.0, 70.0, 68.0, 66.0, 64.0, 62.0, 60.0, 58.0, 56.0, 54.0, 52.0, 50.0, 48.0, 46.0, 44.0, 42.0, 40.0, 38.0, 36.0, 34.0, 32.0, 30.0, 28.0, 26.0, 24.0, 22.0, 20.0, 18.0, 16.0, 14.0, 12.0, 11.0, 10.0
15:	118.0, 96.0, 80.0, 72.0, 60.0, 48.0, 36.0, 24.0, 12.0 11.0
16:	118.0, 96.0, 80.0, 78.0, 72.0, 66.0, 60.0, 50.0, 54.0, 48.0, 42.0, 36.0, 30.0, 24.0, 18.0, 12.0 11.0
17:	118.0, 96.0, 80.0, 78.0, 75.0, 72.0, 69.0, 66.0, 63.0, 60.0, 57.0, 54.0, 51.0, 48.0, 45.0, 42.0, 39.0, 36.0, 33.0, 30.0, 27.0, 24.0, 21.0, 18.0, 15.0, 12.0 11.0
18:	118.0, 96.0, 80.0, 72.0, 64.0, 57.3, 48.0, 46.8, 42.0, 40.6, 36.0, 34.0, 33.1, 28.7, 24.0, 23.4, 22.0, 20.3, 18.0, 17.0, 16.6, 14.4, 12.0, 11.7, 11.0, 10.1
19:	The data stored in SP23 to 32

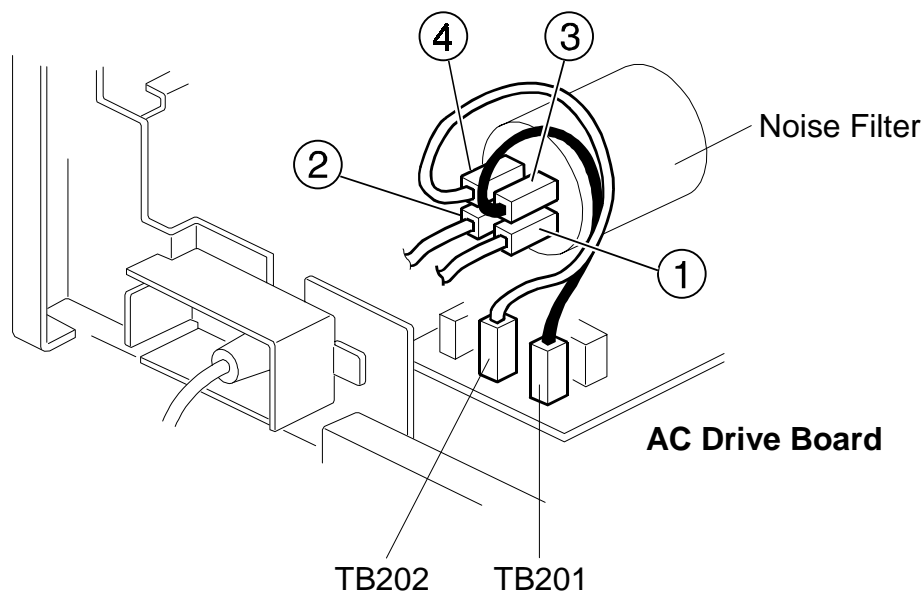
Default Settings for Each Destination (SP#-1)

SP. No.	Japan	U.S.A.	Europe	Asia	NRG	Other 1	Other 2	Other 3	Other 4
#1	1	2	2	2	2	2	2	1	
#2	0	0	0	0	0	0	0	0	
#3	1	1	1	1	1	1	1	1	
#4	0	0	0	0	0	1	0	0	
#5	2	2	2	2	2	2	2	2	
#6	0	0	0	0	0	0	0	0	
#7	0	0	0	0	0	0	0	0	
#8	0	0	0	0	0	0	0	4	
#9	0	0	0	0	0	0	0	0	
#10	0	0	0	0	0	0	0	0	
#13	0	0	0	0	0	0	0	0	
#14	0	0	0	0	0	0	0	0	
#15	30	30	30	30	30	30	30	30	
#17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
#19	0	0.0	0	0	0	0	0.0	0.0	
#20	0	1	0	0	0	0	1	0	
#21	0	0	0	0	0	0	0	5	
#22	0	0	0	0	0	0	0	0	
#33	1	1	1	1	1	1	1	1	
#-2	1	6	1	1	1	1	6	1	
#-3	0	1	0	0	0	0	1	0	
#-6	50	50	50	50	50	50	50	50	

#13, #14, #17: B048 only

4.6 SERVICE REMARKS

4.6.12 AC DRIVE BOARD

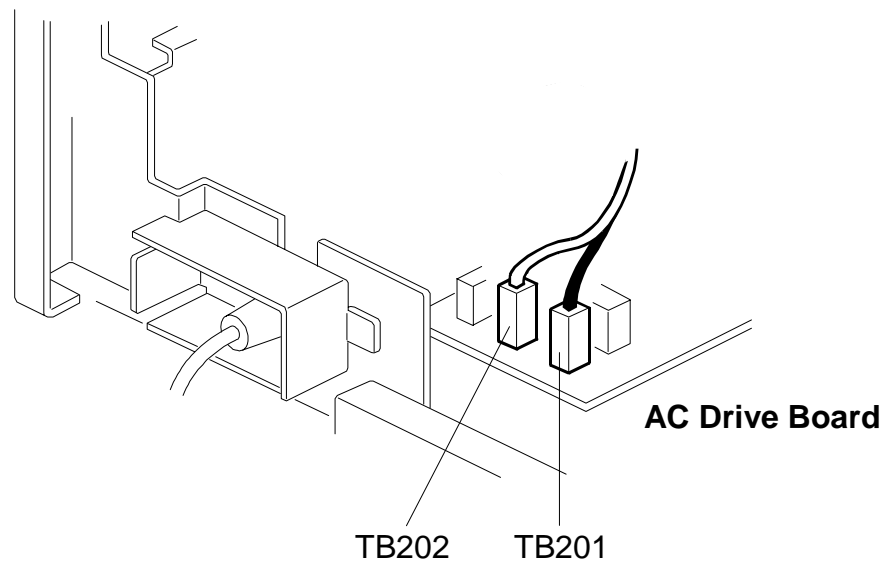


B047S500.WMF

Service Remark for 220 ~ 240 V Version

Make sure that the harnesses are connected to the noise filter and ac drive board as shown.

1. Set the power supply cord hot line (brown wire) connector to terminal 1 on the noise filter.
2. Set the power supply cord neutral line (blue wire) connector to terminal 2 on the noise filter.
3. Set the noise filter harness hot line (black wire) yellow connector to terminal 3 on the noise filter.
4. Set the noise filter harness neutral line (white wire) white connector to terminal 4 on the noise filter.
5. Set the noise filter harness hot line (black wire) yellow connector to TB201 on ac drive board.
6. Set the noise filter harness neutral line (white wire) white connector to TB202 on ac drive board.



B047S501.WMF

Service Remarks for 120 V Version

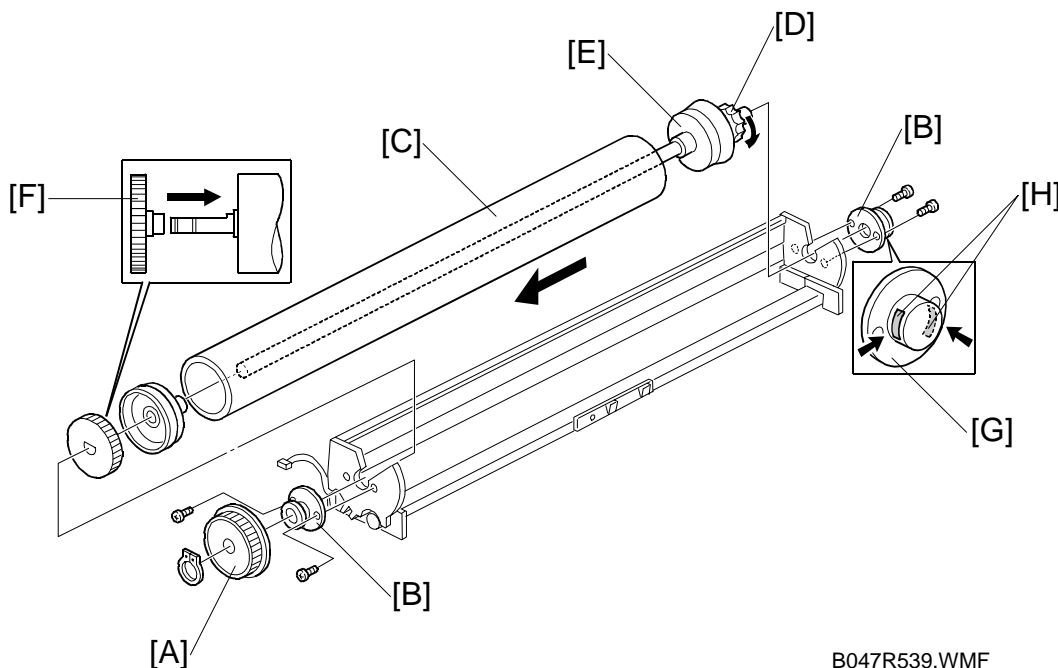
Make sure that the harness is connected to the ac drive board as shown correctly

1. Set the power supply cord harness hot line (black wire) white connector to TB201 on ac drive board.
2. Set the power supply cord harness neutral line (white wire) white connector to TB202 on ac drive board.

5. REPLACEMENT AND ADJUSTMENT

5.4 DRUM UNIT

5.4.2 DRUM REPLACEMENT

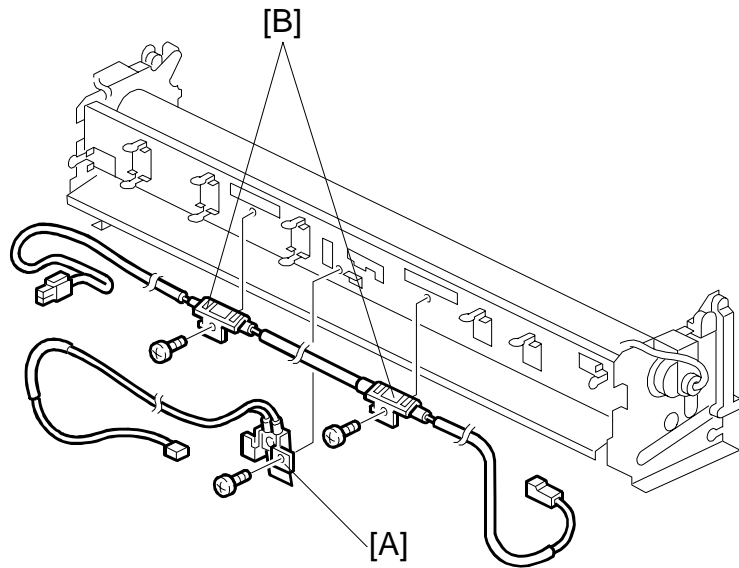


B047R539.WMF

 Replacement
Adjustment

1. Remove the drum unit.
2. Remove the pulley [A] (1 C-ring).
3. Remove the 2 bearing holders [B] (2 screws each).
NOTE: Be careful not to scratch the drum with the pick-off pawls when removing or reinstalling the drum.
4. Remove the drum [C] with the drum shaft.
5. Loosen the drum knob [D] by turning it clockwise as shown.
6. Remove the drum flange [E].
7. Replace the drum with new one.
NOTE: 1) When reinstalling the gear [F], make sure that the direction of the projection of the gear is on the drum side.
 2) When re-installing the bearing holders, make sure that the right bearing holder [G] has two mylar seals [H] attached. The mylar seals determine the position between the drum unit and copier side plate. This also helps to ensure an even image density on the copy.

5.5 FUSING



B047R101.WMF

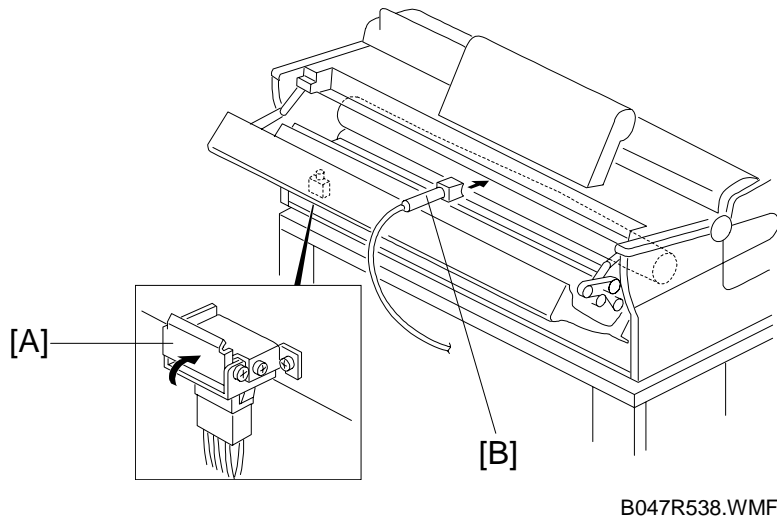
5.5.7 HOT ROLLER THERMISTOR REPLACEMENT

1. Remove the fusing unit.
2. Remove the hot roller thermistor [A] (1 screw, clamps).

5.5.8 FUSING THERMOFUSE REPLACEMENT

1. Remove the fusing unit.
2. Remove the fusing thermofuse [B] (2 screws, 6 clamps, and 2 connectors).

5.5.9 FUSING TEMPERATURE ADJUSTMENT



⚠ CAUTION

When the main switch is turned on, the machine will suddenly start to drive the fusing section. However, this does not occur immediately. The machine waits until the hot roller is heated to above 80°C. Keep your hands away from any mechanical and electrical components during this period.

**Replacement
Adjustment**

This procedure is required only when the hot roller thermistor is replaced.

Adjustment standard: Mode 1 (165°C), Mode 2 (170°C), Mode 3 (175°C), Mode 4 (180°C), Mode 5 (190°C), Mode 6 (193°C), Mode 7 (198°C)

1. Turn off the main switch.
2. Remove the copier rear cover.
3. Remove the pressure roller thermistor screw and hang the thermistor by the harness.
4. Actuate the fusing exit safety switch [A].
5. Turn on the main switch, select the normal fusing temperature mode, and wait for at least 10 minutes.
6. Using a digital thermometer and probe [B], measure the temperature at the middle of the hot roller.
7. If the actual temperature is different from the value for the mode being used (use SP#1 to find out the current mode), adjust the temperature using SP#-7.
8. Repeat steps 5 to 7 and confirm the temperature.
9. Reassemble the machine.

5.8 COPY QUALITY ADJUSTMENT

5.8.4 REGISTRATION ADJUSTMENT


When:	Registration is not within the registration tolerance.
Purpose:	To maintain proper registration.
Registration Tolerance:	0±3 mm (0±0.12")
Perform:	SP#-5 (by-pass feed), SP#-29 (B048 rear original feed), SP#-45 (roll feed)
How:	Change the start timing of the registration roller using SP#-5, SP#-27, and/or SP#-45

1. Make several copies using manual feed or the roll feeder and check the registration.
2. If the registration is not within the registration tolerance, adjust the registration using SP#-5, SP#-29 and/or SP#-45.

NOTE: When SP#-5 is changed, the data in SP#-45 will be automatically set to the same value. To adjust SP#-45 separately, you must change it after adjusting SP#-5.

6. TROUBLESHOOTING

6.2 SERVICE CALL CONDITIONS

When a service call condition occurs, the Call Service indicator  and SC codes are displayed.

SC Codes E2, E3, E4, E5, E6, E7, E8, E15, E17 and E18 cannot be cleared by simply turning the main switch off and on. For safety reasons, you must set SP38 from “1” to “0” to clear these.

6.2.1 SC CODE DESCRIPTIONS

SC Code E-1: Exposure Lamp Abnormal

Definition

The light sensor voltage is less than 0.4 volts for 10 seconds.

Points to Check

- Exposure lamp
- Light sensor
- FL regulator (CN402-1,2,4, and 5, CN401-1, -2, -3)
- Main board (CN103-7, and CN105-A13, -A14, -B17, -B18)

SC Code E-2: Fusing Thermofuse Open

Definition

After turning on the machine, the temperature detected by the hot roller thermistor does not reach 100°C within 4 minutes and 30 seconds.

Points to Check

- Fusing thermofuse
- Hot roller thermistor
- AC drive board
- Main board (CN102-A3, -B11, -B13, -B14)

SC Code E-3: Hot Roller Thermistor Open

Definition

After turning on the machine, the temperature detected by the hot roller thermistor does not reach 50°C within 3 minutes.

Points to Check

- Hot roller thermistor
- AC drive board
- Fusing thermofuse
- Main board (CN102-A5, -B11, -B13, -B14)

SC Code E-4: Hot Roller Thermistor Short**Definition**

The resistance of the hot roller thermistor is less than 0.11 K Ω .

Points to Check

- Hot roller thermistor
- Main board (CN102-A5, -B11, -B13, -B14)

SC Code E-5: Pressure Roller Thermistor Open**Definition**

The resistance of the pressure roller thermistor is more than 0.53 M Ω .

Points to Check

- Pressure roller thermistor
- Main board (CN102-A4, -B12, -B13, -B14)

SC Code E-6: Pressure Roller Thermistor Short**Definition**

The resistance of the pressure roller thermistor is less than 0.55 K Ω .

Points to check

- Pressure roller thermistor
- Main board (CN102-A4, -B12, -B13, -B14)

SC Code E-7: Fusing Overheat**Definition**

The temperature detected by the hot roller thermistor exceeds 250°C.

Points to Check

- Hot roller thermistor
- Fusing thermofuse
- AC drive board
- Main board (CN102-A1, -B13, -B14)

SC Code E-8: Fusing Warm-up Error**Definition**

After turning on the machine, the temperature detected by the hot roller thermistor does not reach the target ready temperature within 12 minutes.

Points to Check

- Hot roller thermistor
- Fusing lamp
- Fusing thermofuse
- AC drive board
- Main board (CN102-A3, -A5, -B11, -B13, -B14)
- AC harness

SC Code E-9: Toner Density Sensor Abnormal**Definition**

The toner density sensor voltage is less than 0.5 volts or more than 4.5 volts.

NOTE: After initializing the developer, this condition cannot be triggered until at least 251 copies are made.

Points to Check

- Toner density sensor
- Flow of the developer at the toner density sensor area
- Main board (CN105-A5, -A6, -B25, -B26)

SC Code E-10: Main Motor Abnormal**Definition**

The main motor is on, but the main board does not receive a signal from the motor for two seconds.

Points to Check

- Main motor
- Mechanical interference of the main motor drive
- Main board (CN103-1, -2)

Trouble-
shooting

SC Code E-11: Toner Density Sensor Adjustment Error**Definition**

The new developer initialization process cannot adjust the toner density sensor voltage to its standard range (4.1 ± 0.1 volts).

NOTE: After clearing the SP code, the previous data of SP#-30 will continue to be used until the next toner initialization.

Points to Check

- Toner density sensor
- Developer
- Flow of the developer at the toner density sensor area
- Main board (CN105-A5, -A6, -B25, -B26)

SC Code E-13: Total Counter Abnormal**Definition**

Total counter does not operate.

Points to Check

- Main board
- AC Drive board

SC Code E-14: Zero Cross Signal Detection Abnormal**Definition**

The zero cross signal is not detected within 0.5 second of turning on the main switch.

Point to Check

- Main board
- AC Drive board

SC Code E-15: Main Switch Abnormal**Definition**

After sending the reset signal, the main switch does not turn off within 0.45 second.

Point to check

- Main switch
- Main board

SC Code E-17: Unstable Fusing Temperature**Definition**

While in the copy ready state, the machine detects 3 or more hot roller temperature changes within 60 seconds, or 2 or more within 2 seconds. The change must be greater than 20°C in 1 second.

Point to Check

- The thermistor is out of position

SC Code E-18: Fusing Lamp Continuous Light**Definition**

In the copy ready condition, the fusing lamp turns on at full power continuously for more than 120 seconds while the hot roller is not rotating.

- Point to check -

- Poor thermistor cable connection
- Poor fusing unit connection

6.3 BLOWN FUSE TABLE

6.3.1 POWER SUPPLY UNIT

Europe Version

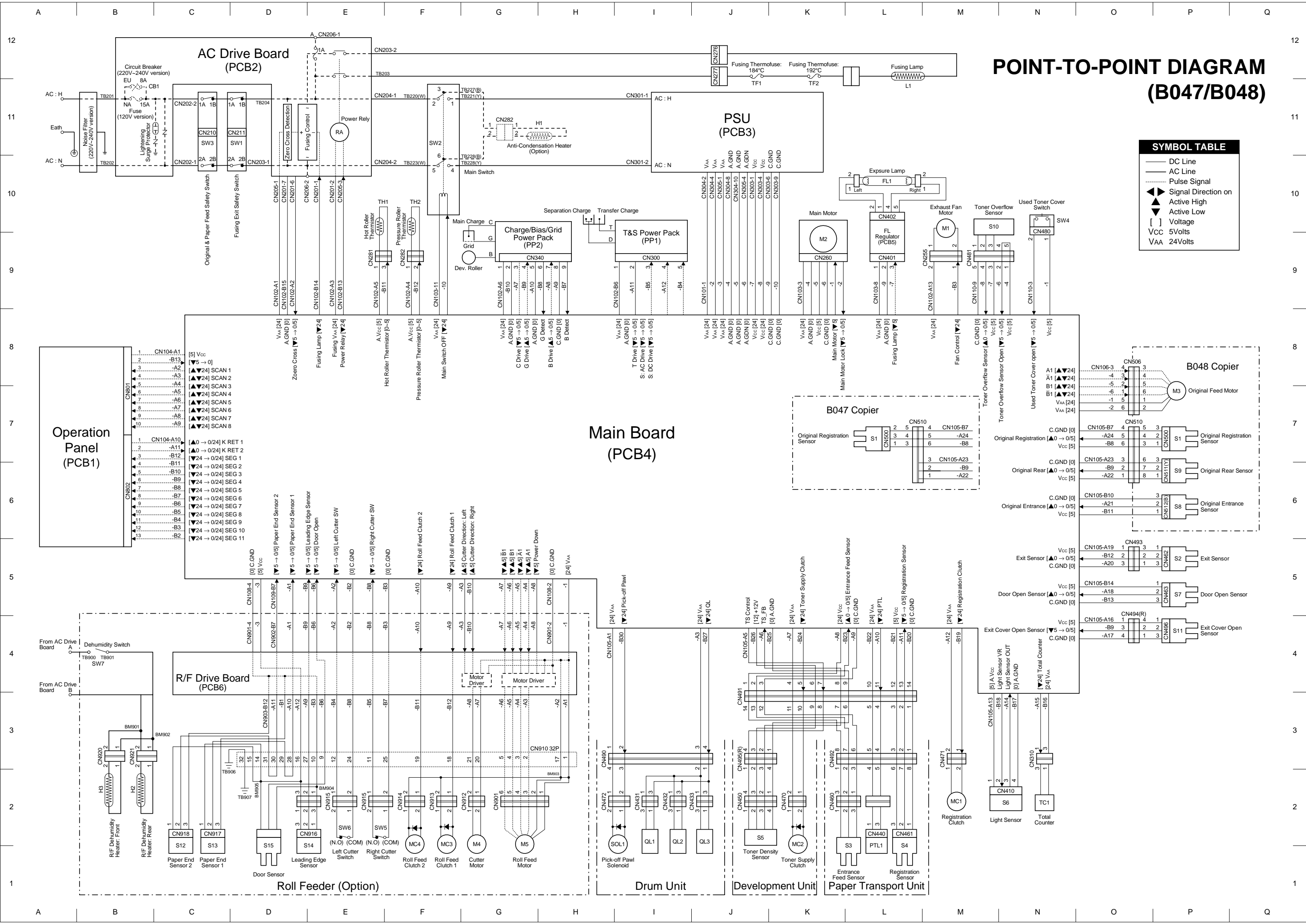
Fuse No.	Specification	Symptom
FU301	250 V 3.15 A	No power.
FU302	250 V 6.3 A	No indication. Beeper sounds.
FU303	250 V 6.3 A	This symptom will occur when all of three fuses are open.
FU304	250 V 6.3 A	

U.S.A. Version

Fuse No.	Specification	Symptom
FU301	125 V 6.3 A	No power.
FU302	250 V 5 A	No indication. Beeper sounds.
FU303	250 V 5 A	This symptom will occur when all of three fuses are open.
FU304	250 V 5 A	

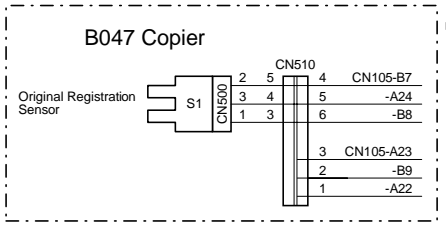
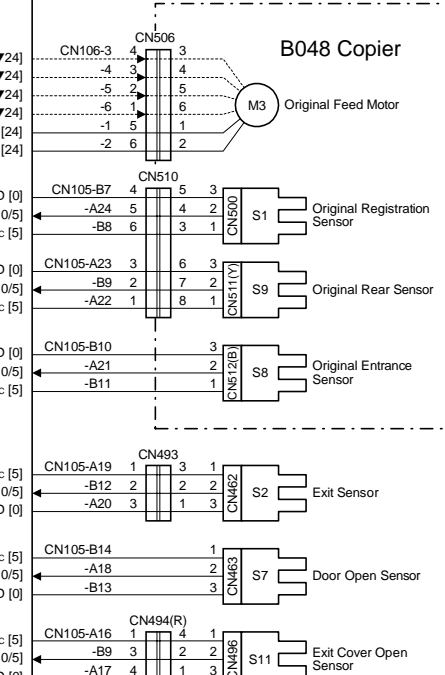
AC Drive Board

Fuse No.	Specification	Symptom
FU201	125 V 15 A (U.S.A. version only)	No power.
FU202	250 1 A	No power is supplied to the de-humidify heater.
CB201	250 V 8 A (Europe version only)	No power.



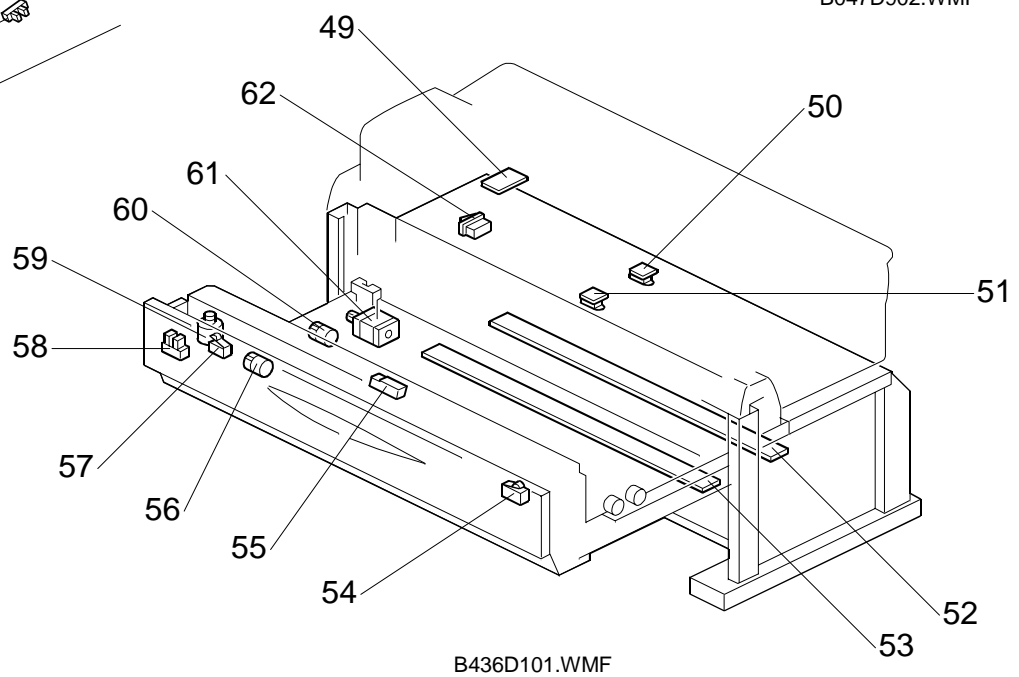
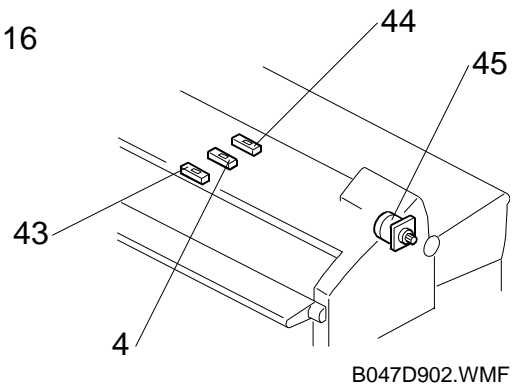
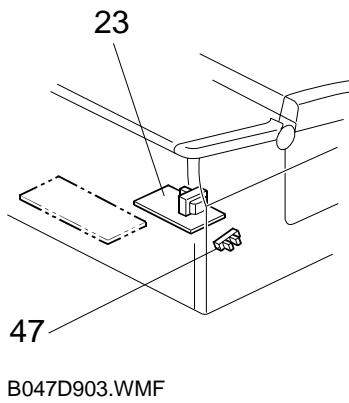
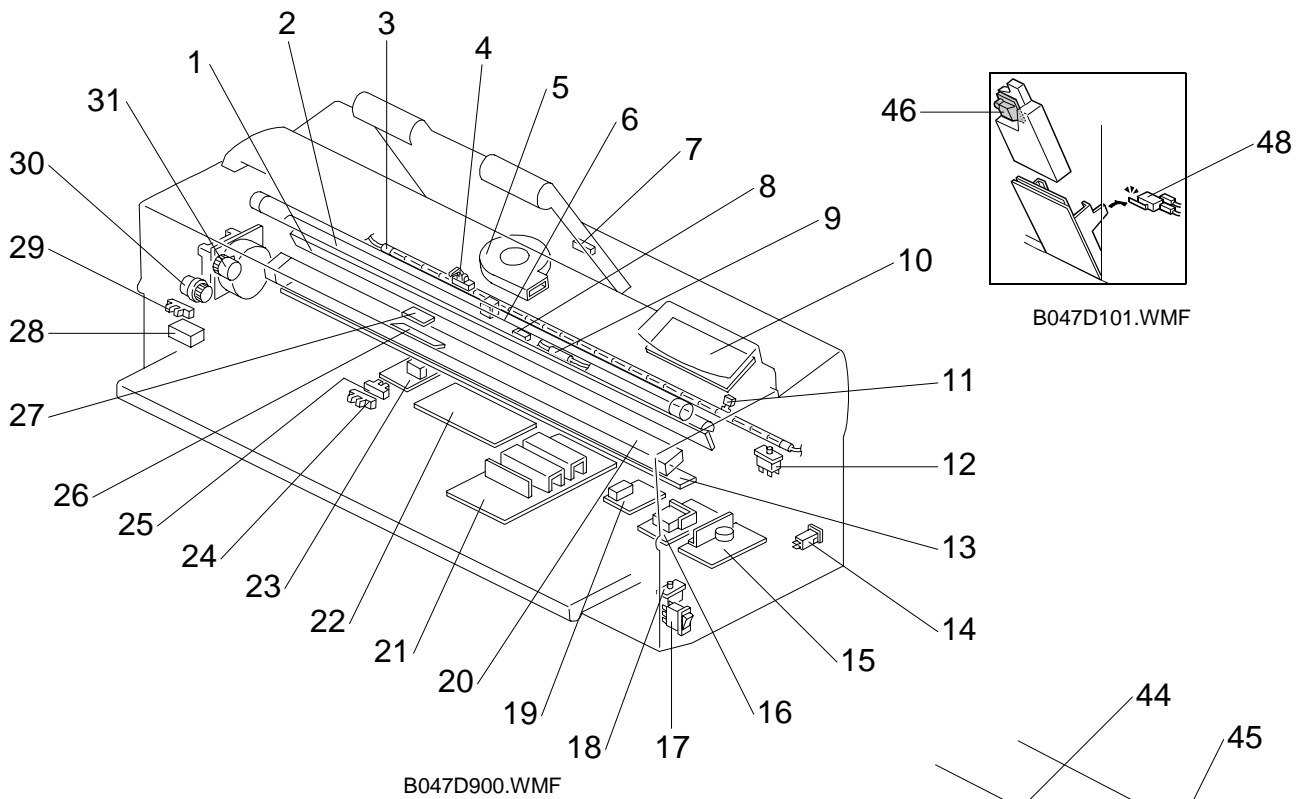
POINT-TO-POINT DIAGRAM
(B047/B048)

SYMBOL TABLE	
	DC Line
	AC Line
	Pulse Signal
	Signal Direction on
	Active High
	Active Low
	Voltage
VCC	5Volts
VAA	24Volts



Main Board
(PCB4)

ELECTRICAL COMPONENT LAYOUT



Symbol	Name	Index No.	P to P
Motors			
M1	Exhaust Fan	5	M10
M2	Main	32	K10
M3	Original Feed (B048 only)	45	P7
M4	Cutter	59	G2
M5	Roll Feed	61	G2
Magnetic Clutch			
MC1	Registration	30	M2
MC2	Toner Supply	31	K2
MC3	Roll Feed 1	56	F2
MC4	Roll Feed 2	60	F2
Solenoids			
SOL1	Pick-off Pawl	6	I2
Switches			
SW1	Fusing Exit Safety	12	D11
SW2	Main	17	F11
SW3	Original & Paper Feed Safety	18	C11
SW4	Used Toner Cover	48	N10
SW5	Right Cutter	54	E2
SW6	Left Cutter	57	E2
SW7	Dehumidity	62	B4
Sensors			
S1	Original Registration	4	P7, L7
S2	Exit	7	P5
S3	Entrance Feed	24	L2
S4	Registration	25	L2
S5	Toner Density	26	J2
S6	Light	27	N2
S7	Door Open	29	P5
S8	Original Entrance (B048 only)	43	P6
S9	Original Rear (B048 only)	44	P6
S10	Toner Overflow	46	M10
S11	Exit Cover Open	47	P4
S12	Paper End 2	50	C2
S13	Paper End 1	51	C2
S14	Leading Edge	55	E2
S15	Door	58	D2

Symbol	Name	Index No.	P to P
Printed Circuit Board			
PCB1	Operation Panel	10	A7
PCB2	AC Drive	15	D12
PCB3	PSU	21	J11
PCB4	Main	22	I7
PCB5	FL Regulator	23	L9
PCB6	RF Drive	49	D4
Lamps			
QL1~3	Quenching (QL)	1	I2
FL1	Exposure	2	L10
L1	Fusing	3	L12
PTL1	Pre-Transfer (PTL)	20	L2
Power Packs			
PP1	Transfer/Separation	16	I10
PP2	Charge/Bias/ Grid Power Pack	19	G10
Thermistors			
TH1	Hot Roller	8	E9
TH2	Pressure Roller	11	F9
Thermofuses			
TF1~2	Fusing	9	K12, L12
Heaters			
H1	Anti-condensation	13	H11
H2	RF Dehumidity Heater 2	52	B2
H3	RF Dehumidity Heater 1	53	B2
Others			
CB1	Circuit Breaker (Europe, Asia)/Fuse (U.S.A.)	14	B12
TC1	Total Counter	28	N2