Gestetner LANIER RICOH savin

G112/G113/G116/G094/G095/G091

SERVICE MANUAL

001705MIU

RICOH GROUP COMPANIES

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G112/G113/G116/G094/G095/G091

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Ricoh Corporation

LEGEND

PRODUCT CODE	COMPANY			
	GESTETNER	LANIER	RICOH	SAVIN
G112	P7527	LP128	Aficio AP410	MLP28
G113	P7527n	LP128n	Aficio AP410N	MLP28n
G116	P7535n	LP135n	Aficio AP610N	MLP35n
G094	P7325	LP026	Aficio AP400	MLP25
G095	P7325n	LP026n	Aficio AP400N	MLP25n
G091	P7132n	LP032	Aficio AP600N	MLP32

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REV. NO.	DATE	COMMENTS
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1	03/2005	G112/G113/G116 Addition

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NOTE: In this manual, “G112 Series” includes the G112, G113, G094, and G095 models.
“G116 Series” includes the G116 and G091 models.

G112/G113/G116/G094/G095/G091

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SEE SECTION G399/G807 FOR DETAILED TABLE OF CONTENTS

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SEE SECTION G806 FOR DETAILED SECTION DESCRIPTION

⚠IMPORTANT SAFETY NOTICES

PREVENTION OF PHYSICAL INJURY

1. Before disassembling or assembling parts of the printer and peripherals, make sure that the printer power cord is unplugged.
2. The wall outlet should be near the printer and easily accessible.
3. Note that some components of the printer and the paper tray unit are supplied with electrical voltage even if the main power switch is turned off.
4. If any adjustment or operation check has to be made with exterior covers off or open while the main switch is turned on, keep hands away from electrified or mechanically driven components.
5. The inside and the metal parts of the fusing unit become extremely hot while the printer is operating. Be careful to avoid touching those components with your bare hands.

HEALTH SAFETY CONDITIONS

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 printer and its peripherals must be installed and maintained by a customer service representative who has completed the training course on those models.
2. The NVRAM on the system control board has a lithium battery which can explode if replaced incorrectly. Replace the NVRAM only with an identical one. The manufacturer recommends replacing the entire NVRAM. Do not recharge or burn this battery. Used NVRAM must be handled in accordance with local regulations.

SAFETY AND ECOLOGICAL NOTES FOR DISPOSAL

1. Do not incinerate toner bottles or used toner. Toner dust may ignite suddenly when exposed to an open flame.
2. Dispose of used toner, developer, and organic photoconductors in accordance with local regulations. (These are non-toxic supplies.)
3. Dispose of replaced parts in accordance with local regulations.
4. When keeping used lithium batteries in order to dispose of them later, do not put more than 100 batteries per sealed box. Storing larger numbers or not sealing them apart may lead to chemical reactions and heat build-up.

LASER SAFETY

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

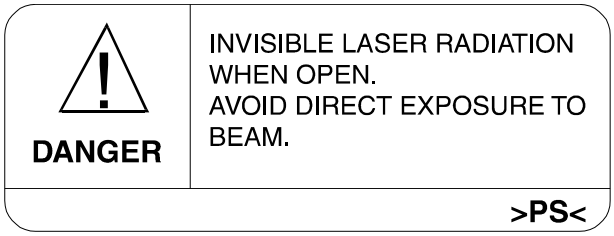
⚠WARNING

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

⚠WARNING

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

Caution Labels



Lithium Batteries (Memory Back-up)

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

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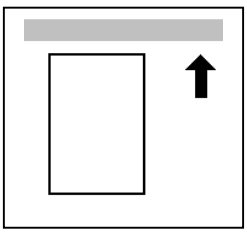
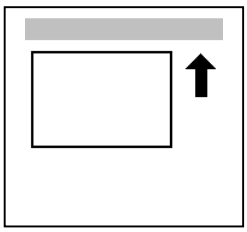
Conventions in this Manual
This manual uses several symbols and some simple abbreviations.

Symbol	What it means
☛	Refer to section number
CT	See Core Tech Manual for details
	Screw
	Connector
	E-ring
	C-ring
HP	Home Position
T/S	Transfer/Separation

The following notations are used in text to describe the direction of paper feed: lengthwise and sideways. The annotations "SEF" and "LEF" denote "Short Edge Feed" and "Long Edge Feed'. (The arrows indicate the direction of paper feed.)



Lengthwise (SEF)



Sideways (LEF)

INSTALLATION

1. INSTALLATION

1.1 INSTALLATION REQUIREMENTS

1.1.1 ENVIRONMENT [ALL MODELS]

1. Temperature Range: 10 °C to 32 °C (50 °F to 89.6 °F)
2. Humidity Range: 15 % to 89 % RH
3. Ambient Illumination: Less than 2,000 lux (do not expose to direct sunlight).
4. Ventilation: 3 times/hr/person
5. Avoid areas that are exposed to sudden temperature changes. This includes:
   1) Areas directly exposed to cool air from an air conditioner.
   2) Areas directly exposed to heat from a heater.
6. Do not install this machine in an area where it will be exposed to corrosive gases.
7. Do not install the machine at locations over 2,500 m (8,125 ft.) above sea level.
8. Put the machine on a strong and level base. Inclination on any side should not exceed 5 mm.
9. Do not put the machine where it may be subjected to strong vibrations.

1.1.2 MACHINE LEVEL [ALL MODELS]

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

Right to left: Within 5 mm. (0.2 inches) of level.

1.1.3 MACHINE SPACE REQUIREMENT [ALL MODELS]

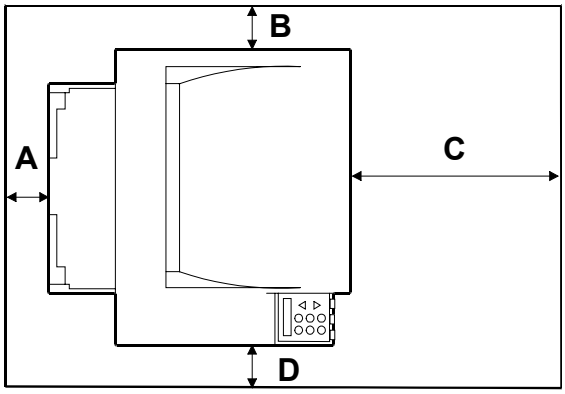
Place the machine near the power source, providing the clearance as shown below:

A: Over 10 cm (4 inches)

B: Over 10 cm (4 inches)

C: Over 100 cm (40 inches)

D: Over 10 cm (4 inches)



1.1.4 POWER SUPPLY [ALL MODELS]

⚠CAUTION
1. Make sure the plug is firmly inserted in the outlet.
2. Avoid multi-wiring.
3. Be sure to ground the machine.

Input voltage level	120 volts, 60 Hz: More than 10 A
	220-240 volts, 50 Hz/60Hz: More than 6 A
Permissible voltage	Fluctuation: ±10 %
Do not set anything on the power cord	

1.2 MACHINE INSTALLATION [ALL MODELS]

Refer to the following sections of the Operating Instructions for installation details for all models.

1.2.1 MAIN UNIT [ALL MODELS]

1. Installing the Printer Unit: Quick Installation Guide.
2. Connecting the machine to a computer: Quick Installation Guide.

1.2.2 HARDWARE OPTIONS

1. Installing the Paper Feed Unit: Section two of the Set-up Guide. (Note: The G116 Paper Tray is unique and is not compatible with the G091 model.)
2. Installing the Envelope Feeder: Section two of the Set-up Guide. (Note: The G116 Envelope Feeder is unique, and is not compatible with the G091 model.)
3. Installing the Duplex Unit: Section two of the Set-up Guide. (Note: The G116 Duplex Unit is unique, and is not compatible with the G091 model.)
4. [G091 only] Installing the One-Bin Shift Tray. Section two of the Set-up Guide.
5. [G091 only] Installing the Four-Bin Mailbox. Section two of the Set-up Guide. (NOTE: The Mailbox and One-Bin Shift Tray are not supported for the G116 model.)

1.2.3 MEMORY OPTIONS [ALL MODELS]

1. Installing the Memory Unit: Section two of the Set-up Guide.
2. Installing the Hard Disk: Section two of the Set-up Guide.

1.2.4 PRINTER INTERFACE OPTIONS

1. Ethernet (G112/G094 models only): Section two of the Set-up Guide.
2. IEEE1394: Section two of the Set-up Guide.
3. IEEE802.11b: Section two of the Set-up Guide.
4. Bluetooth: Section two of the Set-up Guide.

NOTE: The Ethernet is standard for the G113/G116 and G091/G116 models.

1.2.5 DRIVERS AND SOFTWARE [ALL MODELS]

Refer to section 4 of the Set-up Guide for installation procedures.

1.2.6 FIRMWARE UPGRADE [ALL MODELS]

Refer to section 5.4 of the Service Manual.

1.3 SUPPLIES [ALL MODELS]

- Maintenance kit (NOTE: The G094/G095 and G112/G113 Maintenance Kits are not interchangeable. The same applies to the G094 versus the G116 Maintenance Kits. Use the Maintenance Kit that is unique to each model.)
- AIO (NOTE: The G094/G095 AIO can be used in the G112/G113 models, and vice versa. The same interchangeability applies to the G091 and G116 AIO cartridges.)

PREVENTIVE MAINTENANCE

2. PREVENTIVE MAINTENANCE SCHEDULE

2.1 USER MAINTENANCE

NOTE: The G091/G094/G095 and the G112/G113/G116 Maintenance Kits are not interchangeable. Ensure you are using the correct kit for the model you are servicing.

The customer can do all PM items with the Maintenance Kit.

Meter-charge mode must be set to “disabled” (Engine SP mode 5930).

Cross-reference: Section 5.3 Engine service mode

The Operation panel shows “Replace Maintenance Kit” when the PM counter gets to 90K. After the user replaces the fusing unit in the maintenance kit, the machine automatically resets the PM counter.

2.1.1 G112 SERIES (G112/G113 AND G094/G095)

Item	Quantity	Remarks
Fusing unit	1	
Transfer roller	1	
Paper feed roller	3	For standard and optional trays
Friction pad	3	For standard and optional trays

2.1.2 G116 SERIES (G116 AND G091)

Item	Quantity	Remarks
Fusing unit	1	
Transfer roller	1	
Paper feed roller	1	For standard tray
Paper feed roller	2	For optional tray(s)
Friction pad	1	For standard tray
Friction pad	2	For optional tray(s)

2.2 SERVICE MAINTENANCE

The table shows the PM items done by service.

NOTE: 1) To disable the user's PM warning, set meter-charge mode to “ON” in Printer Engine Service Mode.
2) Make sure to reset the PM counters with engine SP mode 7-804 after you complete PM.
- 7-804-1: Transfer roller
- 7-804-2: Paper feed roller
- 7-804-3: Fusing unit.
- (G116/G112/G113 only) SP 7804 255: Paper

Symbol key: C: Clean, R: Replace, L: Lubricate, I: Inspect

2.2.1 MAIN UNIT [ALL MODELS]

Item	90K	EM	Quantity	Remarks
Paper Feed				
Paper Feed Roller	R	C	1	Clean with water
Friction Pad	R	C	1	Clean with water
Registration Roller	C	C	1	Clean with water
Bottom Plate Pad	C	C	1	Clean with water
Around the Drum				
Transfer Roller	R		1	
Fusing Unit and Paper Exit				
Hot Roller	R		1	
Pressure Roller	R		1	
Hot Roller Strippers	R		G091/G116: 5 G094/G095/ G112/G113: 3	
Fusing Thermistor	R	C	1	Clean with alcohol if necessary.
Bushings - Hot Roller	R		2	
Bushings - Pressure Roller	R		2	
Fusing Entrance and Exit Guide Plates	C		1 each	Clean with water or alcohol

2.2.2 PAPER TRAY UNIT [ALL MODELS]

	90K	EM	Quantity	NOTE
Paper Feed Roller	R	C	1	Clean with water
Friction Pad	R	C	1	Dry cloth
Bottom Plate Pad	C	C	1	Clean with water

2.2.3 ONE-BIN SHIFT TRAY [G091 ONLY]

	90K	EM	Quantity	NOTE
Exit Rollers		C		Clean with water
Driven Rollers		C		Clean with water
Transport Rollers		C		Clean with water
Paper Tray		C		Clean with water
Tray Paper Sensor		C		Clean with water

2.2.4 FOUR-BIN MAILBOX [G091 ONLY]

	90K	EM	Quantity	NOTE
Exit Rollers		C		Clean with water
Driven Rollers		C		Clean with water
Trays		C		Clean with water

NOTE: The optional One-Bin Shift Tray and the Four Bin Mailbox units are for the G091 machine only. [These two options are not supported for the successor G116 model.]

REPLACEMENT AND ADJUSTMENT

3. REPLACEMENT AND ADJUSTMENT

⚠CAUTION

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

The Replacement and Adjustment procedures in this section are for all models, unless otherwise specified. Differences are shown with the machine code.

NOTE: This manual uses these symbols.

☛ : See or Refer to : Screws : Connector

3.1 GENERAL

3.1.1 PRECAUTIONS ON DISASSEMBLY [ALL MODELS]

Use extreme caution when removing and replacing components. The cables in the machine are located very close to moving parts. Proper cable routing is a must.

Before removing any component from the machine, note any cable routings that may be affected. After components have been removed, any cables that have been displaced during the procedure must be rerouted as closely as possible to their original positions.

Before servicing the machine:

1. Verify that documents are not stored in memory.
2. Remove the toner cartridge before you remove parts.
3. Unplug the power cord.
4. Work on a flat and clean surface.
5. Replace with authorized components only.
6. Do not force plastic material components.

Ensure that all components are returned to their original positions, when you have completed service activity.

Laser unit

1. Do not loosen or adjust the screws securing the LD drive board on the LD unit. Doing so will throw the LD unit out of adjustment.
2. Do not adjust the variable resistors on the LD unit, as these are permanently adjusted at the factory. If replacement of the LD drive board is necessary, replace the entire LD unit.
3. Keep the polygon mirror and toroidal lens free of dust. Laser performance is very sensitive to dust on these components.
4. Do not touch the shield glass or the surface of the polygon mirror with bare hands.
5. Do not adjust the Laser Synchronization detector on the LD unit, as these are permanently adjusted at the factory. If the position of the Laser Synchronization detector has changed from the factory set position, SC 322 will be shown.

Transfer Roller

1. Never touch the surface of the transfer roller with bare hands.
2. Be careful not to scratch the transfer roller, as the surface is easily damaged.

Fusing

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

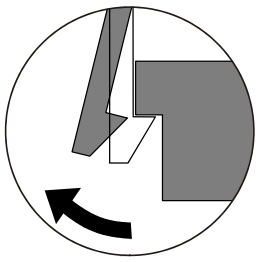
Paper Feed

1. Do not touch the surface of paper feed rollers.
2. To avoid misfeeds, the side and end fences in each paper tray must be positioned correctly so as to align with loaded paper size.

3.1.2 RELEASING PLASTIC LATCHES [ALL MODELS]

Many of the parts are held in place with plastic latches. The latches break easily, so release them carefully.

To remove such parts, press the hook end of the latch away from the part to which it is latched.



3.1.3 AFTER SERVICING THE MACHINE [ALL MODELS]

1. Make sure all parts that require grounding are properly grounded.
2. Make sure the interlock switch is functioning.
3. Do not leave unused parts inside the machine.
4. Do not leave any tools inside the machine.
5. Make sure all wires are properly connected and routed.
6. Make sure wires are not jammed between parts of the machine.
7. Print a configuration sheet to verify machine operation. (See Printer Reference Guide for procedure.)

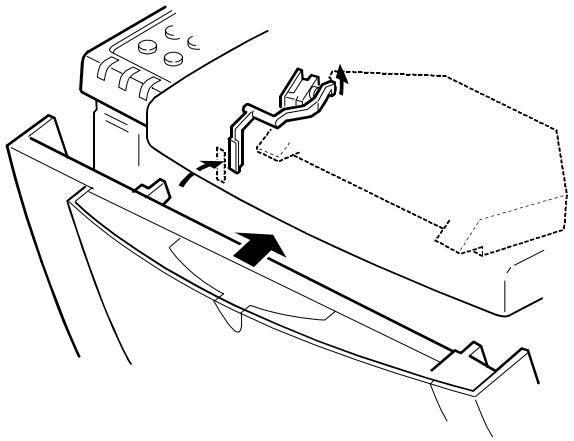
3.2 SPECIAL TOOLS

Part Number	Description	Q'ty	Remarks
N8036701	Flash Memory (PCMCIA) Card - 4MB	1	Used in common with other printers. (Use with G094/G095/G091)
N8031000	Flash Memory (PCMCIA) Card Case	1	Used in common with other printers. (Use with G094/G095/G091)
B6456700	PCMCIA Card Adapter	1	Used to allow SD card download/ upload via a PCMCIA card slot. (Use with G112/G113/G116)
A0069104	Scanner Positioning Pin (4 pieces/set)	1	Used for LD Unit positioning. Used in common with the G073 series and other models.
B6455010	SD Card Kit (64MB)	1	Used for service activities (firmware update, etc.). (Use with G112/G113/ G116)
B6456800	USB Reader/Writer	1	For use with SD Card Kit (Use with G112/G113/G116)
G0219350	Loop Back Connector	1	Used in common with other printers.

3.3 COVERS

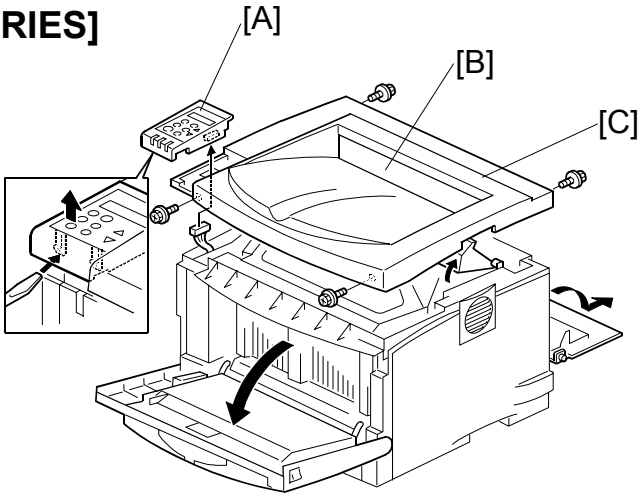
3.3.1 FRONT COVER [ALL MODELS]

To open the front cover, gently push the cover inward (2 hooks).



3.3.2 UPPER COVER [G112 SERIES]

NOTE: Remove the exit guide plate after you have removed the upper cover.



Open the front cover and rear cover (3 clamps, 2 harnesses). Then remove the AIO.

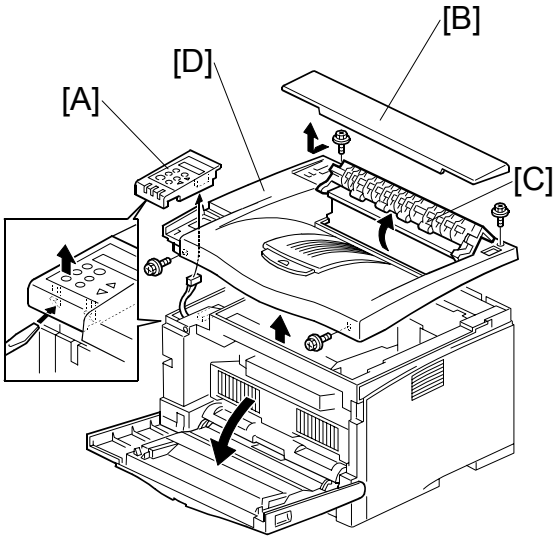
[A]: Operation panel (2 hooks)
[B]: Open the exit guide plate
[C]: Upper cover (x 4)

NOTE: Remove the exit guide plate after you have removed the upper cover.

3.3.3 UPPER COVER [G116 SERIES]

Open the front cover and rear cover (3 clamps, 2 harnesses). Then remove the AIO.

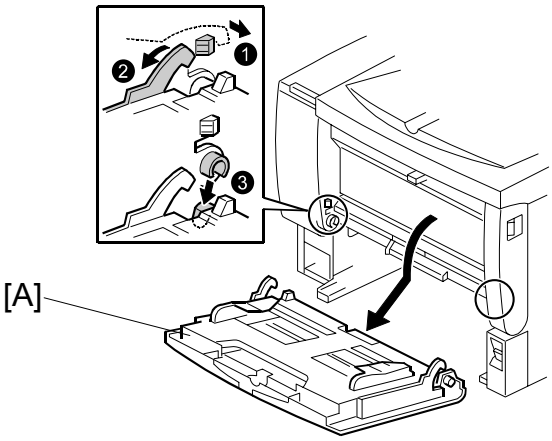
[A]: Operation panel (2 hooks)
[B]: Upper exit cover
[C]: Open the exit guide plate.
[D]: Upper cover (x4)



3.3.4 BY-PASS TRAY UNIT [ALL MODELS]

NOTE: Remove the by-pass tray unit before removing the exterior covers.

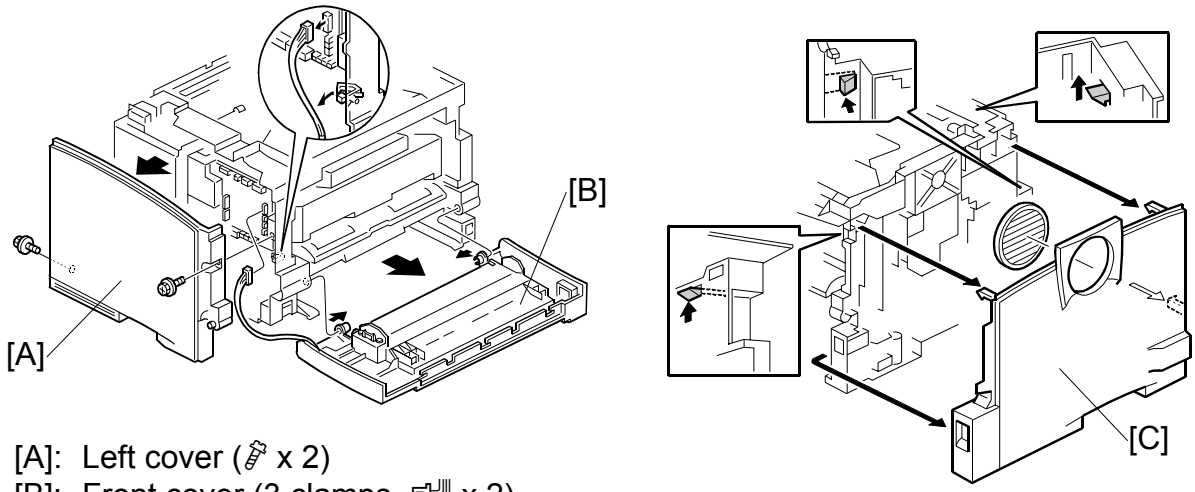
[A]: By-pass tray unit (2 hooks)



3.3.5 EXTERIOR COVERS [G112 SERIES]

NOTE: Pull out the standard paper tray before removing the front cover.

To remove the left or right cover, separate the machine from the optional paper tray unit first.

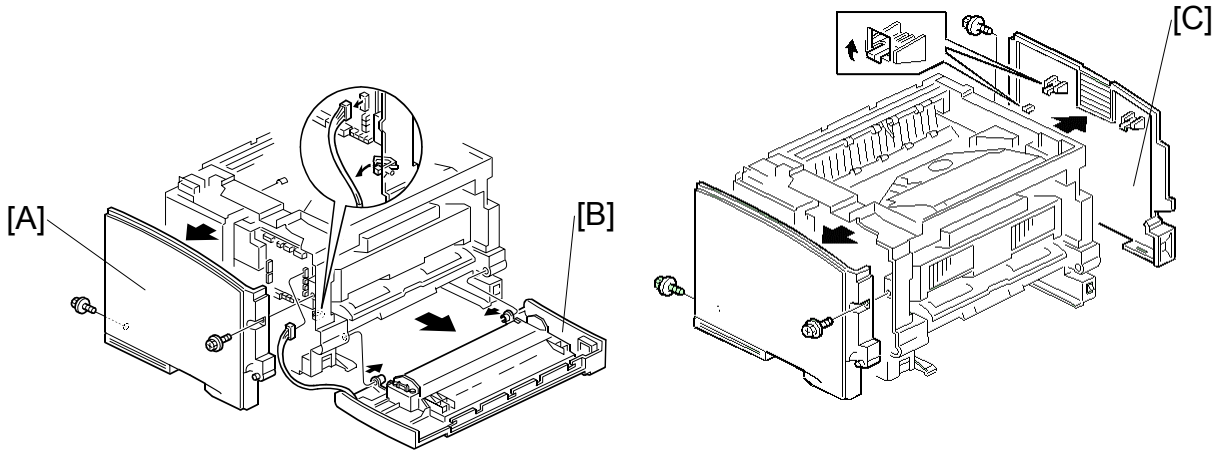


[A]: Left cover (☞ x 2)
[B]: Front cover (3 clamps, ☞ x 2)
[C]: Right cover (3 hooks, 1 fan cover)

3.3.6 EXTERIOR COVERS [G116 SERIES]

NOTE: Pull out the standard paper tray before removing the front cover.

⇒



To remove the left or right cover, separate the machine from the optional paper tray unit first.

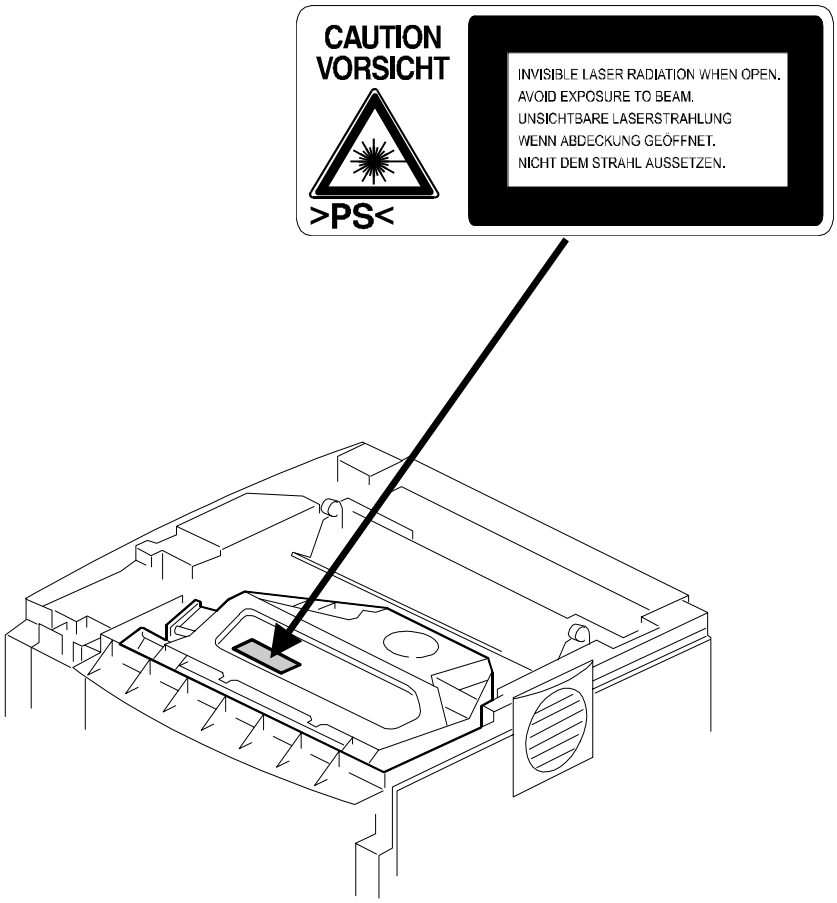
Open the front cover.

[A]: Left cover (☞ x 2)
[B]: Front Cover (3 clamps, ☞ x 2)
⇒[C]: Right cover (3 hooks, (☞ x 1)

3.4 LASER UNIT

⚠WARNING
Turn off the main power switch and unplug the machine before attempting any of the procedures in this section. Laser beams can cause serious eye damage.

3.4.1 CAUTION DECAL LOCATIONS [ALL MODELS]



3.4.2 POLYGON MIRROR MOTOR [ALL MODELS]

⚠WARNING

Turn off the main switch and unplug the machine before attempting any of the procedures in this section. Laser beams can seriously damage your eyes.

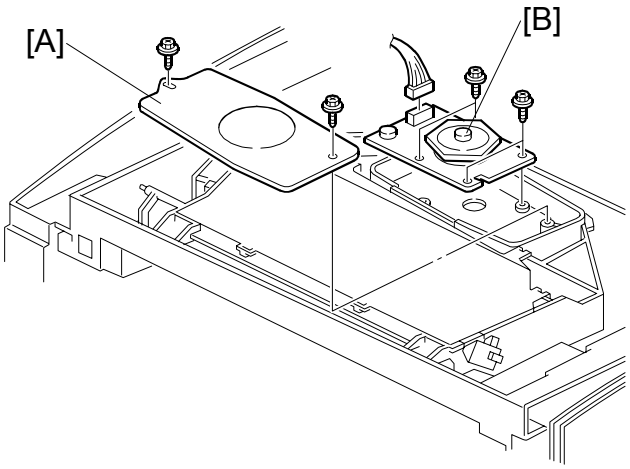
NOTE: Do not touch the surface of the mirror with bare hands.

Operation panel (☛ 3.3.2)

Upper cover ([G094/G095]☛ 3.3.2, [G091] ☛ 3.3.3)

[A]: Polygon mirror cover (🔩 x 2)

[B]: Polygon mirror motor (🔩 x 4, 🖐 x 1)



3.4.3 LASER SYNCHRONIZATION DETECTOR [ALL MODELS]

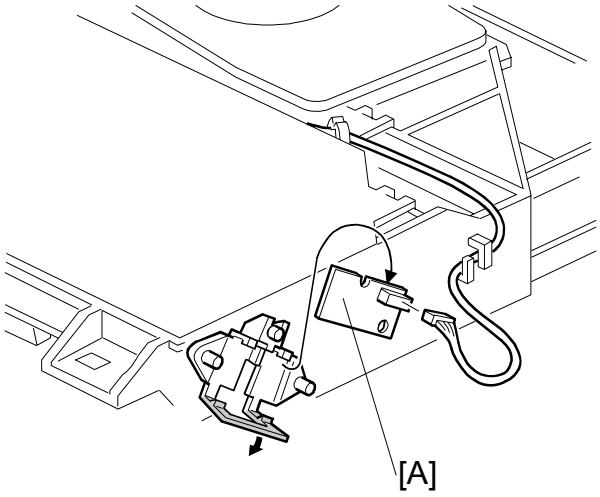
Operation panel (☛ 3.3.2)

Upper cover ([G094/G095]☛ 3.3.2, [G091] ☛ 3.3.3)

By-pass tray unit (☛ 3.3.4)

Exterior covers ([G094/G095]☛ 3.3.5, [G091] ☛ 3.3.6)

[A]: Laser synchronization detector (🖐 x 1)

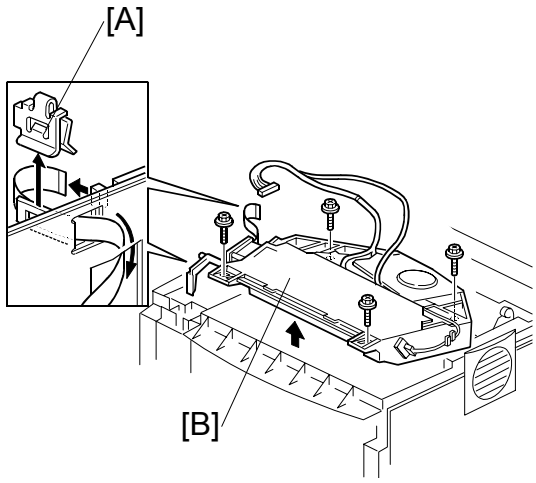


3.4.4 LASER UNIT [G112 SERIES]

Upper cover ([G112 Series]☛ 3.3.2, [G116 Series] ☛ 3.3.3)

Exterior covers ([G112 Series]☛ 3.3.5, [G116 Series] ☛ 3.3.6)

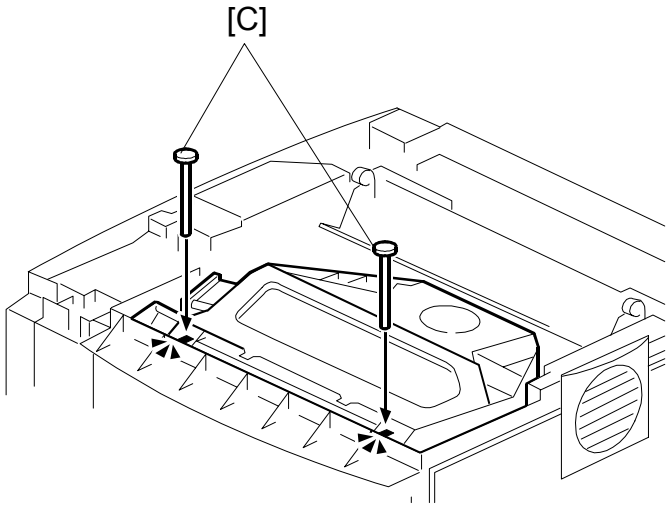
[A]: Clip
[B]: Laser unit (x 4, 1 flat cable, x 2)



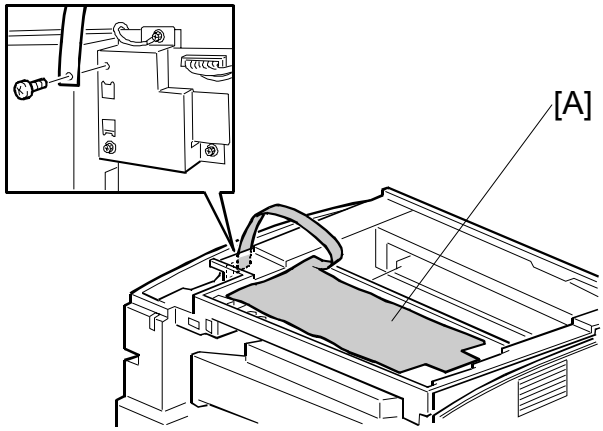
When reinstalling the laser unit.

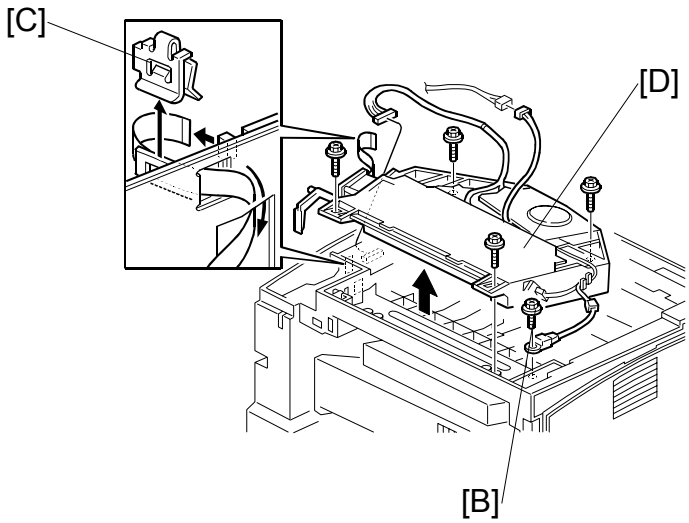
Use the scanner positioning pins (P/N: A0069104) to reinstall the unit.

[C]: Set the positioning pins as shown above. Then secure the laser unit.



3.4.5 LASER UNIT [G116 SERIES]





Operation panel (☛ 3.2 Exterior Covers)

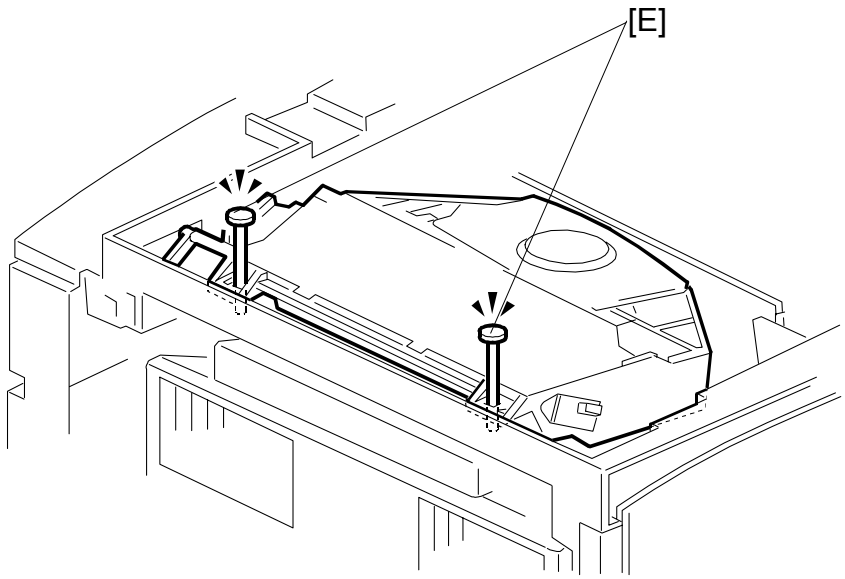
Upper cover (☛ 3.2 Exterior Covers)

Left cover (☛ 3.2 Exterior Covers)

[A]: **230V machine only:** Sheet (🔩 x 1)
[B]: Thermistor (🔩 x 1)
[C]: Clip
[D]: Laser unit (🔩 x 4, 1 flat cable, 🔌 x 2)

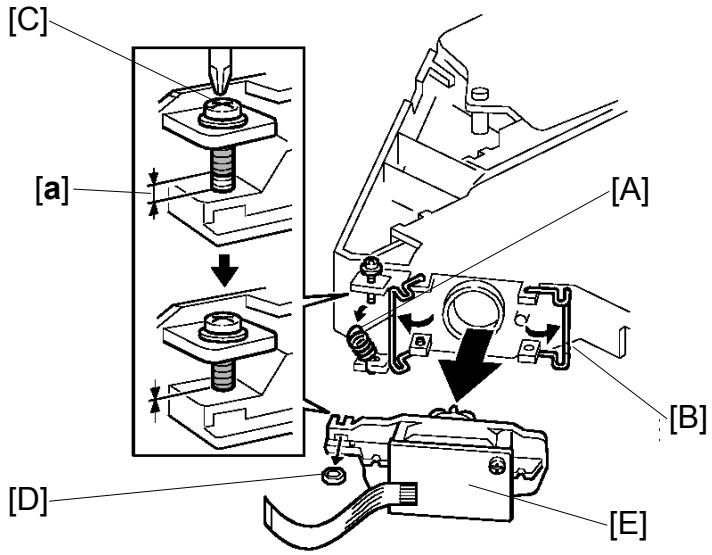
When reinstalling the laser unit

Use the scanner positioning pin (P/N: A0069104) to reinstall the unit.



[E]: Set the positioning pins as shown above. Then secure the laser unit.

3.4.6 LASER DIODE UNIT [ALL MODELS]



Laser Unit (☛ 3.4.4)

[A]: Spring
[B]: LD unit holders (x 2)
[C]: Loosen the screw (☛ **NOTE 1** below)
[D]: Nut
[E]: LD unit

NOTE: 1) Do not remove the screws that secure the LD board.
2) Do not touch any variable resistors on the LD board.

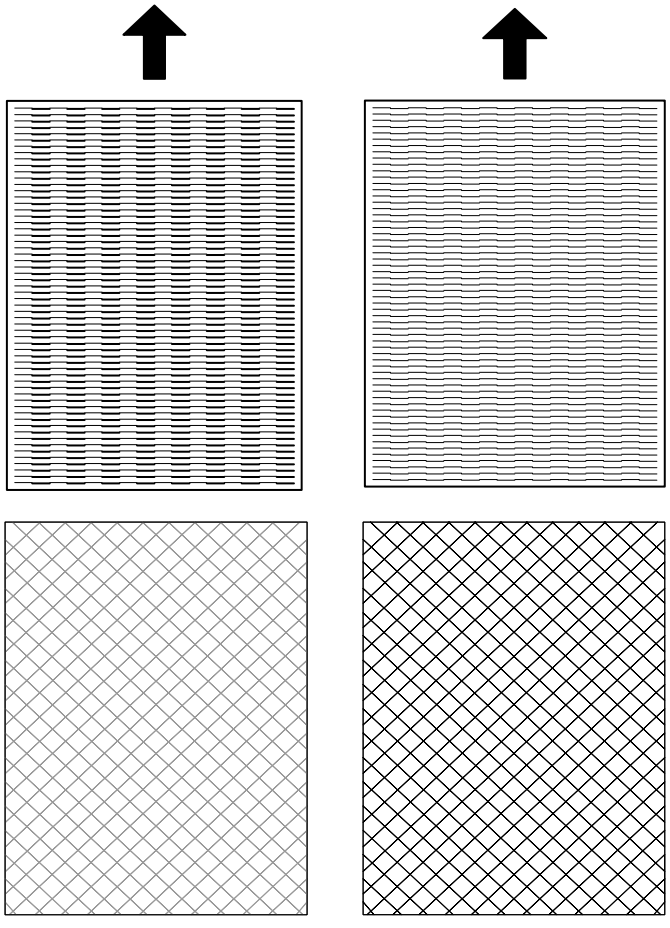
When re-installing the LD unit:

Tighten the screw [C] until the unpainted portion of the screw [a] is not visible.

After installing the LD unit, perform the Laser Beam Pitch Adjustment (☛ 3.4.7).

3.4.7 LASER BEAM PITCH ADJUSTMENT [ALL MODELS]

1. Print out the following test patterns – cross-stitch pattern and two-dot argyle pattern.
   - Select the test pattern with SP 2902.
   - After selecting a pattern, the display automatically goes to SP 5902. Use SP 5902-1 to print one test pattern.
   - After completing the adjustment, reset SP 2902 to 'no specified'.
2. Check these test patterns. If the laser beam pitch is not correct, the images are as follows.
   - Cross-stitch pattern: Vertical black strips seem to appear.
   - Argyle pattern: The density of the diagonal lines is light or the lines have disappeared.
3. Adjust the LD unit holder position: Tighten or loosen the screw [C] (see the previous page) until the printout appears as follows.
   - Cross-stitch pattern: The thin lines are of uniform thickness (no striping effect should appear on the printout).
   - Grid pattern: The diagonal lines appear clearly and are of normal density.



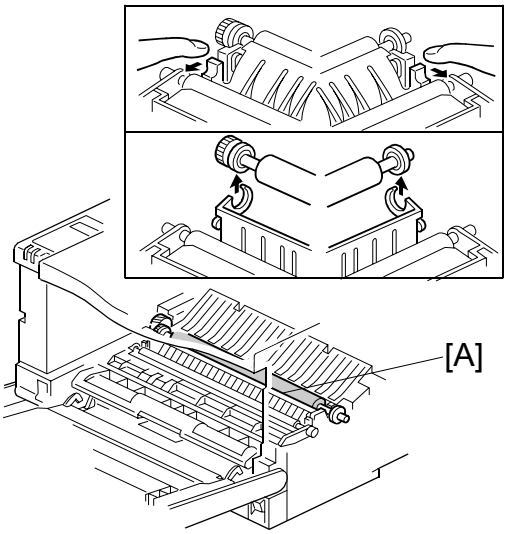
Adjustment not complete Adjustment complete

3.5 TRANSFER ROLLER [ALL MODELS]

NOTE: Do not touch the transfer roller surface.

Remove the AIO cartridge before removing the transfer roller

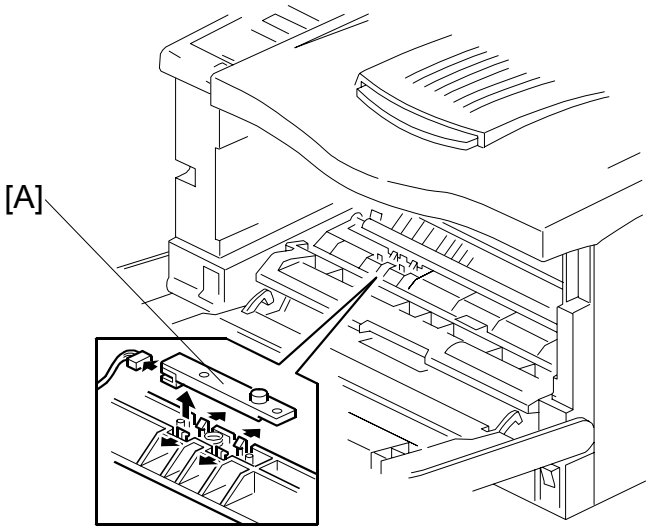
[A]: Transfer roller



3.6 TONER END SENSOR [ALL MODELS]

Remove the AIO cartridge before removing the transfer roller

[A]: Toner end sensor (4 hooks, x 1)



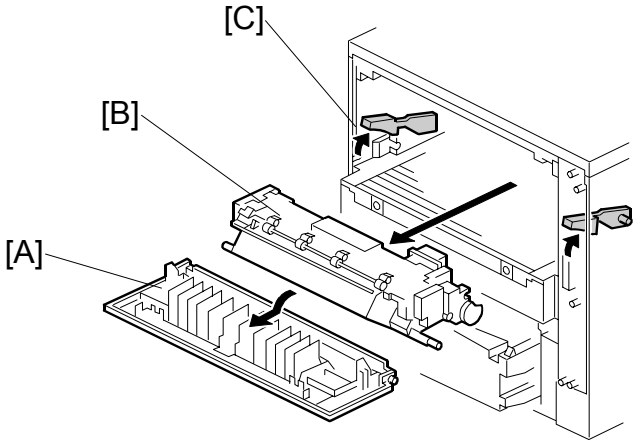
3.7 FUSING

⚠CAUTION
Allow time for the unit to cool before doing the following procedure.

3.7.1 FUSING UNIT [ALL MODELS]

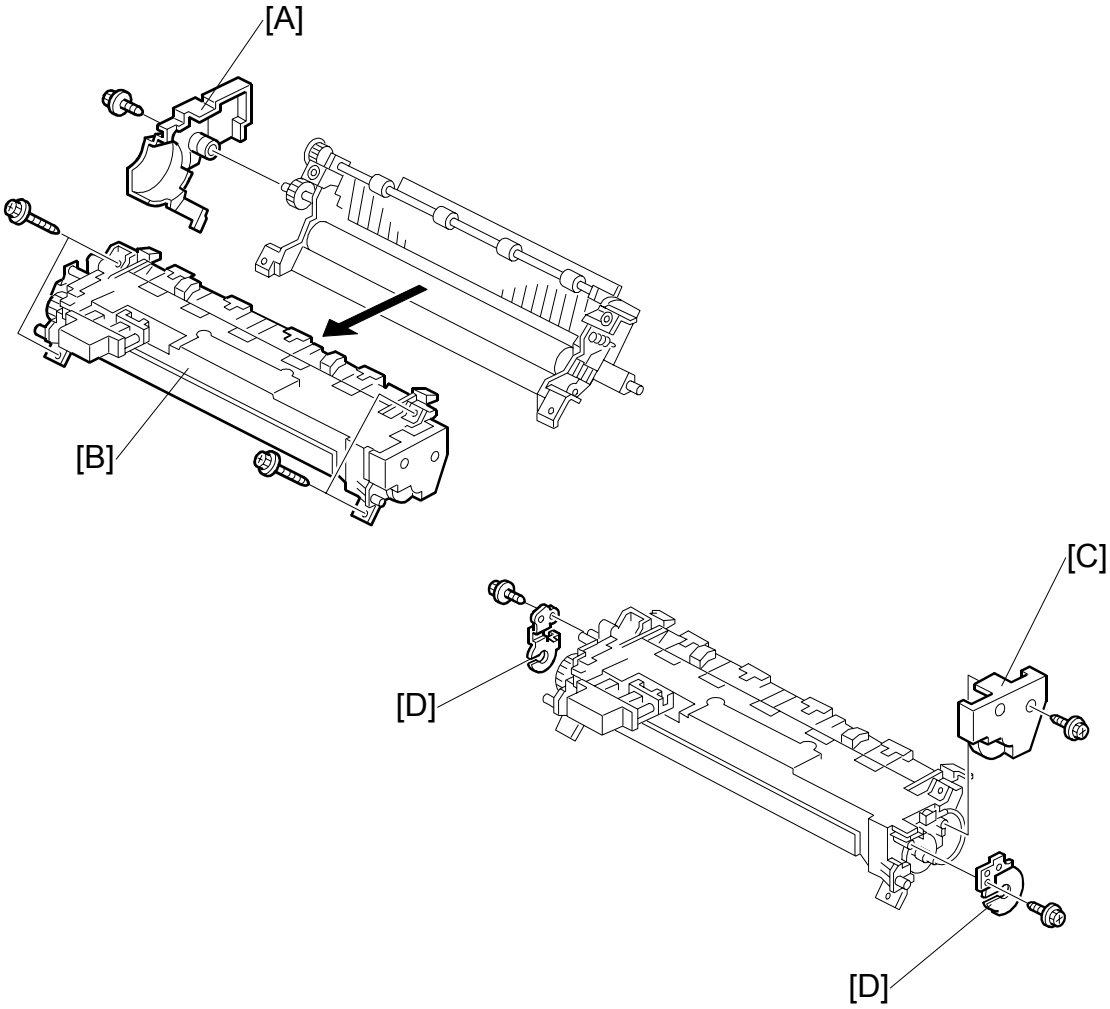
NOTE: Lift both hooks before attempting to remove the fusing unit from the machine.

[A]: Rear cover
[B]: Fusing unit (2 hooks [C])



3.7.2 HOT ROLLER AND FUSING LAMP [ALL MODELS]

NOTE: 1) Remove both springs before taking apart the fusing unit assembly. This will relieve pressure on the unit.
2) When reinstalling the fusing unit assembly, install both springs last. This will reset the springs back to their default position.

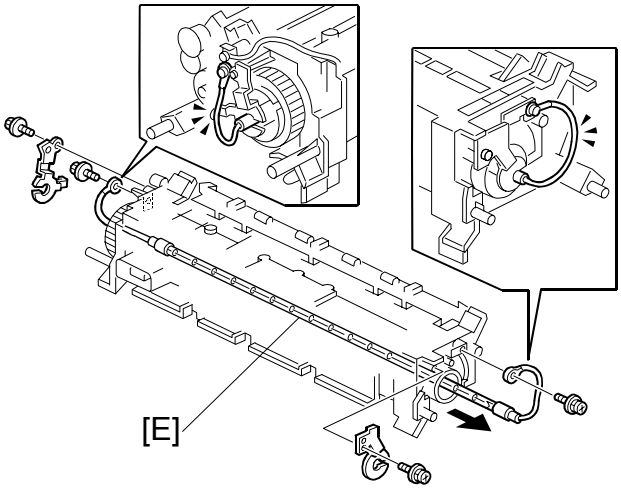


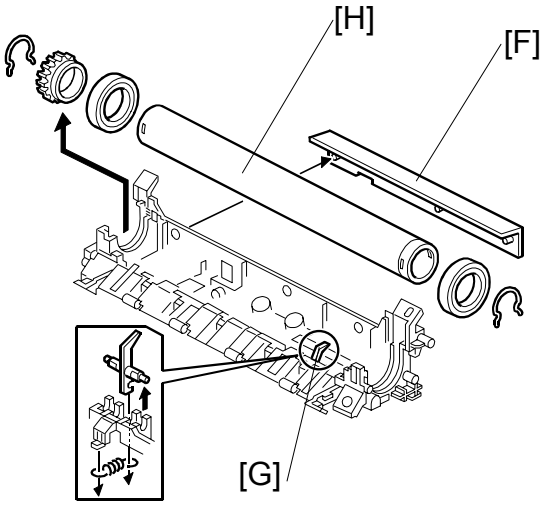
Fusing Unit (☛ 3.7.1)
[A]: Left cover (☞ x 1)
[B]: Upper fusing unit assembly (☞ x 4, 2 springs)
[C]: Right cover (☞ x 1)
[D]: Lamp holders (☞ x 1 each)

(Procedure continued on next page)

3.7.2 Hot Roller and Fusing Lamp continued

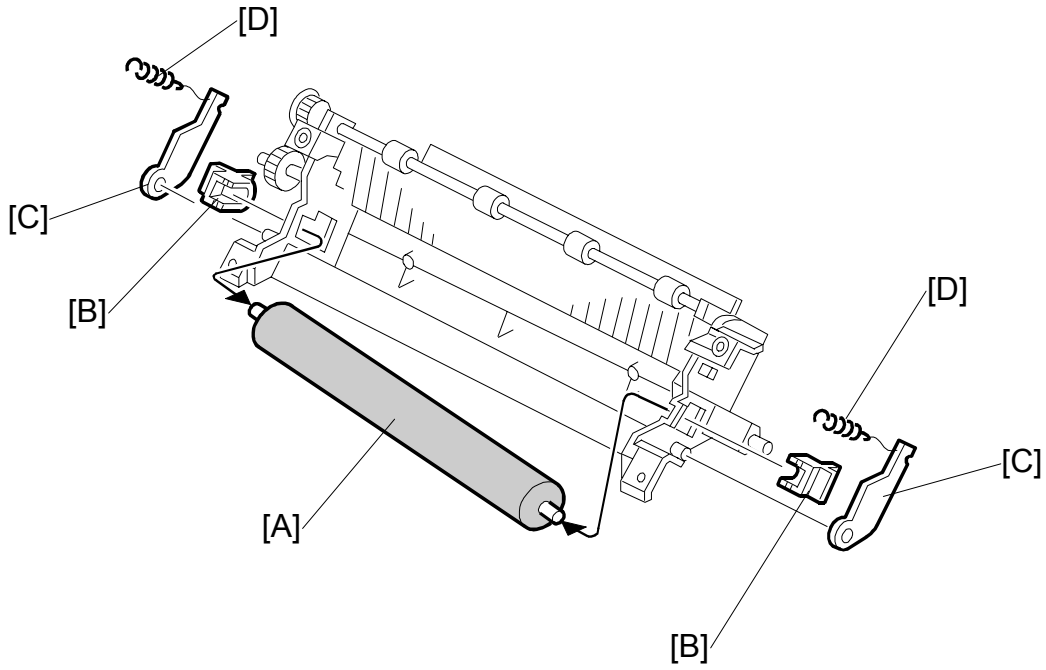
NOTE: 1) Take the gear and the pin off first, before removing the hot roller from the unit.
2) Use a small screwdriver to separate the guide plate from the unit.
3) Before installing the new hot roller, peel off 3 cm (1 inch) from both ends of the protective sheet on the new hot roller. Make sure to remove the rest of the paper before starting the machine.





[E]: Fusing Lamp (☞ x 2)
NOTE: The colored cable must be at the hot roller gear side.
[F]: Guide plate (3 hooks)
[G]: Hot roller strippers (1 spring each)
[H]: Hot roller (2 C-rings, 1 gear, 2 bushings)

3.7.3 PRESSURE ROLLER [ALL MODELS]

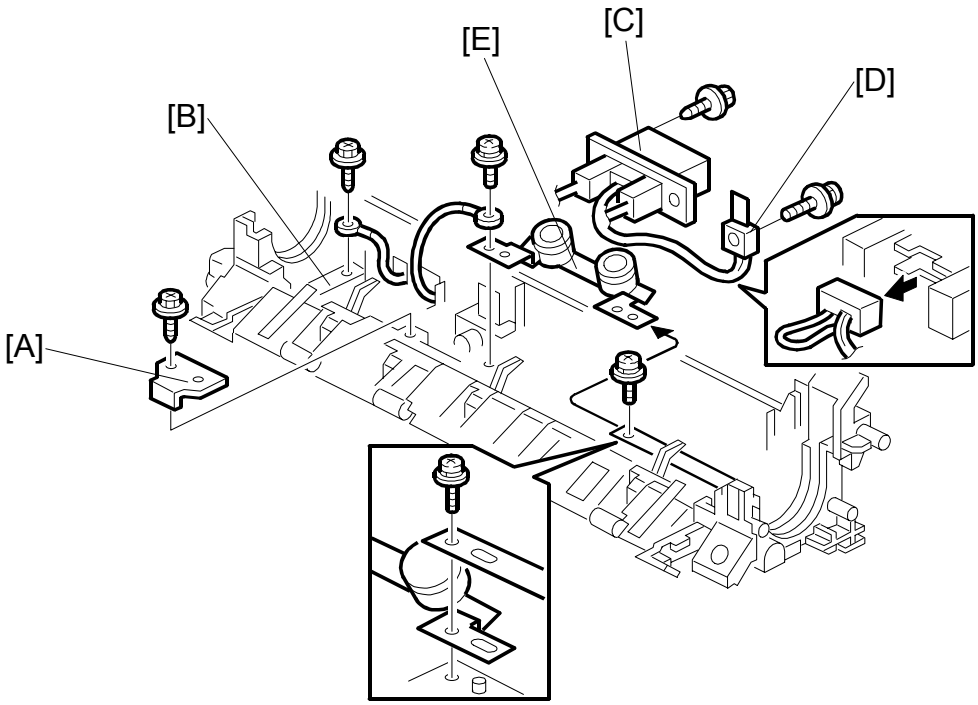


Fusing Unit (☛ 3.7.1)

Hot roller and fusing lamp (☛ 3.7.2)

[A]: Pressure roller
[B]: Bushing
[C]: Pressure roller lever
[D]: Spring

3.7.4 THERMISTOR AND THERMOSTAT [ALL MODELS]

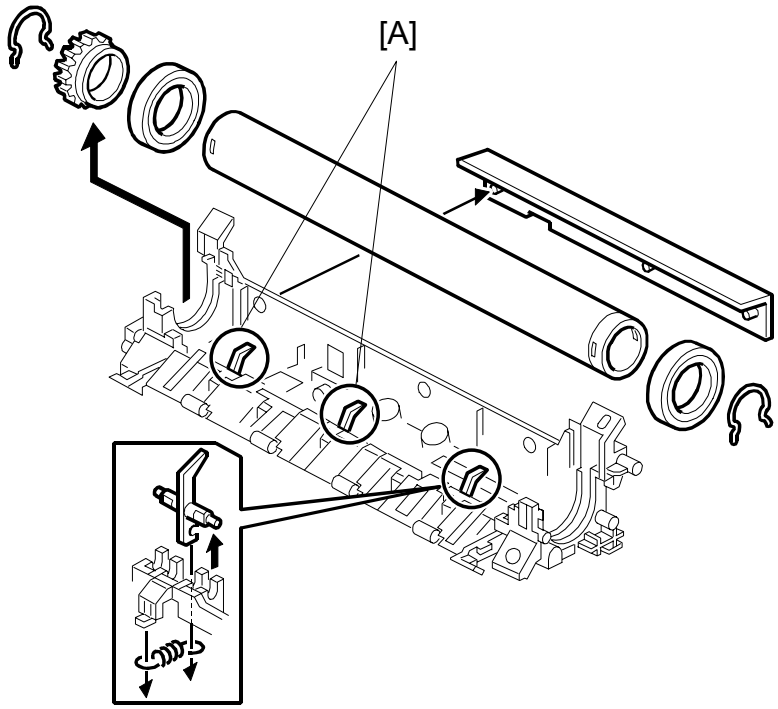


Hot roller and fusing lamp (☛ 3.7.2)

[A]: Wire cover (🔩 x 1)
[B]: Grounding plate (🔩 x 2, 1 wire)
[C]: Fusing unit connector (🔩 x 6, ✋ x 1, 2 hooks)
[D]: Thermistor (🔩 x 1, 1 harness)
[E]: Thermostat (🔩 x 1)

NOTE: 1) When removing the thermistor, remove the entire unit first and then separate it into two parts.
2) Do not touch the thermostat with your hands.

3.7.5 HOT ROLLER STRIPPERS [G112 SERIES]

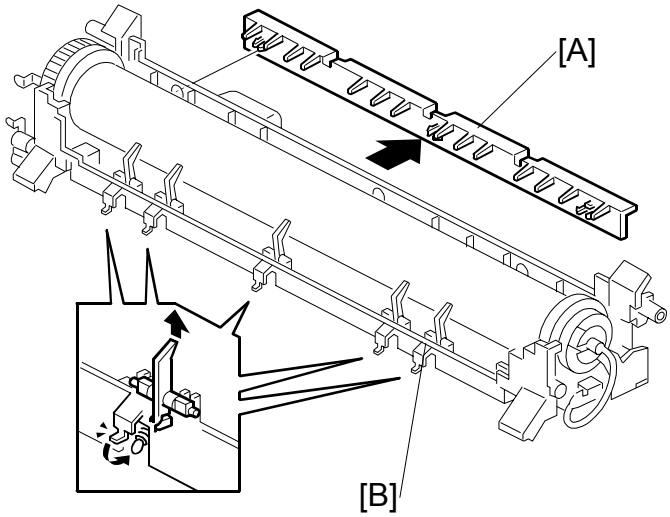


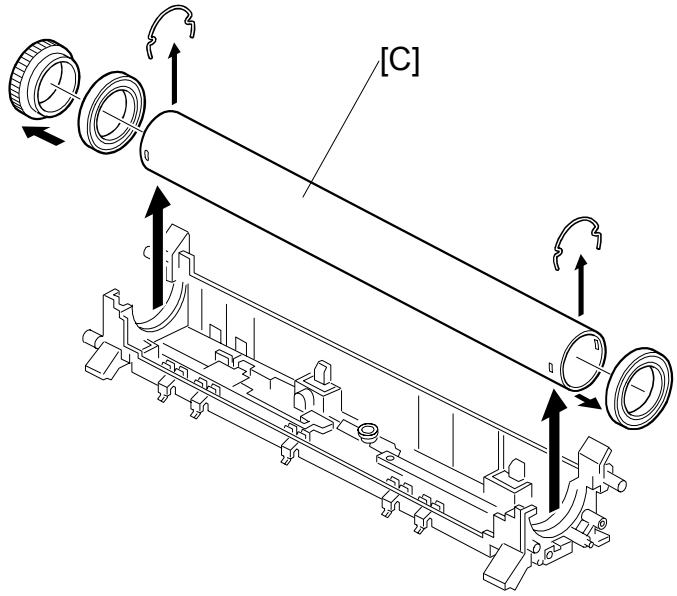
Hot roller and fusing lamp (☛ 3.7.2)

NOTE: Extra Hot Roller Strippers

1) Two extra hot roller strippers [A] are available for this machine. These are used to provide a better grip for narrower paper. This helps prevent paper from curling around the hot roller.
2) When installing the 2 extra hot roller strippers, insert them in the two slots using a small pair of pliers until they snap into place.

3.7.6 HOT ROLLER STRIPPERS [G116 SERIES]





[A]: Guide plate (3 hooks)
[B]: Hot roller strippers (1 spring each)
[C]: Hot roller (2 C-rings, 1 gear, 2 bushings).

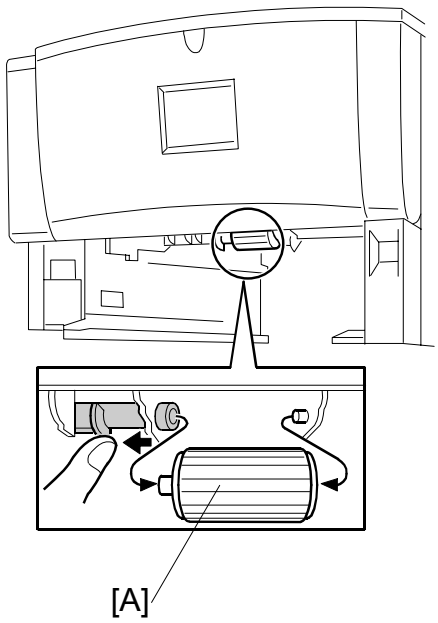
NOTE: Before installing the new hot roller, peel off 3 cm (1 inch) from both ends of the protective sheet on the new roller. Also, remove the rest of the paper before starting the machine.

3.8 PAPER FEED

3.8.1 PAPER FEED ROLLER [ALL MODELS]

NOTE: Pull out the paper tray before removing the paper feed roller.

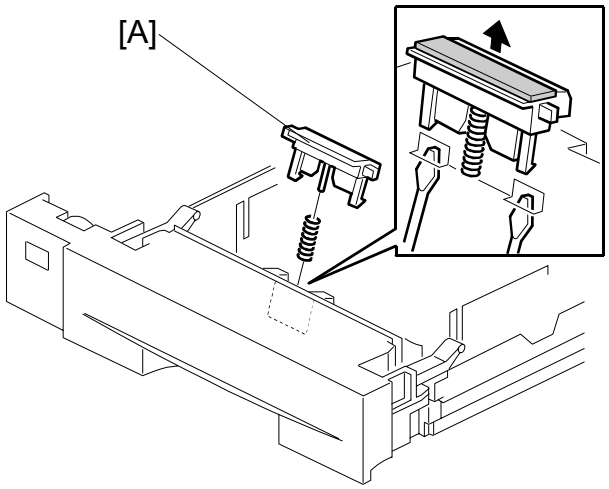
[A]: Paper feed roller



3.8.2 FRICTION PAD [ALL MODELS]

NOTE: Remove the paper tray unit from the machine before removing the friction pad.

[A]: Friction pad (2 hooks, 1 spring)

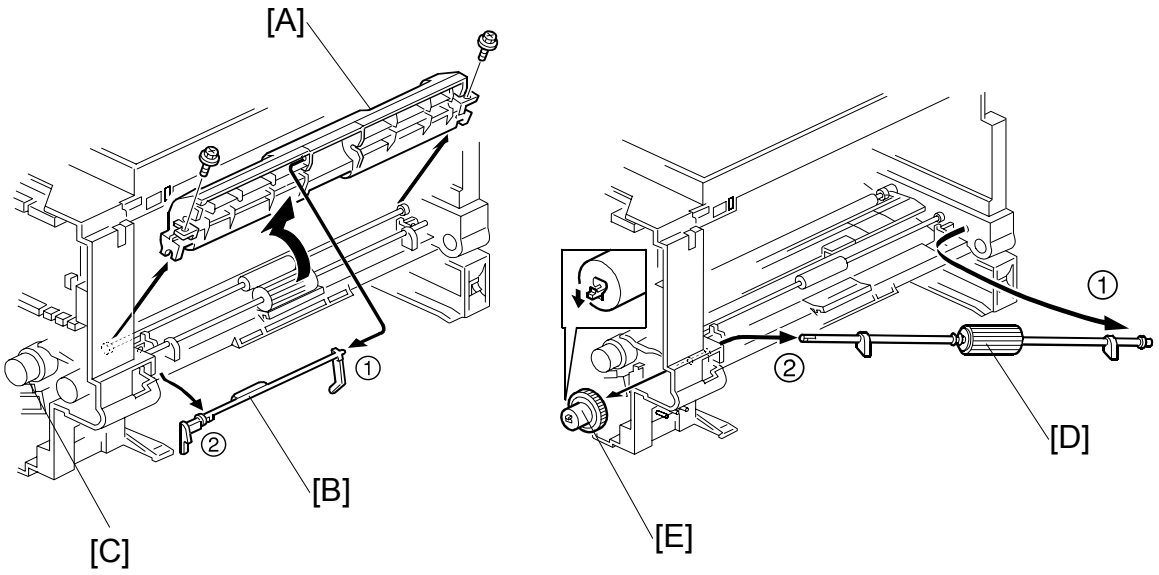


When reinstalling the friction pad follow this order

1. Replace the spring.
2. Insert the right side of the friction pad first followed by the left side.
3. Gently push the friction pad down into the slot and then pull forward very slightly.

3.9 BY-PASS TRAY

3.9.1 BY-PASS TRAY UNIT AND BY-PASS FEED ROLLER [ALL MODELS]



Left cover ([G112 Series]☛ 3.3.5, [G116 Series] ☛ 3.3.6)

Front cover ([G112 Series]☛ 3.3.5, [G116 Series] ☛ 3.3.6)

Remove the AIO

[A]: Paper guide (🔩 x 2)
[B]: Actuator
[C]: Solenoid (🔩 x 1)
[D]: By-pass feed roller
[E]: Gear (1 hook)

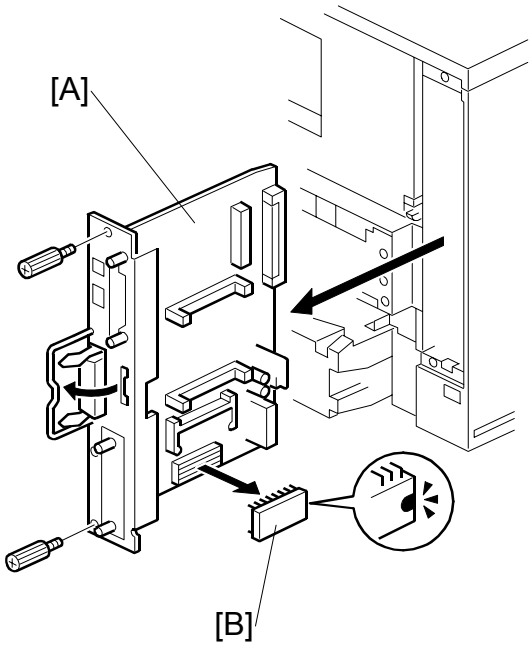
When reinstalling the paper guide.

1. Set the paper guide on the bushing.
2. Install the right side of the actuator on the paper guide.
3. Install the left side of the actuator in the machine.
4. Install the paper guide.
5. Check that the actuator moves smoothly and swings freely.

3.10 PRINTER CONTROLLER BOARD [ALL MODELS]

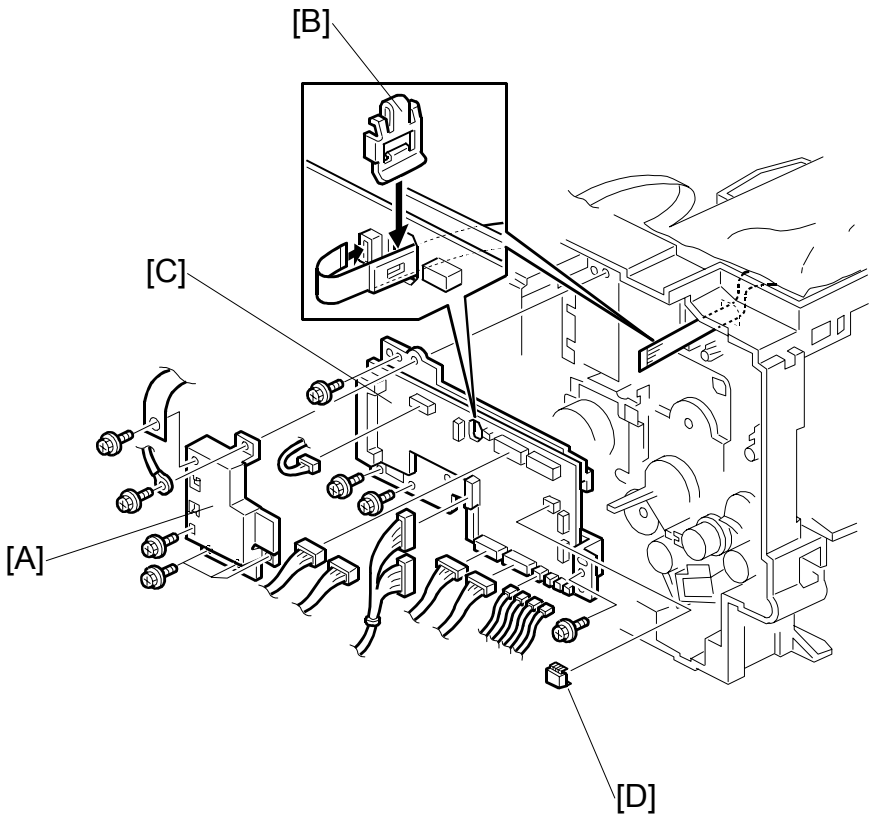
The board for the G112/G094 is different from the board for the G113/G095. **Make sure to install the correct board.**

NOTE: 1) Remove the Duplex Unit before you remove the controller board. [G116/G091 machine only]
2) The screws on the printer controller board are hand screws. Gently turn these screws when removing the printer control board.
3) Pull on the handle to remove the printer controller board from the machine.



[A]: Printer controller board (☞ x 2)
[B]: NVRAM
NOTE: Remove the NVRAM from the old printer controller board and insert it on the new board.

3.11 ENGINE BOARD [ALL MODELS]



Left cover ([G112 Series]☛ 3.3.5, [G116 Series] ☛ 3.3.6)

Printer controller board (☛ 3.10)

[A]: Bracket (🖉 x 7, 1 grounding wire)
NOTE: Be careful not to damage the flat cable.

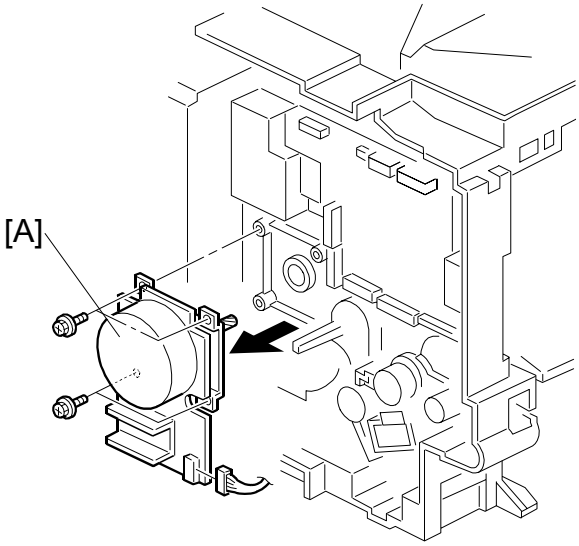
[B]: Clip

[C]: Engine board (🖉 x 4, all connectors)
NOTE: Remove the NVRAM [D] from the old engine board and insert it on the new board.

3.12 MAIN MOTOR [ALL MODELS]

Left cover ([G112 Series]☛ 3.3.5, [G116 Series] ☛ 3.3.6)

[A]: Main motor (🔩 x 4, ✋ x 1)

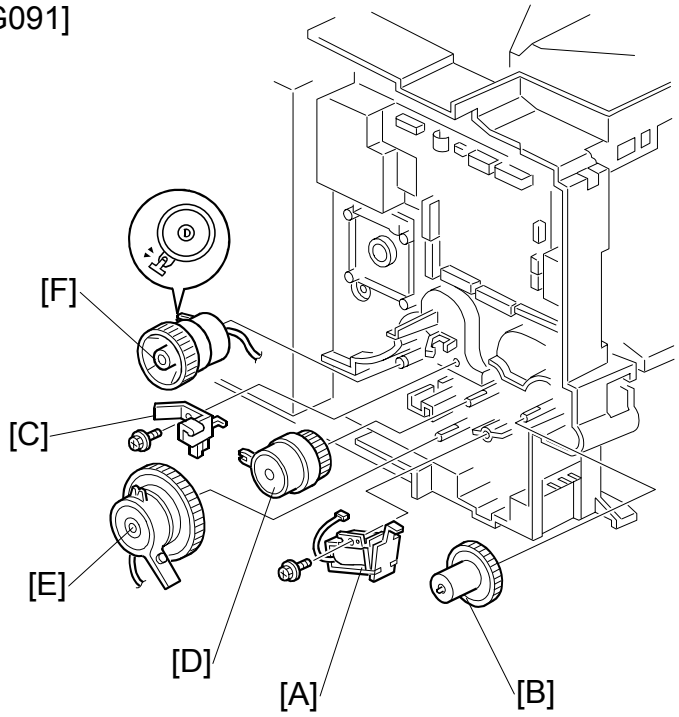


3.13 SOLENOIDS AND CLUTCHES [ALL MODELS]

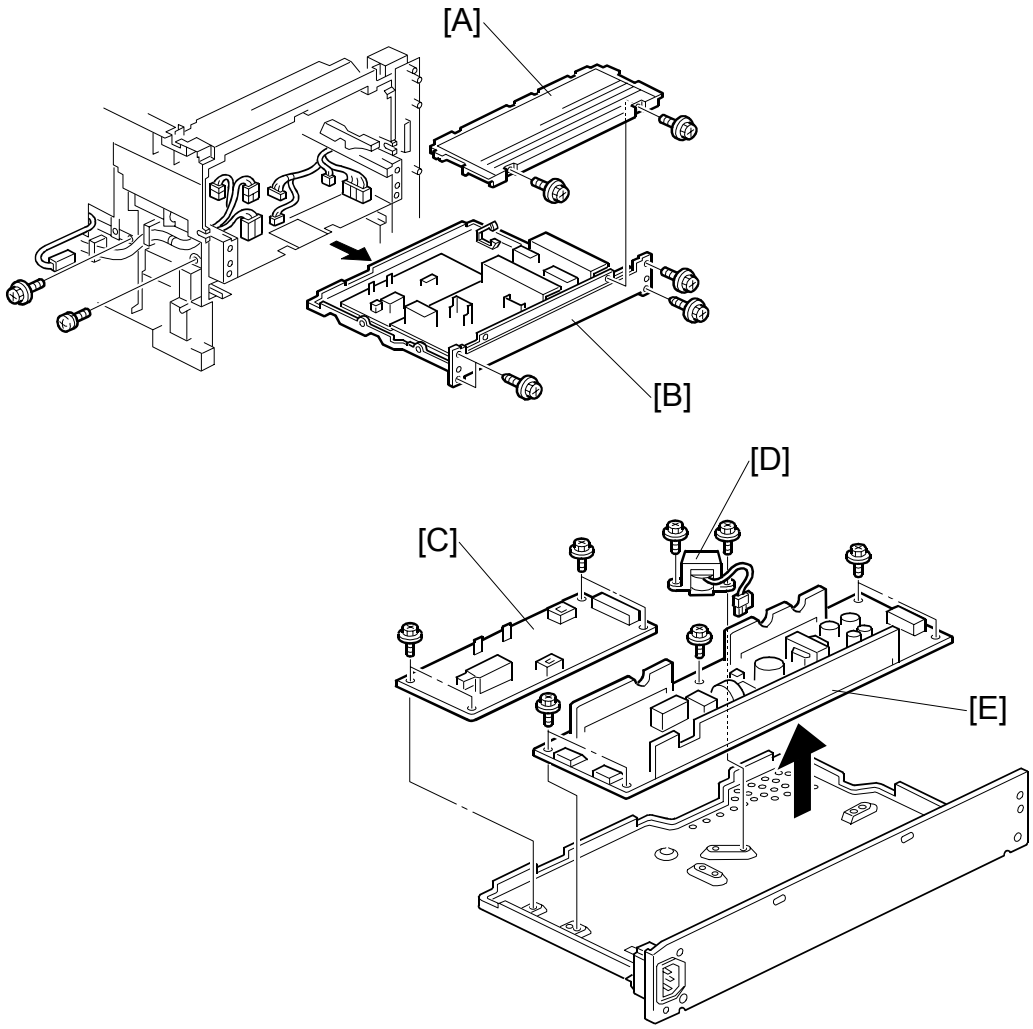
Left cover ([G094/G095]☛ 3.3.5, [G091] ☛ 3.3.6)

[A]: By-pass feed solenoid (🔩 x 1, ✋ x 1)
[B]: Gear (1 hook)
[C]: Stopper (🔩 x 1)
[D]: Relay clutch (🔩 x 1✋ x 1)
[E]: Paper feed clutch (✋ x 1)

Main motor (☛ 3.12)
[F]: Registration clutch (🔩 x 1✋ x 1)



3.14 POWER SUPPLY BOARD AND HIGH VOLTAGE SUPPLY BOARD [ALL MODELS]



Left cover ([G112 Series]☛ 3.3.5, [G116 Series] ☛ 3.3.6)

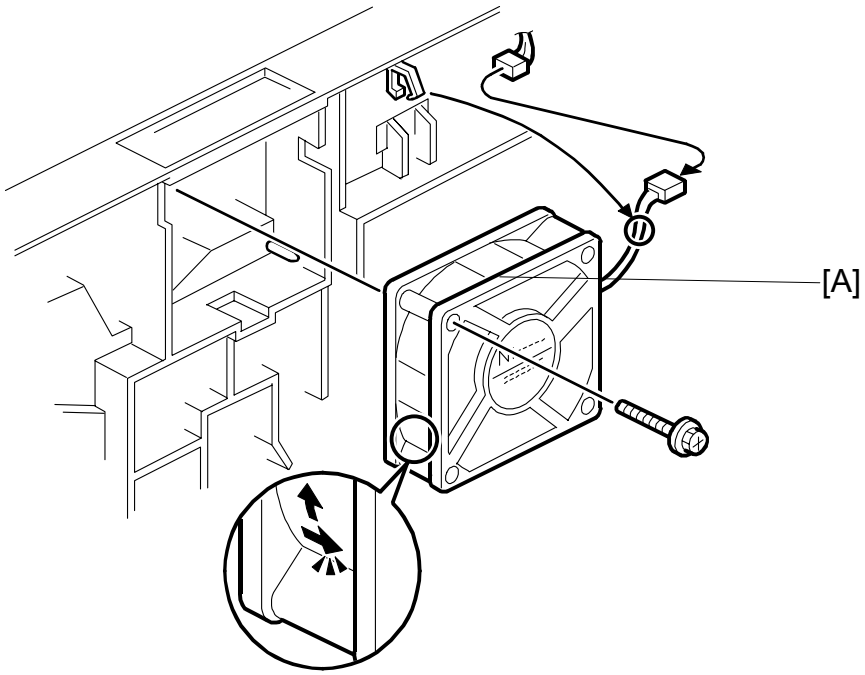
Fusing unit (☛ 3.7.1)

[A]: PSU cover (🔩 x 2)
[B]: PSU assembly (🔩 x 7, all connectors)
[C]: High voltage supply board (🔩 x 4)
[D]: **230-volt machine only:** Choke coil (🔩 x 2 🔌 x 1)
[E]: PSU (🔩 x 5)

3.15 COOLING FAN [ALL MODELS]

NOTE: The cooling fan must be reinstalled to the original position. Do not reinstall the cooling fan opposite to the original position.

Right cover ([G112 Series]☛ 3.3.5, [G116 Series] ☛ 3.3.6)



[A]: Cooling fan (🔩 x 1, ✋ x1)

3.16 IMAGE ADJUSTMENT

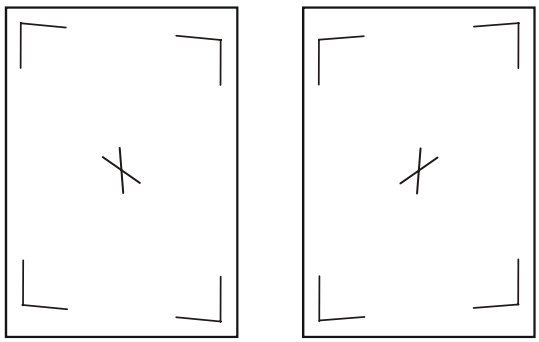
3.16.1 REGISTRATION ADJUSTMENT [ALL MODELS]

The image registration is adjusted using the User Program Mode menu "Maintenance-Registration". See the Printer Reference guide, "Making Printer Settings with the Control Panel-Maintenance Menu" for more details.

3.16.2 PARALELLOGRAM IMAGE ADJUSTMENT [ALL MODELS]

If a parallelogram image (see example below) is printed while adjusting printing registration, use the following procedure.

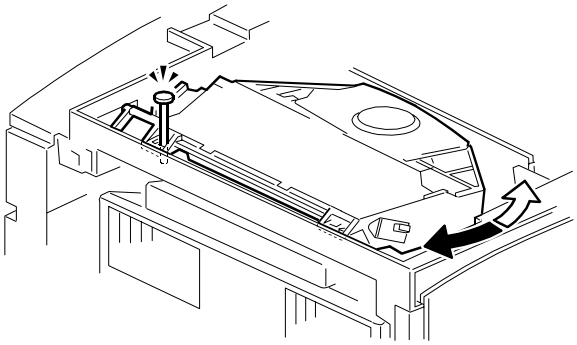
Examples of parallelogram images



(a) (b)

NOTE: Use the scanner positioning pin (P/N: A0069104) for the adjustment.

1. Remove the upper cover ([G112 Series]☛ 3.3.2, [G116 Series] ☛ 3.3.3)
2. Put the positioning pin into one of the two positioning holes on the laser unit, depending upon the image adjustment required.
3. Loosen the four screws and move the laser unit.
4. Tighten the laser unit.
5. Print the trimming area pattern to check the image alignment. If a parallelogram still exists, repeat steps 3 to 5 until image squareness is achieved. (If you cannot achieve image squareness using one positioning hole, try repeating this procedure using the other positioning hole.)



TROUBLESHOOTING

4. TROUBLESHOOTING

4.1 SERVICE CALL CONDITIONS

NOTE: SC codes that are not the same for all models are shown in the left side margin. If no model-specific identifier is present in the left side margin, assume that code applies to all models.

4.1.1 SUMMARY

There are 2 levels of service call conditions.

Level	Definition	Reset Procedure
A	Only a service representative can reset this SC. This will prevent damage to the machine. The machine cannot be used.	***Enter engine SP mode 5810 and press "#". When 'execute' is displayed, press "#" again. Then press 'Escape'. Then turn the main power off/on.***
B	The SC can be reset by turning the operation switch off and on (if the SC was caused by a sensor error).	Switch the main power off and on.

NOTE: 1) If the problem is with electrical circuit boards,disconnect the connectors first. Then reconnect the connectors before you replace the PCBs.
2) If the problem is with a motor lock, first examine the mechanical load. Then replace motors or sensors.

4.1.2 SC CODE DESCRIPTIONS

Code No.		Symptom	Possible Cause
302	B	Charge roller current leak A charge roller current leak signal is detected.	• Cartridge (charge roller) defective • High voltage supply board defective • Defective cartridge connection
320	B	Polygon motor error The polygon motor does not reach its operating speed within 10 seconds after the polygon motor on signal, or the lock signal is not detected for more than a certain time during operation.	• Polygon motor • Polygon motor cable
322	B	1st laser synchronization error The laser synchronization detector cannot detect the laser synchronization signal for more than 5 consecutive 100 ms intervals.	• Laser synchronization detector board out of position • Laser synchronization detector board or cable defective • Laser synchronization mirror out of position • LD unit defective • Engine board defective
323	B	LD drive current exceeded The LD driver detects this error for more than 500 ms.	• LD unit defective
326	B	2nd laser synchronization error The 1st LD1 is already on, but the laser synchronization detector cannot detect the laser synchronization signal from the 2nd LD for more than 5 consecutive 100 ms intervals.	• Laser synchronization detector board out of position • LD unit defective • Engine board defective
391	B	Development bias leak A development bias leak signal is detected.	• High voltage supply board defective • Defective cartridge connection
500	B	Main motor lock A main motor lock signal is not detected for more than 700 ms after the main motor starts to rotate, or the lock signal is not detected for more than a certain time during rotation after the last signal.	• Main motor defective • Too much load on the drive mechanism
541	A	Unstable fusing temperature During warm-up, the fusing temperature rises by less than 20 °C during 11 seconds. The fusing temperature detected by the thermistor was 0 °C 5 seconds after the fusing relay was turned on.	• Thermistor defective • Fusing lamp open • Fusing thermostat open • Power supply board defective • Defective connection of the fusing unit

Code No.		Symptom	Possible Cause
542	A	Fusing temperature warm-up error The fusing temperature does not reach more than 80 °C 17.5 seconds after the main switch is turned on.	• Thermistor defective • Fusing lamp open • Fusing thermostat open • Power supply board Defective • Defective connection of the fusing unit
543	A	Fusing overheat error A fusing temperature of over 245 °C is detected for 1 second by the fusing thermistor. A fusing temperature of over 235 °C is detected for 1 second after the fusing lamp has been turned off. The dual monitoring circuitry of the BICU detects extremely high temperature and tripped the relay circuit off.	• Fusing thermistor defective • Power supply board defective
544 **G091 Only**	A	Fusing overheat error (hardware circuit detection) The dual monitoring circuitry of the BICU detects extremely high temperature and tripped the relay circuit off.	• Power supply unit defective • I/O board (IOB) defective • BICU defective • Fusing thermistor defective
545	A	Fusing lamp stays on The fusing lamp stays on more than 12 seconds after the main motor has been turned off.	• Fusing thermistor defective • Power supply board defective • Defective connection of the fusing unit
546	A	Unstable fusing temperature During standby, within 500 ms, the fusing temperature goes below 60 °C twice or over 60 °C three times. Within 1 minute, a 60 °C increase or decrease in fusing temperature is detected during five different one-second intervals.	• Fusing thermistor defective • Power supply board defective • Defective connection of the fusing unit
547	B	Zero cross signal malfunction Zero cross signals are not detected within 5 seconds.	• Power supply board defective • Defective mains power supply condition
590 **G112** **G113** **G094** **G095** **Only**	B	Fusing fan motor error The CPU detects an exhaust fan lock signal for more than 3.5 seconds. The engine board cannot communicate with the duplex unit.	• Poor connection of the exhaust fan motor • Too much load on the motor drive
610	B	Communication error - duplex unit The engine board cannot communicate with the duplex unit.	• Defective connection between engine board and duplex unit • Engine board defective • Duplex control board defective

Code No.		Symptom	Possible Cause
650	B	Communication error - GAVD • The engine board detects an unknown device on the I^2C I/F bus (internal bus on the engine control board). • The engine board detects an I^2C I/F bus error.	• Engine board defective
651	B	Communication error - FCI • The engine board detects an unknown device on the IC I/F bus (internal bus on the engine control board). • The engine board detects an IC I/F bus error. Tray shift did not finish within a certain time after the shift motor turned on. The IPU does not respond with the settings required to start memory image processing.	• Engine board defective
726 **G091 only**	B	Shift tray motor error Tray shift did not finish within a certain time after the shift motor turned on.	• Shift motor defective • Shift tray: Left shift sensor or right shift sensor defective

4.2 CONTROLLER ERROR

The following table describes the controller error codes. These codes are displayed at power-on, or after the power-on self test, if an error occurs.

Code	Description	Required Action
640	Engine to controller communication error.	• Examine the connection between the controller and the engine board. • Replace the engine board if the error is frequent. • Replace the controller if the error is frequent.
641	Engine to controller communication error (no answer).	• Examine the connection between the controller and the engine board. • Replace the engine board if the error is frequent.
670	Engine response error	• Engine board installed incorrectly • Engine board defective • Controller board defective
671	Controller-to-operation panel communication error at startup	• Controller stalled • Controller board installed incorrectly • Controller board defective • Operation panel connector loose or defective
800	Video data error	• Examine the connection between the controller and the engine board. • Replace the engine board if the error is frequent.
818	System timeout error	• Defective controller • Replace the controller if it occurs frequently.
819	Kernal end error	• HDD error • Software application error • RAM shortage
820	Controller CPU error	• Replace the controller if the error is frequent.
821	CPU and ASIC timer error	• Turn off the machine and turn it back on. • Replace the controller if the error is frequent.
822	HDD timeout error	• Examine the connection between the HDD and the controller • Replace the HDD if the error is frequent.
823	NIB self test error	• Turn off the machine and turn it back on. • Examine the connection between the NIB and the controller. • Replace the NIB if the error is frequent.
824	NVRAM error	• Replace the NVRAM if the error is frequent.
827	SDRAM error	• Replace the controller if the error is frequent.
828	Flash ROM error	• Replace the controller if the error is frequent.
829	Optional RAM error	• Examine the connection of the optional memory. • Replace the optional memory if the error is frequent.
835	Parallel interface error	• Replace the controller if the error is frequent.
836	Font ROM error	• Not used for this model.
837	Optional font ROM error	• Not used for this model.
838	Clock generator error	• Replace the controller if the error is frequent.

CONTROLLER ERROR

Code	Description	Required Action
850	NIB interface error	• Replace the controller if the error is frequent.
851	IEEE1394 interface error	• Replace the controller if the error is frequent.
853	Wireless LAN Error: Card Error 1	• Wireless LAN card not inserted into the wireless LAN board
854	Wireless LAN Error: Card Error 2	• Wireless LAN card has been removed
855	Wireless LAN Error: Card Error 3	• Wireless LAN card defective • Wireless card connection not tight
856	Wireless LAN Error 4: Board	• Wireless LAN card board defective • PCI connector loose
857	USB I/F Error	• The USB driver can generate three types of errors: RX, CRC, and STALL errors. Only the STALL error can generate this SC code. • Defective controller board
860 **G116 G091 Only**	HDD start-up error	• Turn off the machine and turn it back on. • Examine the connection between the HDD and the controller. • Replace the HDD if the error is frequent.
862	HDD damaged cluster error	• Replace the HDD if the error is frequent.
863	HDD data unable to read	
864	HDD data access error	
865	HDD access error	
900	Controller counter error	• Replace the NVRAM if the error is frequent.
955	FGATE error The IPU does not respond with the settings required to start memory image processing.	• Software bug; reboot the machine • Internal parameter incorrect • Insufficient working memory
990	Software performance error	• Software defective; reboot the machine • Internal parameter incorrect • Insufficient working memory • When this SC occurs, the file name, address, and data will be stored in NVRAM. Note the above data and the situation in which this SC occurs. Then report the data and conditions to your technical control center.
991	Software continuity error	• Software bug; reboot the machine • Internal parameter incorrect • Insufficient working memory
998	Application start error	• Software defective; change the firmware for the application that failed • An option required by the application (RAM, DIMM, board) is not installed
999	Software update error	• Try downloading the controller software again.

4.3 ELECTRICAL COMPONENT DEFECTS [ALL MODELS]

4.3.1 SENSORS

Component	CN	Condition	Symptom
Paper Exit	6-B2	Open	The Paper Jam indicator will light whenever a print is made.
		Shorted	The Paper Jam indicator lights even if there is no paper.
Paper Overflow	6-B5	Open	The paper overflow message is not displayed even when a paper overflow condition exists.
		Shorted	The paper overflow message is displayed.
Registration	16-A2	Open	The Paper Jam indicator will light whenever a print is made.
		Shorted	The Paper Jam indicator lights even if there is no paper.
Remaining paper sensor 1	16-A5	Open	The Paper End indicator lights even if paper is placed in the 1st paper tray.
		Shorted	The Paper End indicator does not light even if there is no paper in the 1st paper tray.
Remaining paper sensor 2	16-A8	Open	The machine cannot determine the paper near-end condition properly.
		Shorted	
Toner End	16-A12	High	Toner near-end (toner end) is not detected.
		Low	The add toner message is displayed.

NOTE: The CN numbers describe the connector number on the engine board.

4.3.2 SWITCHES [ALL MODELS]

Component	CN	Condition	Symptom
Main	272-1,3 (PSU 120 V) 270-1,2 (PSU 230 V)	Open	The machine does not turn on.
		Shorted	The machine does not turn off.
Front Cover Safety	9-1	Open	The Front Cover Open message is not displayed even if the front cover is opened.
		Shorted	The Front Cover Open message is displayed even if the front cover is closed.
Rear Cover Safety	9-3 5-3	Open	The Rear Cover Open message is not displayed even if the rear cover or paper exit cover is opened.
		Shorted	The Rear Cover Open message is displayed even if the rear cover or paper exit cover is closed.

NOTE: The CN numbers describe the connector number on the engine board (except for the main switch).

4.4 BLOWN FUSE CONDITIONS [ALL MODELS]

Fuse	Rating		Symptom when turning on the main switch
	115 V	220 - 240 V	
Power Supply Board			
FU1	15 A/125 V	----	Machine does not start
FU2	6.3 A/250 V	3.15 A/250 V	Machine does not start
FU3	5 A/125 V	5 A/250 V	Machine does not start
FU4	5 A/125 V	5 A/250 V	Machine does not start (The LEDs turn on for a moment.)

4.5 LEDS [ALL MODELS]

No LEDs are used for this model (except for the NIB - refer to section 6.7).

SERVICE TABLES

5. SERVICE TABLES

5.1 SERVICE PROGRAM MODE [ALL MODELS]

NOTE: Differences that are machine specific are noted in the margin with the machine code.

⚠CAUTION

Do these before you go into the service program mode:

- Make sure there is no print data in the printer buffer (the Data In LED must not be lit or blinking).
- If there is some data in the buffer, wait until all data has been printed.

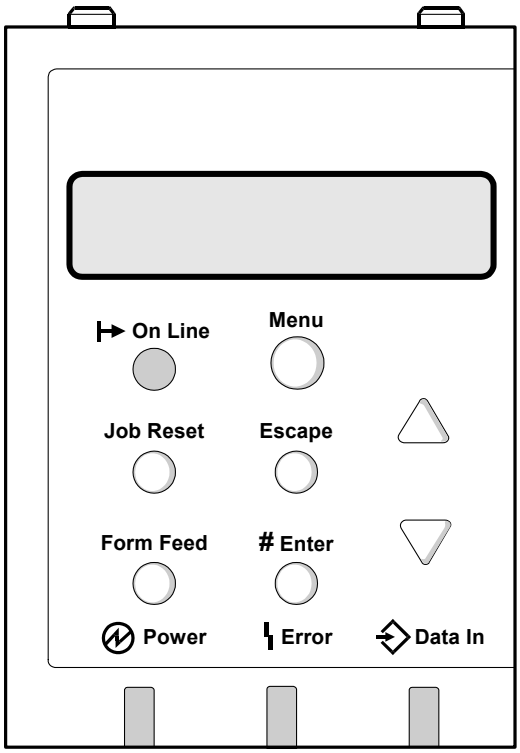
5.1.1 ENABLING AND DISABLING SERVICE PROGRAM MODE

Entering the Service Mode

There are two ways to enter the service mode.

Method 1: Turn the machine on while pressing the “On Line” key and “Escape” key together until “1. Service Menu1” appears on the display.

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



Method 2: Press the “Up/Down arrow” keys together for about 5 seconds, then press the “Enter” key.
“1. Service Menu1” appears on the display.

NOTE: The machine automatically goes off line when you enter the service mode

Inputting a Value or Setting for a Service Program

Enter the required program mode as explained above. The setting appearing on the display is the current setting.
Select the required setting using the “Up/Down arrow” keys, then press the “Enter” key. The previous value remains if the “Enter” key is not pressed.

Exiting Service Mode

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

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

5.2 PRINTER CONTROLLER SERVICE MODE [ALL MODELS]

5.2.1 SERVICE MODE MENU (“1. SERVICE MENU”)

Service Mode	Description	Function
1001	Bit Switch	Adjusts bit switch settings. **Note:** Currently the bit switches are not being used except for Bit Switch 2 bit 3. See PUB(C)-051 for details.
1003	Clear Setting	Initializes settings in the “System” menu of the user mode.
1004	Print summary	Prints the service summary sheet (a summary of all the controller settings).
1005	Disp Version	Displays the version of the controller firmware.

5.2.2 BIT SWITCH PROGRAMMING

NOTE: Currently the bit switches are not being used except for Bit Switch 2 bit 3. See PUB(C)-051 for details.

1. Enter the SP mode, select “Service Menu”, then press [Enter] twice.

```
Service Menu
BitSW
```

2. Select #1, #2, #3, or #4 for the desired bit switch, then press [Enter].
   - [▲] [▼]: Move to the next switch.

```
BitSW
<BitSW#1>
```

3. Adjust the bit switch using the following keys.
   - [▲] [▼]: Move to the next bit.
   - [Escape]: Exit without saving changes.
   - [Enter]: Exit and save changes.

   NOTE: The left digit on the display is bit 7 and the right digit is bit 0.

```
Sw#1  00000000
Bit0         _
```

4. Press [Enter] to save changes and exit.

5.3 PRINTER ENGINE SERVICE MODE [ALL MODELS]

5.3.1 SERVICE MODE TABLE

Notation	What it means
[range / **default** / step]	Example: [-9 ~ +9 / **+3.0** / 0.1 mm step]. The setting can be adjusted in the range ±9, value reset to +3.0 after an NVRAM reset, and the value can be changed in 0.1 mm steps with each key press.
italics	Comments added for reference.
DFU	Denotes "Design or Factory Use". Do not change this value.
Japan only	The feature or item is for Japan only. Do not change this value.

SP1-xxx: Feed

1003	Regist sag	
	Adjusts the relay clutch timing at registration. Relay clutch timing determines the amount of paper buckle at registration. (A "+" setting causes more buckling.)	
1003 1	Cassette	[–8 mm ~+8 mm/**0**/2 mm step]
1003 2	Multi tray [By-pass]	[–8 mm ~+8 mm/**0**/2 mm step]
1003 3	Duplex Tray	[–8 mm ~+8 mm/**0**/2 mm step]

1104	Fusing control	**Normal**, Phase control
	Use phase control if the room lights flicker when the fusing lamp starts. Defaults: North America – Normal (On/off control), Europe – Phase	

1105	Fusing Temp.	
	Adjusts the fusing temperatures for printing and standby mode.	
1105 1	Fusing temp	[150 ~ 200/ **170** / 5 deg.] **DFU**
	Adjusts the fusing temperature for printing on normal paper.	
1105 2	Fusing T Stand	[140 ~ 175 / **168** / 1 deg.] **DFU**
	Adjusts the fusing temperature for standby mode.	

1106	Fusing T Display
1106 1	Displays the current fusing temperature.

1902	OHP clutch rt	G112 Series: **1 = 1 rotation,** 2 = 2 rotations
		G116 Series: 1 = 1 rotation, **2 = 2 rotations**
	Selects the number of rotations for the bypass feed roller when the paper type is set to "Transparencies". If jams occur when transparencies are being used, change the setting to 2.	

1910	Fusing start	**Normal**, Roller turn **DFU**
	Roller turn: Warms up the fusing unit for 20 s just after the power switch has been turned on or when the machine warms up from energy saver mode. Normal: There is no 20 s warm-up period. However, just after the main power switch is turned on, the motor turns to clean the drum. **NOTE:** This SP mode is effective only when the internal temperature is less than 15 C.	

1912 **G116** **G091** **Only**	Warm up control	**Normal**, Curl control
	Lowers the fusing temperature (to 150°C) to prevent thin paper from curling. Use this mode only when a paper jam occurs during duplex rear side printing.	

SP2-xxx: Drum

2001 G112 Series Only	Charge rol bias	[1000 ~ 2000 / **–1700V** / 10V step] **DFU**
	Adjusts the voltage applied to the charge roller for printing.	

2001 G116 Series Only	Charge rol bias	[1000 ~ 2000 / **–1675V** / 10V step] **DFU**
	Adjusts the voltage applied to the charge roller for printing.	

2112	Mainscan mag	[-0.5% ~ 0.5% / **0** / 0.1% step]
	Adjusts the main scan magnification.	

2113	Subscan mag	[-0.5% ~ 0.5% / **0** / 0.1% step]
	Adjusts the sub scan magnification.	

2201	Developer bias	[200 ~ 800 / **750V** / 10V step] **DFU**
	Adjusts the development bias for printing.	

2213	Toner end count	[50 ~ 200 / **200** / 50 sheets/step]
	Adjusts the number of prints the machine can make after it detects toner near-end.	

2301	Transfer curr	[-2 ~ 4 / **0** / 2 μA/step]
	Adjusts the correction current applied to the transfer roller.	

2902	Test Pattern	
	Printing Test Pattern	**No specified** Various test patterns
	Selects a printer test pattern. After selecting a pattern, the display automatically goes to SP 5902. Use SP 5902 to print either one test pattern (5902-1) or a few of them (5902-2). *Reset SP 2902 to "no specified" after printing the test pattern, or the selected pattern will appear on every page printed by the user.*	

2910	Thermistor adj	**Yes**, No **DFU**
	If this is "Yes", the machine automatically adjusts the charge roller voltage and transfer current in response to the temperature within the machine.	

2928	Toner end clear	Execute **DFU**
	Clears the toner end counter in the engine board. Not used in this machine.	

2980	Waste toner cnt	
	Displays the waste toner counter in the engine board.	

SP3-xxx: Process

3921	Effective info	Not used: All items ignored Cartridge dtct: Cartridge detection only **Normal mode** (Cartridge detection and Type ID) All used: All items used
	Selects which of the cartridge ID chip functions are enabled.	

3922	Cartridge lmt	[15k ~ 40k / **30k** / 5k step]
	Adjusts the number of prints the machine can make after a new cartridge is detected. ***Do not use a higher value than 30 k, or waste toner could leak from the waste toner tank.***	

3923	Cartridge stop	**No,** Yes
	Determines whether the machine stops printing after the cartridge counter reaches the limit set with SP 3922.	

3924	Toner end sensor	
3924 1	Toner near-end	[100 ~ 1000 / **200** / 100 ms step] **DFU**
	Threshold adjustment for toner near-end detection.	
3924 2	Toner end	[250 ~ 1050 / **550** / 100 ms step] **DFU**
	Threshold adjustment for toner end detection	

3925	Cartridge info
3925 1	Machine ID
	Displays the model name stored in the toner cartridge IC chip.
3925 2	Version
	Displays the cartridge version number stored in the toner cartridge IC chip.
3925 3	Brand ID
	Displays the OEM brand name stored in the toner cartridge IC chip.
3925 4	Color ID
	Displays the cartridge color name stored in the toner cartridge IC chip.
3925 5	Area ID
	Displays the region stored in the toner cartridge IC chip.
3925 6	Kind ID
	Displays the part code number stored in the toner cartridge IC chip.
3925 7	Secu ID
	Displays the cartridge type ID stored in the toner cartridge IC chip.
3925 8	Maker ID
	Displays the maker ID number stored in the toner cartridge IC chip.

3926 **G112 Series Only**	Prevention of filming	**No,** Yes
	If set to “Yes”: This is done every 50 prints, for 0.2 s, to lubricate the cleaning blade. The charge roller voltage is cut, and toner is transferred to the cleaning blade. If the 50-print interval is reached during a job, printing stops and this process is done. Set this to yes to prevent the following: • Grey banding parallel to the paper feed direction • Cleaning blade flipping due to friction between blade and drum • Noise due to friction between blade and drum	

SP5-xxx: Mode

5024	mm/inch Display Selection	0: Europe/Asia (mm), 1: North America (inch)
	Selects the unit of measurement. After selection, turn the main power switch off and on.	

5046	ROM Update Disp	Enables or disables the ROM Update utility. When enabled, this utility will be displayed in the user program mode. **DFU** [0 or 1 / **1** / –] • *0: Enabled* *1: Disabled*

⇒

5055	[Display IP Address]	0: NO, 1: Yes
5055 1	Displays the LP's IP Address on the display panel. (Default = NO)	

5104 **G091** **G116** **Only**	A3/11x17 Count	Specifies whether the counter is doubled for A3/11" x 17" paper. If "Yes" is selected, the total counter counts up twice when A3/11" x 17" paper is used. Yes (double count) **No (single count)**

5302	Set Time	[-1440 ~ 1440 /**Montreal: -300**/1 minute/step] **DFU**
	Adjusts the RTC (real time clock) time setting. Sets the local time. (Montreal: -300, Paris: + 60, Beijing: +480, Taipei: +480, Hong Kong: +480)	

5305	Auto Off Set	
		Switches energy saver mode on/off **Enable**, Disable Enable: Energy saver mode will be used Disable: Energy saver mode will be ignored

5307	Summer time	
5307 1	Setting	Enables or disables the summer time mode. [0 to 1 / **0** / -] Alphanumeric 0: Off, 1: On
5307 3	Rule set (Start)	Specifies the start of the daylight saving time.
5307 4	Rule set (End)	Specifies the end of the daylight saving time

5401	U limit auto select	**Yes**, No
	Determines whether the machine adds new user codes in the User Management Tool in Smart Net Monitor.	

5404	[UcodeCtrClr] User Code Counter Clear	
5404 1	UcodeCtrClr	Clears all counters for users.

5501	PM Alarm. PM alarm level
	Sets the PM alarm level. A PM alarm is made when this condition occurs: PA x 1000 = or > PC, where PA is the value set in SP5-501 and PC is the value in the PM counter. [0 to 9999 / **0** / -] The alert is sent to the e-mail address that is specified for the system administrator using a browser and the built-in web server (Web Image Monitor). 0: Disables the PM alarm When SP 5866 1 is set to 1, this SP is enabled.

5504	Jam Alarm
	Sets the jam alarm level. If a paper jam occurs, the jam alarm counter increases by +1. If no paper jam occurs while the set number of paper is output, the jam alarm counter decreases by -1. The jam alarm occurs when the jam alarm counter gets to +10. [0 to 3 **/ 3** / 1/step] 0: Disables the jam alarm 1: 1.5K, 2: 3K, 3: 6K The alert is sent to the e-mail address that is specified for the system administrator using a browser and the built-in web server (Web Image Monitor). When SP 5866 1 is set to 1, this SP is enabled.

5505	Error Alarm
	Occurs, the error alarm counter increases by +1. If no SC code occurs while the set number of paper is output, the jam alarm counter decreases by -1. The error alarm occurs when the error alarm counter reaches +5. [0 to 255 / **18** / 1/step] 0: Disables the PM alarm The alert is sent to the e-mail address that is specified for the system administrator using a browser and the built-in web server (Web Image Monitor). When SP 5866 1 is set to 1, this SP is enabled.

5507	Supply Alarm	
5507 1	Paper Supply Ala	Enables or disables the supply alarm. [0 to 1 / **0** / -] Alphanumeric 0: Off, 1: On
5507 3	Toner Supply Alarm	
5507 128	Interval: Others	Sets the paper supply alarm level. A paper supply alarm counter increases by +1 when a sheet of the related size is used. The paper supply alarm occurs when one of the paper supply alarm counters gets to the set value. [250 to 10000 / **1000** / 1/step] The alert is sent to the e-mail address that is specified for the system administrator using a browser and the built-in web server (Web Image Monitor).
5507 132 (G116)	Interval: A3	
5507 133	Interval: A4	
5507 134	Interval: A5	
5507 141 (G116)	Interval: B4	
5507 142	Interval: B5	
5507 160 (G116)	Interval: DLT	

5507 164	Interval: LG	When SP 5866 1 is set to 1, this SP is enabled.
5507 166	Interval: LT	
5507 172	Interval: HLT	

5801	Memory Clear
	Resets software counters and returns modes and settings to their defaults. All clear: Clears all data Engine clear: Clears the printer engine settings SCS: Clears the systems settings PRT: Clears user mode system settings NCS: Network control systems - Clears the items listed in the “Host Interface” section of the Configuration page. DCS: Delivery control system (e-mail settings) MIRS: E-mail addresses
5801 1	Memory all clear
5801 2	Engine memory clear Resets the following user tool settings: Maintenance menu: Main scan registration, sub scan registration, image density, curl control Resets the settings of the following SPs: 1003, 1104, 1105, 1902, 1910, 2001, 2112, 2113, 2201, 2213, 2301, 2910, 3921, 3922, 3923, 3924, 5930
5801 3	SCS memory clear Resets the following user tool settings: Paper Input menu: Paper type, paper size, tray lock, System menu: Energy saver timer Resets the settings of the following SPs: 5009, 5812 Also resets the user code counters.
5801 4	IMH: Clears IMH data. **DFU**
5801 5	MCS: Clears MCS data **DFU**
5801 8	PRT memory clear Resets the following user tool settings: Paper Input menu: Tray priority System menu: Misfeed recovery, print error report, auto continue, memory overflow, output tray, job separation, memory usage
5801 10	Web Service Clears the web service data and the network application data.
5801 11	NCS memory clear Resets the network settings, such as IP address and subnet mask
5801 14	DCS setting Resets the e-mail settings, such as those stored in SP 5860
5801 15	Clear USC Settings Resets or deletes the UCS-related data.
5801 16	MIRS setting Resets the settings used for the e-mail alert feature (such as the enable/disable setting and the address used for the e-mail alert)
5801 17	CCS Resets or deletes the CSS-related data. **FA**

5802	Free run
	The machine performs a free run. Press [Enter] to start. Press [Enter] to stop. Please note that the machine will not stop immediately after the [Enter] key is pressed.

5803	Input check	
	Displays signals received from sensors and switches. **NOTE:** SP Modes other than those listed in this table, are not used in the machine.	
	Operation Panel	**Component Name**
5803 1	Front Door	Front cover safety switch
5803 2	MainMotLock	Main Motor Lock
5803 3	PolygonLock	Polygon Motor Lock
5803 5	Duplex door	Duplex Unit cover switch
5803 6	Duplex set	Duplex Unit
5803 7	Fusing set	Fusing Unit
5803 11	StdTrayFul	Paper Overflow Sensor
5803 16	Regist	Registration Sensor
5803 17	Pap Output	Paper Exit Sensor
5803 18	Dup in/out	Duplex Invertor Sensor
5803 19	Dup In	Duplex Entrance Sensor
5803 20	Duplex Out	Duplex Exit Sensor
5803 21	PinBypass	Bypass paper sensor
5803 22	NoT1paper	Paper end sensor-Standard Paper Tray Unit
5803 23	Tray1 Size	Paper size switch-Standard tray
5803 24	T1 Remains	Remaining paper sensor-Standard tray
5803 26	No T2 paper	Paper end sensor-1st Optional Paper Tray Unit
5803 29	No T3 paper	Paper end sensor-2nd Optional Paper Tray Unit
5803 30	Tray 3 Size	Paper size switch-2nd Optional Paper Tray Unit
5803 31	T3 remains	Remaining paper sensor-2nd Optional Paper Tray Unit
5803 32	Carrier 2	Paper feed sensor-1st Optional Paper Tray Unit
5803 33	Carrier 3	Paper feed sensor-2nd Optional Paper Tray Unit
5803 34	Tray 2 size	Paper size switch-1st Optional Paper Tray Unit
5803 36	Tray2 Remains	Remaining paper sensor-1st Optional Paper Tray Unit
SP 5803 41-54 are for the G116 and G091 models only. These SP Modes are not used in the G112 Series machines.		
5803 41	Exit Door	Paper output tray cover sensor
5803 42	Sft Carrier	Shift tray paper transport sensor
5803 43	Sft to R	Shift tray at right
5803 44	Sft to L	Shift tray at left
5803 45	PaperinB1	Paper sensor - 1st bin
5803 46	Bin1 Full	Paper overflow sensor- 1st bin
5803 47	PaperinB2	Paper sensor - 2nd bin
5803 48	Bin2 Full	Paper overflow sensor- 2nd bin
5803 49	PaperinB3	Paper sensor - 3rd bin

5803	Input check	
	Displays signals received from sensors and switches. **NOTE:** SP Modes other than those listed in this table, are not used in the machine.	
	Operation Panel	**Component Name**
5803 50	Bin3 Full	Paper overflow sensor – 3 rd bin
5803 51	PaperinB4	Paper sensor - 4th bin
5803 52	Bin4 Full	Paper overflow sensor – 4th bin
5803 53	4bin Upr Tr	Upper paper transport sensor - Mailbox
5803 54	4bin Lwr Tr	Lower paper transport sensor - Mailbox

5804	Output check	
	Turns on electrical components individually for test purposes. **NOTE:** SP Modes other than those listed in this table, are not used in the machine.	
	Operation Panel	**Component Name**
5804 0	Impossible	Not used in this machine
5804 1	Main Motor	Main Motor
5804 2	Carr Clutch	Relay Clutch
5804 3	Reg Clutch	Registration Clutch
5804 5	Tray1 Clutch	Paper Feed Clutch
5804 6	Byp Clutch	Bypass Feed Solenoid
5804 11	Fan/speedy	Exhaust fan
5804 12	Fan/slowly	Exhaust fan
5804 13	Fus Relay	Fusing Lamp Relay
5804 22	Pol Motor	Polygon Motor
5804 23	Pol + LD	Polygon Motor and Laser Diode
5804 26	T2 Clutch	Paper Feed Clutch-1st Optional Paper Tray Unit
5804 27	T2 Motor	Paper Tray Motor-1st Optional Paper Tray Unit
5804 28	T3 Clutch	Paper Feed Clutch-2nd Optional Paper Tray Unit
5804 29	T3 Motor	Paper Tray Motor-2nd Optional Paper Tray Unit
5804 31	Exit motor.	Paper exit motor (1-bin shift tray, 4-bin mailbox)
5804 32	Exit solenoid.	Paper exit junction gate solenoid
5804 33	Motor to R.	1-bin shift tray - right
5804 34	Motor to L.	1-bin shift tray - left
5804 35	SP1 solenoid.	Mailbox turn gate solenoid 2
5804 36	SP2 solenoid.	Mailbox turn gate solenoid 3
5804 37	SP3 solenoid.	Mailbox turn gate solenoid 4
5804 41	Dup Side Rt.	Duplex Invertor Motor-forward
5804 42	Dup Side Rv	Duplex Invertor Motor-reverse
5804 43	Dup Long	Duplex Transport Motor
5804 44	Dup Split	Invertor Gate Solenoid

5810	Fusing err clear
	Resets a service call condition (for fusing unit errors). After using this SP mode, turn the main switch off and on.

5811	Serial Number **DFU**
	Used to input the machine serial number. This is normally done at the factory. *If you want to know the serial number, print the system parameter list. Press # and then input "A".*

5812	Service Tel. No. Setting	
	Use these SP modes to input service and support telephone numbers. Enter the number and press # *Press the # key to input a pause. Press the "Clear modes" key to delete the telephone number.*	
5812 1	Tel No.	Use this to input the telephone number of the CE printed on the SP print mode printout.
5812 2	Fax	Use this to input the fax number of the CE printed on the SP print mode printout.

5816	Remote Service	
5816 1	I/F Setting	[0 to 2 / **2** / 1/step] Alphanumeric 0: Off, 1: CSS 2: Network (The remote service function is on.)
5816 2	CE Call	[0 to 1 / **1** / 1/step] 0: Start, 1: End
5816 3	Function Flag	[0 to 1 / **0** / 1/step] 0: Off (The remote service function is disabled.) 1: On (The remote service function is enabled.)
5816 4	Communication Test	Does a communication test. One of the return codes from 0 to 99 is shown: • 0: Normal end (The service is operating.) • 1: Normal end (The service is not operating.) • Any other code: Abnormal end Do the test from the User Tools. Do not use SP 5816 4 unless you are told to do it by the manufacturer.
5816 5	Device Information	DFU
5816 6	Device Information	Shows or does not show the device information in the User Tools. [0 to 1 / **0** / 1/step] 0: Not displayed, 1: Displayed
5816 7	SSL Disable	[0 to 1 / **0** / 1/step] 0: On, 1: Off
5816 8	RCG Connect Time	Sets the timeout counter for the remote connection. [1 to 90 / **10** / 1 second/step]
5816 9	RCG Write Timeout	Sets the timeout counter for writing processing. [0 to 100 / **60** / 1 second/step]

5816 10	RCG Read Timeout	Sets the timeout counter for reading processing. [0 to 100 / **60** / 1 second/step]
5816 11	Port 80 Enable	Enables or disables access to the SOAP method via port 80. [0 to 1 / **0** / 1/step] 0: Disables, 1: Enables

5821	Remote Service Address	
5821 1	CSS-PI Device Co	[0 to 4 / **0** / 1/step] **DFU**
5821 2	RCG IP Address	Sets the IP address of the RCG (Remote Communication Gate). [00000000h to FFFFFFFFh / **00000000h** / 1/step]

5824	NVRAM Upload # Uploads the UP and SP mode data (except for counters and the serial number) from the NVRAM to an SD card.

5825	NVRAM Download # Downloads the UP and SP mode data from an SD card to the NVRAM.

5828	Network	
5828 50	1284 Compatible	Switches Centronics IEEE1284 compatibility on/off for the network. [0 or 1 / **1** / -] 0: Disabled, 1: Enabled Selecting “0” disables bi-directional data transmission.
5828 52	ECP	Switches the ECP setting for Centronics off/on. [0 or 1 / **1** / -] 0: Disabled, 1: Enabled With “1” selected, SP5-828-050 must be enabled for 1284 mode compatibility.
5828 65	Job Spool	Switches the job spool on/off. [0 or 1 / **0** / -] 0: Disabled, 1: Enabled
5828 66	HDD Job Clear	Selects the treatment of the job when a spooled job exists at power on. [0 to 1 / **1** / 1/step] 0: Data is cleared, 1: Automatically printed
5828 69	Job Spool Protocol	Switches job spooling off or on and enables settings for job spooling protocols. [0 to 1 / **1** / 1/step] 0: Off, 1: On
5828 84	Print Settings List	Prints a list of NCS related parameters.
5828 90	Telnet	Enables or disables Telnet. [0 to 1 / **1** / 1/step] 0: Disabled, 1: Enabled

5828 91	Web	Enables or disables the Web monitor. [0 to 1 / **1** / 1/step] 0: Disabled, 1: Enabled

5832	HDD Init
	Initializes the hard disk. **Use this only if there is a hard disk error.**

5837	Prog checksum
	Displays the checksum for the engine firmware.

5839	IEEE1394	
5839 001	IP Address	
	This is the IP address used for IP over 1394.	
5839 002	Subnet mask	
	This is the subnet mask used for IP over 1394.	
5839 003	Physical address	**DFU**
5839 004	Host name	**DFU**
5839 007	Cycle master	**DFU**
5839 008	BCR mode	**DFU**
5839 009	IRM 1394a check	**DFU**
5839 010	Unique ID	**DFU**
5839 011	Logout	**DFU**
5839 012	Login	**DFU**
5839 013	Login max	**DFU**

5840	IEEE802.11b	
5840 04	Current SSID	
	Enters a unique ID (up to 32 characters long) to identify the device.	
5840 06	Channel max	**DFU**
5840 07	Channel min	**DFU**
5840 11	WEP key number	
	Selects the WEP key number	
5840 18	SSID key check	**DFU**
5840 20	WEP mode	
	Sets the type of WEP key (64-bit or 128-bit).	

5842	NFA Analysis
	Prints or does not print the module log for each bit. [0 to 1 / **1** / 1/step] 0: Prints, 1: Not print

5844	USB	
5844 1	Transfer rate	FS Fixation: Full Speed (Fixed) **HS/FS Auto**: High Speed/Full Speed (Automatic change)
	Sets the speed for USB data transmission.	
5844 2	Vendor ID	**DFU**
5844 3	Product ID	**DFU**
5844 4	Dev release number	**DFU**

5845	Delivery Server Setting	
	Provides items for delivery server settings.	
5845 3	Retry Interval	[60~900 / **300** / 1]
	Determines the time interval between retries before the machine returns to standby after an error occurs during an image transfer with the delivery scanner or SMTP server.	
5845 4	Number of Retries	[0~99 / **3** / 1]
	Determines the number of retries before the machine returns to standby after an error occurs during an image transfer with the delivery or SMTP server.	

5846	UCS Setting	
5846 3	Maximum Entries	Displays the number of maximum entries**. 500**
5846 50	Init All Dir	Initializes all address information data except the administration account.

5848	Web Service	
5848 4	ac: ud	Enables or disables the udirectory access limitation. 0000: Disabled, 0001: Enabled
5848 11	ac: dm	Enables or disables the device management access limitation. 0000: Disabled, 0001: Enabled

5851	Bluetooth
	Sets the Bluetooth security mode. **Public,** Private

5856	Remote Program Update: Local port. (☛ 5.5)
	When set to “enable” allows reception of firmware data via the local port (IEEE 1284) during a remote ROM update. **Disable**, Enable *This setting is reset to “disable” after the machine is cycled off and on*

5857	Debug Log Save Function: Not Used
Do not change this setting.	

5858	Debug Log Save Function: Not Used
Do not change this setting.	

5859	Debug Log Save Function: Not Used
Do not change this setting.	

5860	SMTP/POP3/IMAP	
5860 2	SMTP ser port no.	Input the SMTP server port number
5860 3	SMTP auth	SMTP authentication enable/disable
5860 6	SMTP auth encryp	Encryption mode for SMTP authentication enable/disable (Only valid if 5860 3 is set to “enable”)
5860 7	POP before SMTP	Enable/disable POP before SMTP. If the SMTP server does not have authentication, you can enable POP before SMTP, them POP authentication is available (SP 5860 13)
5860 8	POP to SMTP wait	When using POP before SMTP, this SP mode determines the maximum wait time between POP authentication and connection with SMTP. Communication stops if this time is exceeded.
5860 13	POP auth encryp	If POP before SMTP is enabled, then you can use this SP to enable or disable encryption mode for POP authentication
5860 14	POP serv port no.	Input the POP server port number
5860 22	SMTP from replace	If SMTP authentication is enabled, this SP mode determines which name is included in the e-mail header 0: Normal sender name 1: User name used by the authentication feature
5860 25	SMTP Auth Direct	Selects directly the way of SMTP authentication if all SMTP authentications fail due to the error in the SP5860-006. This SP is activated only when SP5860-003 is set to “Enable”. Bit switch 0: LOGIN Bit switch 1: PLAIN Bit switch 2: CRAM MD5 Bit switch 3: DIGEST MD Bit switch 4 - 7: Not used

5866	E-mail Alert	
5860 1	Notice Func Email	Enables or disables the alert notice function by e-mail. [0 to 1 / **0** / 1/step] 0: Off, 1: On
5860 5	Add Date Field	Enables or disables to add the date field on the alert notice e-mail. [0 to 1 / **0** / 1/step] 0: Off, 1: On

5869	RAM disk setting	**DFU**

5870	Common Key Info. Common key information writing	
5870 1	Writing	Writes the authentication data (used for NRS) in the memory.
5870 3	Initialize	Initializes the authentication data in the memory.

5873	SD Card Appli Move	
5873 1	Move Exec	☛ 5.11.2
5873 2	Undo Exec	☛ 5.11.3

5876	Security Clear	
5876 1	All Clear	
5876 11	Clear NCS Security	
5876 15	Clear UCS Security	

⇒

5886	[ROM Update]	0: YES, 1: No
5886 1	Allows the ROM firmware to be updated remotely via the local network. (Default = Yes) **NOTE:** The settings can be changed via Web Image Monitor.	

5902	Test print	
	Prints the test pattern that you selected with SP 2902.	
5902 1	1 sheet test	
	Prints one copy of the test pattern	
5902 2	Cont test	
	Prints consecutive copies of the test pattern	

5907	Plug & Play
	Sets the brand name and the production name for Windows Plug & Play. This information is stored in NVRAM. If the NVRAM is defective or has been replaced, these names should be registered again. *To set the plug and play model name, enter the model number, and then press #.*

5930	Meter Charge Mode	
5930 1	**No,** Yes	Enables or disables meter-charge mode.
5930 2	**No,** Yes	Display or Not display of "Replace Maintenance Kit"
	Important: Turn the main switch off/on after changing this setting. **Meter charge mode disabled (Default):** • The meter charge counter is not shown when the Menu key is pressed. • The PM counter resets automatically after the user replaces the fusing unit. • Regardless of setting of SP5930 2, the machine displays "Replace Maintenance Kit" (the user replaces the maintenance kit items). **Meter charge mode enabled:** • The meter charge counter is shown immediately after the Menu key is pressed. • The technician must reset the PM counter after finishing PM. **Display of "Replace Maintenance Kit" (SP5930 2):** When enabling meter charge mode, you can select display/not display of "Replace Maintenance Kit" by SP5930 2. • If it is set to "Yes", "Replace Maintenance Kit" is displayed on the operation panel when the PM counter runs out. • If it is set to "No", "Replace Maintenance Kit" is not displayed on the operation panel when the PM counter runs out.	

5970	Debug Serial Output	**DFU**
5983	Paper Kind Setting **DFU**	

5990 (G094/ G095)	SP print mode	
5990 1	All (Data List)	Prints summary sheet for the item selected.
5990 2	SP (Mode Data List)	
5990 4	Logging	
5990 5	Diagnostic Report	
5990 6	Non-default	
5990 7	NIB Summary	

5990 (G091)	SP print mode	
5990 2	SP (Mode Data List)	Prints summary sheet for the item selected.
5990 7	NIB Summary	

SP7-xxx: Data Log

7001	Operation time
	Displays the total number of engine rotation cycles made so far. **NOTE:** 1) One cycle is calculated as 3.8 s (G112/G113) of drum rotation. 2) One cycle is calculated as 3.0 s (G116) of drum rotation. However, this counter also includes idle rotations. This counter is not reset at PM.

7003	Total counter
	Displays the controller total counter. This counter is used for meter charge, and it appears when the user presses the Menu key (if meter charge mode is enabled). It does not count up when certain items, such as service reports, are printed (see section 6.6.1. for a complete list of conditions).

7401	SC Counter	[0 to 9999 / **0** / 1/step]
	Shows the number of SC codes detected.	

7502	Total Jam	[0 to 9999 / **0** / 1 sheet/step]
	Shows the total number of paper jams.	

7504	Jam location	
	Displays the number of jams according to the location where jams were detected.	
7504 17	Main 17	PFU (tray 2) paper feed sensor not turned on
7504 18	Main 18	PFU (tray 3) paper feed sensor not turned on
7504 19	Main 19	Registration sensor not turned on – bypass feed
7504 20	Main 20	Registration sensor not turned on –tray 1
7504 21	Main 21	Registration sensor not turned on –paper feed unit
7504 22	Main 22	Registration sensor not turned on –duplex
7504 23	Main 23	Registration sensor not turned off
7504 24	Main 24	Paper exit sensor not turned on
7504 25	Main 25	Paper exit sensor not turned off
7504 33	Main 33	Not used in this machine
7504 34	Main 34	Not used in this machine
7504 35	Main 35	Not used in this machine
7504 36	Main 36	Not used in this machine
7504 49	Main 49	Duplex entrance sensor not turned on
7504 50	Main 50	Duplex entrance sensor not turned off
7504 51	Main 51	Duplex inverter sensor not turned on
7504 52	Main 52	Duplex inverter sensor not turned off
7504 53	Main 53	Duplex exit sensor not turned on
7504 54	Main 54	Duplex exit sensor not turned off
7504 255	Main 255	Others

7506 (G116)	Jam Paper size	
7506 5	A4 LEF	Displays the number of jams according to the paper size. [0 to 9999 / **0** / 1 sheet/step]
7506 6	A5 LEF	
7506 14	B5 LEF	
7506 38	LTR LEF	
7506 132	A3 SEF	
7506 133	A4 SEF	
7506 134	A5 SEF	
7506 141	B4 SEF	
7506 142	B5 SEF	
7506 160	DLT SEF	
7506 164	LG SEF	
7506 166	LT SEF	
7506 172	HLT SEF	
7506 255	Others	
7506 (G112/G113)	Jam Paper size	
7506 6	A5 LEF	Displays the number of jams according to the paper size. [0 to 9999 / **0** / 1 sheet/step]
7506 44	HLT LEF	
7506 133	A4 SEF	
7506 134	A5 SEF	
7506 142	B5 SEF	
7506 164	LG SEF	
7506 166	LT SEF	
7506 172	HLT SEF	
7506 255	Others	

7801 **G091** **G112** **G113**	ROM version display
	Displays the firmware version (system, engine, and duplex).
7803 1	System Version
7803 2	Engine Version
7803 3	Duplex Version

7803	PM Counter
	Displays the PM counter. This is not a page counter. It estimates the page count using the engine rotation cycle count. It counts up one page when the engine has made the average number of rotations that is required for one page of a three-page job.
7803 1	Transfer roller
7803 2	Paper feed roller
7803 3	Fusing unit

7803 255	Paper This SP is controlled by the controller. This counter is a page counter, so the results can be different from SP7803 1-3 (SP7803 1-3 are controlled by the engine and are not page counters; see above). When meter charge mode is on (the technician does PM), use this SP mode with the NRS to check when it is time to do PM.

7804	PM counter reset
	Resets the PM counter. **Important:** If a technician replaces the PM items, reset this counter after replacing these items.
7804 1	Transfer roller
7804 2	Paper feed roller
7804 3	Fusing unit
7804 255	Paper

7807	**[SC/ Jam Clear]** SC/ Jam Counter Clear	
7807 1	All Clear	Clears the all counters related to SC codes and paper jams.

7832	Diag Result
	Press # to display a list of error codes. Nothing is displayed if no errors have occurred.

7836	Total Memory Size
7836 1	Shows the total storage size.

7901	Assert Info **DFU** (Used for debugging.)	
7901 1	Assert Info	**DFU**
7901 2	# of Lines	**DFU**
7901 3	Location	**DFU**

7910	Firmware PN	
7910 1	System	
7910 2	Engine	
7910 13	Duplex	
7910 131	Bluetooth	
7910 150	RPCS	
7910 151	PS	
7910 152	RPDL	
7910 153	R98	
7910 154	R16	
7910 155	RPGL	
7910 156	R55	
7910 157	RTIFF	
7910 158	PCL	

7910 159	PCLXL	
7910 160	MSIS	
7910 161	MSIS (option)	
7910 162	PDF	
7910 163	Bmlinks	
7910 180	Font	
7910 181	Font 1	
7910 182	Font 2	
7910 183	Font 3	
7910 200	Factory	
7910 202	Net File	
7910 204	Printer	
7910 209	Test Suite	
7910 210	MIB	
7910 211	Web System	

7911	Firmware version	
7911 1	Controller	
7911 2	Engine	
7911 13	Duplex	
7911 131	Bluetooth	
7911 150	RPCS	
7911 151	PS	
7911 152	RPDL	
7911 153	R98	
7911 154	R16	
7911 155	RPGL	
7911 156	R55	
7911 157	RTIFF	
7911 158	PCL	
7911 159	PCLXL	
7911 160	MSIS	
7911 161	MSIS (option)	
7911 162	PDF	
7911 163	Bmlinks	
7911 180	Font	
7911 181	Font 1	
7911 182	Font 2	
7911 183	Font 3	
7911 200	Factory	
7911 202	Net File	
7911 204	Printer	
7911 209	Test Suite	
7911 210	MIB	
7911 211	Web System	

7993	Total counter
	Displays the engine total counter. It counts up for all prints, including service reports.

SP8-xxx: Counters

8064	P: 1-0-07	P: FIN Jobs
8064 7	Others	

8067	O: 1-0-07	O: FIN Jobs
8067 7	Others	

8381	T: 2-2-01	T:AplOut/PGS The number of sheets that the application program tries to print (excluding the pages printed in the SP mode) [0~9999999/ **0** / 1]
8381 1		

8384	P: 2-2-01	P:AplOut/PGS The number of sheets that the application program tries to print (excluding the pages printed in the SP mode) [0~9999999/ **0** / 1]
8284 1		

8387	O: 2-2-01	O:AplOut/PGS The number of sheets that the application program tries to print (excluding the pages printed in the SP mode) [0~9999999/ **0** / 1]
8387 1		

8391	T: 2-2-01	LrgSize Out/PGS The number of sheets printed on A3/DLT and larger sizes [0~9999999/ **0** / 1]
8391 1	A2	

8411	T: 2-2-04	DupOut/Sheets The number of sheets used in duplex printing [0~9999999/ **0** / 1]
8411 1		

8421	T: 2-2-05 Mechanical Counter by Print Mode	T:Dup nUp Out/PGS The number of sheets used in binding and combining [0~9999999/ **0** / 1]
8421 1	Simplex> Duplex	Counts pages
8421 4	Simplex Combine	Combine pages
8421 5	Duplex Combine	Combine pages
8421 6	2>	Combines 2 in 1
8421 7	4>	Combines 4 in 1
8421 8	6>	Combines 6 in 1
8421 9	8>	Combines 8 in 1
8421 10	9>	Combines 9 in 1
8421 11	16>	Combines 16 in 1
8421 12	Booklet	Prints a book
8421 13	Magazine	Prints a magazine

8424	P: 2-2-05 Controller Counter by Print Mode	P:Dup nUp Out/PGS The number of sheets used in binding and combining [0~9999999/ **0** / 1]
8424 1	Simplex>Duplex	Counts pages
8424 4	Simplex Combine	Counts pages
8424 5	Duplex Combine	Counts pages
8424 6	2>	Combine pages
8424 7	4>	Combine pages
8424 8	6>	Combines 2 in 1
8424 9	8>	Combines 4 in 1
8424 10	9>	Combines 6 in 1
8424 11	16>	Combines 16 in 1
8424 12	Booklet	Prints a book
8424 13	Magazine	Prints a magazine

8427	O: 2-2-05 Others by Print Mode	O:Dup nUp Out/PGS The number of sheets used in binding and combining [0~9999999/ **0** / 1]
8427 1	Simplex> Duplex	Counts pages
8427 4	Simplex Combine	Combine pages
8427 5	Duplex Combine	Combine pages
8427 6	2>	Combines 2 in 1
8427 7	4>	Combines 4 in 1
8427 8	6>	Combines 6 in 1
8427 9	8>	Combines 8 in 1
8427 10	9>	Combines 9 in 1
8427 11	16>	Combines 16 in 1
8427 12	Booklet	Prints a book
8427 13	Magazine	Prints a magazine

8441	T: 2-2-07 Mechanical Total Counter by Page Size	T:Copy Size/PGS The number of sheets of a specific paper size that the application program uses [0~9999999/ **0** / 1]
8441 1	A3	
8441 2	A4	
8441 3	A5	
844 1 4	B4	
8441 5	B5	
8441 6	DLT	
8441 7	LG	
8441 8	LT	
8441 9	HLT	
8441 10	12 x 18/ 13 x 19	
8441 254	Others: Fixed	
8441 255	Others: Custom	

8444	P: 2-2-07 Controller Count by Page Size	P:Copy Size/PGS The number of sheets of a specific paper size that the application program uses [0~9999999/ **0** / 1]
8444 1	A3	
8444 2	A4	
8444 3	A5	
8444 4	B4	
8444 5	B5	
8444 6	DLT	
8444 7	LG	
8444 8	LT	
8444 9	HLT	
8444 10	12 x 18/ 13 x 19	
8444 254	Others: Fixed	
8444 255	Others: Custom	

8447	O: 2-2-07 Others Count by Page Size	O:Copy Size/PGS The number of sheets of a specific paper size that the application program uses [0~9999999/ **0** / 1]
8447 1	A3	
8447 2	A4	
8447 3	A5	
8447 4	B4	
8447 5	B5	
8447 6	DLT	
8447 7	LG	
8447 8	LT	
8447 9	HLT	
8447 10	12 x 18/ 13 x 19	

8447 254	Others: Fixed	
8447 255	Others: Custom	

8451	2-2-08 Counter by Tray	Feed Tray Sheets The number of sheets fed from a specific tray [0~9999999/ **0** / 1]
8451 1	Bypass Tray	
8451 2	Standard Tray	
8451 3	1st optional tray	
8451 4	2nd optional tray	
8451 5	Not used in this machine	
8451 6	Not used in this machine	
8451 7	Not used in this machine	
8451 8	Not used in this machine	
8451 0	Not used in this machine	

8461	T: 2-2-09 Counter by Paper Type	T:Paper Type The number of sheets of specific paper types [0~9999999/ **0** / 1]
8461 1	Normal	
8461 2	Recycled	
8461 3	Special	
8461 4	Thick	
8461 5	Normal (Front)	
8461 6	Thick (Back)	
8461 7	OHP	
8461 8	Other	

8464	P: 2-2-09 Controller Counter by Paper Type	T:Paper Type The number of sheets of specific paper types [0~9999999/ **0** / 1]
8464 1	Normal	
8464 2	Recycled	
8464 3	Special	
8464 4	Thick	
8464 5	Normal (Front)	
8464 6	Thick (Back)	
8464 7	OHP	
8464 8	Other	

8521	T: 2-2-15 Total Edit by Print Mode	T:FIN Proc/PGS The number of pages processed by the finisher [0~9999999/ **0** / 1]
8521 7	Not used in this machine	

8524	P: 2-2-15 Total Controller Edit by Print Mode	P:FIN Proc/PGS The number of pages processed by the finisher [0~9999999/ **0** / 1]
8524 1-6	Not used in this machine	
8524 7	Others	

8581	T: Admin Counter Total Counter	The number of outputs in a specific color mode [0~9999999/ **0** / 1]
8581 1	Total	Not used in this machine

8591	O: 2-2-23 Total Counter	O:Admin Counter The number of A3/DLT, duplex printing, or staples [0~9999999/ **0** / 1]
8591 1	A3/DLT	
8591 2	Duplex Counter	
8591 3	Not used in this machine	Not used in this machine

8771	3-0-01 Total Development Counter	DevelCnt/PGS The number of rotations of the development rollers [0~9999999/ **0** / 1]
8771 1	Total	

8801	3-0-05 Toner Counter	Toner Remain The percentage of the remaining toner [0~100/ **0** / 1]
8801 1	Bk	

8941	3-6-01 Checks the Machine Status	MachStatus Time The amount of time the machine spends in a specific mode [0~9999999/ **0** / 1]
8941 1	Operation time	
8941 2	Stand-by time	
8941 3	Energy Saver time	
8941 4	Sleep mode	
8941 5	Off mode time	
8941 6	Downtime/SC	
8941 7	Downtime/Printer Jam	
8941 8	Downtime/Scn Jam	
8941 9	Downtime/Toner End	

SP9-xxx: Counters

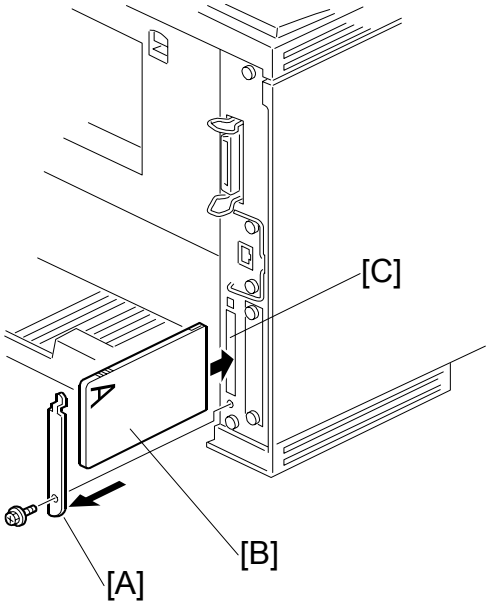
All level nine SP Modes are either DFU, or, not used in this machine.

5.4 UPDATING THE FIRMWARE

⚠CAUTION
Do not turn off the machine while downloading the firmware.

5.4.1 CONTROLLER FIRMWARE [G091/G094/G095/G112]

NOTE: 1) Turn the machine off before starting the firmware update procedure.
2) Controller/NIB firmware includes the following firmware types:
* Card 0: Platform & Rescue
* Card 1: Printer
* Card 2: Web Support
Use the cards in numerical order starting from card 0, then card 1 and then card 2



1. Prepare a card that contains the required firmware.
2. Turn off the power and remove the cover [A] (1 screw).
3. Insert the card [B] into the card slot [C] and turn on the power.
4. Push the “Online Key” when “Platform and Rescue” is displayed (in the case of card 0).
   NOTE: Card 1 will display “Printer” and card 2 will display “Web Support”.
5. The firmware download is finished when “Updated” is displayed.
6. After the firmware download has finished, turn off the power and remove the card.
7. Repeat step 3 to 6 for the remaining firmware cards.
8. After the firmware download has finished, turn off the power and remove the card. Then replace the cover [A].
9. Turn on the power, and print the service summary report to confirm that the new firmware version has been installed.

5.4.2 ENGINE FIRMWARE [G091/G094/G095/G112]

NOTE: There is only one Engine Firmware card.

1. Prepare a card that contains the required firmware.
2. Turn off the power and remove the cover [A] (1 screw).
3. Insert the card [B] into the card slot [C].
4. Open the front door and then turn on the power.
   NOTE: Opening the front door during the engine firmware procedure prevents overheating in the fusing unit.
5. Push the “Online Key” when “Engine” is displayed.
6. The firmware download is finished when “Updated” is displayed.
7. After the firmware download has finished, turn off the power and remove the card.
8. Close the front door and then replace the cover [A].
9. Turn on the power, and print the service summary report to confirm that the new firmware version has been installed.

5.4.3 TYPE OF FIRMWARE

⇒**[G113/G116]**

G113/G116 models use an SD card to update the firmware. The table below lists the programs used by the machine. All programs can fit on to one SD card.

	Type of firmware	Function	Location of firmware	Message shown
1	Engine - Main	Printer engine control	SD card	Engine
2	System	Printer system management	SD card	Onboard SYS
3	Printer Application	Feature application	SD card	Onboard Prt
4	Network support	Network application	SD card	Network support
5	Web support	Web service application	SD card	Web support

⇒**[G112]**

An IC card is used to update the firmware on the G112.
The Controller/NIB firmware includes three types of firmware:

* Card 0: Platform & Rescue
* Card 1: Printer
* Card 2: Web Support

Use the cards in numerical order starting from card 0, then card 1 and then card 2.

There is only one Engine Firmware card.

⇒5.4.4 PRECAUTIONS [G113/G116]

Handling SD Cards

Observe these precautions when you handle SD cards:

- Turn off the main power switch before you insert or remove an SD card. Data in the SD card can get corrupted if you insert or remove an SD card while the main power switch is on.
- Do not turn off the main power switch during downloading.
- Keep SD cards in a safe location. Do not store SD cards in these locations:
  - Locations that get high temperature, high humidity, direct sunlight, or strong vibration.
  - Locations where there are effects from magnetic forces
- Do not bend or scratch SD cards.
- Do not drop SD cards or expose them to shock or vibration.

Upload or Download

In this section “upload” and “download” have these meanings:

- Upload: To copy data from the printer to the SD card
- Download: To copy data from the SD card to the printer

Network Connection

Before you start, tell the user that they cannot use the printer during firmware update, and that they must disconnect the printer physically from the network. If a print job comes in, this can cause problems with the firmware update.

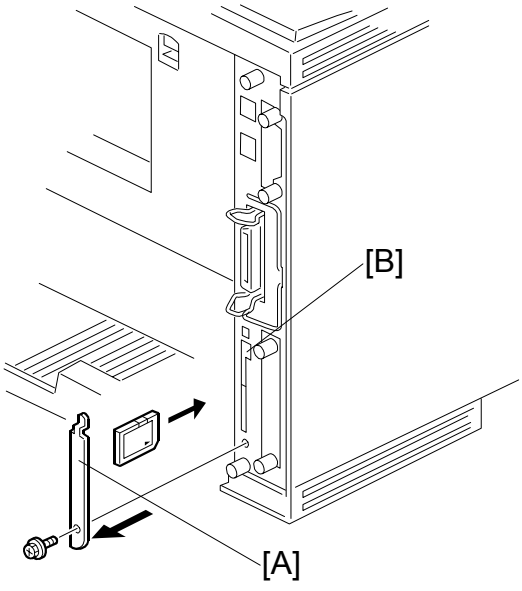
⇒5.4.5 MACHINE FIRMWARE [G113/G116]

NOTE: 1) Turn the machine off before you start the firmware update procedure.
2) This procedure will let you upgrade all programs for this machine.

1. Prepare a card that contains the required firmware.
2. Turn off the power and remove the cover [A] (1 screw).
3. Insert the card into the upper card slot [B] (slot 1).
4. Turn ON the power.

NOTE: It takes about 30 seconds before you will see anything on the operation panel. “Onboard Sys” shows after 30 seconds.

5. Scroll to the program you want to upgrade (Example; Engine). Then press “enter”



6. Press the “online” button to start the upgrade procedure.

NOTE: It takes about 90 seconds to complete the upgrade procedure. Power on/off shows when the upgrade procedure has completed.

7. Turn OFF the power. Then remove the SD card from the slot.
8. Turn ON the power.

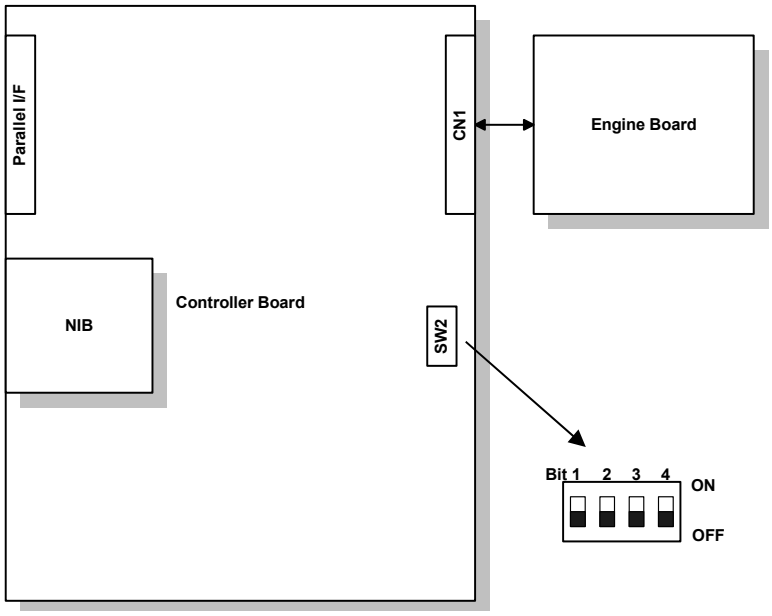
NOTE: 1) Do the procedure again if you want to upgrade a different program.
2) The firmware is not upgraded successfully if “Turn power on/off” does not show on the operation panel after the sixth step. At this time, turn off the machine. Then do steps 1-6 again.

5.5 ERROR RECOVERY [ALL MODELS]

Controller

If an error occurs during updating the controller firmware, use the following procedure. This procedure will force the controller to boot from the firmware card.

1. Prepare a card with the required controller firmware version.
2. Turn OFF the machine and remove the controller.
3. Change the DIP Switch 2 - No. 1 setting to “ON”.
4. Put back the controller
5. Insert the card into the card slot on the controller.
   NOTE: When you see the machine from the back, the “A” side of the card must face the right.
6. Turn ON the machine. The machine automatically starts to download the software.



7. When downloading is finished, “Updated” is displayed.
8. Turn OFF the machine, then remove the card.
9. Reset the DIP Switch 2 - No.1 setting to “OFF” and then put back the controller.
   NOTE: 1) You must perform steps 5 to 8 for all three firmware cards.
   2) The default settings of the DIP Switches are all “OFF”.
10. Turn ON the machine, and print the service summary report.

Engine

If a download attempt failed, try downloading the new firmware again using the normal firmware download procedure described in section 5.4.2.

5.6 REMOTE FIRMWARE UPDATE (RFU) [ALL MODELS]

The G112 Series and G116 Series printers have the capability to receive Remote Firmware Update (RFU) information. However, the process to perform this procedure is being finalized.

When the RFU procedure has been finalized, update documentation for this procedure will be cascaded.

NOTE: 3) Before you do the RFU procedure the machine must be in the Frame Priority setting. This can be set in the memory priority function of the system menu of the user tools. The reason for this is the Frame Priority setting uses less of the installed system memory than the Font Priority setting.
4) You cannot do the RFU if the machine is set to the Font Priority.

5.7 LOOP-BACK TEST [ALL MODELS]

This self-diagnostic test requires a loop-back connector (P/N: G0219350).

1. Turn off the machine and attach the loop-back connector to the parallel interface.
2. Turn on the machine while pressing the “On Line” key and “# Enter” key together.
3. The machine prints the diagnostic report automatically.
   - To check the error codes, use engine SP mode 7832.
   - Refer to section 4.2 for details about the error codes.

5.8 POWER-ON SELF TESTS [ALL MODELS]

The controller tests the following devices at power-on. If an error is detected, an error code is stored in the controller board.

- CPU, ASIC and clock
- Flash ROM
- Resident and optional SDRAM
- Parallel interface
- NIB
- IEEE1394 interface (if installed)
- NVRAM
- Optional HDD (if installed)

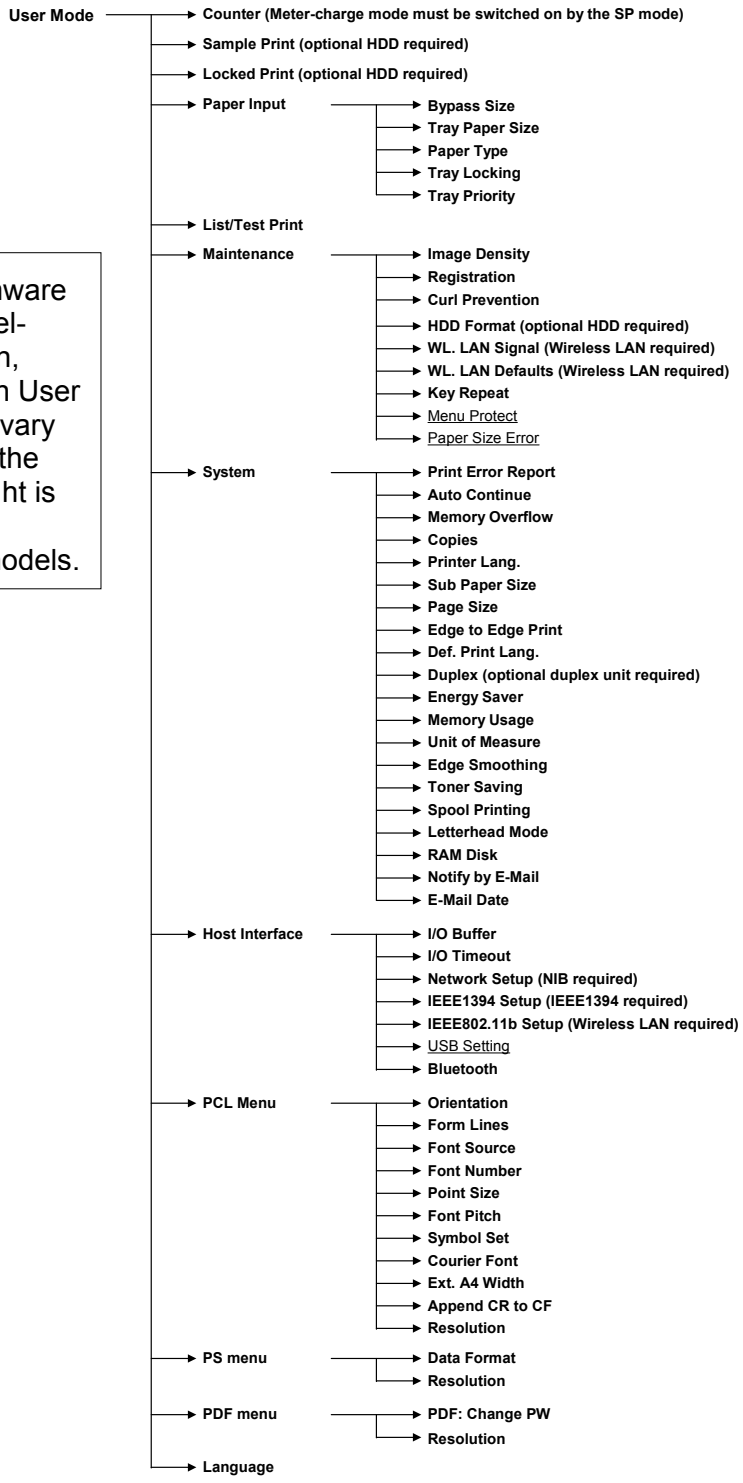
- To check the error codes, use engine SP mode 7832.
- Refer to section 4.2 for details about the error codes.

5.9 USER PROGRAM MODES [ALL MODELS]

Press the “Menu” button and use the “Up/Down arrow” keys to scroll through the menu listing. To go back to a higher level, press the “Escape” key. After changing the settings, press the “On Line” key. The user menu list can be printed using “Menu List” in the “List/Test Print” user mode.

User Mode Tree

NOTE: Due to firmware changes and model-specific information, options within each User Mode subset may vary slightly. However, the example on the right is typical of the User Modes on these models.

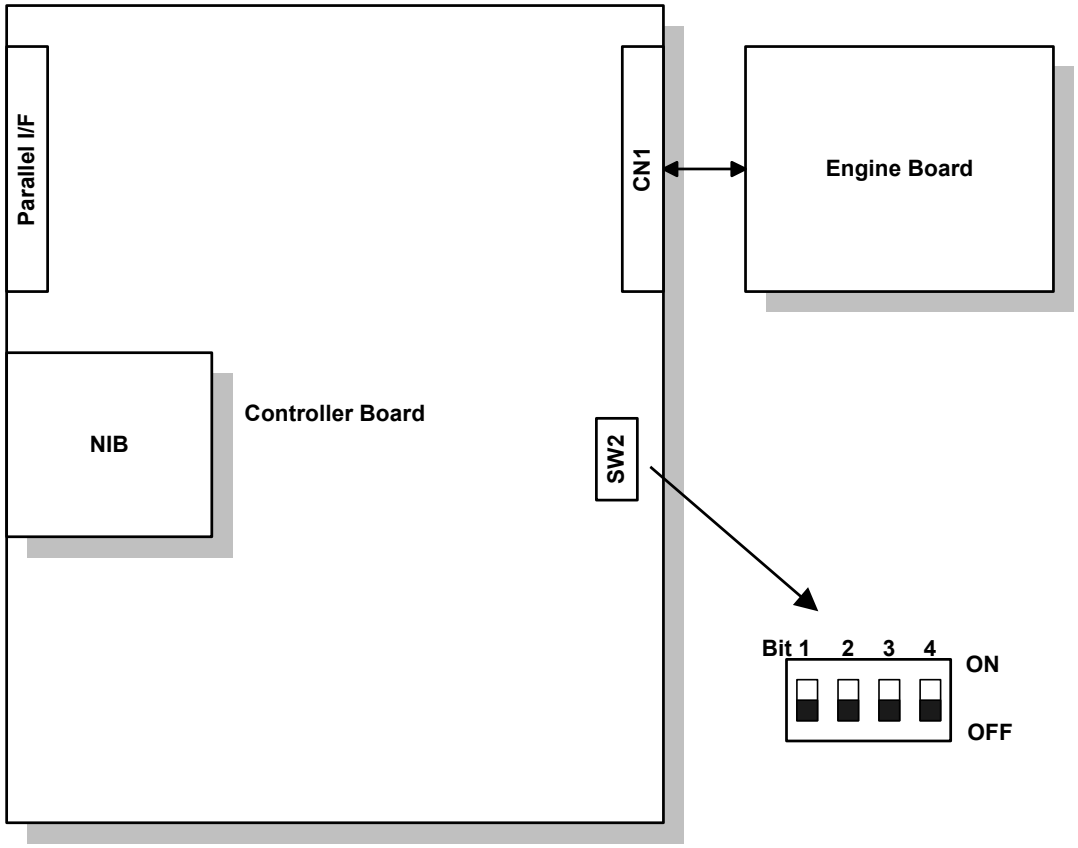


5.10 DIP SWITCHES [ALL MODELS]

Controller Board

DIP Switch 2 (Bit 1) on the controller is used for error recovery after a firmware updating procedure failed.

NOTE: The default settings of the DIP Switches are all “OFF”.



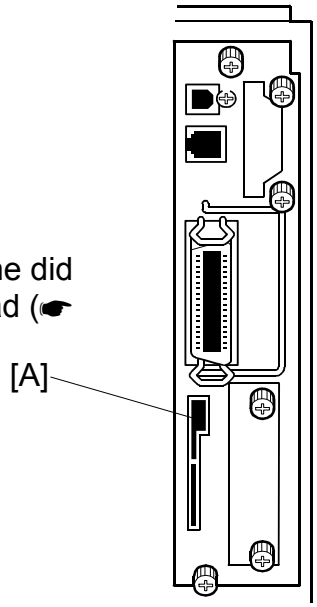
⇒5.11 NVRAM DATA UPLOAD/DOWNLOAD [G113/G116]

⚠CAUTION

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

Uploading NVRAM Data

Copy the data from the NVRAM to an SD card (referred to as "to upload NVRAM data" in this section) before you replace the NVRAM. If you cannot upload NVRAM data, manually input the necessary settings after you replace the NVRAM



1. Start the SP mode.
2. Select SP 5990 1 (ALL).
3. Do the SP.
4. See if the SMC Report is correctly output.
   NOTE: You may need the SMC Report when the machine did not complete an NVRAM data upload or download (☛ Downloading NVRAM Data) correctly.
5. Go out of the SP mode.
6. Turn OFF the main power switch.
7. Insert an SD card into the upper slot [A] (slot 1)
8. Turn ON the main power switch.
9. Start the SP mode.
10. Select SP 5824 1 (NVRAM Upload).
11. Push the enter key. The upload starts.

NOTE: When uploading ends correctly, the following file is made:

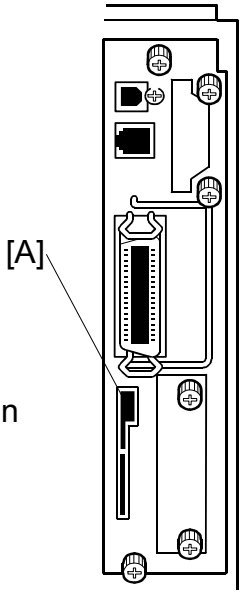
- NVRAM\serial_number.NV where "NVRAM" is the folder name in the SD card and "serial_number.NV" is the file name with the extension ".NV". The serial number of the printer is used as the file name. For example, if the serial number is G1160017, the file name is "G1160017.NV".

12. Go out of the SP mode.
13. Turn OFF the main power switch.
14. Remove the SD card.
15. Mark the SD card with, for example, the machine code. You need this SD card when you download NVRAM data (☛ Downloading NVRAM Data).

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

Downloading NVRAM Data

Copy the data from the SD card to the NVRAM (referred to as "to download NVRAM data" in this section) after you replace the NVRAM. If you cannot download NVRAM data, manually input the necessary settings.



1. Make sure that the main power switch is OFF.
2. Make sure that you have the correct SD card that contains the necessary NVRAM data.
3. Insert the SD card into the upper slot [A] (slot 1).
4. Turn ON the main power switch.
5. Start the SP mode.
6. Select SP 5825 1 (NVRAM Download).
7. Push the enter key. The download starts.
   NOTE: The machine cannot do the download if the file name in the SD card is different from the serial number of the printer (☛Uploading NVRAM Data).
8. Go out of the SP mode.
9. Turn OFF the main power switch.
10. Remove the SD card.
11. Turn ON the main power switch.
12. Check that the NVRAM data is correctly downloaded.

⇒5.12 SD CARD APPLI MOVE [G113/G116]

5.12.1 OVERVIEW

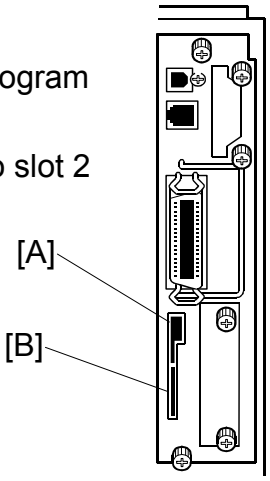
The service program "SD Card Appli Move" (SP 5873) lets you copy application programs from an SD card to another SD card.

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

1. The authentication data is transferred with the application program from an SD card to the other SD card. Authentication fails if you try to use the SD card after you copy the application program from this card to another SD card.
2. Do not use an SD card if it has been used for some other work, for example, on a computer. Normal operation is not guaranteed when such SD card is used.
3. Keep the SD card in the place (☛Note) after you copy the application program from the card to another card. This is because: ① The SD card can be the only proof that the user is licensed to use the application program. ② You may need to check the SD card and its data to solve a problem in the future.

5.12.2 MOVE EXEC

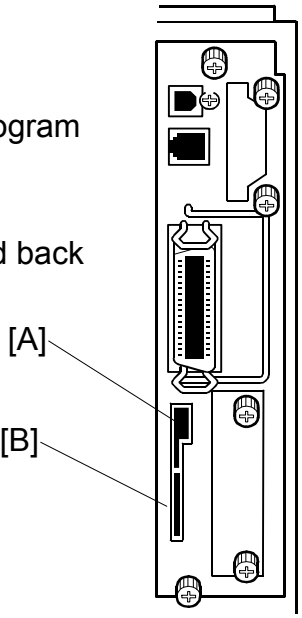
The menu “Move Exec” (SP 5873 1) lets you copy application programs from the original SD card to another SD card. The application programs are copied from slot 1 [A] to slot 2 [B].



1. Turn off the main power switch.
2. Make sure that an SD card is in slot 1 [A]. The application program is copied to SD card in slot 1 [A].
3. Insert the SD card (having stored the application program) to slot 2 [B]. The application program is copied from this SD card.
4. Turn on the main power switch.
5. Start the SP mode.
6. Select SP 5873 1 “Move Exec.”
7. Follow the messages shown on the operation panel.
8. Go out of the SP mode.
9. Turn off the main power switch.
10. Remove the SD card from slot 2 [B].
11. Turn on the main power switch.
12. Check that the application programs run normally.

5.12.3 UNDO EXEC

The menu “Undo Exec” (SP 5873 2) lets you copy back application programs from an SD card to the original SD card. You can use this program when, for example, you have mistakenly copied some programs by using Move Exec (SP 5873 1). The application programs are copied from slot 1 [A] to slot 2 [B].



1. Turn off the main power switch.
2. Insert the original SD card in slot 2 [B]. The application program is copied back to this card.
3. Make sure that the SD card (having stored the application program) is in slot 2 [B]. The application program is copied back from this SD card.
4. Turn on the main power switch.
5. Start the SP mode.
6. Select SP 5873 2 “Undo Exec.”
7. Follow the messages shown on the operation panel.
8. Go out of the SP mode.
9. Turn off the main power switch.
10. Remove the SD card from slot 2 [B]
11. Turn on the main power switch.
12. Check that the application programs run correctly.

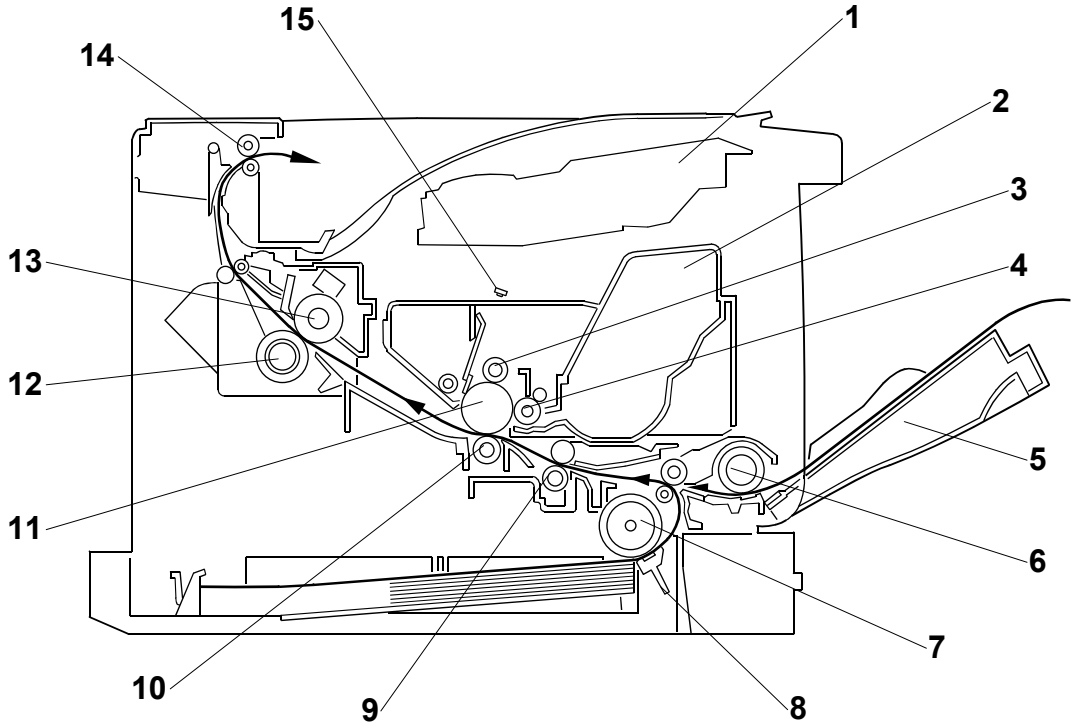
DETAILED DESCRIPTIONS

6. DETAILED SECTION DESCRIPTIONS

6.1 OVERVIEW

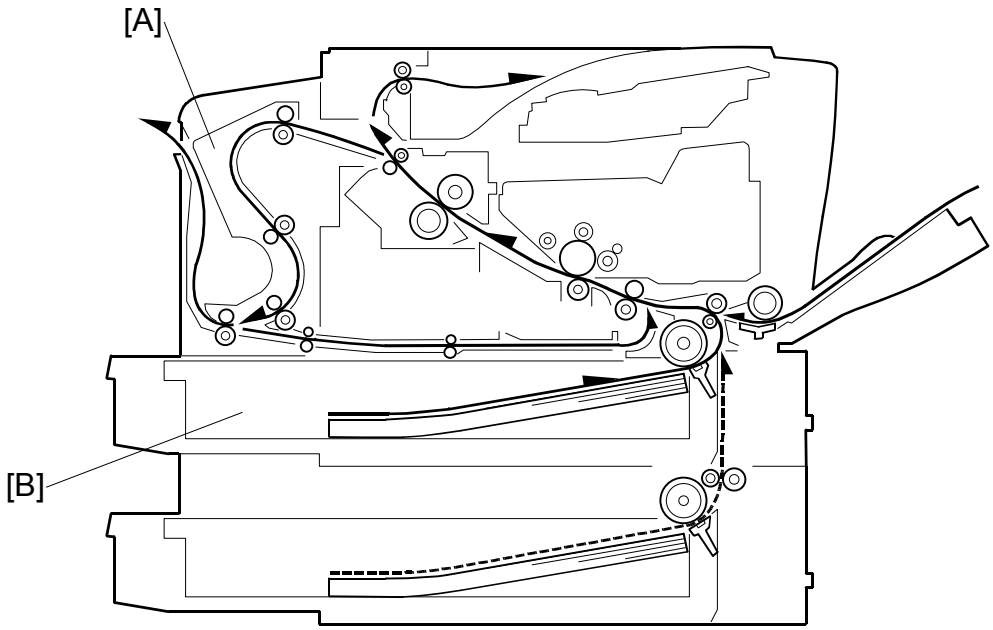
Details that are machine specific are shown with the machine codes.

6.1.1 MECHANICAL COMPONENT LAYOUT [ALL MODELS]



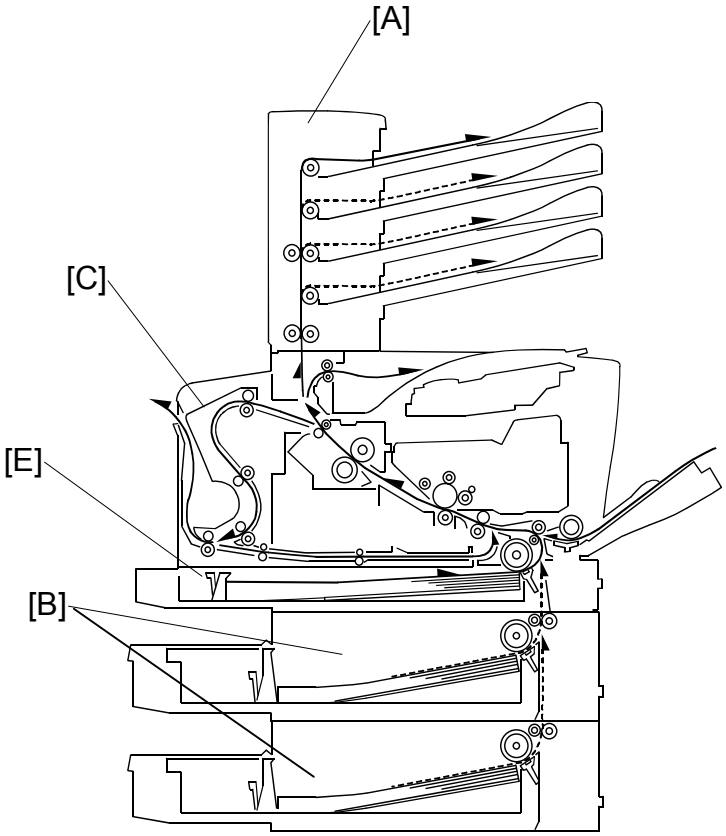
1. Laser unit
2. Cartridge (AIO-type)
3. Charge roller
4. Development roller
5. By-pass feed tray
6. By-pass feed roller
7. Paper feed roller
8. Friction pad
9. Registration roller
10. Transfer roller
11. Drum
12. Pressure roller
13. Hot roller
14. Paper exit roller
15. Quenching lamp

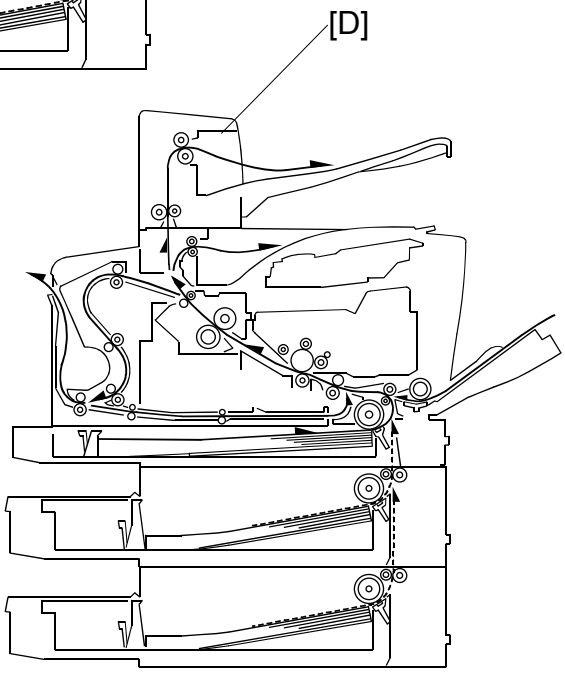
6.1.2 PAPER PATH [G112 SERIES]



[A]: Optional duplex unit
[B]: Optional paper tray unit

6.1.3 PAPER PATH [G116 SERIES]



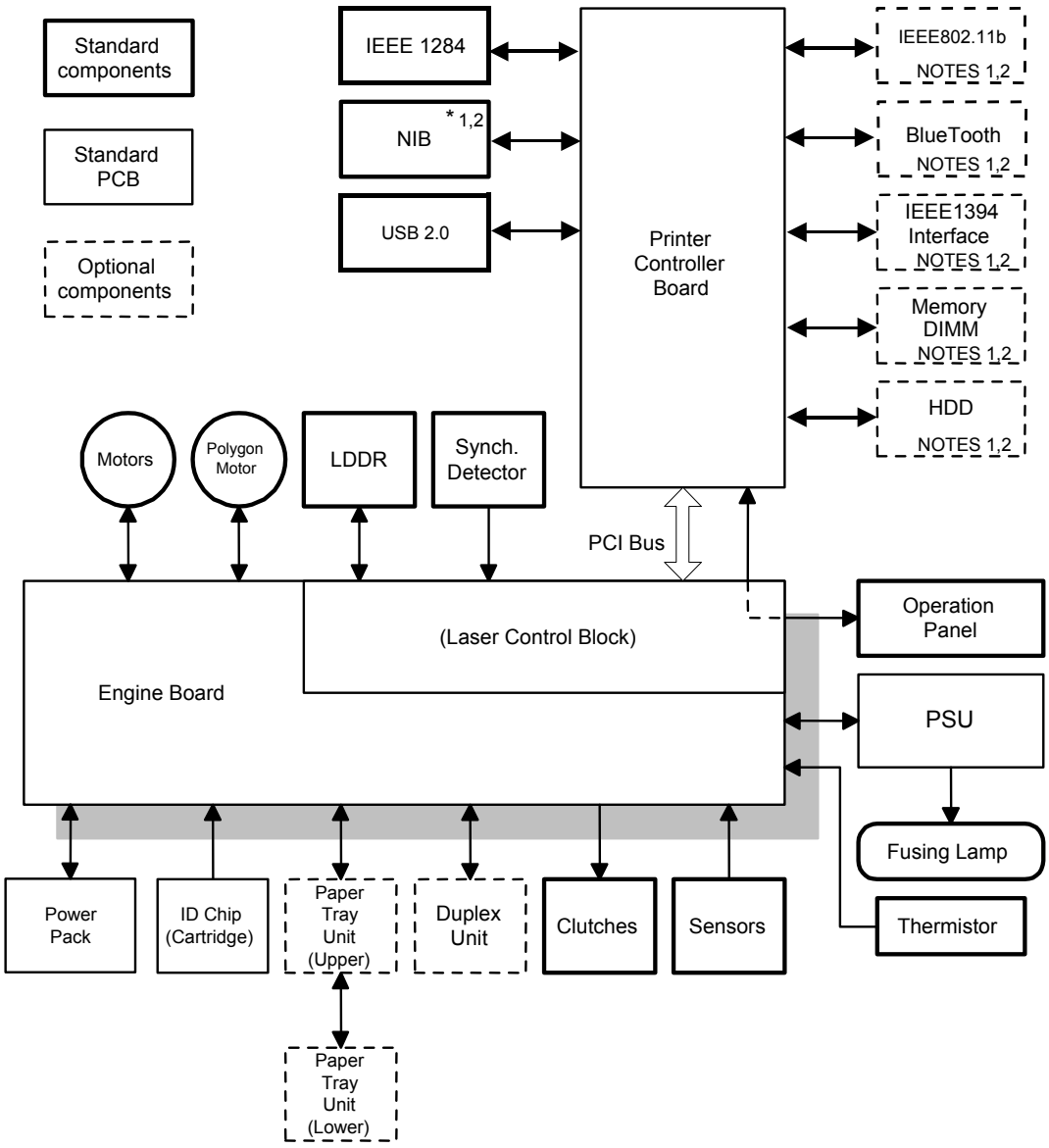


[A]: Optional four-bin mailbox
[B]: Optional paper tray units
[C]: Optional duplex unit
[D]: Optional one-bin shift tray unit
[E]: Standard Paper Tray Unit

NOTE: If both optional paper tray units are installed, the envelope feeder must go in the top tray.

6.2 BOARD STRUCTURE

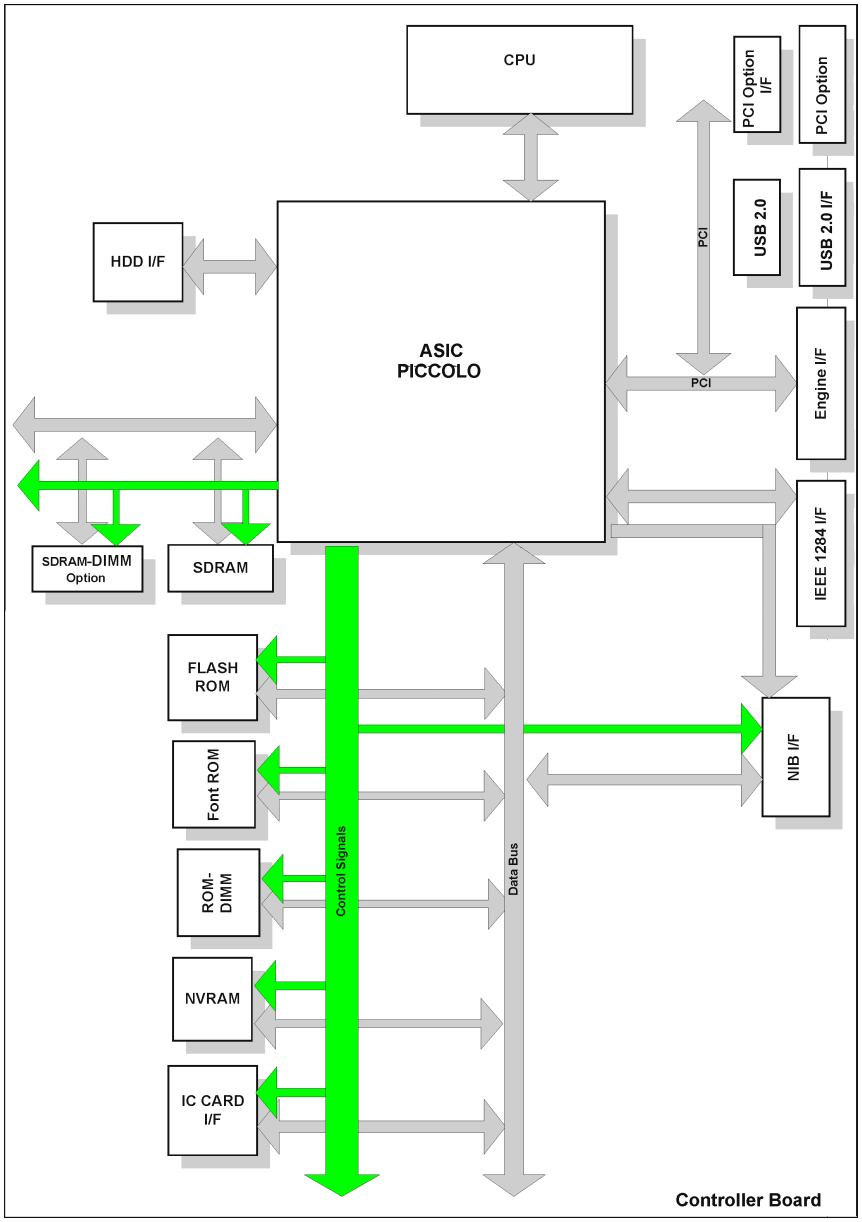
6.2.1 BLOCK DIAGRAM [G112 SERIES]



NOTE: 1) The NIB is standard for the G113 and G095 models only.
2) On the G112 and G094, you cannot install the NIB, IEEE1394 option, IEEE802.11b option and Bluetooth option at the same time. On the G113 and G095, you cannot install the IEEE1394 option, IEEE802.11b option and Bluetooth option at the same time.

The engine board controls all the mechanical components. The printer controller board connects to the engine board through a PCI bus.

6.2.2 BLOCK DIAGRAM [G116 SERIES]



The engine board controls all the mechanical components.

The printer controller board connects to the engine board through a PCI bus.

NOTE: 1) You cannot install the IEEE1394 option, IEEE802.11b option and Bluetooth option at the same time.

6.2.3 DESCRIPTIONS [ALL MODELS]

1. Engine Board

The engine board controls these functions:

- Engine sequence
- Machine and printer engine operation
- Timing for external options
- High voltage supply, laser, and fusing
- Sensors, motors, and solenoids

2. Printer Controller Board

The printer controller board controls these functions:

- Printer-to-host interface
- Operation panel interface
- Interfacing and control of the NIB, printer interface boards, and other options (HDD and DRAM DIMM)

3. LDU

This controls the laser diodes.

4. Network Interface Board (NIB)

The network interface board connects the printer to a network. This component is standard on the G113, G116, G095, and G091 Printer Controller Boards. The G112 and G094 models do not have a NIB as a standard component.

5. HDD Unit (Option)

The HDD unit holds the data for these functions:

- More soft fonts
- Collation
- Locked print
- Sample print
- Downloading forms for form overlay

6. Memory DIMM (Option: 64MB/128MB/256MB DRAM)

This gives more memory for printer processing, collation, and for soft fonts.

7. Operation Panel Board

Controls the display panel, the LED, and the key pad.

8. Standard interface boards

The machine has these built-in printer interfaces:

- G113, G116, G095, and G091: IEEE1284 (also known as Centronics or parallel port), USB, Ethernet
- G112 and G094: IEEE1284 (also known as Centronics or parallel port), USB, (Ethernet is an option.)

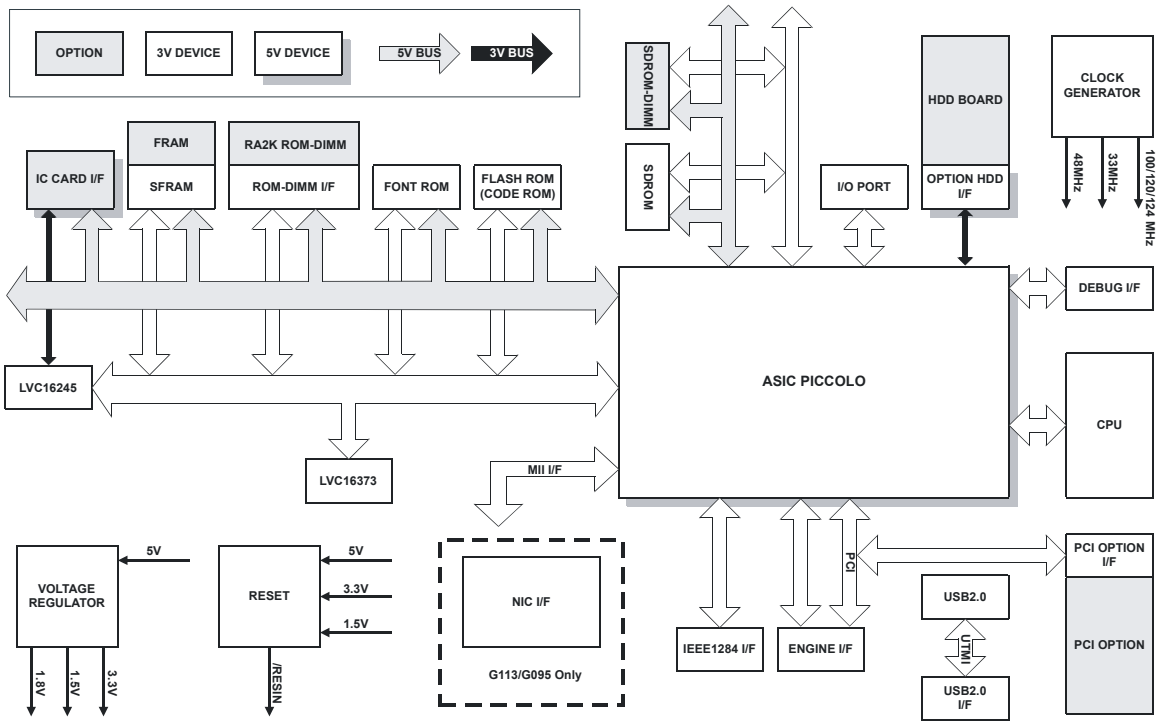
9. Optional interface boards

One of these optional printer interfaces can be installed:

- IEEE802.11b
- IEEE1394
- Bluetooth
- NIB Type 2610

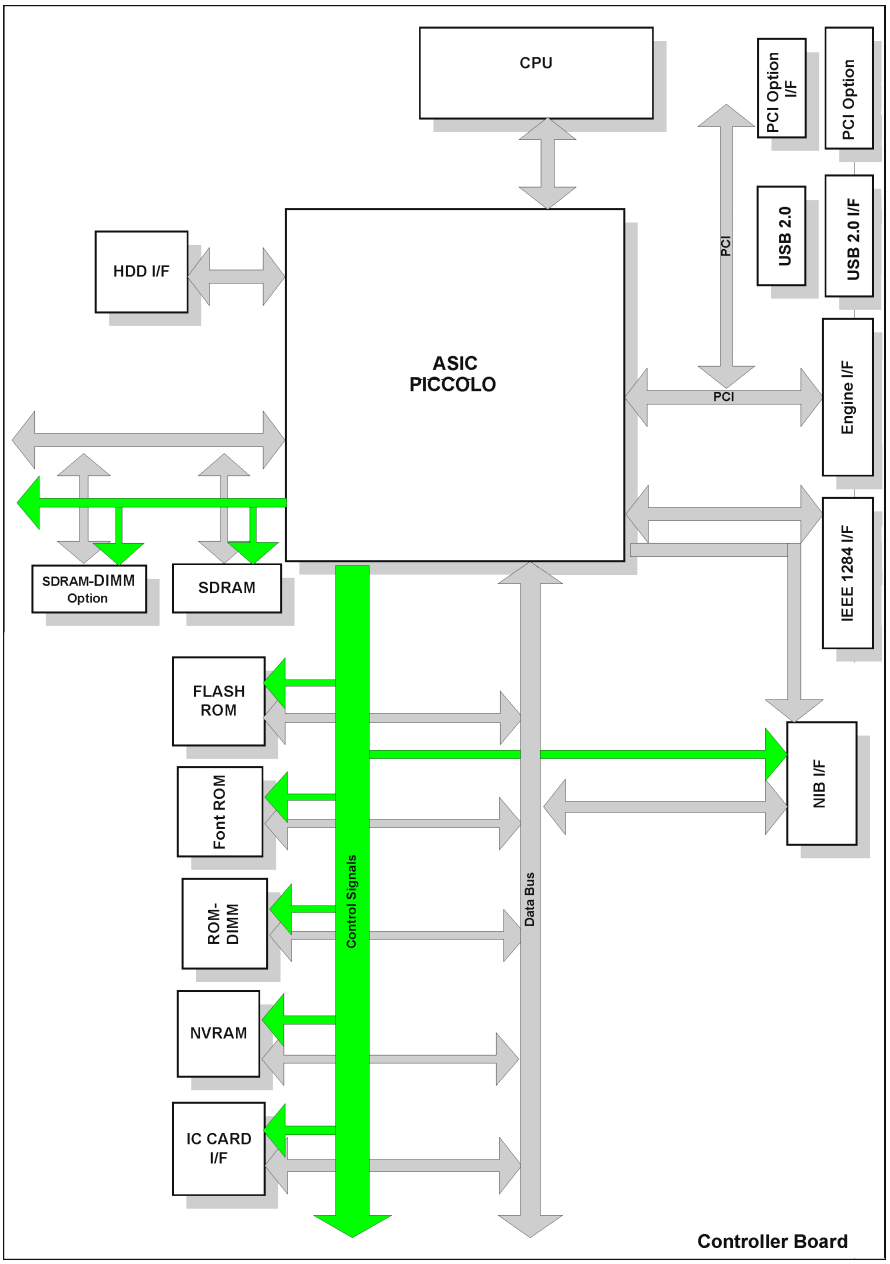
This option allows computers to connect to the printer with the interface.

6.2.4 CONTROLLER BOARD [G112 SERIES]



PICCOLO	The PICCOLO ASIC controls all the functions of the printer controller board.
CPU	TX4955 300 MHz (G094/G095/G112); 372 MHz (G113)
RAM	Resident: 64 MB SDRAM (G094/G095/G112); 128 MHz SDRAM (G113)
	Option: 1 slot SDRAM DIMM (64/128/256 MB)
ROM	Flash: 16 MB ROM (Emulation)
	Mask: 4 MB (PCL/PS font)
NVRAM	Stores the controller settings
HDD	6 GB

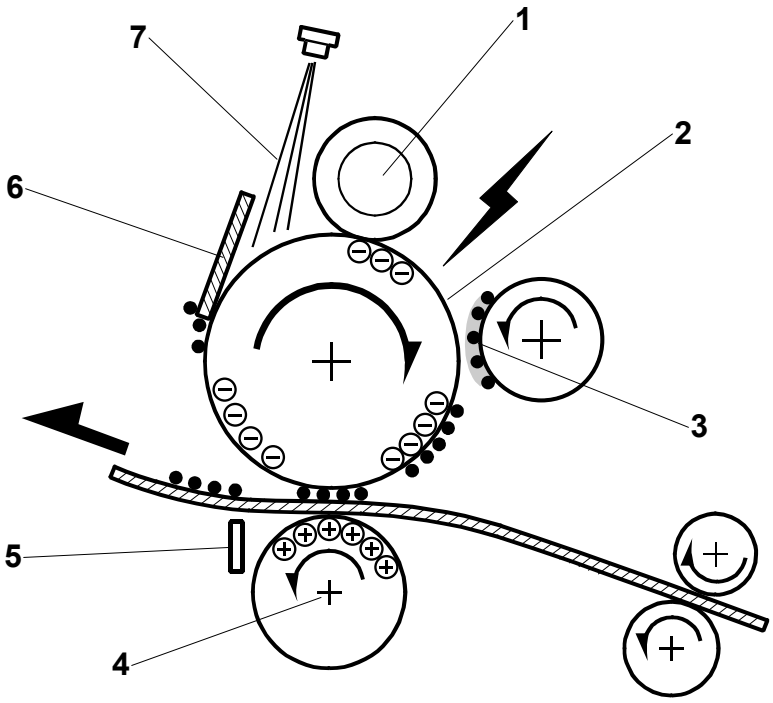
6.2.5 CONTROLLER BOARD [G116 SERIES]



PICCOLO	The PICCOLO ASIC controls all the functions of the printer controller board.
CPU	TX4955 300 Mhz (G091); 375 MHz (G116)
RAM	Resident: 64 MB SDRAM (G091); 128 MB SDRAM (G116)
	Option: 1 slot SDRAM DIMM (64/128/256 MB)
ROM	Flash: 16 MB ROM (Emulation)
	Mask: 4 MB (PCL/PS font)
NVRAM	Stores the controller settings
HDD	6 GB

6.3 PRINTING PROCESS

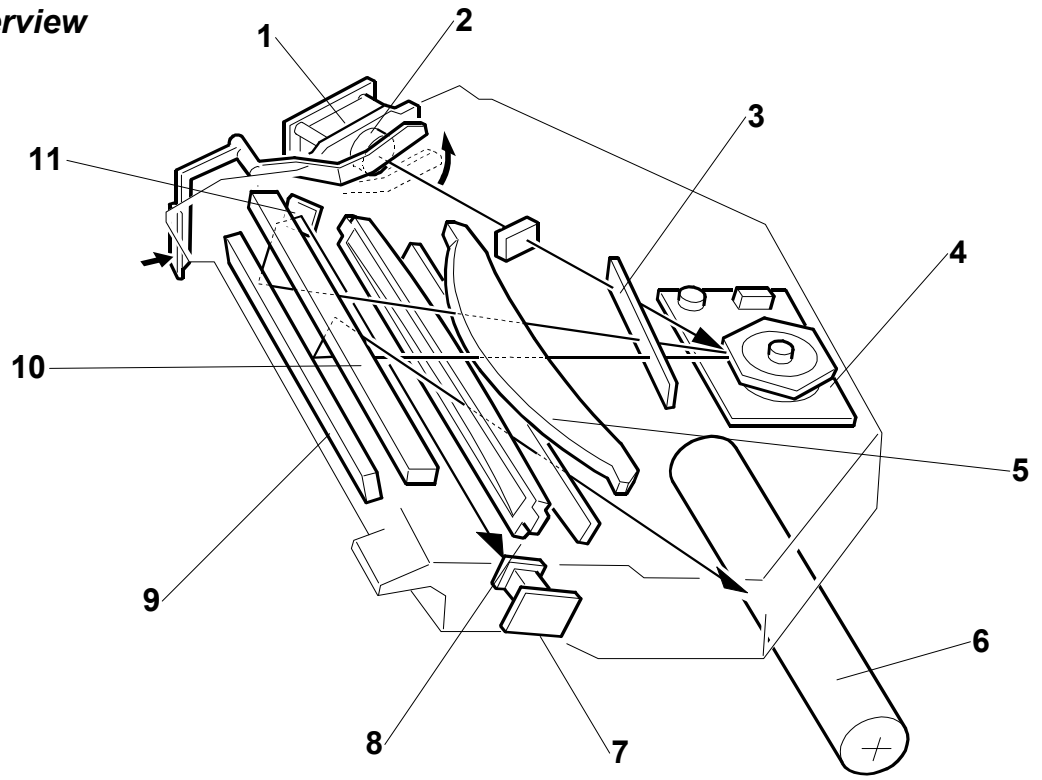
6.3.1 OVERVIEW [ALL MODELS]



1. **Drum Charge:**
   The charge roller gives the drum a negative charge.
2. **Laser Exposure:**
   A laser beam writes the print data on the drum.
3. **Development:**
   The development roller moves toner to the latent image on the drum surface.
4. **Image Transfer:**
   The transfer roller moves the toner from the drum to the paper.
5. **Separation:**
   The separation plate helps to remove the paper from the drum.
6. **Cleaning:**
   The cleaning blade removes remaining toner on the drum surface after the image moved to the paper.
7. **Quenching:**
   The light from the quenching lamp cancels the charge that stays on the drum.

6.3.2 LASER EXPOSURE [ALL MODELS]

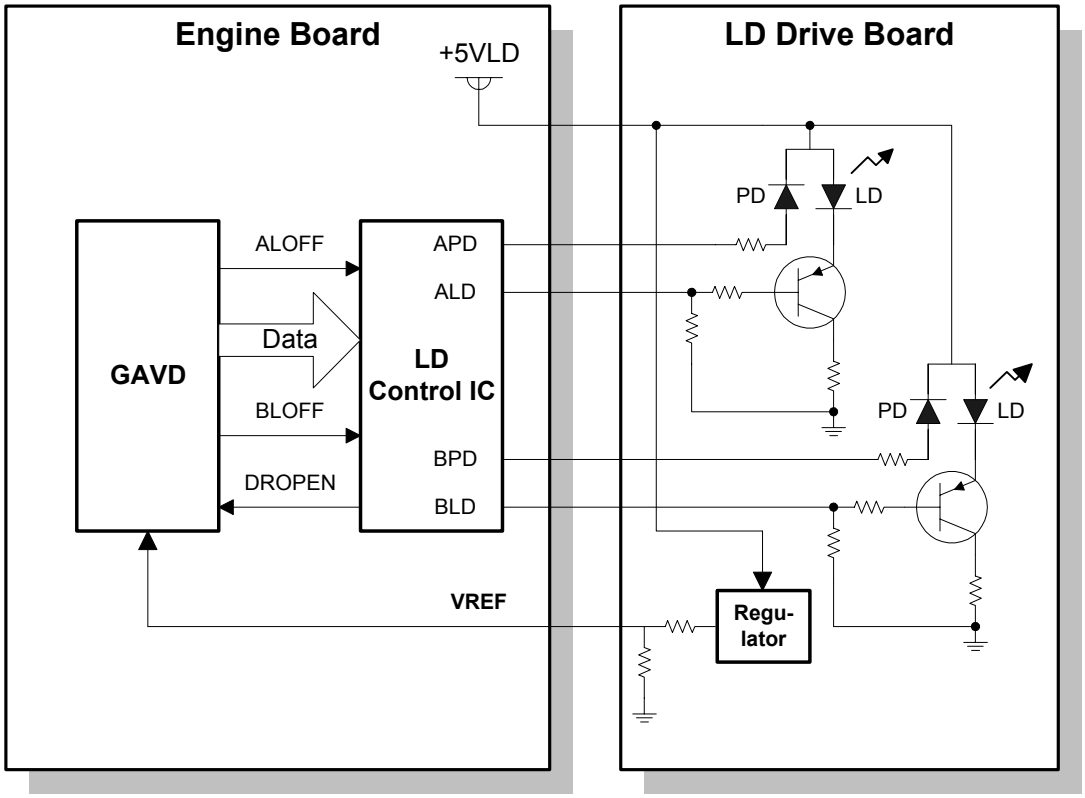
Overview



1. LD unit
2. Laser shutter
3. Shield glass
4. Polygon mirror
5. F-Theta lens
6. Drum
7. Synchronization detector
8. Toroidal lens
9. 1st mirror
10. 2nd mirror
11. Detector mirror

- Synchronization detector: The 1st mirror, 2nd mirror, and the detector mirror reflect the beam from the LD unit to the synchronization detector.
- Two laser beams: The LD unit writes two lines at the same time.
- LD safety shutter: When the user opens the front cover, the shutter closes and blocks the laser beam path.
- After you replace the LD unit, adjust its position (see Replacement and Adjustment).
- The thermistor next to the laser unit (not shown) checks the temperature inside the machine. The machine automatically corrects the charge roller and transfer voltages for this temperature.

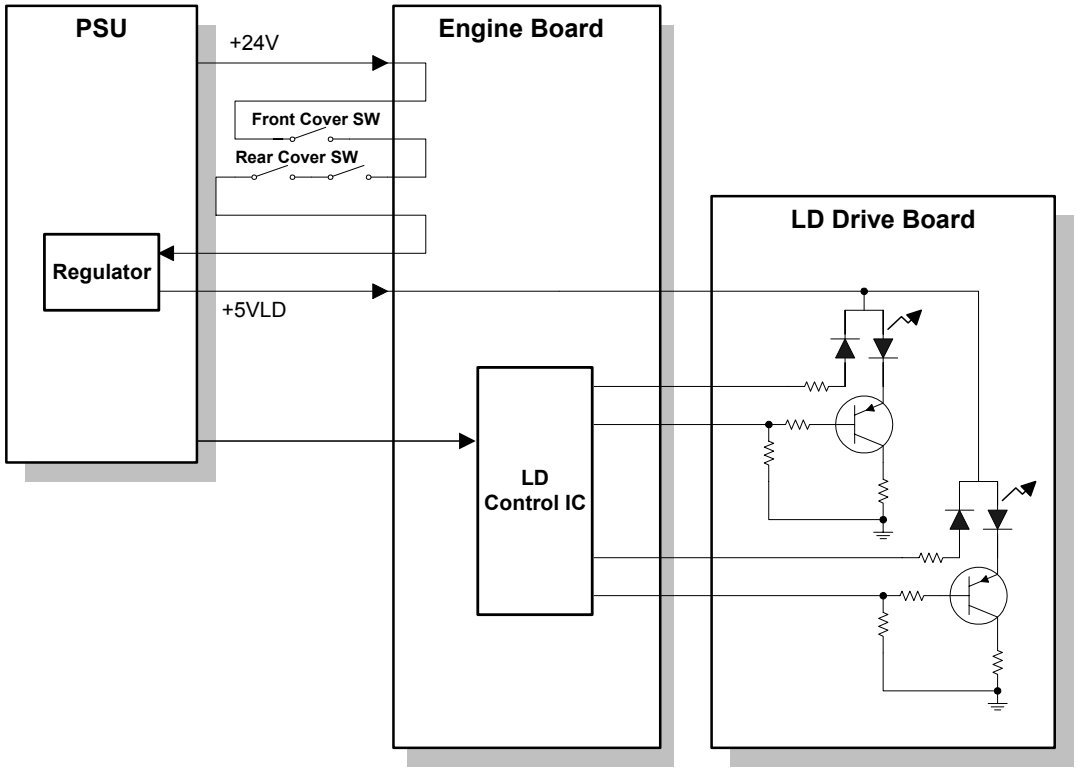
Automatic Process Control (APC) [ALL MODELS]



The LD control IC on the engine board automatically controls power for the laser diodes. The laser diode power is adjusted in the factory.

NOTE: Do not touch the variable resistors on the LD unit in the field.

LD Safety Mechanisms [ALL MODELS]



Laser Safety Switch

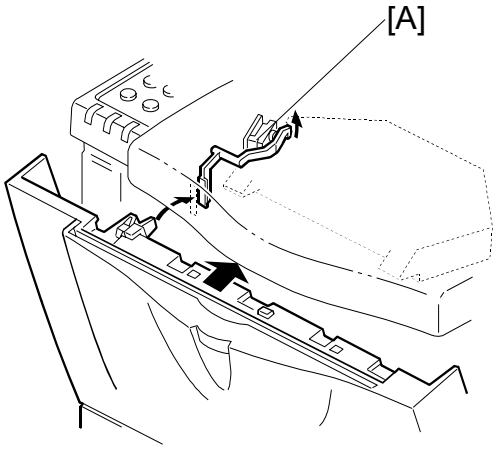
There are safety switches on the front and rear covers. These switches stop the laser while the cover is open.

If the user opens one of these covers, the +5VLD power to the laser diodes is stopped.

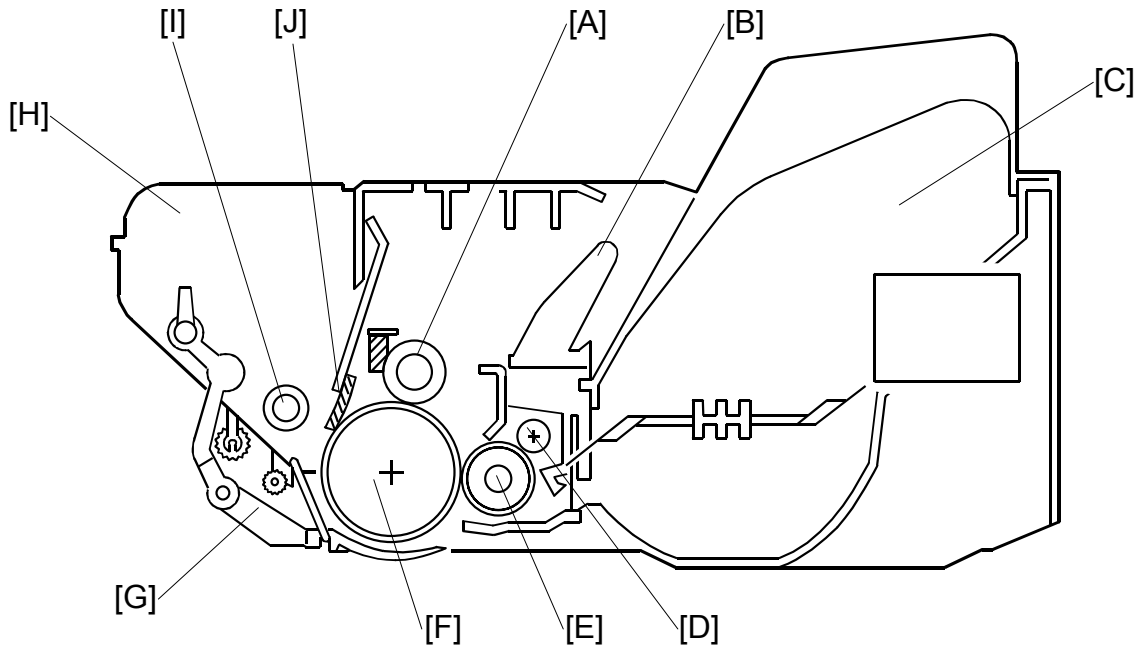
Laser Shutter

The laser shutter [A] is for back-up safety. If the laser safety switches fail, the +5VLD power may reach the laser diodes if the cover is open.

The laser shutter blocks the laser beam when the front cover is open.



6.3.3 CARTRIDGE OVERVIEW [ALL MODELS]



[A]: Charge roller
[B]: Developer tank
[C]: Toner tank
[D]: Reverse roller
[E]: Development roller
[F]: Drum
[G]: Drum shutter
[H]: Waste toner tank
[I]: Toner collection roller
[J]: Cleaning blade

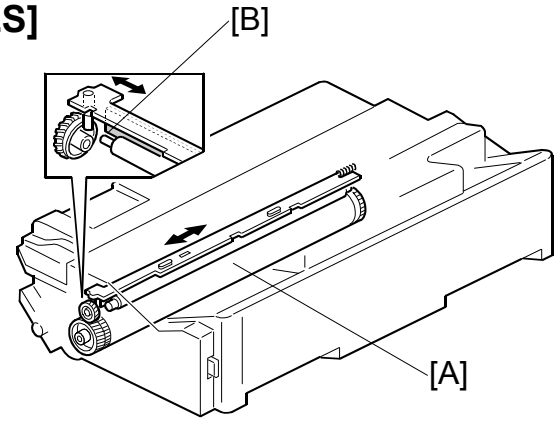
This type of cartridge is known as an “All-in One” (AIO) cartridge.

NOTE: G091/G094/G095 Toner Cartridges can be used in the G116/G112/G113 models.

6.3.4 DRUM CHARGE [ALL MODELS]

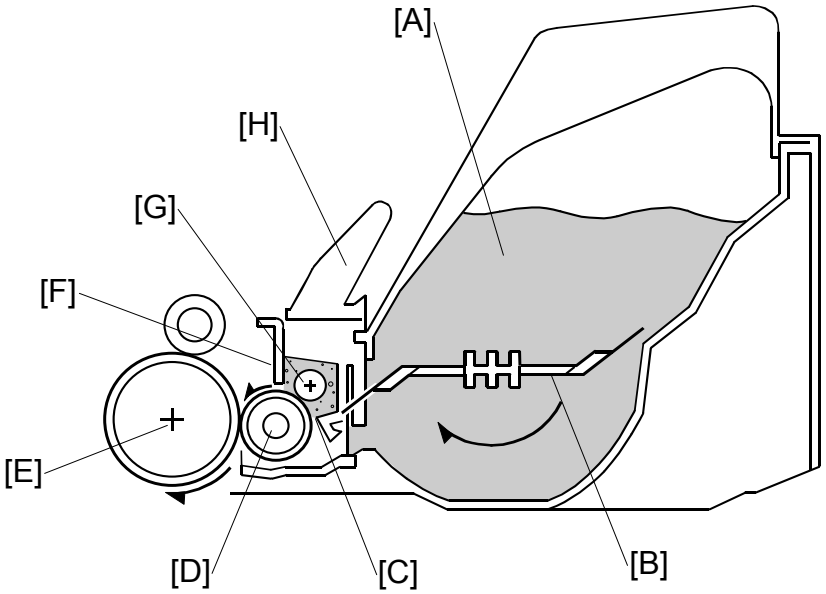
[A]: Charge roller
[B]: Cleaning pad

- The charge roller [A] gives the drum surface a negative charge of approximately –900 V.
- The cleaning pad [B] touches the charge roller to clean the surface.



6.3.5 DEVELOPMENT [ALL MODELS]

[A]: Toner tank
[B]: Agitator
[C]: Pre-doctor blade
[D]: Development roller
[E]: Drum
[F]: Doctor blade
[G]: Reverse roller
[H]: Developer tank



Toner Supply

The agitator [B] mixes toner and sends it to the development roller.

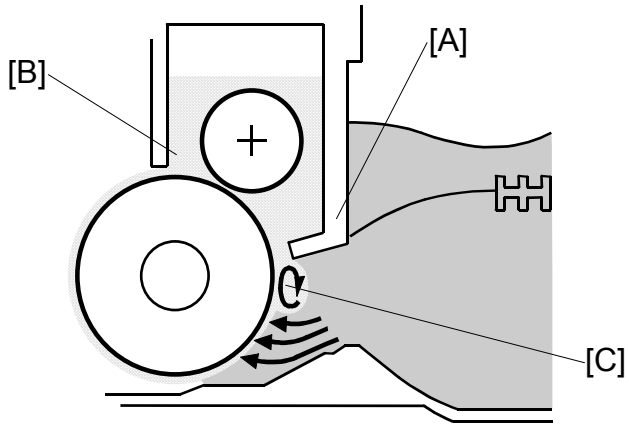
Development Unit

This machine uses a one-roller development system. The high voltage supply applies -700V to the development roller.

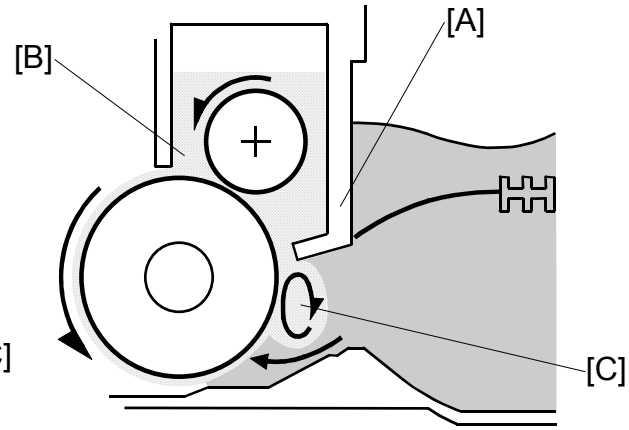
When the user removes the developer seal, the developer falls and the magnetic reverse roller [G] mixes the developer.

This machine does not use a TD sensor or ID sensor to control toner density. The pre-doctor blade [C] and the doctor blade [F] control the toner density.

Toner Density Control



More toner is fed when the toner coating on the development roller



Less toner is fed when the toner coating on the development roller

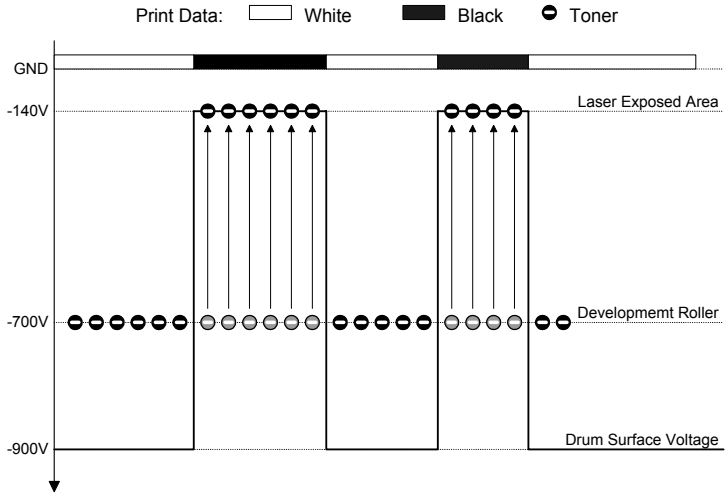
[A]: Pre-doctor blade
[B]: Doctor blade
[C]: Circulation of developer

A mixture of toner and developer circulates at the pre-doctor blade [A].

When the toner on the development roller decreases, the circulating region [C] gets smaller to let more toner get to the development roller.

When the toner on the development roller increases, the circulating region [C] gets bigger to let less toner get to the development roller.

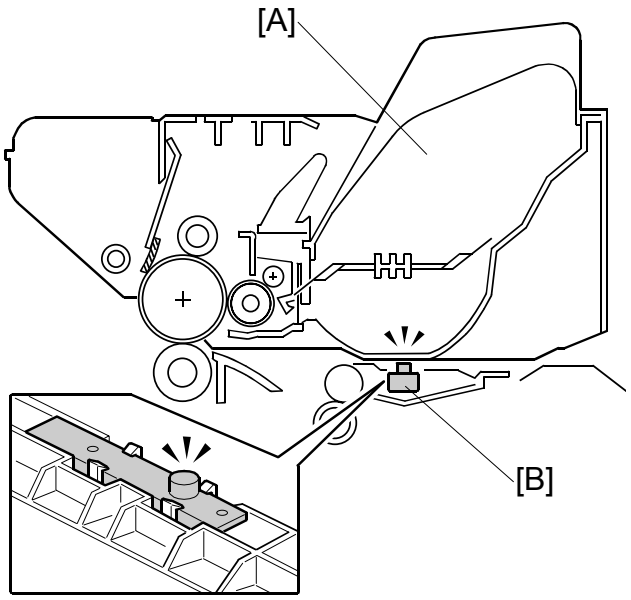
Development Bias



Toner transfers from the development roller to the areas on the drum that were exposed to the laser.

Toner End Detection

[A]: Toner tank
[B]: Toner end sensor



The toner end sensor detects toner near-end by the voltage output.

Toner near-end

When the output from the toner end sensor is below a given level, the machine displays “Low on Toner” to tell the user.

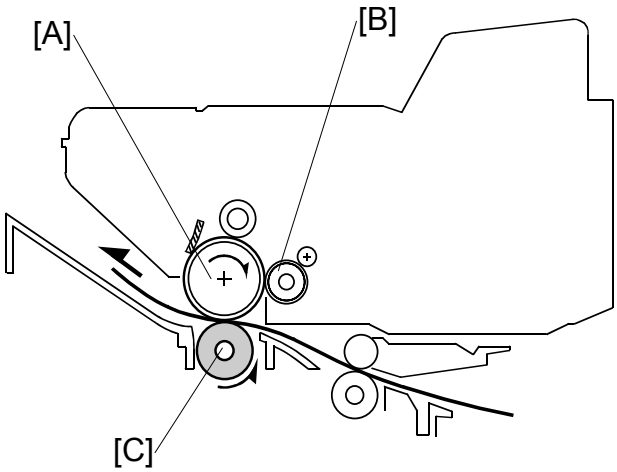
Toner end

After toner near-end, the machine can print 200 more pages, and then it prevents printing. At this time, “Replace Toner Cartridge” is displayed. The 200-page limit can be changed with engine SP 2213.
The machine also displays “Replace Toner Cartridge” when the output from the toner end sensor is below a given level.

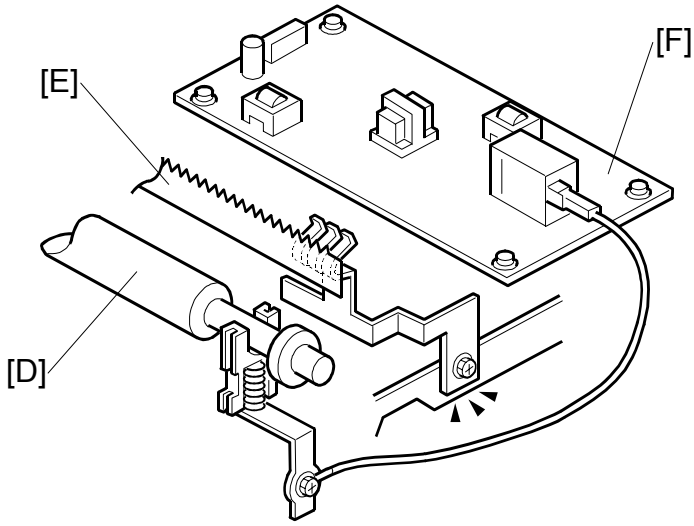
NOTE: To prevent waste toner tank overflow, you can make the machine stop printing if the total number of prints per cartridge is more than 30k. To make the machine stop, use engine SP 3923.
To adjust the 30k limit, use engine SP 3922.

6.3.6 IMAGE TRANSFER AND PAPER SEPARATION [ALL MODELS]

Overview



[A]: Drum
[B]: Development roller
[C]: Transfer roller
[D]: Transfer roller
[E]: Separation plate
[F]: High voltage supply



This machine uses a transfer roller [C] to pull the toner from the drum [A] to the paper. The high voltage supply [F] applies a positive current (+18μA) to the transfer roller [C]. To adjust the current applied to the transfer roller [C], use engine SP 2301. The separation plate [E] helps to remove paper from the drum.

Transfer Roller Cleaning

After a paper jam or when the user sets the incorrect paper size, toner can transfer to the rear side of printouts. To prevent this, the machine automatically cleans the transfer roller before the next printing cycle.

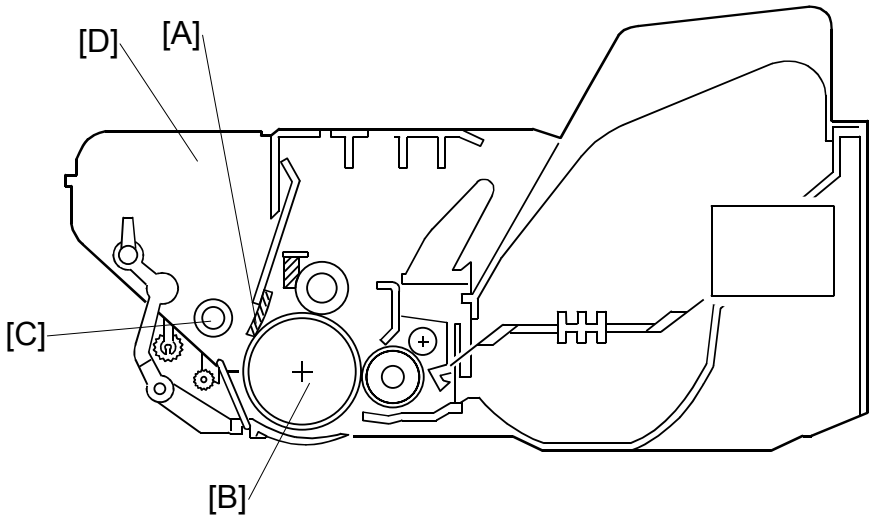
During transfer roller cleaning, the high voltage supply applies a negative current (–3μA) to the transfer roller.

The machine cleans the transfer roller in these conditions:

- At power on
- During fusing unit warm-up
- Immediately after a jam is removed
- When the front cover is opened and closed
- After a job which is 10 pages or larger

6.3.7 CLEANING [ALL MODELS]

[A]: Cleaning blade
[B]: Drum
[C]: Toner collection roller
[D]: Waste toner tank

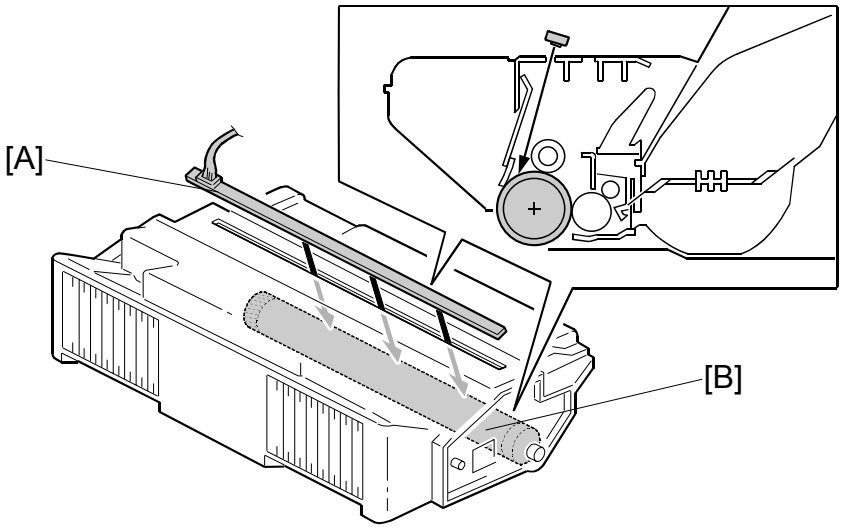


The cleaning blade [A] removes toner that remains on the drum. The toner collection roller [C] moves the toner to the waste toner tank.

There is no waste toner overflow detection. See "Toner End Detection" for more on how to prevent waste tank overflow.

6.3.8 QUENCHING [ALL MODELS]

[A]: Quenching lamp
[B]: Drum

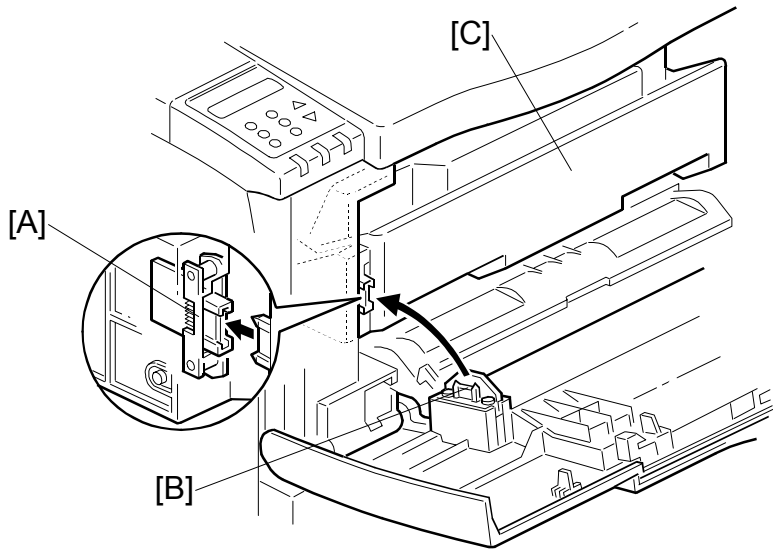


Light from the quenching lamp [A] (LED) gets to the drum [B] through the opening at the top of the cartridge.

6.3.9 ID CHIP AND INTERNAL THERMISTOR [ALL MODELS]

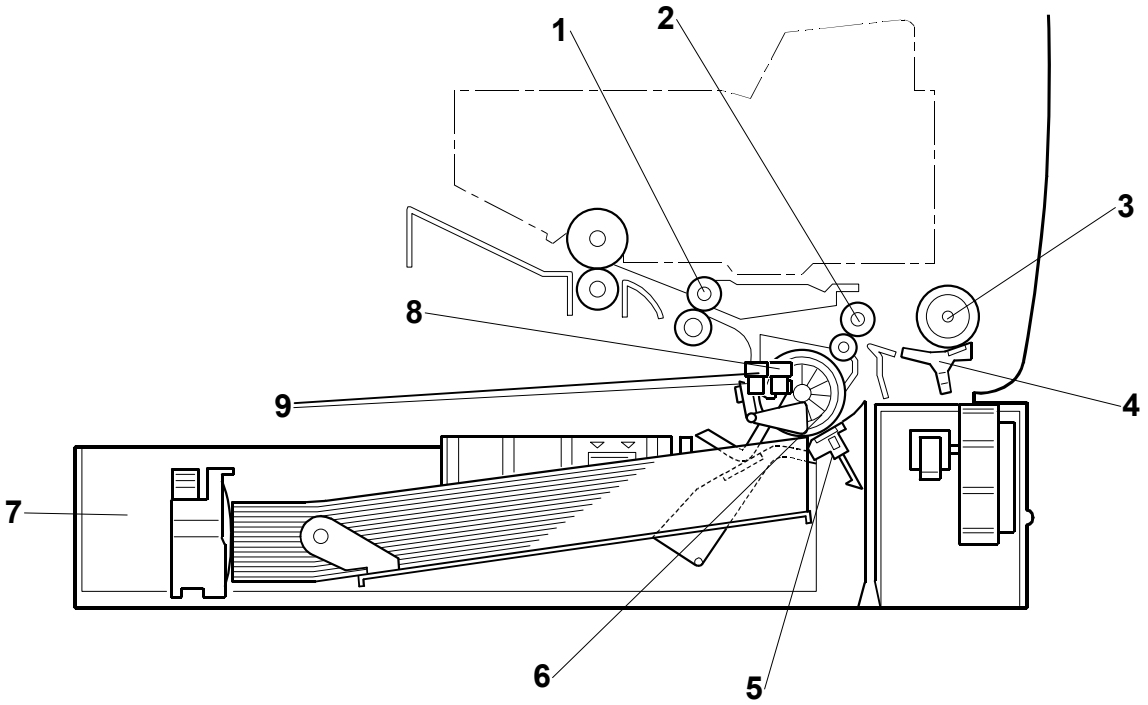
The cartridge contains an ID chip.

[A]: ID chip
[B]: Internal Thermistor
[C]: Cartridge



6.4 PAPER FEED [ALL MODELS]

6.4.1 OVERVIEW



1. Registration Roller
2. Relay Roller
3. By-pass feed roller
4. By-pass friction pad
5. Friction pad
6. Feed roller
7. Paper tray
8. Paper end sensor
9. Remaining paper sensors (1 and 2)

Paper Tray

Paper Feed System:	Feed roller and friction pad
Paper Lift Mechanism:	Tray arm and spring
Paper End Detection:	Remaining paper sensors Paper end sensor
Paper Size Detection:	Paper size switch
Tray Capacity:	500 sheets
Tray Extension:	Available

By-pass Tray

Paper Feed System:	Feed roller and friction pad
Paper Lift Mechanism:	Cams and springs
Paper Detection:	By-pass tray paper sensor
Paper Size Detection:	None
Tray Capacity:	100 sheets

6.4.2 PAPER TRAY [ALL MODELS]

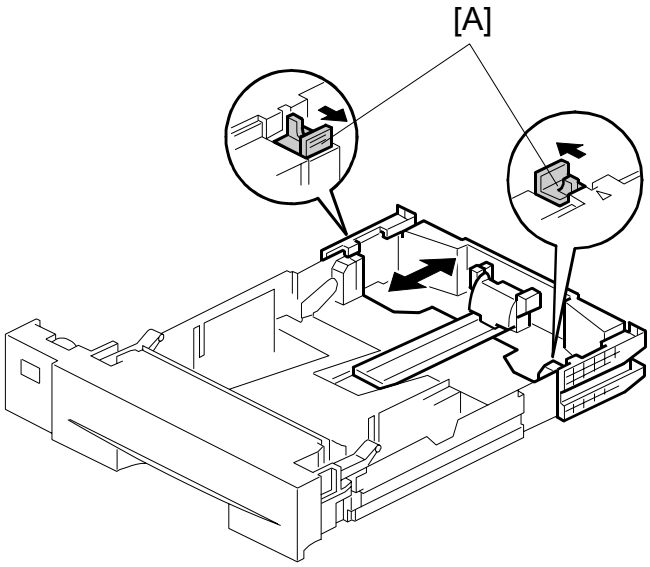
Tray Extension

The user can extend the tray manually to hold paper longer than A4/Letter size.

To use longer paper:

- Release the two locks [A]
- Extend the tray and close the locks.

The following paper sizes are supported for use in this tray:



Paper Sizes [G112 Series]

Tray Mode	Possible Paper Sizes
Short (default)	A5 (LEF/SEF), B5 (SEF), A4 (SEF), LT (SEF)
Long	LG (SEF), 8.5”x13” (SEF), 8”x13” (SEF), 8.25”x13” (SEF)

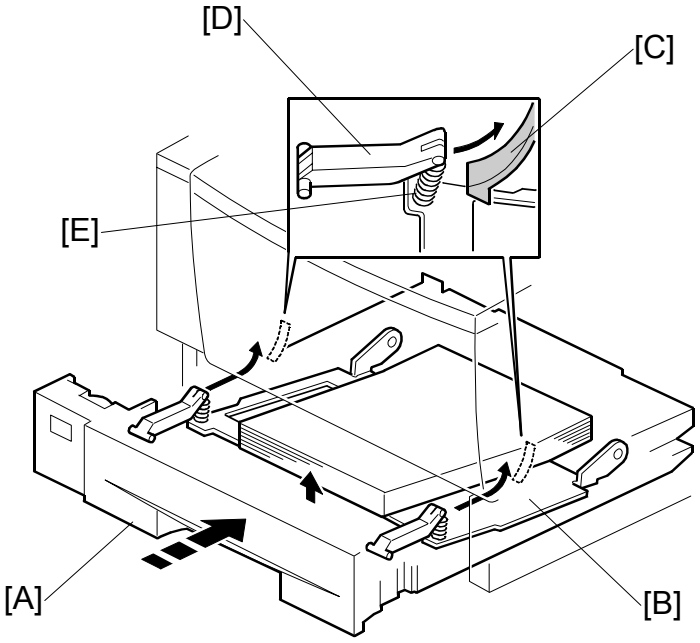
Paper Sizes [G116 Series]

Tray Mode	Possible Paper Sizes
Short (default)	A5 (LEF), B5 (LEF/SEF), A4 (LEF/SEF), 10.5”x7.25” (LEF), LT (LEF/SEF)
Long	B4 (SEF), A3 (SEF), 8.5”x13” (SEF), 8”x13” (SEF), 8.25”x13” (SEF), LG (SEF), DLT (SEF)

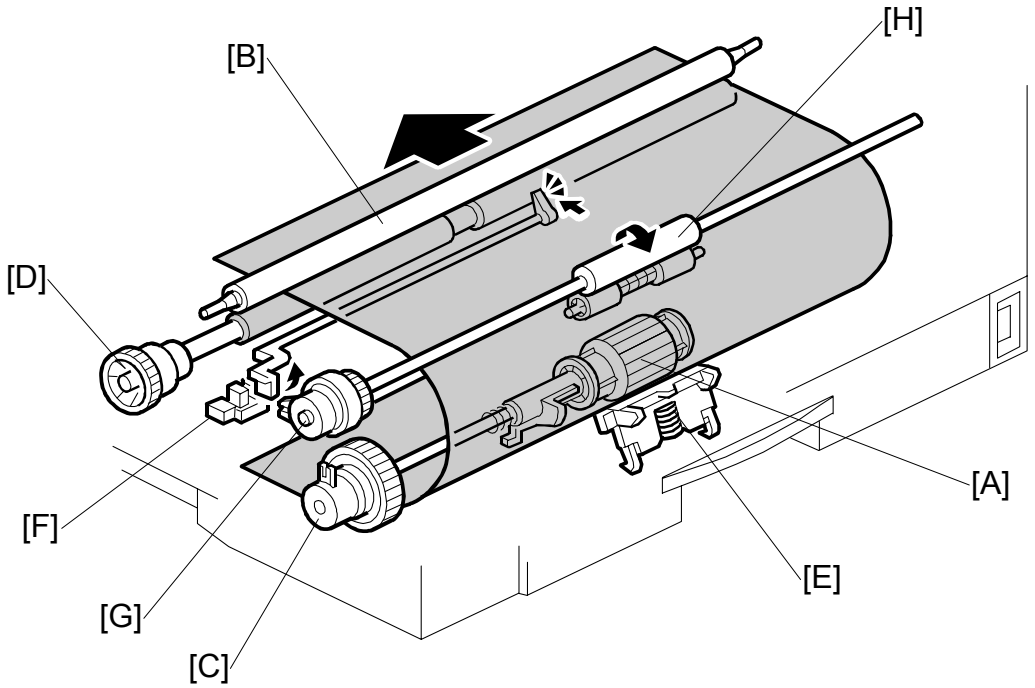
Paper Lift

When the user puts the tray [A] in the machine, the bottom plate [B] lifts as follows.

- The slopes on the guide blocks [C] on the machine lift the tray arms [D] up.
- The springs [E] between the tray arms and bottom plates lift the plate.
- The springs [E] keep the top sheet of the paper at the correct height.



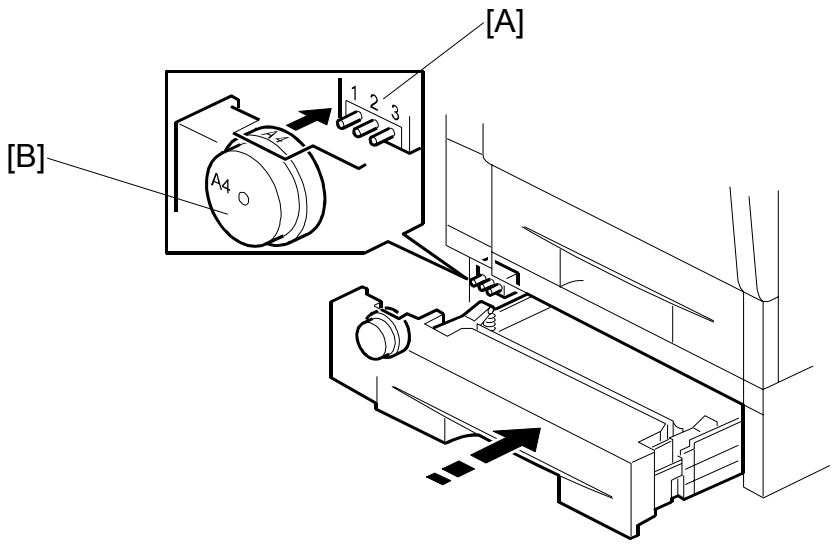
Paper Feed and Registration



[A]: Feed roller
[B]: Registration roller
[C]: Paper feed clutch
[D]: Registration clutch
[E]: Friction pad
[F]: Registration sensor
[G]: Relay clutch
[H]: Relay roller

NOTE: 1) The friction pad cannot be adjusted.
2) The machine makes a paper buckle at the registration roller to correct paper skew.
3) The paper buckle can be adjusted with engine SP 1003.

Paper Size Detection



[A]: Paper size switch
[B]: Paper size dial

Paper Size Detection [G112 Series]

SW / Size	1	2	3
A4 SEF	❍	❍	●
A5 SEF	❍	●	❍
B5 SEF	●	❍	●
Custom Size	❍	●	●
LG SEF	●	●	●
LT SEF	●	●	❍
HLT SEF	●	❍	❍

❍: ON (Not pushed)
●: OFF (Pushed)

Paper Size Detection [G116 Series]

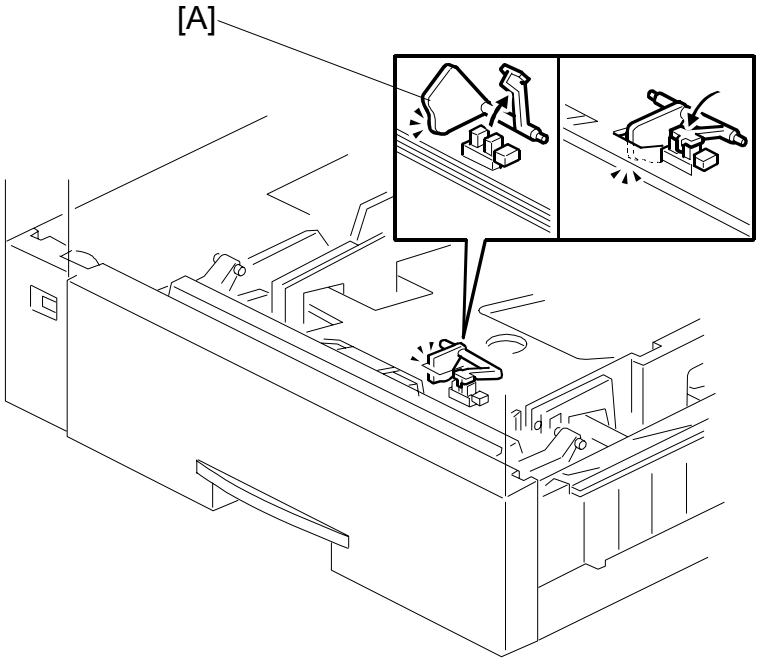
Size / SW		1	2	3
NA	**Eur/Asia**			
DLT	A3	❍	❍	❍
LG	A4 LEF	❍	●	●
LT LEF	A4 SEF	❍	❍	●
LT SEF	A5 LEF	●	❍	❍
8.5”x13”	LT LEF	●	❍	●
A4 LEF	LT SEF	❍	●	❍
*	*	●	●	❍

❍: ON (Not pushed)
●: OFF (Pushed)

- The machine disables paper feed from a tray if it cannot detect the paper size. This occurs when the paper size actuator is broken or no tray is installed.
- When the dial is at the “*” mark, the user can set the paper tray up for a wider range of paper sizes with a User Tool (See Printer Reference Operation Manual, “Paper Input menu – Tray Paper Size”).

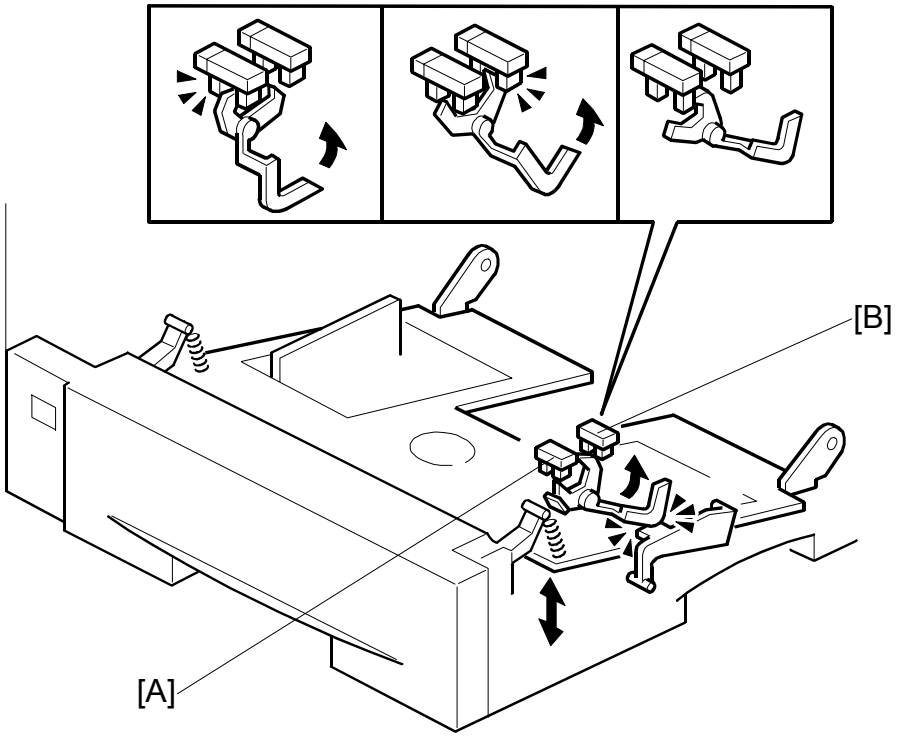
Paper End Detection

- When there is no paper in the tray, the feeler [A] falls into the cutout in the bottom plate, and the paper end sensor is activated.



Remaining Paper Detection

- Remaining paper is detected by the combination of the remaining paper sensor signals. The signals from the sensors indicate whether there are 500, 450, 250, or 50 sheets remaining.
-

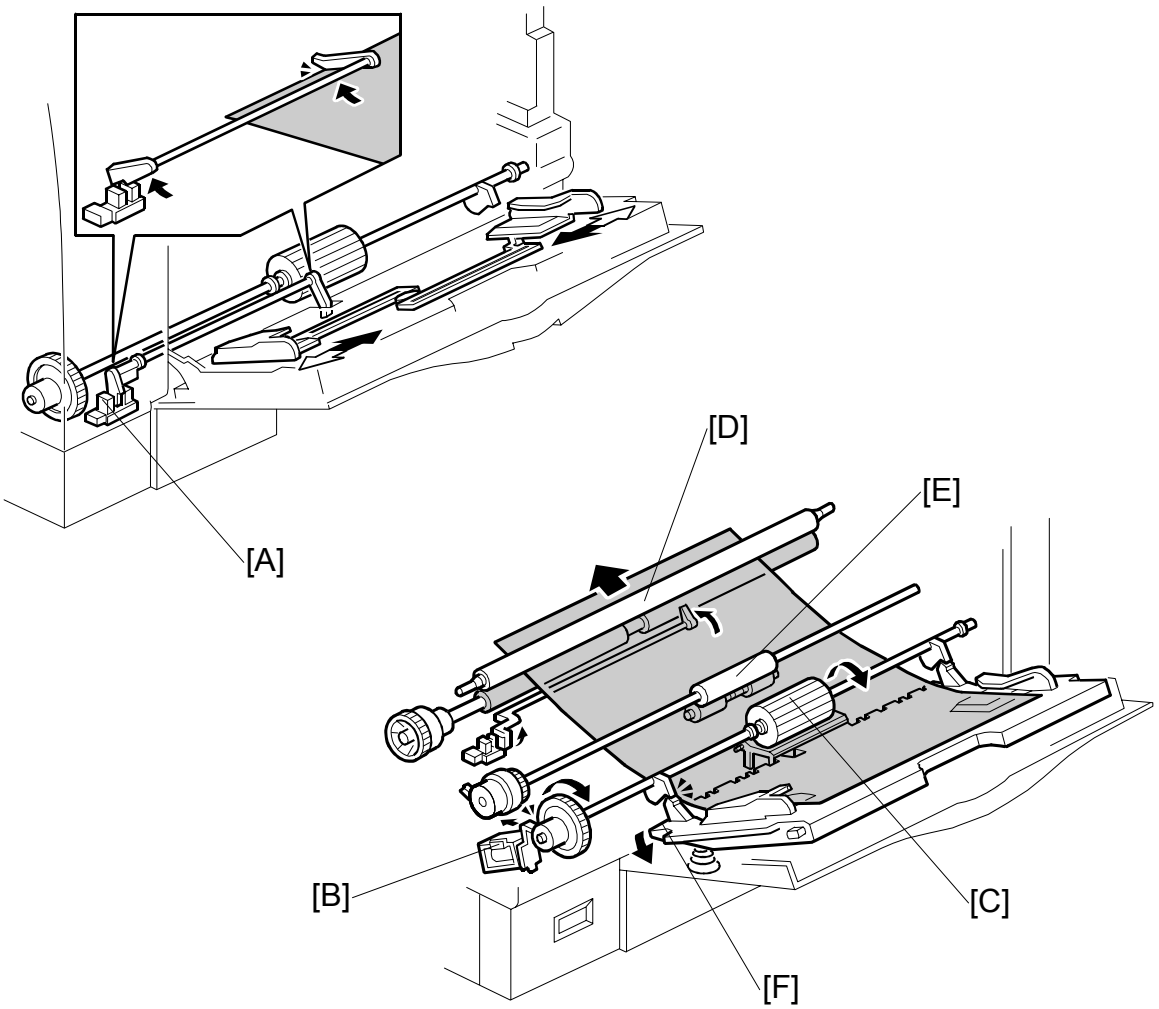


[A]: Remaining paper sensor 1
[B]: Remaining paper sensor 2

Amount of paper	Remaining paper sensor 1	Remaining paper sensor 2
1-50 sheets (10%)	OFF	OFF
51-250 sheets (50%)	OFF	ON
251-450 sheets (90%)	ON	ON
451-500 sheets (100%)	ON	OFF

OFF: Unblocked, ON: Blocked

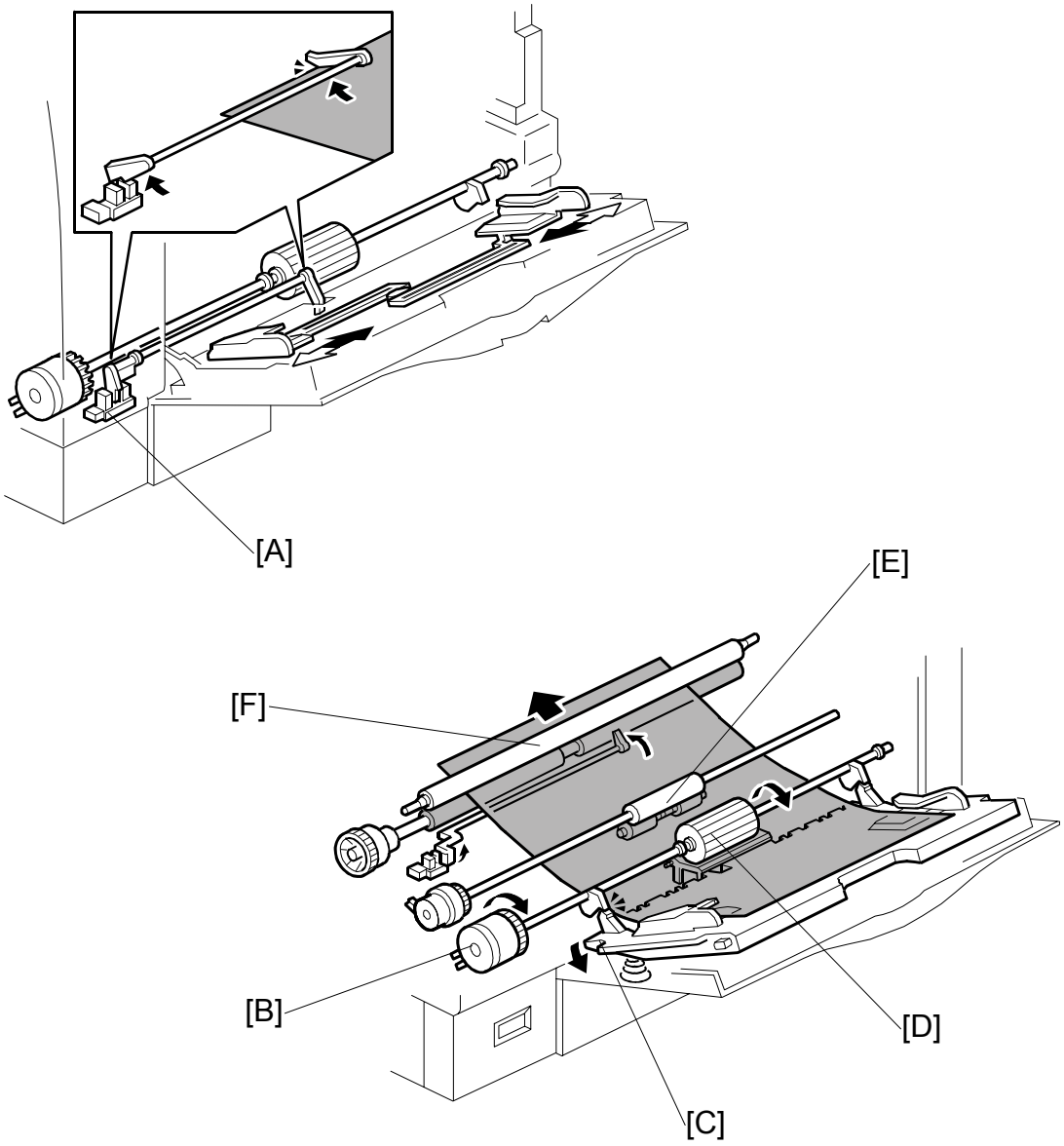
6.4.3 BY-PASS TRAY [G091/G094/G095]



- The by-pass paper sensor [A] detects when paper is placed on the tray.
- The CPU energizes the by-pass feed solenoid [B]. Then the by-pass feed roller [C] starts to feed paper to the registration roller [D] through the relay roller [E].
- The by-pass feed roller shaft has two cams [F]. These cams release the bottom plate to press the stack of paper against the feed roller.
- There is no width sensor.

NOTE: To prevent paper feed problems from too much friction between the feed roller and friction pad, the feed roller contains a metal plate.

6.4.4 BY-PASS TRAY [G112/G113/G116]



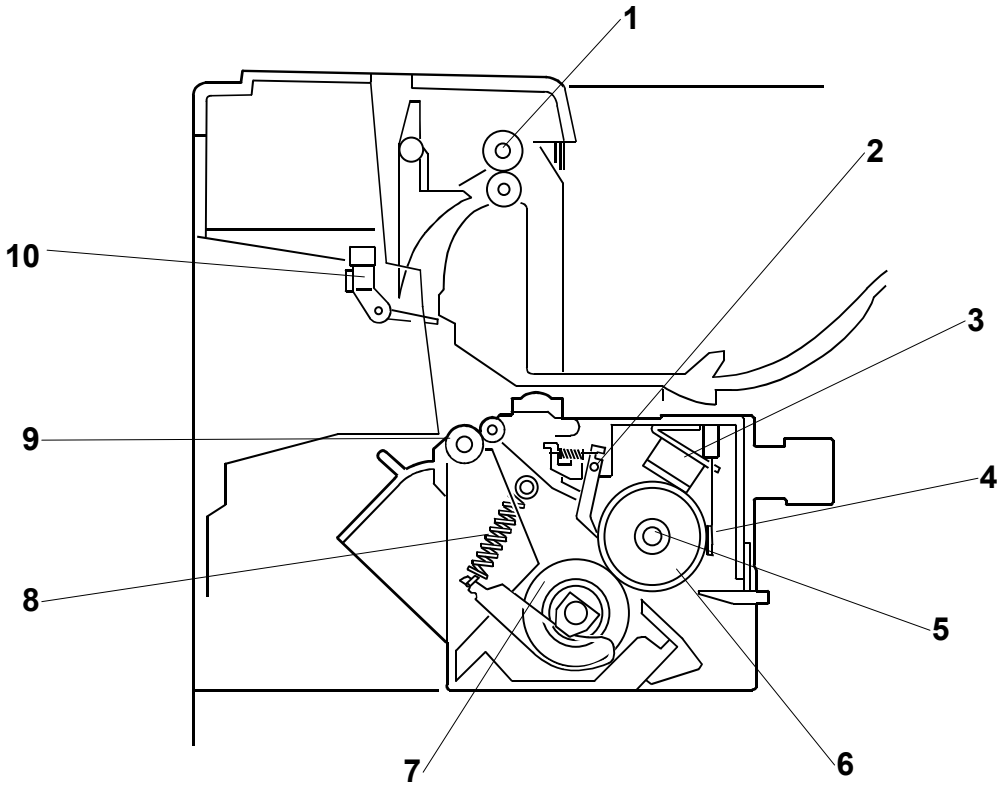
The bypass paper sensor [A] detects when paper is put on the tray. The CPU energizes the by-pass feed clutch [B]. Then the by-pass feed roller [D] starts to feed paper to the registration roller [F] through the relay roller [E].

The by-pass feed roller shaft has two cams [C]. These cams release the bottom plate to press the stack of paper against the feed roller.

NOTE: The feed roller has a metal plate to prevent bad effects from too much friction between the feed roller and friction pad.

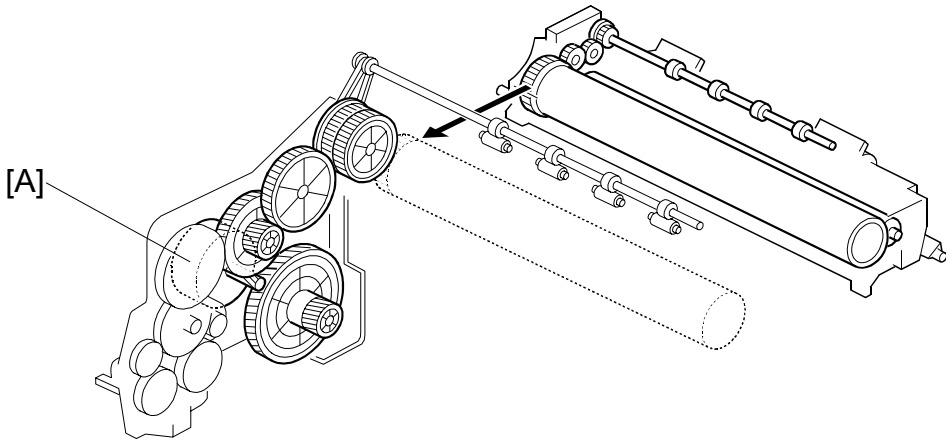
6.5 IMAGE FUSING AND PAPER EXIT [ALL MODELS]

6.5.1 OVERVIEW



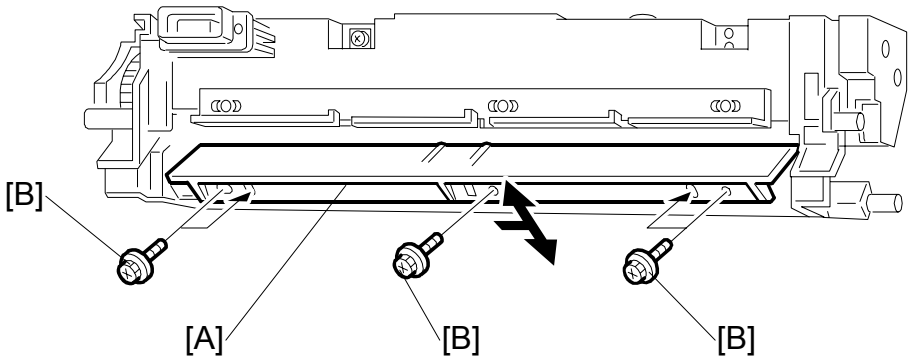
1. Paper exit roller
2. Hot roller strippers
3. Thermostat
4. Thermistor
5. Fusing lamp
6. Hot roller
7. Fusing pressure roller
8. Pressure spring
9. Fusing exit roller
10. Paper exit sensor

6.5.2 FUSING DRIVE [ALL MODELS]



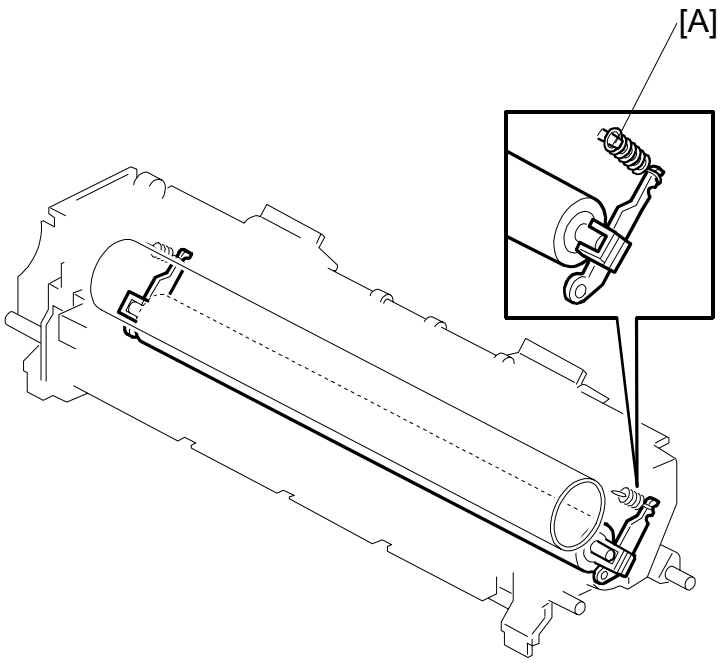
The main motor [A] drives the fusing unit through a gear train.

6.5.3 FUSING ENTRANCE AND GUIDE SHAFT [ALL MODELS]



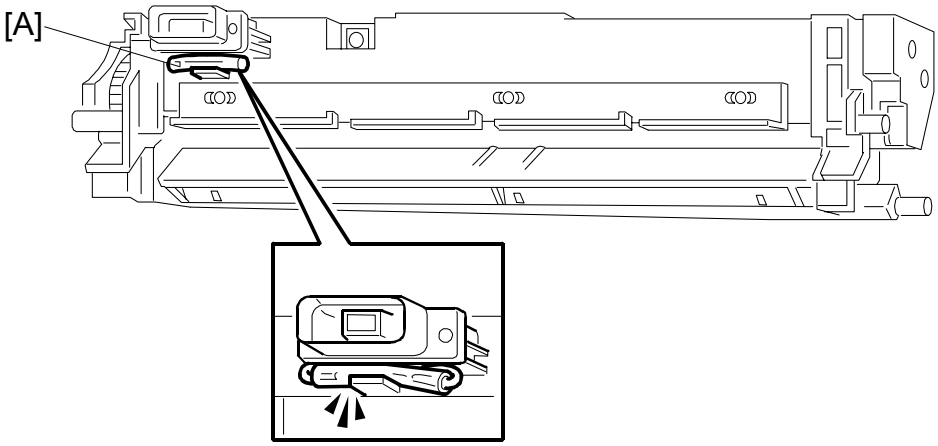
NOTE: 1) The entrance guide [A] is adjustable for paper thickness to prevent creasing.
2) If creasing occurs frequently in the fusing unit, remove all screws [B] and slide the entrance guide to the right. Replace the two end screws only. Do not replace the middle screw.
3) This procedure allows paper to have more direct access to the gap between the hot roller and the pressure roller.

6.5.4 PRESSURE ROLLER [ALL MODELS]



- To change the applied pressure, adjust the position of the pressure springs [A]. The factory setting for the spring position is at the top (minimum pressure).

6.5.5 NEW FUSING UNIT DETECTION [ALL MODELS]



There are two types of fusing unit: the Service unit, and the Maintenance Kit unit.

(NOTE: Only the fusing unit in the maintenance kit has the following detection mechanism.)

In the maintenance kit fusing unit, the looped wire on the fusing unit connector contains a fuse [A]. When power is switched on after installing a new fusing unit, the engine board detects the fusing unit through the looped wire. However, the fuse opens very shortly afterwards.

What happens next depends on the setting of engine SP mode 5930 (Meter Charge):

If Meter Charge Mode is enabled

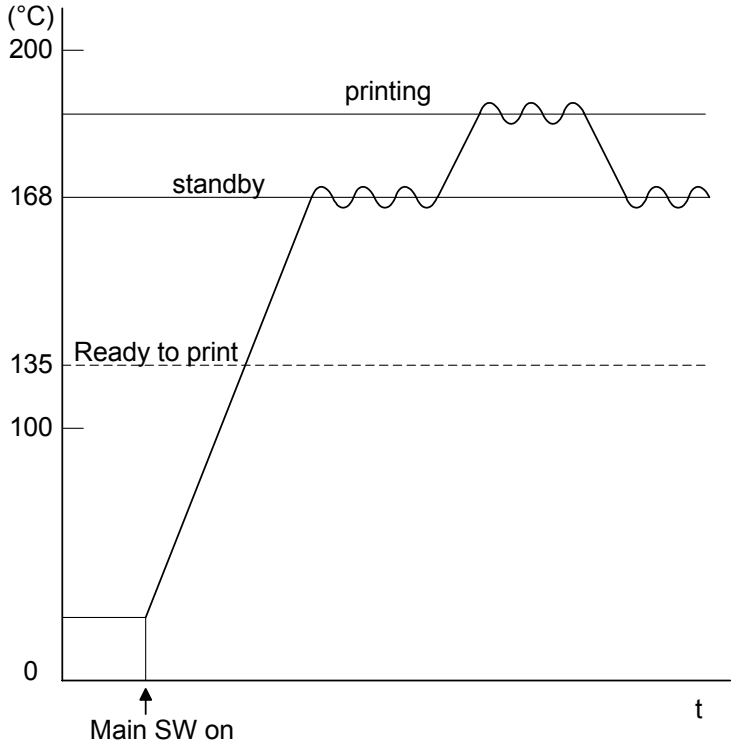
- After the technician replaces the fusing unit, the maintenance counter must be reset with engine SP mode 7-804.
  - 7-804-1: Transfer roller
  - 7-804-2: Paper feed roller
  - 7-804-3: Fusing unit).
  - 7-804-255: Paper (G112/G113/G116)

If Meter Charge Mode is disabled (default setting)

- After the fusing unit has been replaced, the CPU detects the new unit and automatically removes the “Replace Maintenance Kit” message. Then, the maintenance counter resets automatically.

NOTE: The G091/G094/G095 and the G112/G113/G116 Maintenance Kits are <u>not</u> interchangeable. Ensure you are using the correct kit for the model you are servicing.

6.5.6 FUSING TEMPERATURE CONTROL [ALL MODELS]



When the main switch turns on, the CPU turns on the fusing lamp using the soft start process. The lamp stays on until the thermistor detects the standby temperature. Then the CPU maintains this temperature using on-off control. To start printing, the CPU raises the temperature to the printing temperature.

NOTE: The soft start process prevents the room lights from flickering.

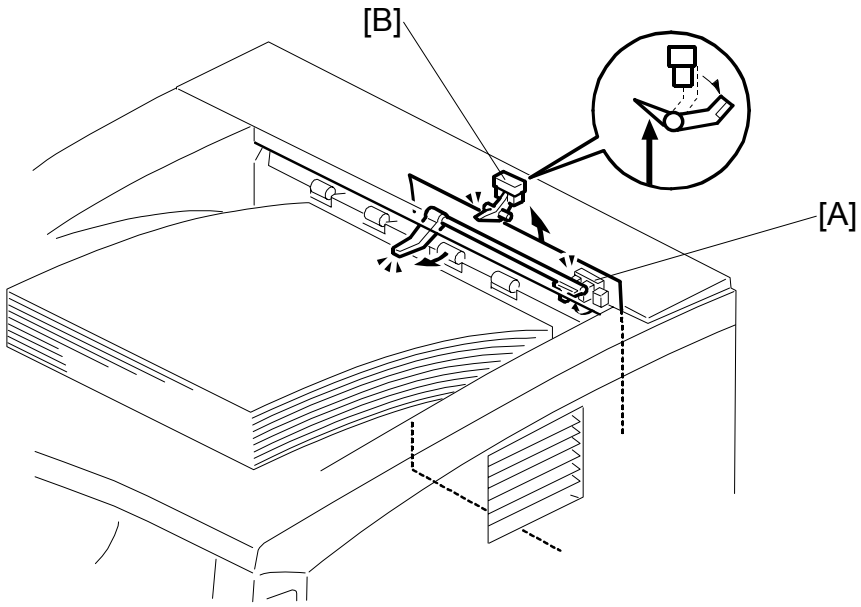
The fusing temperature for each mode is as follows:

Condition	Temperature			Note
Ready to print	**G112 Series 135 °C**			The machine can start to print any time.
	G116 Series 138 °C			
Standby mode	168 °C			On-off control
Printing	Print start ~ 2 minutes	2 min. ~ 4 min.	4 min ~	On-off control
Tray	170 °C	165 °C	160 °C	
By-pass (Envelopes)	180 °C	180 °C	180 °C	
By-pass (Post Cards)	185 °C	185 °C	185 °C	
By-pass (Others)	170 °C	165 °C	160 °C	
Envelope Feeder	180 °C	180 °C	180 °C	
Thick Paper	185 °C	185 °C	185 °C	

Overheat Protection

- If the hot roller temperature becomes greater than 240 °C, the CPU cuts off the power to the fusing lamp. At this time, SC543 will be generated.
- If the thermistor overheat protection fails, there is a thermostat in series with the ground of the fusing lamp. If the temperature of the thermostat becomes greater than 210 °C, the thermostat opens, removing power from the fusing lamp. At this time, the machine stops operation.

6.5.7 PAPER EXIT [ALL MODELS]



[A]: Paper overflow detection sensor
[B]: Paper exit sensor

- When the paper overflow detection sensor [A] is activated, the machine detects that the paper stack height has exceeded a certain limit and stops printing.
- The paper exit sensor [B] detects paper misfeeds.

6.5.8 ENERGY SAVER MODE [ALL MODELS]

When the machine has been idle for a specified period of time, it will automatically enter the Energy Saver mode.

The Energy Saver mode feature reduces power consumption by turning off the fusing lamp. However, the +24V, +12V, and +5V lines are still active within the machine when in Energy Saver mode. This allows the machine to return to a "ready" state in the minimum amount of time.

When Energy Saver mode is active, the message "Energy Saver Mode" is displayed on the operation panel.

Entering Energy Saver Mode

The user specifies the idle time setting before Energy Saver mode will be automatically activated. The following choices are available:

- Off (energy saver mode never activates)
- 5 minutes
- 15 minutes
- 30 minutes (default)
- 60 minutes

To change this setting, use the "System" menu in the User Program Modes menu. See the Printer Reference guide, "Making Printer Settings with the Control Panel", or 5.7 in this manual.

Exiting Energy Saver Mode

The machine will automatically leave Energy Saver mode when one of the following occurs:

- A print command is received from the PC
- Any cover is opened or closed
- Any operation panel keys are pressed

6.6 CONTROLLER FUNCTIONS [ALL MODELS]

6.6.1 METER CHARGE MODE

Meter-charge Counter Display

When meter charge mode (engine SP 5930) is switched on, the meter-charge counter menu is the first item shown on the user menu.

```
Menu:
     Counter
```

(The “Sample Print” menu appears first when the meter-charge mode is switched off.)

NOTE: The default setting for this machine is meter-charge mode off.

The meter-charge counter is not the same as the PM counter. This is because, in the following cases, the meter-charge counter does not count up.

- Blank rear side during duplex printing
- Blank page when using the “Cover Page” or “Two in One” features
- Service reports

NOTE: The meter-charge counter cannot be reset.

PM Warning Display

When meter charge mode (engine SP 5930) is switched on, “Replace Maintenance Kit” will not be displayed at 90k prints.

Item	Meter-charge On	Meter-charge Off	Remarks
Meter-charge counter	Shown as the first item in the user menu	Not shown	User menu
PM Warning	Not shown	“Replace Maintenance Kit” displayed at 90k prints	
PM	Service	Customer	
PM Counter	Reset manually	Automatically reset when the fusing unit is replaced using the maintenance kit	Printer engine service mode “PM counter”

SPECIFICATIONS

SPECIFICATIONS (G091)

1. GENERAL SPECIFICATIONS

The specifications in this section are for the G091 machine only.

Configuration	Desktop	
Paper size	A3 / 11"x17" – A6 LEF	
Technology	Laser beam scanning & Electro photographic printing Dual component toner development AIO is used	
Print Resolution	300 dpi, 600 dpi, 1200 dpi	
Smoothing	Yes (on, off)	
Continuous Print Speed	32 ppm (A4/LT, LEF)	
Duplex Print Speed	31.5 ppm from standard tray	
	27 ppm from first optional paper tray	
	23 ppm from second optional paper tray	
First Print Speed	6.5 seconds or less (A4/LT, LEF from standard tray)	
Copy Paper Weight	Paper Tray	60-105 g/m² (16-28 lb.)
	By-pass tray	52-162 g/m² (14-43 lb.)
	Optional paper tray	60-105 g/m² (16-28 lb.)
	Duplex	64-105 g/m² (17-28 lb.)
Warm-up Time	19 seconds or less from power on (23 °C, 73 °F) 12 seconds or less from energy saver mode	
Paper Input Size	Standard tray	A3 / 11" x 17" – A5 LEF
	By-pass tray	A3 / 11" x 17" – A6 SEF
	By-pass tray-Custom size paper	148 x 432 mm, 90 x 305 mm, 5.8" x 17", 3.5" x 12", Com#10, C5, C6, DL. Monarch
	Optional Envelope Feeder	Com#10, C5, C6, DL. Monarch
	Optional paper tray unit Up to 2 units can be installed.	A3 / 11" x 17" – B5 LEF
Paper Input Capacity	Standard tray and Optional paper trays	500 sheets
	By-pass tray	100 sheets
	Optional Envelope feeder	60 envelopes
Output Capacity	250 sheets (Maximum 500 sheets)	
Total Counter	Electric Counter	
Environmental Standard	US version: Energy Star Tier1	
	EU version: BAM	

2. PHYSICAL SPECIFICATIONS

Power Source	North America: 120 V, 60 Hz: More than 10 A		
	Europe: 220 V - 240 V, 50/60 Hz: More than 6.0 A		
Power Consumption **North America**	**North America**	**Main Unit (including NIB)**	**Full system**
	Maximum	850 W or less	920 W or less
	Printing	610 W or less	650 W or less
	Energy Saver	5.5 W or less	9.0 W or less
Power Consumption **Europe**	**Europe**	**Main Unit (including NIB)**	**Full system**
	Maximum	850 W or less	920 W or less
	Printing	620 W or less	650 W or less
	Energy Saver	6.5 W or less	10.5 W or less
Noise Emission **All Models**		**Mainframe Only**	**Full System**
	Printing	67 dB or less	71 dB or less
	Stand-by	40 dB or less	40 dB or less
	Energy Saver	40 dB or less	40 dB or less
Sound Pressure Level **All Models**	Printing	55dB or less (Operating position)	
	Energy Saver	30dB or less (Operating position)	
Weight **All Models**	19.5 Kg. 43 lb. (including Paper Tray and AIO)		
Dimensions **All Models**	Excluding standard tray	478 x 410 x 343 (mm). 18.8 x 16.1 x 13.5 (inch)	
	Including standard try	478 x 437/575 x 343 (mm). 18.8 x 17.2 /22.6x 13.5 (inch)	

3. CONTROLLER

CPU	TX4955 300Mhz	
Printer Languages	RPCS, PCL6, PCL5e emulation, Adobe PS3 (genuine), Adobe PDF	
Resolution	RPCS	600/1200 dpi
	PCL6	600/1200 dpi
	PCL5e	300/600 dpi
	PS3	600/1200 dpi
Resident Fonts	PCL	35 Intellifonts, 10 TrueType fonts, 1 bitmap font
	PS	136 Type1 fonts
	Font Manager and 31 additional fonts for PCL to be loaded to the PC, Euro currency ok.	
Drivers	RPCS	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	PCL6	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	PCL5e	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	PS3	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	Mac OS 8.6.0 or later, Mac OSX (10.1 or later)	
ROM	Flash: 16 MB (Emulation) Mask: 4MB (PCL/PS font)	
RAM	Resident	64 MB SDRAM
	Option	1 slot SDRAM DIMM (64/128/256 MB)
HDD	Option: Approximately 6 GB	
Interface	Standard	USB2.0 (Win98, 2000, ME, XP, Server 2003) Bi-directional IEEE1284 10/100 Base-TX
	Optional	• IEEE1394, SCSI Print (Windows 2000 SP1 or later). • IP over 1394 Windows Me, XP, Server 2003 • IEEE802.11b, 10/100 Base-TX, Bluetooth
Firmware Update	Flash Memory card (3 cards)	
	RFU (Remote Firmware Update)	
Network Protocol	TCP/IP (including IPP), IPX/SPX, NetBEUI, Apple Talk	
NRS	Supported	

NOTE: 1) One optional interface board can be added
2) 10/100Base-TX and IEEE802.11b cannot be connected at the same time. Manual switch at the operation panel is required (user tool)

4. SUPPORTED PAPER SIZES

Paper	Size (W x L)	Paper Trays Main Unit/Option		By-pass Tray	Env. Feeder	Duplex
		US	Eur/Asia			
A3	297 x 420 mm	Y#/Y	Y/Y	Y#	N	Y
B4	257 x 364 mm	Y#/Y#	Y#/Y#	Y#	N	Y
A4 SEF	210 x 297 mm	Y#/Y	Y/Y	Y#	N	Y
A4 LEF	297 x 210 mm	Y/Y	Y/Y	Y#	Y	Y
B5 SEF	182 x 257 mm	Y#/Y#	Y#/Y#	Y#	N	Y
B5 LEF	257 x 182 mm	Y#/Y#	Y#/Y#	Y#	N	Y
A5 SEF	148 x 210 mm	N	N	Y#	N	N
A5 LEF	210 x 148 mm	Y#/N	Y/N	Y#	N	Y
A6 SEF	105 x 148 mm	N	N	YC	N	N
Ledger	11 x 17”	Y/Y	Y#/Y	Y#	N	Y
Legal	8.5 x 14“	Y/Y	Y#/Y	Y#	N	Y
Letter SEF	8.5 x 11”	Y/Y	Y/Y	Y#	N	Y
Letter LEF	11 x 8.5”	Y/Y	Y/Y	Y#	N	Y
Half Letter SEF	5.5 x 8.5”	N	N	Y#	N	N
Half Letter LEF	8.5 x 5.5”	N	N	N	N	N
Executive SEF	7.25 x 10.5”	N/Y#	N/Y#	Y#	N	N
Executive LEF	10.5 x 7.25”	Y#/Y#	Y#/Y#	Y#	N	Y
F	8 x 13”	Y#/Y#	Y#/Y#	Y#	N	Y
Foolscap	8.5 x 13”	Y/Y#	Y#/Y#	Y#	N	Y
Folio	8.25 x 13”	Y#/Y#	Y#/Y#	Y#	N	Y
Com10 Env.	4.125 x 9.5”	N	N	Y#	Y#	N
Monarch Env.	3.875 x 7.5”	N	N	Y#	Y#	N
C6 Env.	114 x 162 mm	N	N	Y#	Y#	N
C5 Env.	162 x 229 mm	N	N	Y#	Y#	N
DL Env.	110 x 220 mm	N	N	Y#	Y#	N
8K	267 x 390 mm	Y#/Y#	Y#/Y#	Y#	N	Y
16K SEF	195 x 267 mm	Y#/Y#	Y#/Y#	Y#	N	Y
16K LEF	267 x 195 mm	Y#/Y#	Y#/Y#	Y#	N	Y
Custom	Minimum: 90 x 148 mm Maximum: 305 x 432 mm	N/YC	N/YC	YC	N	N

Y: Supported. The paper size sensor detects the paper size.
Y#: Supported. The user has to select the correct paper size for the tray.
YC: Supported. The user has to enter the width and length of the paper.
N: Not supported.

5. OPERATION PANEL LED SPECIFICATIONS

LED	Color	Appearance	Meaning
Power	Green	Off	Power off or in Energy Saver mode
		Flashing	Warming up
		On	Power on and not in Energy Saver mode
Data In	Green	Off	No data
		Flashing	Data being received or processed or the printer is spooling
		On	Data being received or processed; more data coming
Online	Green	Off	Printer off-line
		Flashing	Going off-line
		On	Ready to print
Error	Red	Off	No messages or error conditions requiring attention
		On	Printer requires service

6. EXTERNAL OPTIONS

Paper Feed Unit (G555)	Paper Size	A3/ 11" x 17"-B5 LEF
	Paper Weight	60 – 105g/m², 16 – 28 lb.
	Paper Capacity	Maximum 500 sheets
	Dimensions (W x D x H)	468 x 410/545 x 130 mm 18.4" x 19.7"/21.5" x 5.1"
	Weight	6 kg, 13.2 lb.
Envelope Feeder (G556)	Envelope size	Com#10, C5, C6, DL, Monarch
	Capacity	Maximum 60
	Dimensions (W x D x H)	468 x 410 x 127 mm 18.4" x 16.1" x 5"
	Weight	2 kg, 4.4 lb
Duplex Unit (G552)	Paper Size	A3/ 11" x 17"-A5 LEF
	Paper Weight	64 – 105g/m², 18 – 28 lb.
	Dimensions (W x D x H)	419 x 378 x 257 mm 16.5" x 14.9" x 10.1"
	Weight	6 kg, 13.2 lb.
4-Bin Mailbox (G553)	Paper Size	A3/ 11" x 17"-A5 LEF
	Paper Stack	50 sheets / bin (80g/m2)
	Paper Weight	60 – 105g/m², 16 – 28 lb.
	Dimensions (W x D x H)	465 x 395 x 285 mm 18.3" x 15.6" x 11.2"
	Weight	5.5 kg, 12.1 lb.
1-Bin Shift Tray (G554)	Paper Size	A3/ 11" x 17"-A5 LEF
	Paper Stack	250 sheets / bin (80g/m2)
	Paper Weight	60 – 105g/m², 16 – 28 lb.
	Dimensions (W x D x H)	465 x 395 x 160 mm 13.3" x 15.6" x 6.3"
	Weight	3.5 kg, 7.7 lb..

7. SOFTWARE ACCESSORIES

The printer drivers and utility software are provided on one CD-ROM. An auto-run installer allows you to select which components to install.

7.1 PRINTER DRIVERS

Printer Language	Windows 95/98/ME	Windows NT4.0	Windows 2000	Windows XP	Server 2003	Macintosh
PCL 6	Yes	Yes	Yes	Yes	Yes	No
PCL 5e	Yes	Yes	Yes	Yes	Yes	No
PS3	Yes	Yes	Yes	Yes	Yes	Yes
RPCS	Yes	Yes	Yes	Yes	Yes	No

NOTE: 1) The printer drivers for Windows NT 4.0 are only for the Intel x86 platform. There is no Windows NT 4.0 printer driver for the PowerPC, Alpha, or MIPS platforms.
2) The PS3 drivers are all genuine AdobePS drivers, except for Windows 2000, which uses Microsoft PS. A PPD file for each operating system is provided with the driver.
3) The PS3 driver for Macintosh supports Mac OS 7.6 or later versions.

7.2 CD-ROM CONTENTS

7.2.1 NORTH AMERICAN VERSION

Utilities and Drivers CD-ROM

Environment	Contents	Language	Remarks
Windows	RPCS Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL6 Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL5e Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Adobe PS3 Printer Driver	9 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Font Manager	English only	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Client)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Admin)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	1394 UTILITY	English only	Windows 2000, XP
	README.TXT	English only	–
Macintosh	Adobe PS3 Printer Driver	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	PS Descriptions	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	Printer Utility for Mac	English only	–

Operating Instructions CD-ROM

Environment	Contents	Language	Remarks
Windows Macintosh	Setup Guide	English only	–
	Printer Reference	English only	–
	NIB Operating Instructions	English only	–
	PS Supplement	English only	–
	Adobe Acrobat Reader	English only	–

7.2.2 EUROPEAN VERSION

Utilities and Drivers CD-ROM

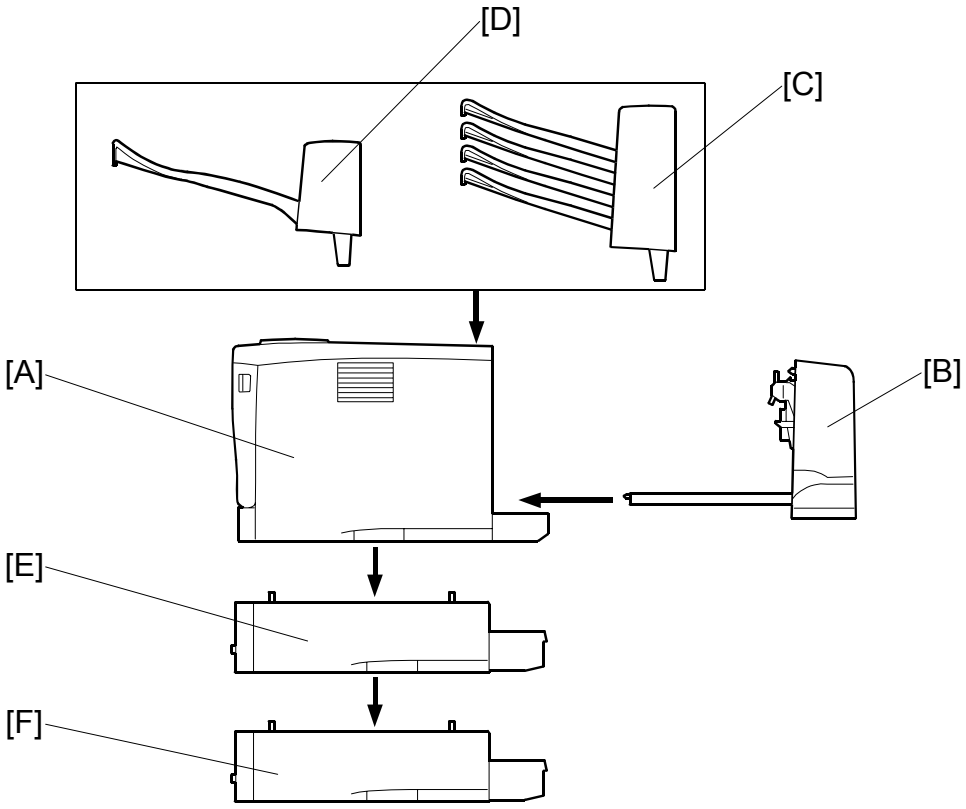
Environment	Contents	Language	Remarks
Windows	RPCS Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL6 Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL5e Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Adobe PS3 Printer Driver	9 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Font Manager	English only	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Client)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Admin)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	1394 UTILITY	English only	Windows 2000, XP
	README.TXT	English only	–
Macintosh	Adobe PS3 Printer Driver	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	PS Descriptions	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	Printer Utility for Mac	English only	–

Operating Instructions CD-ROM

Environment	Contents	Language	Remarks
Windows Macintosh	Setup Guide	14 languages	Prepared by RE as paper manual
	Printer Reference	14 languages	–
	NIC Operating Instructions	14 languages	–
	PS Supplement	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norway, Denmark
	Adobe Acrobat Reader	8 languages	English, German, Spanish, French, Italian, Dutch, Portuguese, Swedish

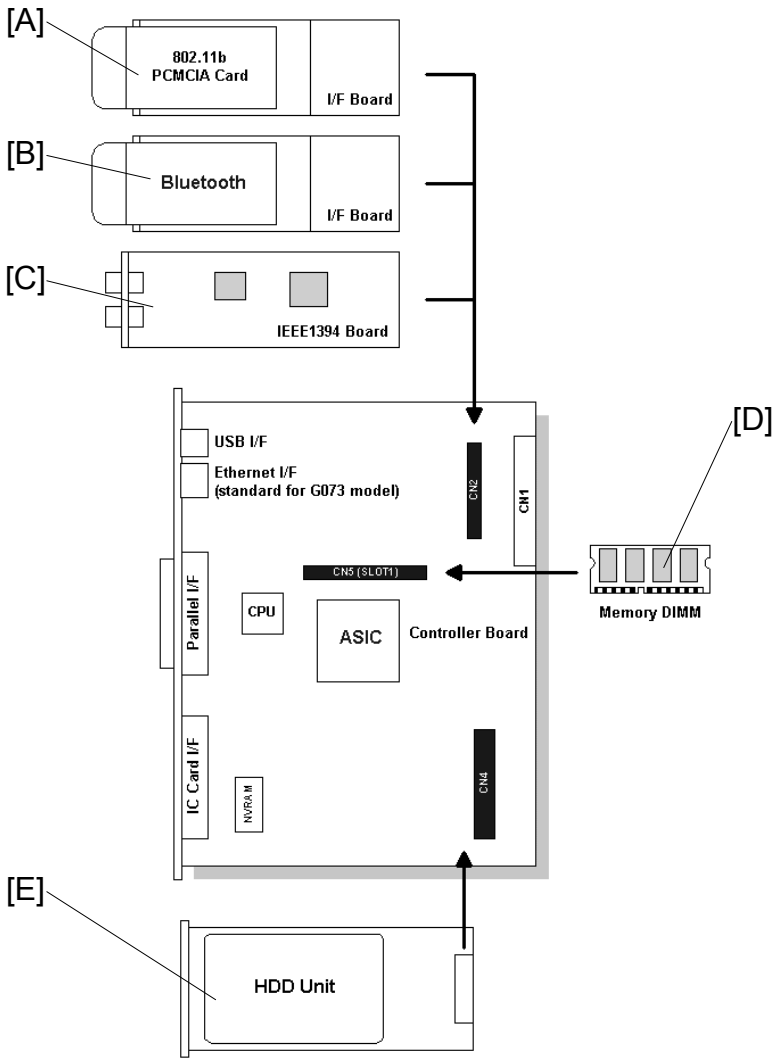
8. MACHINE CONFIGURATION

8.1 SYSTEM COMPONENTS



Item	Machine Code	No.	Remarks
Main Unit	G091	A	The NIB is standard for this model.
Optional Units			
Duplex Unit	G552	B	Also used with G073/G074
Paper Tray Unit	G555	E, F	Up to two tray units can be installed.
Envelope Feeder	G556	E	If both optional paper trays are installed, the envelope feeder must go in the top tray.
Four-Bin Mailbox	G553	C	Also used with G073/G074
One-Bin Shift Tray	G554	D	Also used with G073/G074

8.2 INTERNAL OPTIONS



Internal Options			
IEEE1394 I/F Board	G336	C	Also used with model G073/G074
IEEE802.11b	G373	A	Also used with model G073/G074
Bluetooth	G354	B	Also used with model B079/B082
HDD	G575	E	Also used with model G073/G074
Memory 64 MB	G330	D	Also used with model G073/G074
Memory 128 MB	G331	D	Also used with model G073/G074
Memory 256 MB	G332	D	Also used with model G073/G074
Barcode Font DIMM	G627		Also used with model G073/G074
Others			
AIO Cartridge	G795		Also used with model G073/G074
Maintenance Kit	G770		

NOTE: This model has an on-board Ethernet interface.

SPECIFICATIONS (G094/G095)

1. GENERAL SPECIFICATIONS

The specifications in this section are for the G094/G095 machines only.

Configuration	Desktop	
Paper size	Legal SEF – A6 SEF	
Technology	Laser beam scanning & Electro photographic printing Dual component toner development AIO is used	
Print Resolution	300 dpi, 600 dpi, 1200 dpi	
Smoothing	Yes (on, off)	
Continuous Print Speed	25 ppm (A4), 26 ppm (LT)	
Duplex Print Speed	25 ppm (A4), 26 ppm (LT) from standard tray	
	21 ppm (A4), 22 ppm (LT) from first optional paper tray	
	18 ppm (A4), 19 ppm (LT) from second optional paper tray	
First Print Speed	7.5 seconds or less (A4-SEF from standard tray)	
Copy Paper Weight	Paper Tray	60-105 g/m² (16-28 lb.)
	By-pass tray	60-162 g/m² (16-43 lb.)
	Optional paper tray	60-105 g/m² (16-28 lb.)
	Duplex	64-105 g/m² (17-28 lb.)
Warm-up Time	19 seconds or less from power on (23 °C, 73 °F) 12 seconds or less from energy saver mode	
Paper Input Size	Standard Tray	LG – A5 LEF
	By-pass Tray	LG – A6 SEF
	By-pass Tray – Custom size paper	Length: 139.7 – 432 mm (5.5”-17”), Width: 90 – 216 mm (3.5”-8.5”), Com#10, C5, C6, DL. Monarch
	Optional Envelope Feeder	Com#10, C5, C6, DL. Monarch
	Optional Paper Tray unit Up to 2 units can be installed	LG – A5 SEF
Paper Input Capacity	Standard tray	500 sheets (80 g/m², 20 lb.)
	By-pass tray	100sheets (80 g/m², 20 lb.) or 10 envelopes
	Optional paper tray unit Up to 2 units can be installed.	500 sheets (80 g/m², 20 lb.)
	Optional Envelope feeder	60 envelopes
Output Capacity	250 sheets	
Total Counter	Electric Counter	
Environmental Standard	US version: Energy Star Tier1	
	EU version: BAM specifications	

2. PHYSICAL SPECIFICATIONS

Power Source	North America: 120 V, 60 Hz: More than 10 A		
	EU: 220 V - 240 V, 50/60 Hz: More than 6.0 A		
Power Consumption		**120 V**	**230 V**
	Maximum	820 W or less	820 W or less
	Printing	550 W or less	550 W or less
	Energy Saver	7.5 W or less	7.5 W or less
Noise Emission		**Mainframe Only**	**Full System**
	Printing	63 dB or less	67 dB or less
	Stand-by	39 dB or less	39 dB or less
	Energy Saver	39 dB or less	39 dB or less
Sound Pressure Level	Printing	53dB or less (operating position)	
	Stand-by	29dB or less (operating position)	
	Energy Saver	29dB or less (operating position)	
Weight	15.5 Kg (17.5 Kg with AIO) 34.1 lb. (38.5 lb. With AIO)		
Dimensions	**Excluding standard tray**	**388 x 410 x 345 (mm). 15.3 x 16.1 x 13.6 (inch)**	
	Including standard try	**388 x 450/509 x 345 (mm). 15.3 x 17.7/20.0 x 13.6 (inch)**	

3. CONTROLLER

CPU	TX4955 300 MHz	
Printer Languages	RPCS, PCL6, PCL5e emulation, Adobe PS3 (genuine), Adobe PDF	
Resolution	RPCS	600/1200 dpi
	PCL6	600/1200 dpi
	PCL5e	300/600 dpi
	PS3	600/1200 dpi
Resident Fonts	PCL	35 Intellifonts, 10 TrueType fonts, 1 bitmap font
	PS	136 Type1 fonts
	Font Manager and 31 additional fonts for PCL to be loaded to the PC, Euro currency ok.	
Drivers	RPCS	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	PCL6	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	PCL5e	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	PS3	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	Mac OS 8.6.0 or later, Mac OSX (10.1 or later)	
ROM	Flash: 16 MB (Emulation) Mask: 4MB (PCL/PS font)	
RAM	Resident	64 MB SDRAM
	Option	1 slot SDRAM DIMM (64/128/256 MB)
HDD	Option: Approximately 6 GB	
Interface	Standard	USB2.0 (Win98, 2000, ME, XP, Server 2003) Bi-directional IEEE1284 10/100 Base-TX (G095 only)
	Optional	• IEEE1394, SCSI Print (Windows 2000 SP1 or later). • IP over 1394 Windows Me, XP, Server 2003 • IEEE802.11b, 10/100 Base-TX, Bluetooth
Firmware Update	Flash Memory card (3 cards)	
	RFU (Remote Firmware Update)	
Network Protocol	TCP/IP (including IPP), IPX/SPX, NetBEUI, Apple Talk	
NRS	Supported	

NOTE: 1) One optional interface board can be added
2) 10/100Base-TX and IEEE802.11b cannot be connected at the same time. Manual switch at the operation panel is required (user tool)

4. SUPPORTED PAPER SIZES

Paper Name	Direction (Edge)	Paper Size width x length	Main Unit / Bank		Bypass Tray		Env. Feeder	Duplex
			NA	EU	NA	EU	NA/EU	NA/EU
A4	Short Edge	210 x 297 mm	D/D	D/D	S	S	N	Y
B5	Short Edge	182 x 257 mm	D/D	D/D	S	S	N	Y
A5	Short Edge	148 x 210 mm	D/D	D/D	S	S	N	Y
A5	Long Edge	210 x 148 mm	*/N	*/N	S	S	N	Y
B6	Short Edge	128 x 182 mm	N/N	N/N	N	N	N	N
B6	Long Edge	182 x 128 mm	N/N	N/N	N	N	N	N
A6	Short Edge	105 x 148 mm	N/N	N/N	S	S	N	N
A6	Long Edge	148 x 105 mm	N/N	N/N	N	N	N	N
Legal	Short Edge	8.5 x 14 inch	D/D	D/D	S	S	N	Y
Letter	Short Edge	8.5 x 11 inch	D/D	D/D	S	S	N	Y
Half Letter	Short Edge	5.5 x 8.5 inch	D/D	D/D	S	S	N	Y
Half Letter	Long Edge	8.5 x 5.5 inch	*/N	*/N	S	S	N	Y
Executive	Short Edge	7.25 x 10.5 inch	N/*	N/*	S	S	N	N
F	Short Edge	8 x 13 inch	*/*	*/*	S	S	N	Y
Foolscap	Short Edge	8.5 x 13 inch	*/*	*/*	S	S	N	Y
Folio	Short Edge	8.25 x 13 inch	*/*	*/*	S	S	N	Y
Com10	Short Edge	4.125 x 9.5 inch	N/N	N/N	S	S	S	N
Monarch	Short Edge	3.875 x 7.5 inch	N/N	N/N	S	S	S	N
C6	Short Edge	114 x 162 mm	N/N	N/N	S	S	S	N
C5	Short Edge	162 x 229 mm	N/N	N/N	S	S	S	N
DL Env	Short Edge	110 x 220 mm	N/N	N/N	S	S	S	N
16k	Short Edge	195 x 267 mm	*/*	*/*	S	S	N	Y
Custom	Width (Bank)	139.7-216.0 mm	*/-	*/-	-	-	N	N
	Length (Bank)	**160.0**-356.0 mm	*/-	*/-	-	-	N	N
	Width (Bypass)	90.0-216.0 mm	-	-	S	S	N	N
	Length (Bypass)	139.7-432.0 mm	-	-	S	S	N	N

D: Paper size is specified by using the dial.
*: Supported. The user has to select the correct paper size for the tray from the user menu.
S: Paper size is entered at the operation panel.
N: Not supported
Y: Supported

5. OPERATION PANEL LED SPECIFICATIONS

LED	Color	Appearance	Meaning
Power	Green	Off	Power off or in Energy Saver mode
		Flashing	Warming up
		On	Power on and not in Energy Saver mode
Data In	Green	Off	No data
		Flashing	Data being received or processed or the printer is spooling
		On	Data being received or processed; more data coming
Online	Green	Off	Printer off-line
		Flashing	Going off-line
		On	Ready to print
Error	Red	Off	No messages or error conditions requiring attention
		On	Printer requires service

6. EXTERNAL OPTIONS

Paper Feed Unit (Type 400) (G360)	Paper Size	A4 SEF – A5 SEF, LG SEF-A5 SEF, Free size
	Paper Weight	60 – 105g/m², 16 – 28 lb.
	Paper Capacity	Maximum 500 sheets
	Dimensions (W x D x H)	388 x 427/486 x 135 mm 15.3" x 17.3/19.5" x 5.3"
	Weight	Less than 6 Kg, 13.2 lb.
Envelope Feeder (Type 400) (G362)	Envelope size	Com#10, C5, C6, DL, Monarch
	Capacity	Maximum 60
	Dimensions (W x D x H)	359 x 427 x 101 mm 14.1" x 16.8" x 4.0"
	Weight	Less than 6 Kg, 13.2 lb.
Duplex Unit (AD 450) (G361)	Paper Size	A4 SEF – A5 LEF
	Paper Weight	60 – 105g/m², 16 – 28 lb.
	Dimensions (W x D x H)	340 x 380 x 250 mm 13.4" x 15.0" x 9.8"
	Weight	Less than 6 Kg, 13.2 lb.

7. SOFTWARE ACCESSORIES

The printer drivers and utility software are provided on one CD-ROM. An auto-run installer allows you to select which components to install.

7.1 PRINTER DRIVERS

Printer Language	Windows 95/98/ME	Windows NT4.0	Windows 2000	Windows XP	Server 2003	Macintosh
PCL 6	Yes	Yes	Yes	Yes	Yes	No
PCL 5e	Yes	Yes	Yes	Yes	Yes	No
PS3	Yes	Yes	Yes	Yes	Yes	Yes
RPCS	Yes	Yes	Yes	Yes	Yes	No

NOTE: 1) The printer drivers for Windows NT 4.0 are only for the Intel x86 platform. There is no Windows NT 4.0 printer driver for the PowerPC, Alpha, or MIPS platforms.
2) The PS3 drivers are all genuine AdobePS drivers, except for Windows 2000, which uses Microsoft PS. A PPD file for each operating system is provided with the driver.
3) The PS3 driver for Macintosh supports Mac OS 7.6 or later versions.

7.2 CD-ROM CONTENTS

7.2.1 NORTH AMERICAN VERSION

Utilities and Drivers CD-ROM

Environment	Contents	Language	Remarks
Windows	RPCS Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL6 Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL5e Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Adobe PS3 Printer Driver	9 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Font Manager	English only	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Client)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Admin)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	1394 UTILITY	English only	Windows 2000, XP
	README.TXT	English only	–
Macintosh	Adobe PS3 Printer Driver	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	PS Descriptions	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	Printer Utility for Mac	English only	–

Operating Instructions CD-ROM

Environment	Contents	Language	Remarks
Windows Macintosh	Setup Guide	English only	–
	Printer Reference	English only	–
	NIB Operating Instructions	English only	–
	PS Supplement	English only	–
	Adobe Acrobat Reader	English only	–

7.2.2 EUROPEAN VERSION

Utilities and Drivers CD-ROM

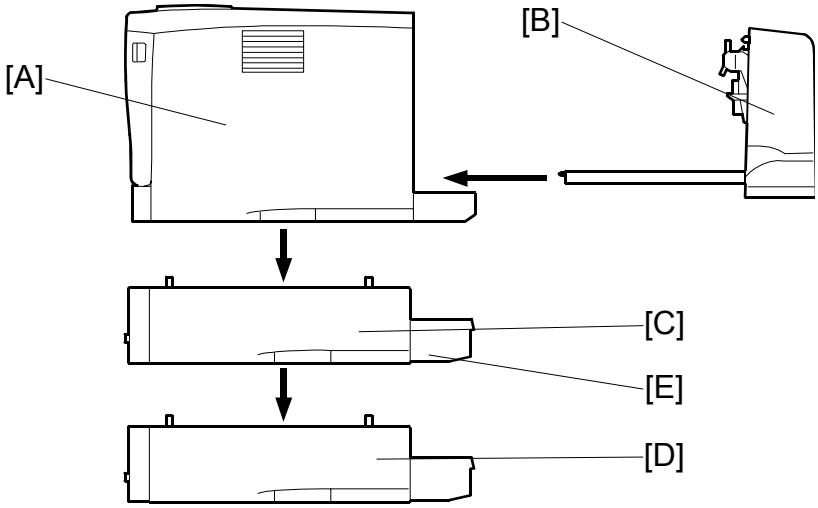
Environment	Contents	Language	Remarks
Windows	RPCS Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL6 Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL5e Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Adobe PS3 Printer Driver	9 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Font Manager	English only	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Client)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Admin)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	1394 UTILITY	English only	Windows 2000, XP
	README.TXT	English only	–
Macintosh	Adobe PS3 Printer Driver	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	PS Descriptions	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	Printer Utility for Mac	English only	–

Operating Instructions CD-ROM

Environment	Contents	Language	Remarks
Windows Macintosh	Setup Guide	14 languages	Prepared by RE as paper manual
	Printer Reference	14 languages	–
	NIC Operating Instructions	14 languages	–
	PS Supplement	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norway, Denmark
	Adobe Acrobat Reader	8 languages	English, German, Spanish, French, Italian, Dutch, Portuguese, Swedish

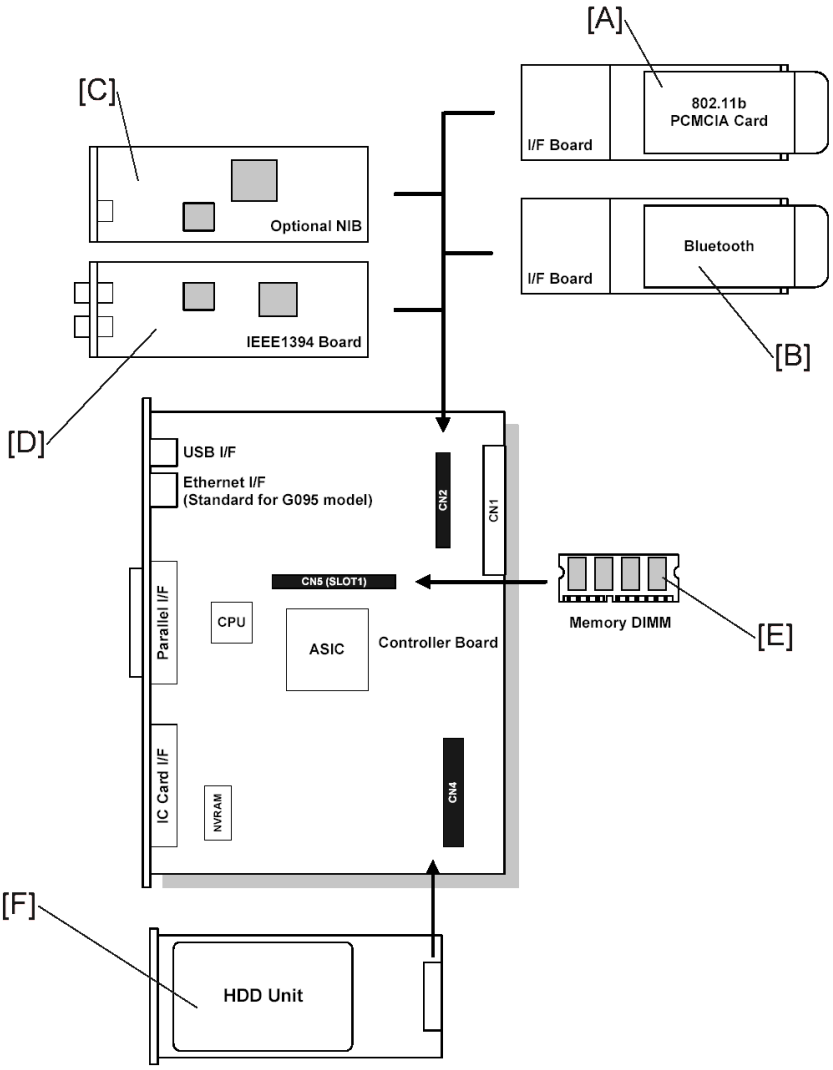
8. MACHINE CONFIGURATION

8.1 SYSTEM COMPONENTS



Item	Machine Code	No.	Remarks
Main Unit	G094 G095	A	The NIB option is built into the G095 model but not for the G094 model.
Optional Units			
Duplex Unit	G361	B	
Paper Tray Unit	G360	C, D	Up to two tray units can be installed.
Envelope Feeder	G362	E	If both optional paper trays are installed, the envelope feeder must go in the top tray.

8.2 INTERNAL OPTIONS



Internal Options			
NIB (10/100Base-TX) (Standard for the G095)	G646	C	Also used with model G073/G074
IEEE1394 I/F Board	G336	D	Also used with model G073/G074
IEEE802.11b	G373	A	Also used with model G073/G074
Bluetooth	G354	B	Also used with model B079/B082
HDD	G575	E	Also used with model G073/G074
Memory 64 MB	G330	F	Also used with model G073/G074
Memory 128 MB	G331	F	Also used with model G073/G074
Memory 256 MB	G332	F	Also used with model G073/G074
Barcode Font DIMM	G627		Also used with model G073/G074
Others			
AIO Cartridge	G216		
Maintenance Kit	G830		

NOTE: The user can install all of the above items.

SPECIFICATIONS (G116)

1. GENERAL SPECIFICATIONS

The specifications in this section are for the G116 machine only.

Configuration	Desktop	
Paper size	Legal SEF – A6 SEF. A5 LEF not supported	
Technology	Laser beam scanning & Electro photographic printing Dual component toner development AIO is used	
Print Resolution	200/300/600/1200 dpi	
Smoothing	Yes (on, off)	
Continuous Print Speed	LEF A4 Mono 35 ppm	
	LT Mono 35 ppm	
Duplex Print Speed (A4-LEF)	34 ppm from standard tray	
	34 ppm from first optional paper tray	
	33 ppm from second optional paper tray	
First Print Speed	6.5 seconds or less (A4/LT, LEF from standard tray)	
Copy Paper Weight	Paper Tray	60-105 g/m² (16-28 lb.)
	By-pass tray	52-162 g/m² (14-43 lb.)
	Optional paper tray	60-105 g/m² (16-28 lb.)
	Duplex	64-105 g/m² (17-28 lb.)
Warm-up Time	19 seconds or less from power on (23 °C, 73 °F) 12 seconds or less from energy saver mode	
Paper Input Size	Standard tray	A3/DLT – A5
	By-pass tray	A3/DLT – A6, Free size
	By-pass tray-Custom size paper	Length: 160 - 432 mm (5.8" - 17"), Width: 90 - 305 mm (3.5" - 12"), Com#10, C5, C6, DL. Monarch
	Optional Envelope Feeder	Com#10, C5, C6, DL. Monarch
	Optional paper tray unit Up to 2 units can be installed.	A3/DLT – A5
Paper Input Capacity	Standard tray and Optional paper trays	500 sheets (80 g/m², 20 lb.)
	By-pass tray	100 sheets (80 g/m², 20 lb.)
	Optional Envelope feeder	60 envelopes
	Maximum paper input	1600 sheets
Output Capacity (Face down)	250 sheets (Maximum 500 sheets)	
Total Counter	Electric Counter	
Environmental Standard	US version: Energy Star Tier 1	
	EU version: BAM specifications	
Energy Saver Mode	Default 15 minutes	
	Selectable 1/5/15/30/45/60 minutes	

2. PHYSICAL SPECIFICATIONS

Power Source	North America: 120 V, 60 Hz: More than 10 A		
	Europe: 220 V- 240 V, 50/60 Hz: More than 6.0 A		
Power Consumption **North America**	**North America**	**Main Unit (including NIB)**	**Full system**
	Maximum	850 W or less	920 W or less
	Printing	610 W or less	650 W or less
	Energy Saver	5.5 W or less	9.0 W or less
Power Consumption **Europe**	**Europe**	**Main Unit (including NIB)**	**Full system**
	Maximum	850 W or less	920 W or less
	Printing	620 W or less	650 W or less
	Energy Saver	6.5 W or less	10.5 W or less
Noise Emission **All Models**		**Mainframe Only**	**Full System**
	Printing	67 dB or less	71 dB or less
	Stand-by	40 dB or less	40 dB or less
	Energy Saver	40 dB or less	40 dB or less
Sound Pressure Level **All Models**	Printing	55dB or less (Operating position)	
	Energy Saver	30dB or less (Operating position)	
Weight **All Models**	20 Kg. 44 lb. (including Paper Tray and AIO)		
Dimensions **All Models**	Excluding standard tray	478 x 410 x 343 (mm). 18.8 x 16.1 x 13.5 (inch)	
	Including standard tray	478 x 437/575 x 343 (mm). 18.8 x 17.2 /22.6x 13.5 (inch)	

3. CONTROLLER

CPU	TX4955 372Mhz	
Printer Languages	Standard	RPCS, PCL6, PCL5e emulation, Adobe PS3 (genuine), Adobe PDF
Resolution	RPCS	600/1200 dpi
	PCL6	600/1200 dpi
	PCL5e	300/600 dpi
	PS3	600/1200 dpi
Resident Fonts	PCL	35 Intellifonts, 10 TrueType fonts, 1 bitmap font
	PS	136 Type1 fonts
	Font Manager and 31 additional fonts for PCL to be loaded to the PC, Euro currency ok.	
	Optional	OCR, Barcode
Drivers	RPCS	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	PCL6	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	PCL5e	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	PS3	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	Mac OS 8.6.0 or later, Mac OSX (10.1 or later)	
ROM	Flash: 16 MB (Emulation) Mask: 4MB (PCL/PS font)	
RAM	Standard	128 MB SODIMM
	Maximum	256 MB (Maximum 256 MB)
HDD	Option: 6 GB	
Interface	Standard	• USB2.0 (Win98, 2000, ME, XP, Server 2003) • NIC • Bi-directional IEEE1284 • 10/100 Base-TX
	Optional	• IEEE1394, SCSI Print (Windows 2000 SP1 or later). • IP over 1394 Windows Me, XP, Server 2003 • IEEE802.11b, Bluetooth
Firmware Update	SD card. One SD card holds all programs	
	RFU (Remote Firmware Update)	
Network Protocol	TCP/IP (including IPP), IPX/SPX, SMBI, Apple Talk	
NRS	Supported	
DESS	Supported	

NOTE: 1) One optional interface board can be added
2) 10/100Base-TX and IEEE802.11b cannot be connected at the same time. Manual switch at the operation panel is required (user tool)
3) The machine has a maximum memory capacity of 256 MB. You must replace the 128 MB memory board with the 256 MB memory board if you want to increase the machine memory.

4. SUPPORTED PAPER SIZES

Paper	Size (W x L)	Paper Trays Main Unit/Option		By-pass Tray	Env. Feeder	Duplex
		US	Eur/Asia			
A3	297 x 420 mm	Y#/Y	Y/Y	Y#	N	Y
B4	257 x 364 mm	Y#/Y#	Y#/Y#	Y#	N	Y
A4 SEF	210 x 297 mm	Y#/Y	Y/Y	Y#	N	Y
A4 LEF	297 x 210 mm	Y/Y	Y/Y	Y#	Y	Y
B5 SEF	182 x 257 mm	Y#/Y#	Y#/Y#	Y#	N	Y
B5 LEF	257 x 182 mm	Y#/Y#	Y#/Y#	Y#	N	Y
A5 SEF	148 x 210 mm	N	N	Y#	N	N
A5 LEF	210 x 148 mm	Y#/N	Y/N	Y#	N	Y
A6 SEF	105 x 148 mm	N	N	YC	N	N
Ledger	11 x 17"	Y/Y	Y#/Y	Y#	N	Y
Legal	8.5 x 14"	Y/Y	Y#/Y	Y#	N	Y
Letter SEF	8.5 x 11"	Y/Y	Y/Y	Y#	N	Y
Letter LEF	11 x 8.5"	Y/Y	Y/Y	Y#	N	Y
Half Letter SEF	5.5 x 8.5"	N	N	Y#	N	N
Half Letter LEF	8.5 x 5.5"	N	N	N	N	N
Executive SEF	7.25 x 10.5"	N/Y#	N/Y#	Y#	N	N
Executive LEF	10.5 x 7.25"	Y#/Y#	Y#/Y#	Y#	N	Y
F	8 x 13"	Y#/Y#	Y#/Y#	Y#	N	Y
Foolscap	8.5 x 13"	Y/Y#	Y#/Y#	Y#	N	Y
Folio	8.25 x 13”	Y#/Y#	Y#/Y#	Y#	N	Y
Com10 Env.	4.125 x 9.5"	N	N	Y#	Y#	N
Monarch Env.	3.875 x 7.5"	N	N	Y#	Y#	N
C6 Env.	114 x 162 mm	N	N	Y#	Y#	N
C5 Env.	162 x 229 mm	N	N	Y#	Y#	N
DL Env.	110 x 220 mm	N	N	Y#	Y#	N
8K	267 x 390 mm	Y#/Y#	Y#/Y#	Y#	N	Y
16K SEF	195 x 267 mm	Y#/Y#	Y#/Y#	Y#	N	Y
16K LEF	267 x 195 mm	Y#/Y#	Y#/Y#	Y#	N	Y
Custom	Minimum: 90 x 148 mm Maximum: 305 x 432 mm	N/YC	N/YC	YC	N	N

Y : Supported. The paper size sensor detects the paper size.
Y# : Supported. The user has to select the correct paper size for the tray.
YC : Supported. The user has to enter the width and length of the paper.
N : Not supported.

5. OPERATION PANEL LED SPECIFICATIONS

LED	Color	Appearance	Meaning
Power	Green	Off	Power off or in Energy Saver mode
		Flashing	Warming up
		On	Power on and not in Energy Saver mode
Data In	Green	Off	No data
		Flashing	Data being received or processed or the printer is spooling
		On	Data being received or processed; more data coming
Online	Green	Off	Printer off-line
		Flashing	Going off-line
		On	Ready to print
Error	Red	Off	No messages or error conditions requiring attention
		On	Printer requires service

6. EXTERNAL OPTIONS

Paper Feed Unit (G399)	Paper Size	A3/ 11" x 17"-B5 LEF
	Paper Weight	60 – 105g/m², 16 – 28 lb.
	Paper Capacity	Maximum 500 sheets
	Dimensions (W x D x H)	468 x 410/545 x 130 mm 18.4" x 19.7"/21.5" x 5.1"
	Weight	6 kg, 13.2 lb.
Envelope Feeder (G807)	Envelope size	Com#10, C5, C6, DL, Monarch
	Capacity	Maximum 60
	Dimensions (W x D x H)	468 x 410 x 127 mm 18.4" x 16.1" x 5"
	Weight	2 kg, 4.4 lb
Duplex Unit (G806)	Paper Size	A3/ 11" x 17"-A5 LEF
	Paper Weight	64 – 105g/m², 18 – 28 lb.
	Dimensions (W x D x H)	419 x 378 x 257 mm 16.5" x 14.9" x 10.1"
	Weight	6 kg, 13.2 lb.

7. SOFTWARE ACCESSORIES

The printer drivers and utility software are provided on one CD-ROM. An auto-run installer allows you to select which components to install.

7.1 PRINTER DRIVERS

Printer Language	Windows 95/98/ME	Windows NT4.0	Windows 2000	Windows XP	Server 2003	Macintosh
PCL 6	Yes	Yes	Yes	Yes	Yes	No
PCL 5e	Yes	Yes	Yes	Yes	Yes	No
PS3	Yes	Yes	Yes	Yes	Yes	Yes
RPCS	Yes	Yes	Yes	Yes	Yes	No

NOTE: 1) The printer drivers for Windows NT 4.0 are only for the Intel x86 platform. There is no Windows NT 4.0 printer driver for the PowerPC, Alpha, or MIPS platforms.
2) The PS3 drivers are all genuine AdobePS drivers, except for Windows 2000, which uses Microsoft PS. A PPD file for each operating system is provided with the driver.
3) The PS3 driver for Macintosh supports Mac OS 7.6 or later versions.

7.2 OPERATING SYSTEMS/NETWORKS

	Windows 95/98/NT4.0/2000/Me/XP/Server 2003
Operating Systems/Network	Netware 3.12, 3.2, 4.1, 4.11, 5.0, 5.1, 6
	Unix (using Ricoh UNIX filter)
	Mac OS 8.6-9.2x, OS X 10.1 or later

7.3 CD-ROM CONTENTS

7.3.1 NORTH AMERICAN VERSION

Utilities and Drivers CD-ROM

Environment	Contents	Language	Remarks
Windows	RPCS Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL6 Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL5e Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Adobe PS3 Printer Driver	9 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Font Manager	English only	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Client)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Admin)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	1394 UTILITY	English only	Windows 2000, XP
	README.TXT	English only	–
Macintosh	Adobe PS3 Printer Driver	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	PS Descriptions	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	Printer Utility for Mac	English only	–

Operating Instructions CD-ROM

Environment	Contents	Language	Remarks
Windows Macintosh	Setup Guide	English only	–
	Printer Reference	English only	–
	NIB Operating Instructions	English only	–
	PS Supplement	English only	–
	Adobe Acrobat Reader	English only	–

7.3.2 EUROPEAN VERSION

Utilities and Drivers CD-ROM

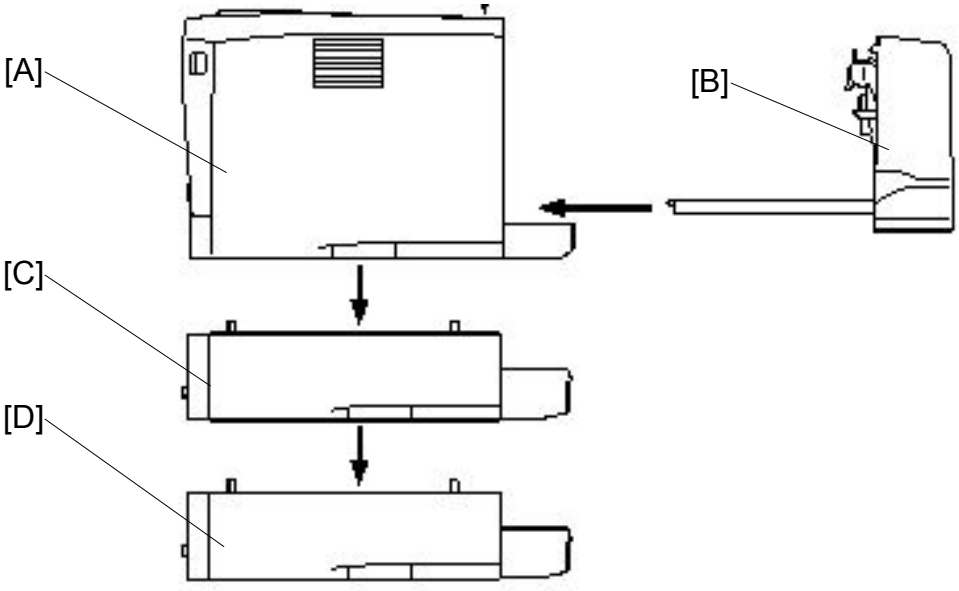
Environment	Contents	Language	Remarks
Windows	RPCS Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL6 Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL5e Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Adobe PS3 Printer Driver	9 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Font Manager	English only	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Client)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Admin)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	1394 UTILITY	English only	Windows 2000, XP
	README.TXT	English only	–
Macintosh	Adobe PS3 Printer Driver	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	PS Descriptions	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	Printer Utility for Mac	English only	–

Operating Instructions CD-ROM

Environment	Contents	Language	Remarks
Windows Macintosh	Setup Guide	14 languages	Prepared by RE as paper manual
	Printer Reference	14 languages	–
	NIC Operating Instructions	14 languages	–
	PS Supplement	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norway, Denmark
	Adobe Acrobat Reader	8 languages	English, German, Spanish, French, Italian, Dutch, Portuguese, Swedish

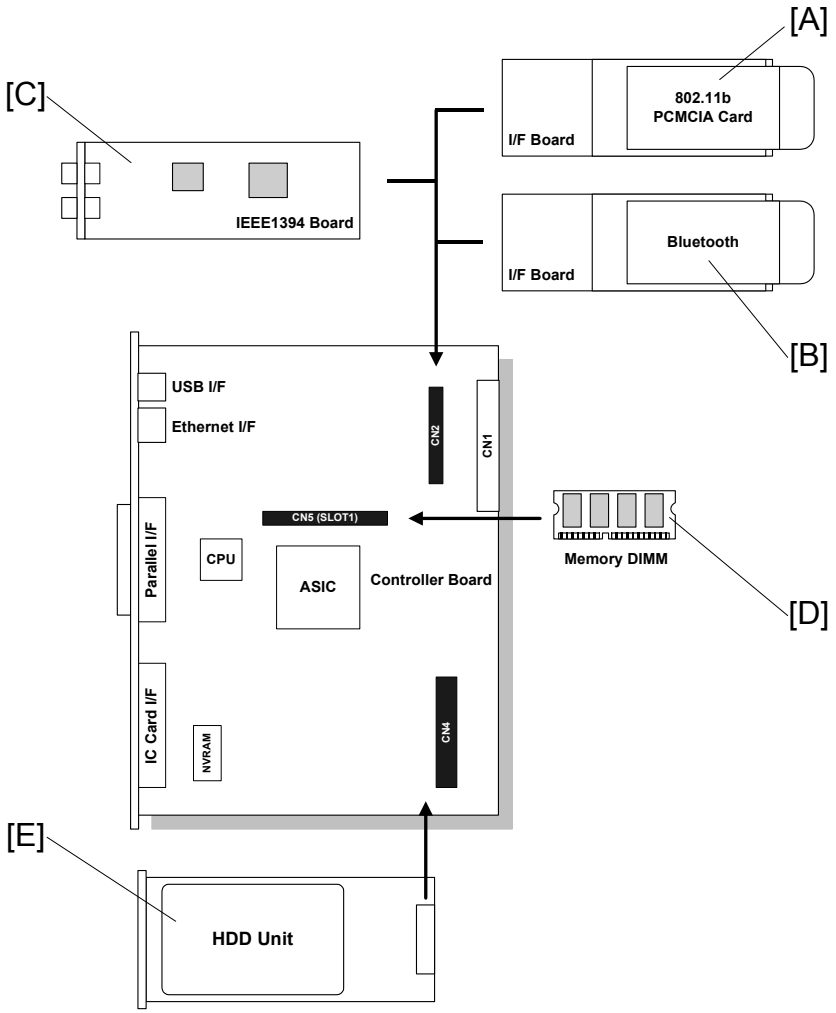
8. MACHINE CONFIGURATION

8.1 SYSTEM COMPONENTS



Item	Machine Code	No.	Remarks
Main Unit	G116	A	The NIB is standard for this model.
Optional Units			
Duplex Unit	G806	B	
Paper Tray Unit	G399	C, D	Up to two tray units can be installed.
Envelope Feeder	G807	C	If both optional paper trays are installed, the envelope feeder must go in the top tray.

8.2 INTERNAL OPTIONS



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Item	Machine Code	No.	Remarks
Internal Options			
IEEE1394 I/F Board	G336	C	Also used with model G091
IEEE802.11b	G813	A	
Bluetooth Type C	G354	B	
DESS	G880		
HDD	G575	E	Also used with model G091
Memory 256 MB	G332	D	Also used with model G091
Barcode Font DIMM	G627		Also used with model G091
Others			
AIO Cartridge	G795		Also used with model G091
Maintenance Kit	G263		

NOTE: This model has an on-board Ethernet interface.

SPECIFICATIONS (G112/G113)

1. GENERAL SPECIFICATIONS

The specifications in this section are for the G112/G113 machines only.

Configuration	Desktop	
Paper size	Legal SEF - A6SEF	
Technology	Laser beam scanning & Electro photographic printing Dual component toner development AIO is used	
Print Resolution	400 dpi, 600 dpi, 1200 dpi	
Smoothing	Yes (on, off)	
Continuous Print Speed	27 ppm (A4), 28 ppm (LT)	
Duplex Print Speed (A4)	27 ppm from standard tray	
	23 ppm from first optional paper tray	
	20 ppm from second optional paper tray	
First Print Speed	7.5 seconds or less (A4-SEF from standard tray)	
Copy Paper Weight	Paper Tray	60-105 g/m² (16-28 lb.)
	By-pass tray	60-162 g/m² (16-43 lb.)
	Optional paper tray	60-105 g/m² (16-28 lb.)
	Duplex	64-105 g/m² (17-28 lb.)
Warm-up Time	19 seconds or less from power on (23 °C, 73 °F) 12 seconds or less from energy saver mode	
Paper Input Size	Standard tray	LG – A5 LEF
	By-pass tray	LG – A6 SEF
	By-pass tray-Custom size paper	Length: 139.7 - 432 mm (5.5"- 17"), Width: 90 - 216 mm (3.5" - 8.5"), Com#10, C5, C6, DL. Monarch
	Optional Envelope Feeder	Com#10, C5, C6, DL. Monarch
	Optional paper tray unit Up to 2 units can be installed.	LG – A5 SEF
Paper Input Capacity	Standard tray and Optional paper trays	500 sheets (80 g/m², 20 lb.)
	By-pass tray	100 sheets (80 g/m², 20 lb.) or 10 envelopes
	Optional Envelope feeder	60 envelopes
Output Capacity	250 sheets	
Total Counter	Electric Counter	
Environmental Standard	US version: Energy Star Tier 1	
	EU version: BAM specifications	

2. PHYSICAL SPECIFICATIONS

Power Source	North America: 120 V, 60 Hz: More than 10 A		
	EU: 220 V - 240 V, 50/60 Hz: More than 6.0 A		
Power Consumption		**120 V**	**230 V**
	Maximum	790 W or less	790 W or less
	Printing	550 W or less	550 W or less
	Energy Saver	4 W or less	4 W or less
Noise Emission		**Mainframe Only**	**Full System**
	Printing	63 dB or less	67 dB or less
	Stand-by	39 dB or less	39 dB or less
	Energy Saver	39 dB or less	39 dB or less
Sound Pressure Level	Printing	53dB or less (operating position)	
	Stand-by	29dB or less (operating position)	
	Energy Saver	29dB or less (operating position)	
Weight	15.0 Kg (33 lb.)		
Dimensions	**Excluding standard tray**	**388 x 410 x 345 (mm). 15.3 x 16.1 x 13.6 (inch)**	
	Including standard tray	**388 x 450/509 x 345 (mm). 15.3 x 17.7/20.0 x 13.6 (inch)**	

3. CONTROLLER

CPU	TMPR4955CFG 400 MHz	
Printer Languages	RPCS, PCL6, PCL5e emulation, Adobe PS3 (genuine), Adobe PDF	
Resolution	RPCS	600/1200 dpi
	PCL6	600/1200 dpi
	PCL5e	300/600 dpi
	PS3	600/1200 dpi
Resident Fonts	PCL	35 Intellifonts, 10 TrueType fonts, 1 bitmap font
	PS	136 Type1 fonts
	Font Manager and 31 additional fonts for PCL to be loaded to the PC, Euro currency ok.	
Drivers	RPCS	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	PCL6	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	PCL5e	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	PS3	Win95/98/Me, Win NT 4.0, 2000, XP, Server 2003
	Mac OS 8.6.0 or later, Mac OSX (10.1 or later)	
ROM	Flash: 24 MB (Emulation) Mask: 8MB (PCL/PS font)	
RAM	Standard	G112: 64 MB SDRAM
		G113: 128 MB SDRAM
	Optional	G112: 64/128/256 MB (Maximum 320 MB)
		G113: 256 MB (Maximum 256 MB)
HDD	Option: Approximately 6 GB	
Interface	Standard	USB2.0 (Win98, 2000, ME, XP, Server 2003) Bi-directional IEEE1284 10/100 Base-TX (G113)
	Optional	• IEEE1394, SCSI Print (Windows 2000 SP1 or later). • IP over 1394 Windows Me, XP, Server 2003 • IEEE802.11b, 10/100 Base-TX (G112), Bluetooth
Firmware Update	SD card (1 card)	
	RFU (Remote Firmware Update)	
Network Protocol	TCP/IP (including IPP), IPX/SPX, NetBEUI, Apple Talk	
NRS	Supported	

NOTE: 1) One optional interface board can be added
2) 10/100Base-TX and IEEE802.11b cannot be connected at the same time. Manual switch at the operation panel is required (user tool)

4. SUPPORTED PAPER SIZES

Paper Name	Direction (Edge)	Paper Size width x length	Main Unit / Bank		Bypass Tray		Env. Feeder	Duplex
			NA	EU	NA	EU	NA/EU	NA/EU
A4	Short Edge	210 x 297 mm	D/D	D/D	S	S	N	Y
B5	Short Edge	182 x 257 mm	D/D	D/D	S	S	N	Y
A5	Short Edge	148 x 210 mm	D/D	D/D	S	S	N	Y
A5	Long Edge	210 x 148 mm	*/N	*/N	S	S	N	Y
B6	Short Edge	128 x 182 mm	N/N	N/N	N	N	N	N
B6	Long Edge	182 x 128 mm	N/N	N/N	N	N	N	N
A6	Short Edge	105 x 148 mm	N/N	N/N	S	S	N	N
A6	Long Edge	148 x 105 mm	N/N	N/N	N	N	N	N
Legal	Short Edge	8.5 x 14 inch	D/D	D/D	S	S	N	Y
Letter	Short Edge	8.5 x 11 inch	D/D	D/D	S	S	N	Y
Half Letter	Short Edge	5.5 x 8.5 inch	D/D	D/D	S	S	N	Y
Half Letter	Long Edge	8.5 x 5.5 inch	*/N	*/N	S	S	N	Y
Executive	Short Edge	7.25 x 10.5 inch	N/*	N/*	S	S	N	N
F	Short Edge	8 x 13 inch	*/*	*/*	S	S	N	Y
Foolscap	Short Edge	8.5 x 13 inch	*/*	*/*	S	S	N	Y
Folio	Short Edge	8.25 x 13 inch	*/*	*/*	S	S	N	Y
Com10	Short Edge	4.125 x 9.5 inch	N/N	N/N	S	S	S	N
Monarch	Short Edge	3.875 x 7.5 inch	N/N	N/N	S	S	S	N
C6	Short Edge	114 x 162 mm	N/N	N/N	S	S	S	N
C5	Short Edge	162 x 229 mm	N/N	N/N	S	S	S	N
DL Env	Short Edge	110 x 220 mm	N/N	N/N	S	S	S	N
16k	Short Edge	195 x 267 mm	*/*	*/*	S	S	N	Y
Custom	Width (Bank)	139.7-216.0 mm	*/-	*/-	-	-	N	N
	Length (Bank)	**160.0-**356.0 mm	*/-	*/-	-	-	N	N
	Width (Bypass)	90.0-216.0 mm	-	-	S	S	N	N
	Length (Bypass)	139.7-432.0 mm	-	-	S	S	N	N

D: Paper size is specified by using the dial.
* : Supported. The user has to select the correct paper size for the tray from the user menu.
S: Paper size is entered at the operation panel.
N: Not supported
Y: Supported

5. OPERATION PANEL LED SPECIFICATIONS

LED	Color	Appearance	Meaning
Power	Green	Off	Power off or in Energy Saver mode
		Flashing	Warming up
		On	Power on and not in Energy Saver mode
Data In	Green	Off	No data
		Flashing	Data being received or processed or the printer is spooling
		On	Data being received or processed; more data coming
Online	Green	Off	Printer off-line
		Flashing	Going off-line
		On	Ready to print
Error	Red	Off	No messages or error conditions requiring attention
		On	Printer requires service

6. EXTERNAL OPTIONS

Paper Feed Unit (Type 400) (G360)	Paper Size	A4 SEF – A5 SEF, LG SEF-A5 SEF, Free size
	Paper Weight	60 – 105g/m², 16 – 28 lb.
	Paper Capacity	Maximum 500 sheets
	Dimensions (W x D x H)	388 x 427/486 x 135 mm 15.3" x 16.8/19.1" x 5.3"
	Weight	Less than 6 Kg, 13.2 lb.
Envelope Feeder (Type 400) (G362)	Envelope size	Com#10, C5, C6, DL, Monarch
	Capacity	Maximum 60
	Dimensions (W x D x H)	359 x 427 x 101 mm 14.1" x 16.8" x 4.0"
	Weight	Less than 6 Kg, 13.2 lb.
Duplex Unit (AD 450) (G361)	Paper Size	A4 SEF – A5 LEF
	Paper Weight	60 – 105g/m², 16 – 28 lb.
	Dimensions (W x D x H)	340 x 380 x 250 mm 13.4" x 15.0" x 9.8"
	Weight	Less than 6 Kg, 13.2 lb.

7. SOFTWARE ACCESSORIES

The printer drivers and utility software are provided on one CD-ROM. An auto-run installer allows you to select which components to install.

7.1 PRINTER DRIVERS

Printer Language	Windows 95/98/ME	Windows NT4.0	Windows 2000	Windows XP	Server 2003	Macintosh
PCL 6	Yes	Yes	Yes	Yes	Yes	No
PCL 5e	Yes	Yes	Yes	Yes	Yes	No
PS3	Yes	Yes	Yes	Yes	Yes	Yes
RPCS	Yes	Yes	Yes	Yes	Yes	No

NOTE: 1) The printer drivers for Windows NT 4.0 are only for the Intel x86 platform. There is no Windows NT 4.0 printer driver for the PowerPC, Alpha, or MIPS platforms.
2) The PS3 drivers are all genuine AdobePS drivers, except for Windows 2000, which uses Microsoft PS. A PPD file for each operating system is provided with the driver.
3) The PS3 driver for Macintosh supports Mac OS 7.6 or later versions.

7.2 CD-ROM CONTENTS

7.2.1 NORTH AMERICAN VERSION

Utilities and Drivers CD-ROM

Environment	Contents	Language	Remarks
Windows	RPCS Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL6 Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL5e Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Adobe PS3 Printer Driver	9 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Font Manager	English only	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Client)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Admin)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	1394 UTILITY	English only	Windows 2000, XP
	README.TXT	English only	–
Macintosh	Adobe PS3 Printer Driver	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	PS Descriptions	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	Printer Utility for Mac	English only	–

Operating Instructions CD-ROM

Environment	Contents	Language	Remarks
Windows Macintosh	Setup Guide	English only	–
	Printer Reference	English only	–
	NIB Operating Instructions	English only	–
	PS Supplement	English only	–
	Adobe Acrobat Reader	English only	–

7.2.2 EUROPEAN VERSION

Utilities and Drivers CD-ROM

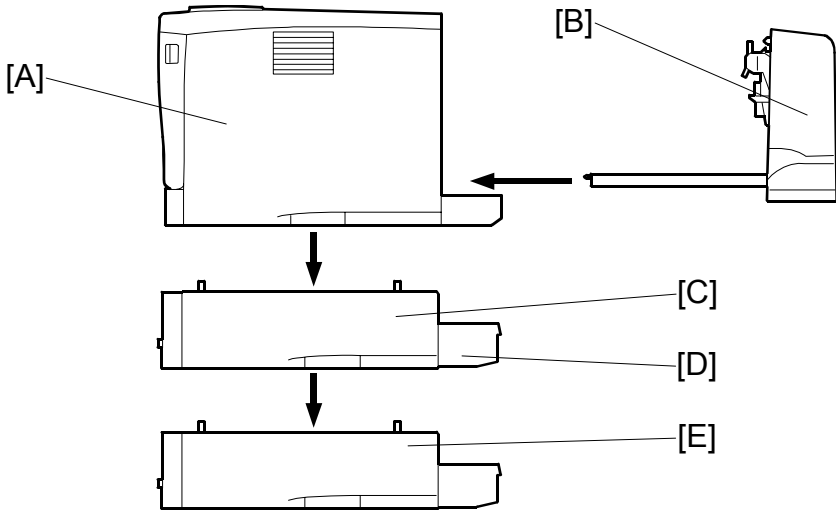
Environment	Contents	Language	Remarks
Windows	RPCS Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL6 Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	PCL5e Driver	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Adobe PS3 Printer Driver	9 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	Font Manager	English only	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Client)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	SmartNetMonitor (Admin)	14 languages	Windows 95/98/Me, NT4.0, 2000, XP, Server 2003
	1394 UTILITY	English only	Windows 2000, XP
	README.TXT	English only	–
Macintosh	Adobe PS3 Printer Driver	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	PS Descriptions	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norwegian, Danish
	Printer Utility for Mac	English only	–

Operating Instructions CD-ROM

Environment	Contents	Language	Remarks
Windows Macintosh	Setup Guide	14 languages	Prepared by RE as paper manual
	Printer Reference	14 languages	–
	NIC Operating Instructions	14 languages	–
	PS Supplement	9 languages	English, German, Spanish, French, Italian, Dutch, Swedish, Norway, Denmark
	Adobe Acrobat Reader	8 languages	English, German, Spanish, French, Italian, Dutch, Portuguese, Swedish

8. MACHINE CONFIGURATION

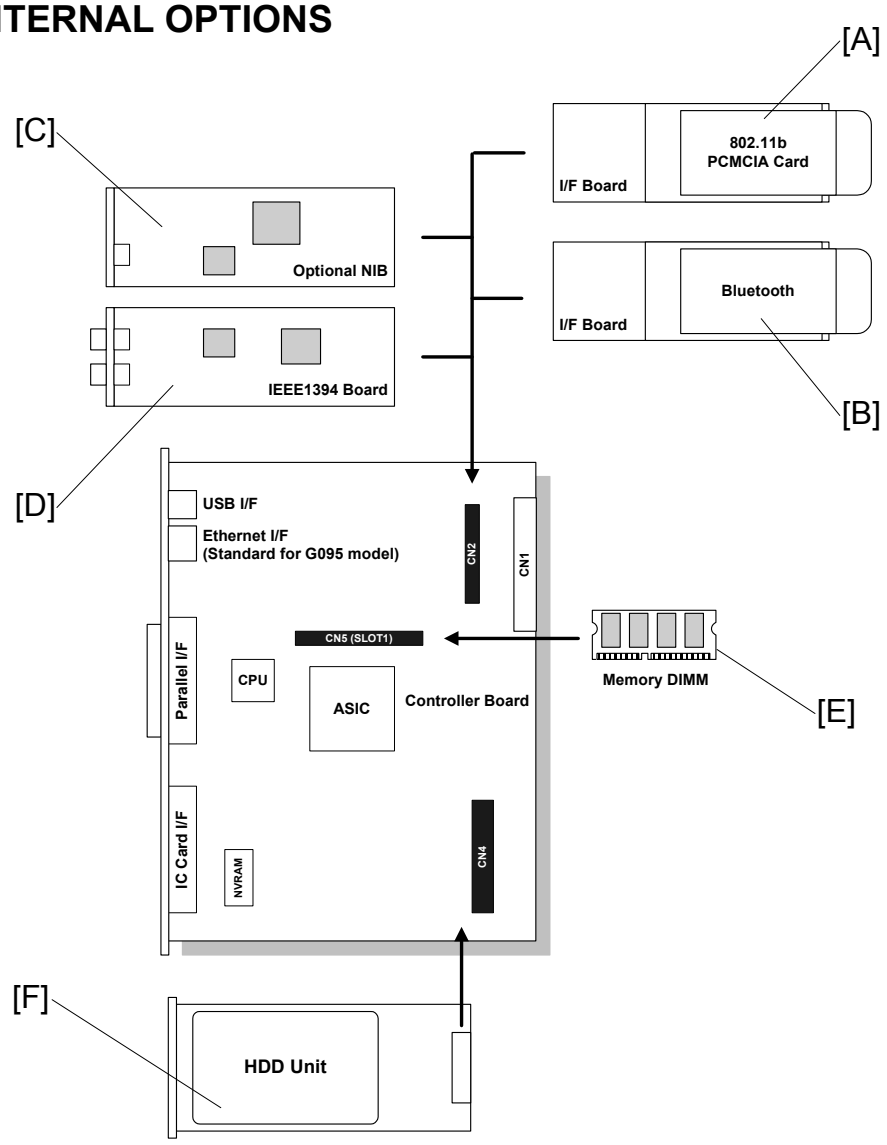
8.1 SYSTEM COMPONENTS



Item	Machine Code	No.	Remarks
Main Unit	G112 G113	A	The NIB option is built into the G113 model but not for the G112 model.
Optional Units			
Duplex Unit	G361	B	
Paper Tray Unit	G360	C, D	Up to two tray units can be installed.
Envelope Feeder	G362	E	If both optional paper trays are installed, the envelope feeder must go in the top tray.

NOTE: The user can install all of the above items.

8.2 INTERNAL OPTIONS



Item	Machine Code	No.	Remarks
Internal Options			
NIB (10/100Base-TX) (Standard for G113)	G646	C	Also used with model G094/G095
IEEE1394 I/F Board	G336	D	Also used with model G094/G095
IEEE802.11b	G813	A	
Bluetooth Type C	G354	B	
HDD	G575	F	Also used with model G094/G095
DESS	G880		
Memory 64 MB	G330	E	Also used with model G095, G112 only
Memory 128 MB	G331	E	Also used with model G095, G112 only
Memory 256 MB	G332	E	Also used with model G094/G095
Barcode Font DIMM	G627		Also used with model G094/G095
Others			
AIO Cartridge	G216		Also used with model G094/G095
Maintenance Kit	G263		

PAPER TRAY UNIT
G360

ENVELOPE FEEDER
G362

PAPER TRAY UNIT B360/ENVELOPE FEEDER B362

TABLE OF CONTENTS

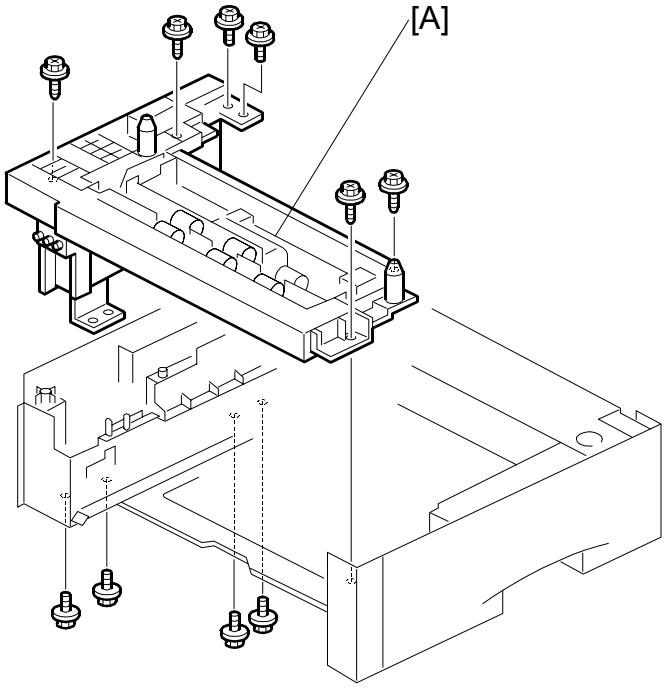
1. REPLACEMENT AND ADJUSTMENT

⚠CAUTION

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

NOTE: This manual uses these symbols.
: C ring : screw : connector/harness

1.1 PAPER FEED UNIT

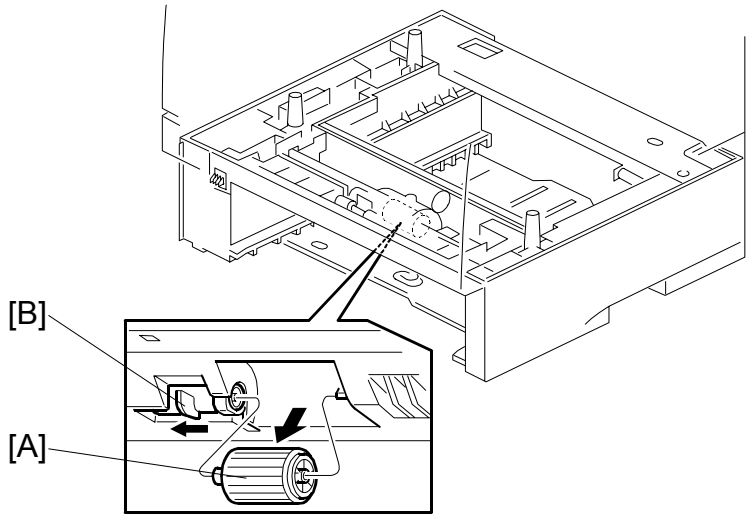


NOTE: Before removing the paper feed unit, turn the main unit over and remove all screws indicated with an arrow.

- Remove the paper tray unit from the main unit.
- Pull out the paper tray.

[A]: Remove the paper feed unit (x 10)

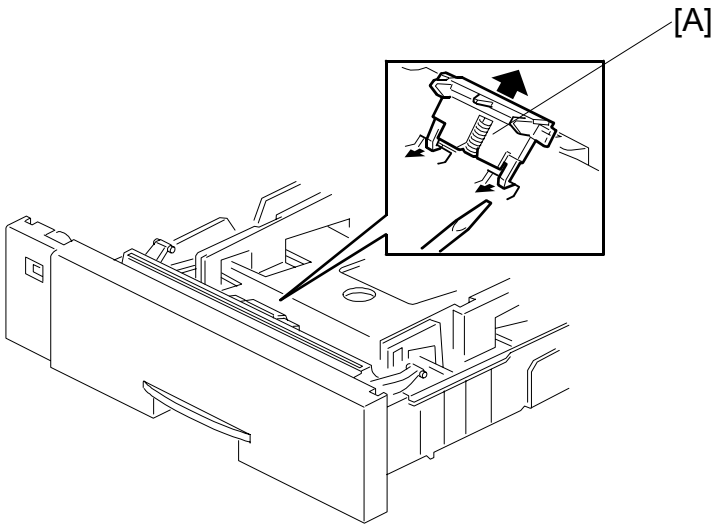
1.2 PAPER FEED ROLLER



- Pull out the paper tray

[A]: Paper feed roller (move the lever [B] to the left)

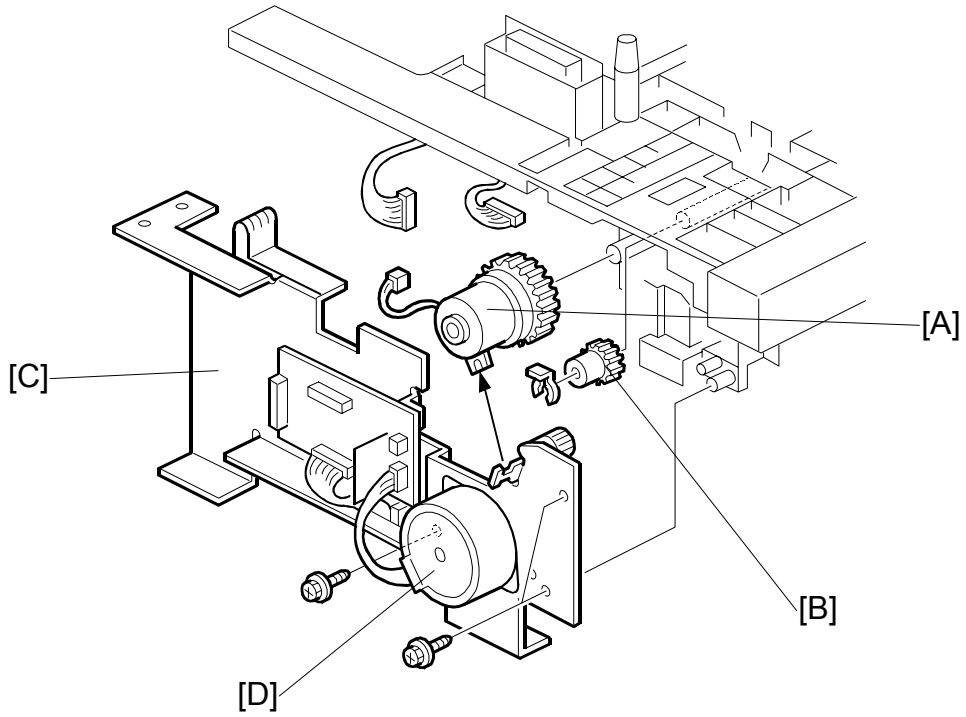
1.3 FRICTION PAD



- Pull out the paper tray

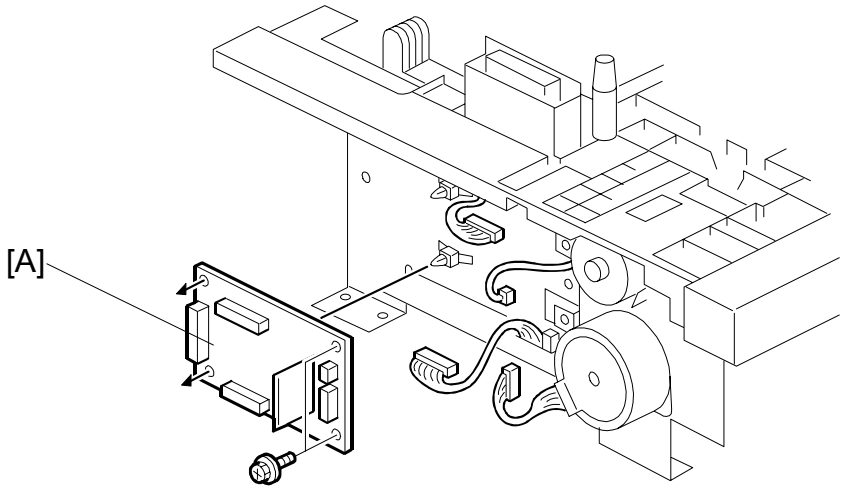
[B]: Friction pad

1.4 PAPER FEED CLUTCH



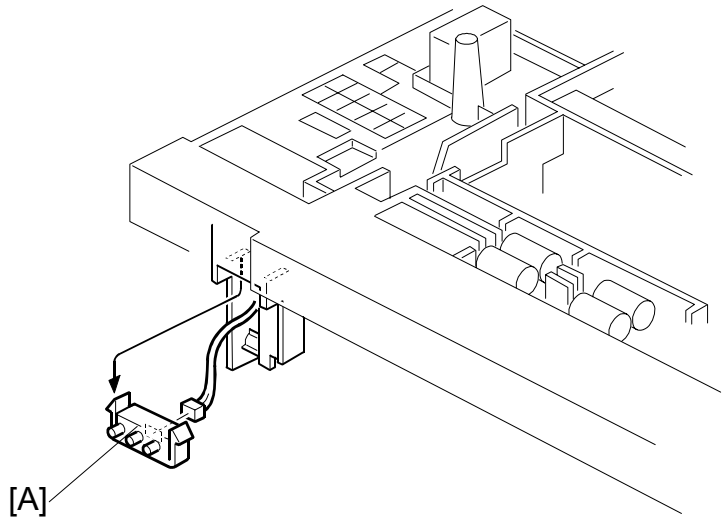
[A]: Paper feed clutch (x 1, 1 gear)
[B]: Paper feed gear (x 1)
[C]: Motor bracket (x 3, x 2)
[D]: Motor (1 gear, x 1)

1.5 PAPER TRAY BOARD



[A]: Paper tray board (2 hooks, ☞ x 2)

1.6 PAPER SIZE SWITCH

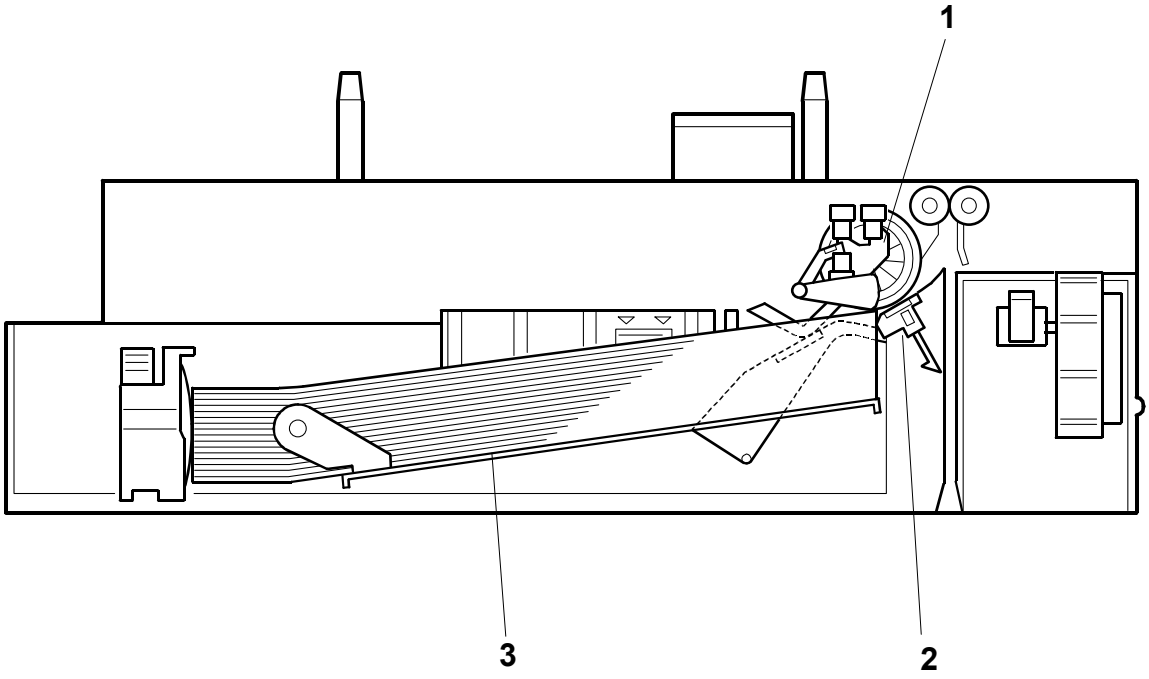


[A]: Paper size switch (1 hook, ☞ x 1)

2. DETAILED DESCRIPTIONS

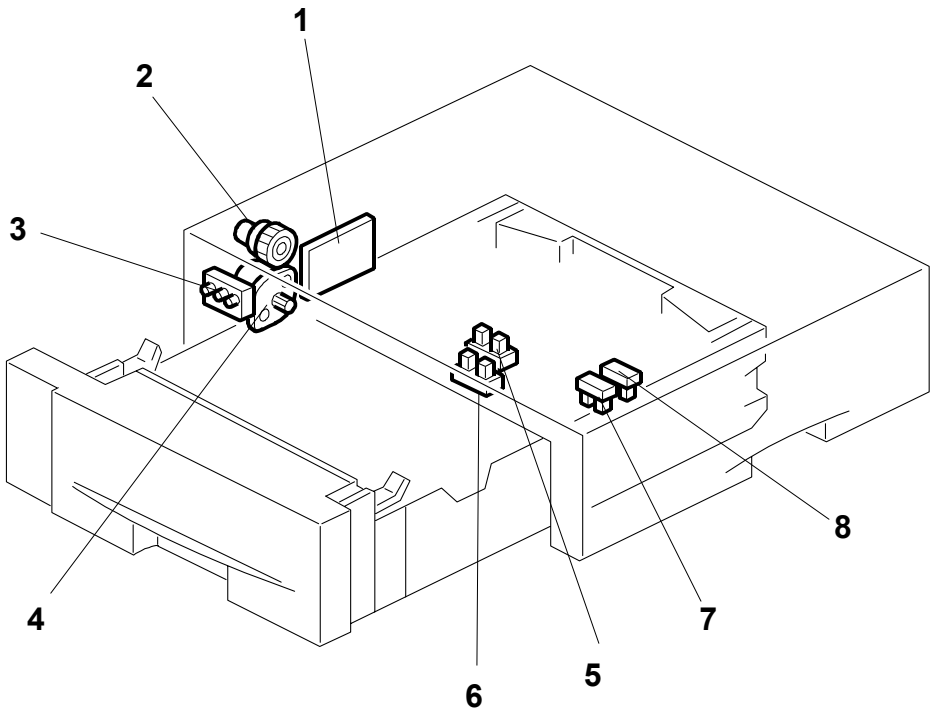
2.1 OVERALL MACHINE INFORMATION

2.1.1 MECHANICAL COMPONENT LAYOUT



1. Paper feed roller
2. Friction pad
3. Bottom plate

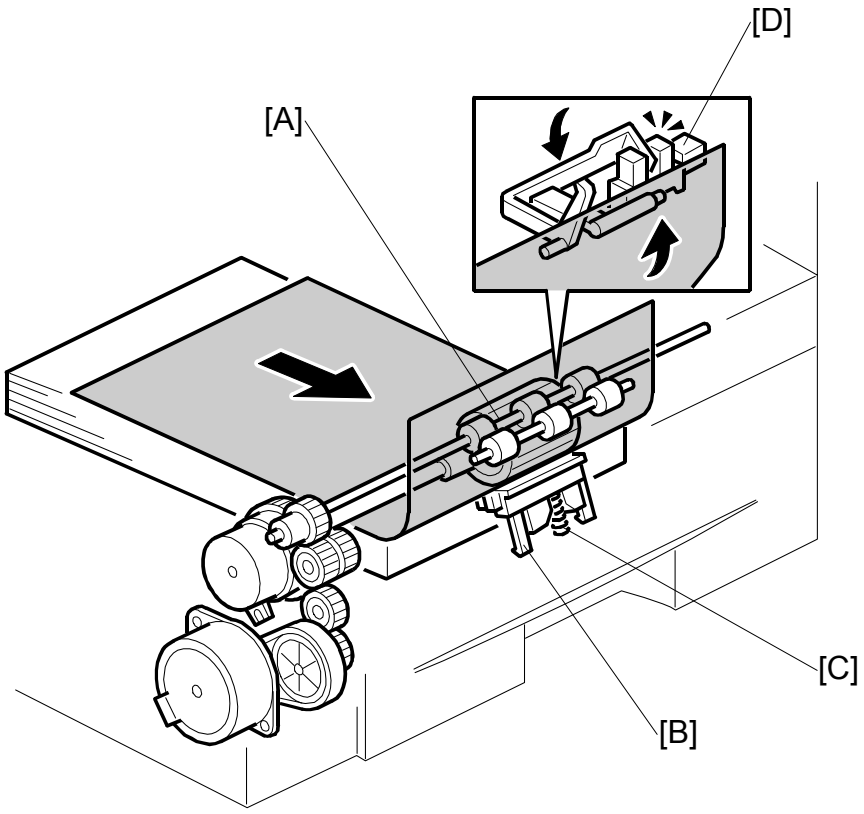
2.1.2 ELECTRICAL COMPONENT LAYOUT



1. Paper tray board
2. Paper feed clutch
3. Paper size switch
4. Paper feed motor
5. Paper feed sensor
6. Paper end sensor
7. Remaining paper sensor 1
8. Remaining paper sensor 2

2.2 DETAILED DESCRIPTIONS

2.2.1 PAPER FEED AND SEPARATION



- The paper tray holds 500 sheets of paper
- The paper feed unit uses a feed roller and friction pad method

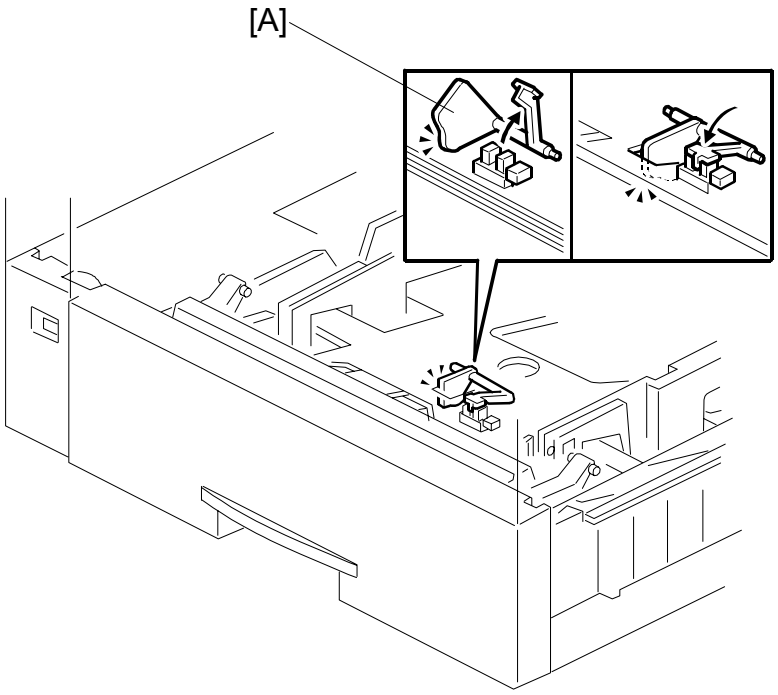
[A]: Paper feed roller
[B]: Friction pad
[C]: Pressure spring
[D]: Paper feed sensor

2.2.2 PAPER LIFT

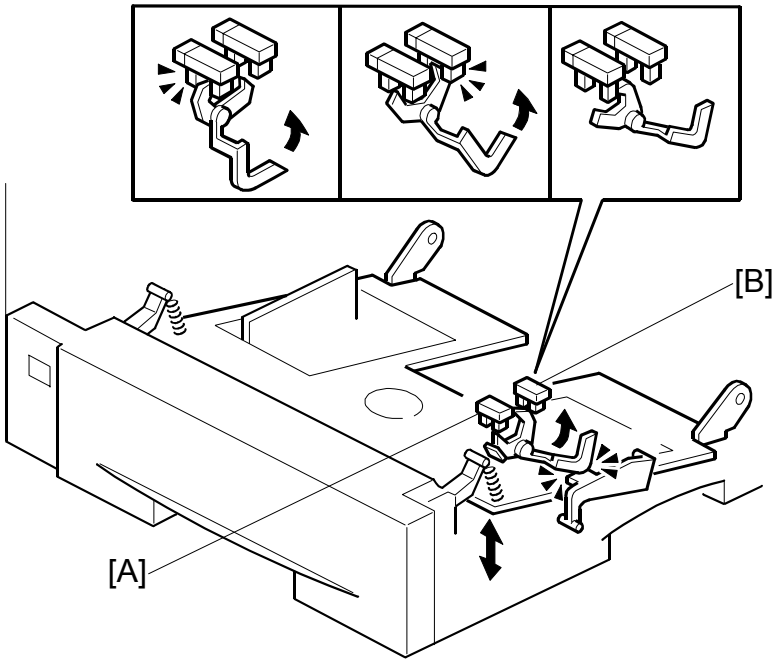
Paper lift is the same as for the main unit.

2.2.3 PAPER END DETECTION

- When the paper tray runs out of paper, the feeler [A] drops into the cutout in the bottom plate to actuate the remaining paper sensor.



2.2.4 REMAINING PAPER DETECTION

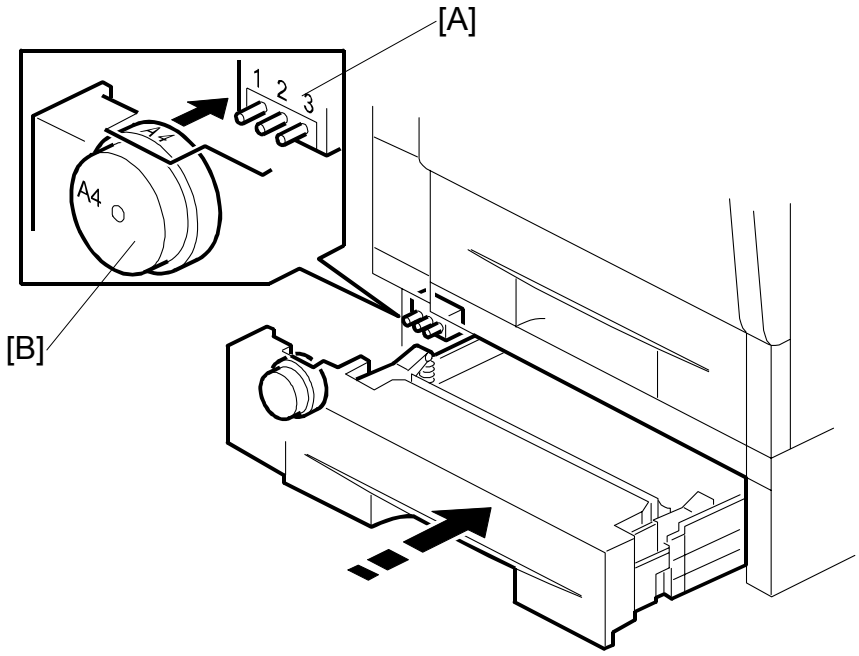


[A]: Remaining paper sensor 1
[B]: Remaining paper sensor 2

Amount of paper	Remaining Paper Sensor 1	Remaining Paper Sensor 2
0 sheets (0%)	On	On
50 sheets (10%)	On	On
250 sheets (50%)	On	Off
450 sheets (90%)	Off	Off
500 sheets (100%)	Off	On

OFF: Unblocked, ON: Blocked

2.2.5 PAPER SIZE DETECTION



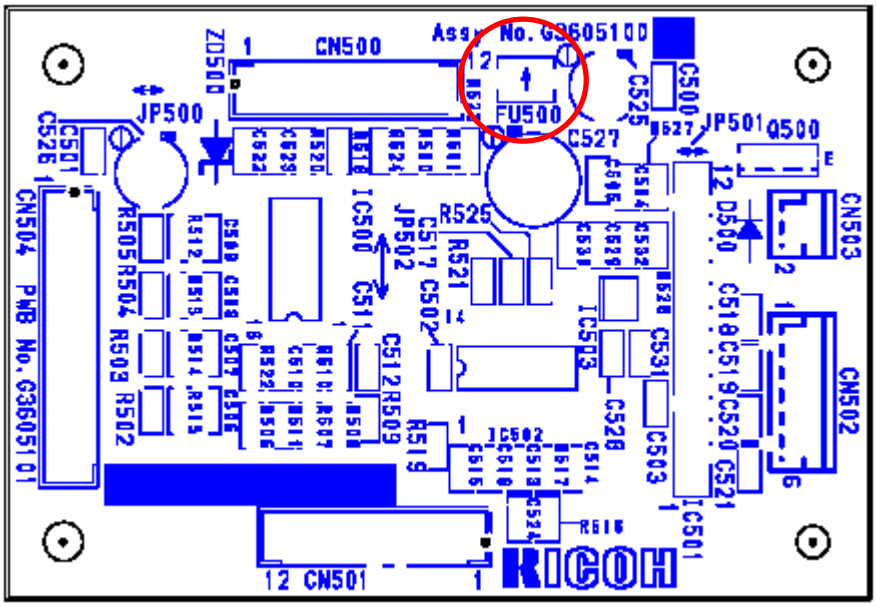
[A]: Paper size switch
[B]: Paper size dial

SW / Size	1	2	3
A4 SEF	❍	❍	●
A5 SEF	❍	●	❍
B5 SEF	●	❍	●
Custom Size	❍	●	●
LG SEF	●	●	●
LT SEF	●	●	❍
HLT SEF	●	❍	❍

❍: ON (Not pushed)
●: OFF (Pushed)

- The machine disables paper feed from a tray if the paper size cannot be detected (if the paper size actuator is broken or no tray is installed)
- When the paper size dial is at the "*" mark, the paper tray can be set up to accommodate one of a wider range of paper sizes by using a User Tool at the machine's operation panel (Paper Input menu – Tray Paper Size).

2.3 PROTECTION FUSE



Name	Rating	Manufacturer	Type No.
FU500	DC50V/1.5A	ROHM CO .,LTD	ICP-N38

3. ENVELOPE FEEDER

3.1 OVERALL MACHINE INFORMATION

3.1.1 MECHANICAL COMPONENT LAYOUT

- This optional unit is a tray that slides into the optional paper feed unit, replacing the paper tray.
- If two optional trays have been installed, the envelope feeder must go into the top tray.
- The layout is the same as the paper tray.
- The tray pushes down and locks the mechanism in place
- The paper size can be fixed using the end fence.
- The end fence prevents the envelopes from overflowing and spilling out of the envelope unit.

DUPLEX UNIT
G361

DUPLEX UNIT G361

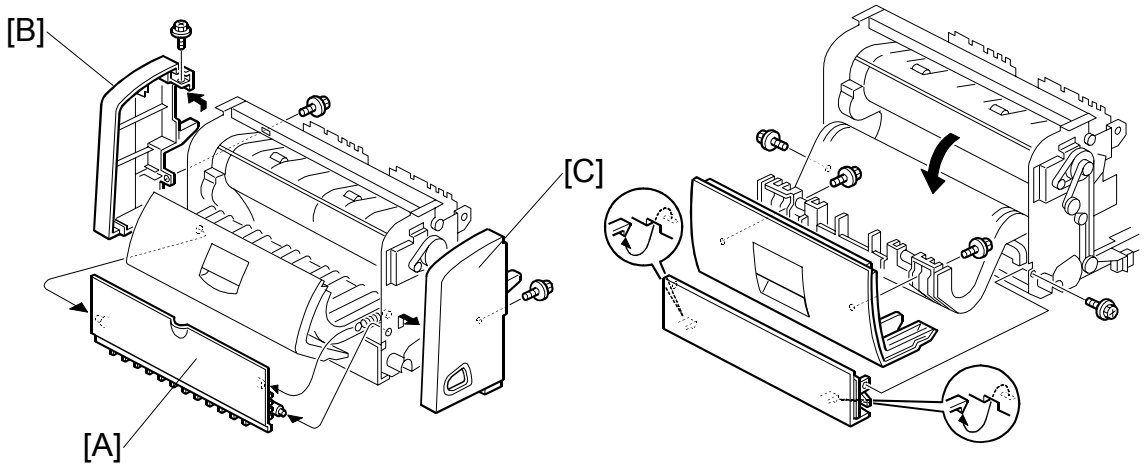
TABLE OF CONTENTS

1. REPLACEMENT AND ADJUSTMENT

⚠CAUTION
Turn off the main power switch and unplug the machine before attempting any of the procedures in this section.

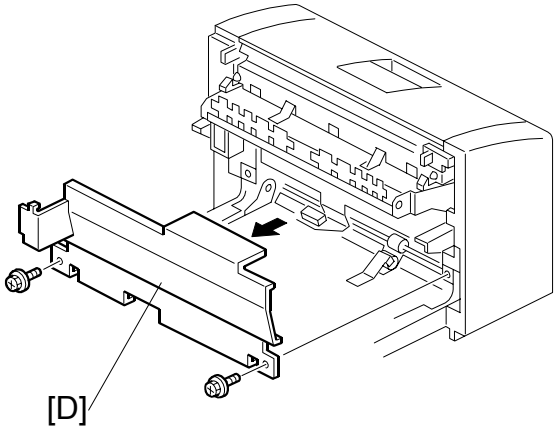
NOTE: This manual uses these symbols.
☛: See or Refer to : screw : connector : e-ring

1.1 EXTERIOR COVERS

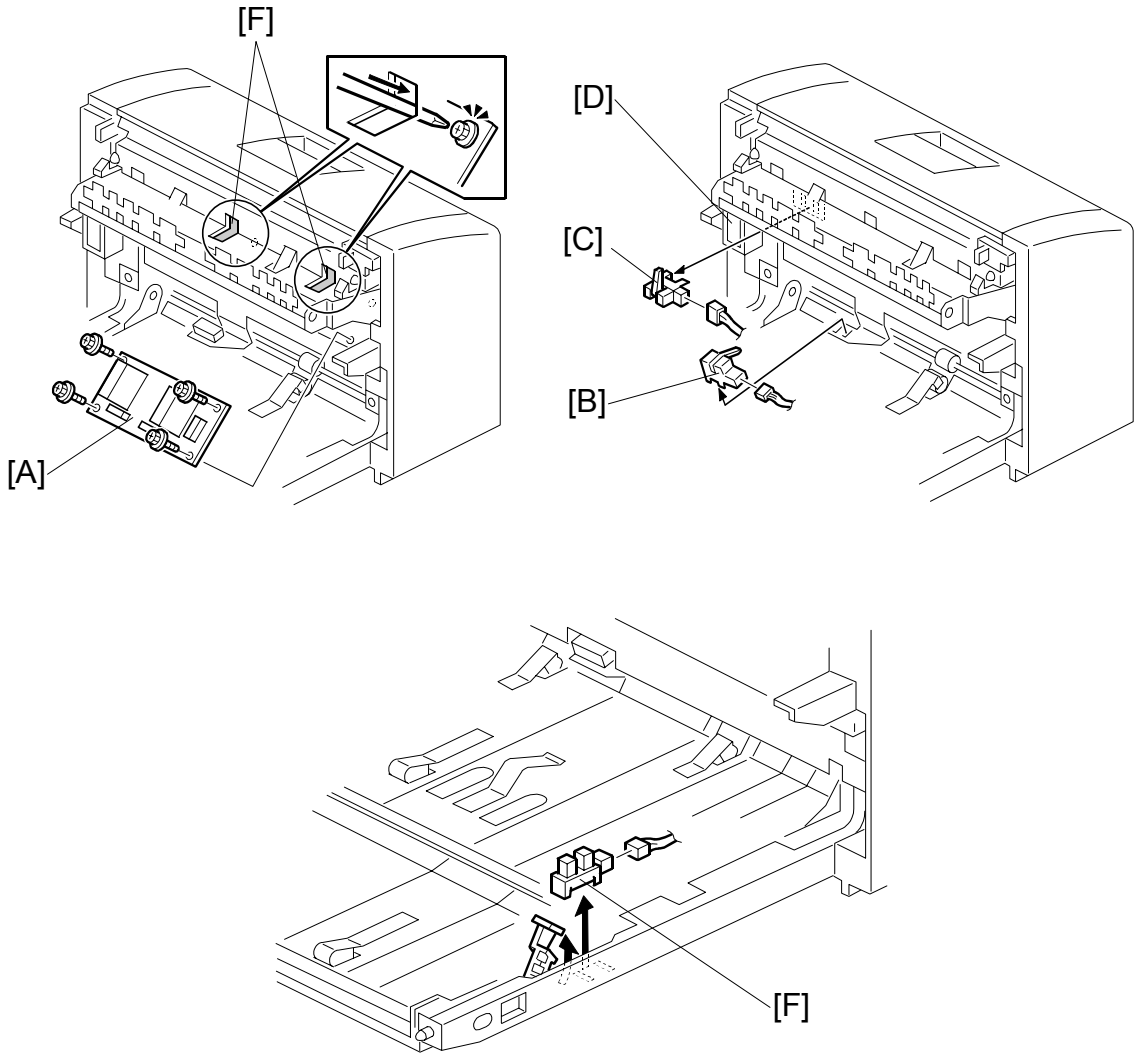


- Remove the duplex unit from the main unit.
- Open the upper cover [A].

[A]: Upper cover (x 2)
[B]: Right cover (x 2)
[C]: Left cover (x 1)
[D]: Front cover (x 2)



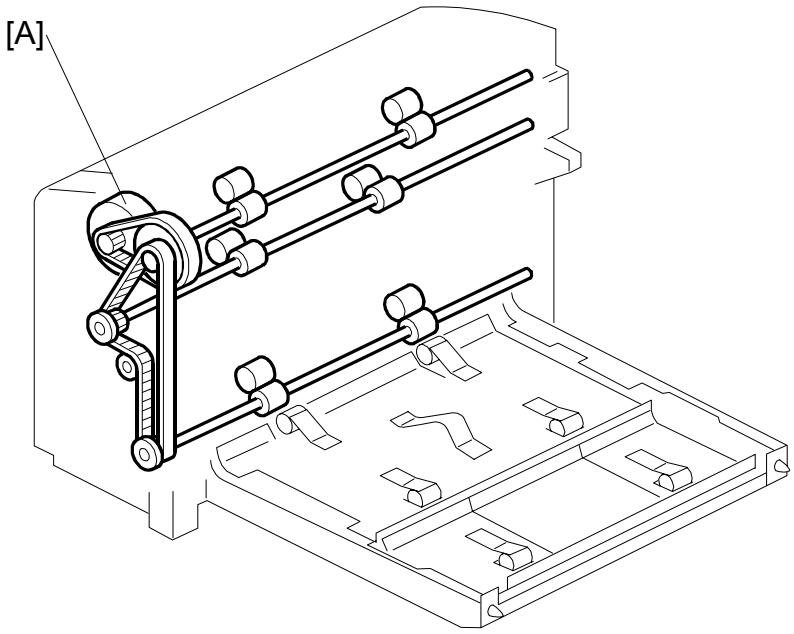
1.2 DUPLEX BOARD AND SENSORS



- Front cover (☛: Exterior covers)

[A]: Duplex board bracket (🔩 x 2)
[B]: Duplex board (🔩 x 4, all connectors)
[C]: Inverter sensor (✋ x 1)
[D]: Entrance sensor (✋ x 1, 1 bracket)
[E]: Inverter gate solenoid (🔩 x 2)
[F]: Exit sensor (✋ x 1)

1.3 INVERTER MOTOR



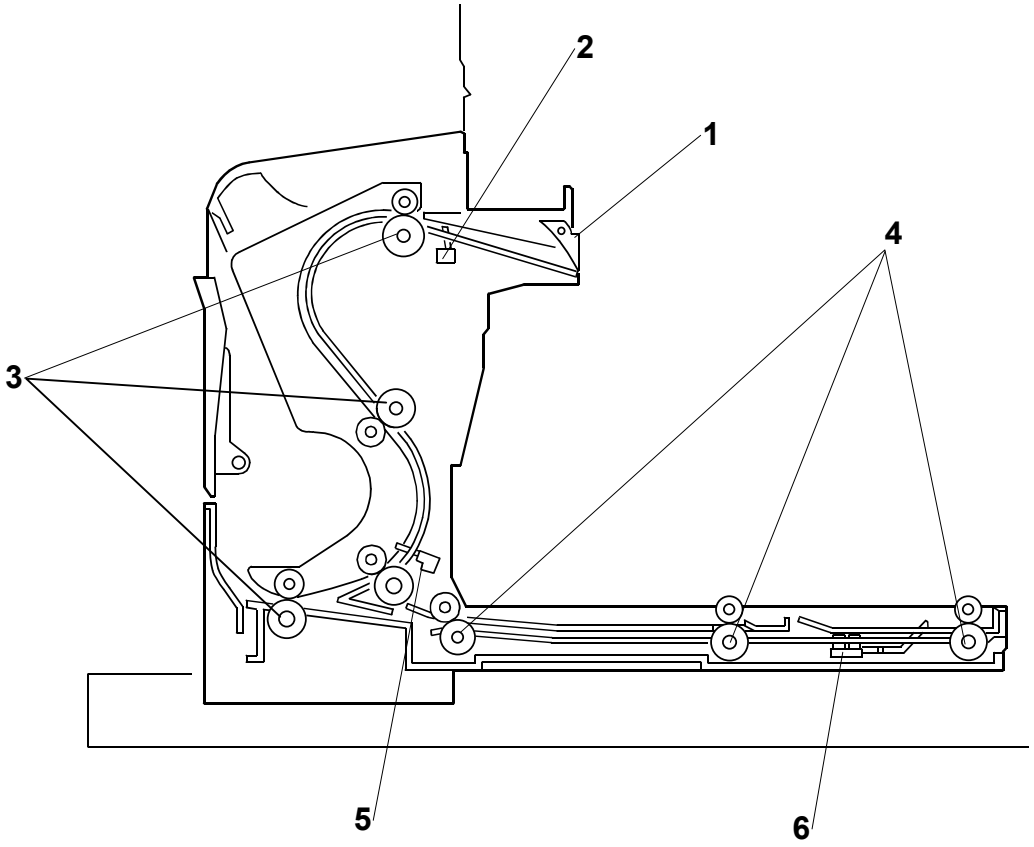
[A]: Inverter motor (2 timing belts, 1 x ℂ, 1 gear)

NOTE: Remove the motor bracket before removing the inverter motor.

2. DETAILED DESCRIPTIONS

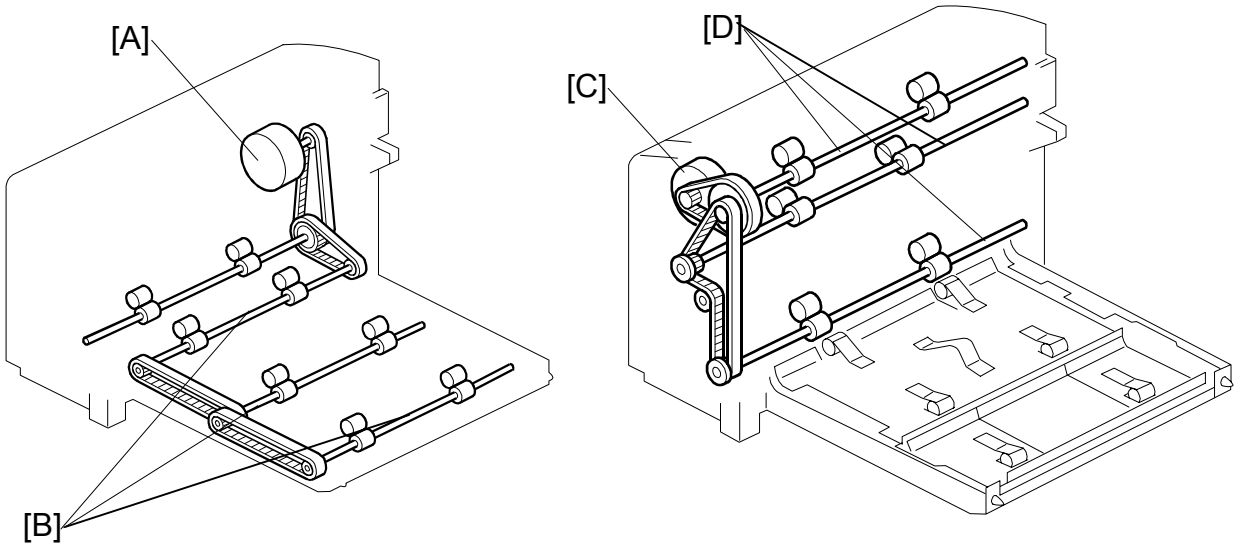
2.1 OVERALL MACHINE INFORMATION

2.1.1 MECHANICAL COMPONENT LAYOUT



1. Junction gate
2. Entrance sensor
3. Inverter rollers
4. Transport rollers
5. Transport sensor
6. Exit sensor

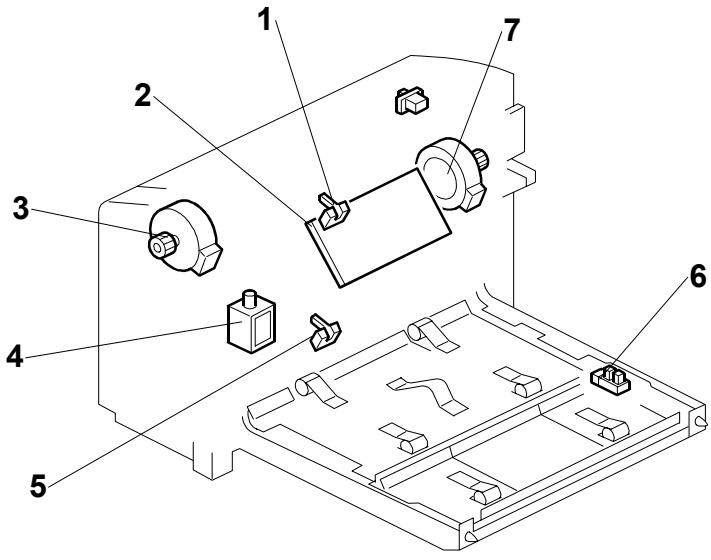
2.1.2 DRIVE LAYOUT



[A]: Transport motor
[B]: Transport rollers
[C]: Inverter motor
[D]: Inverter rollers

2.1.3 ELECTRICAL COMPONENT LAYOUT

1. Entrance sensor
2. Duplex board
3. Inverter motor
4. Junction gate solenoid
5. Inverter sensor
6. Exit sensor
7. Transport motor



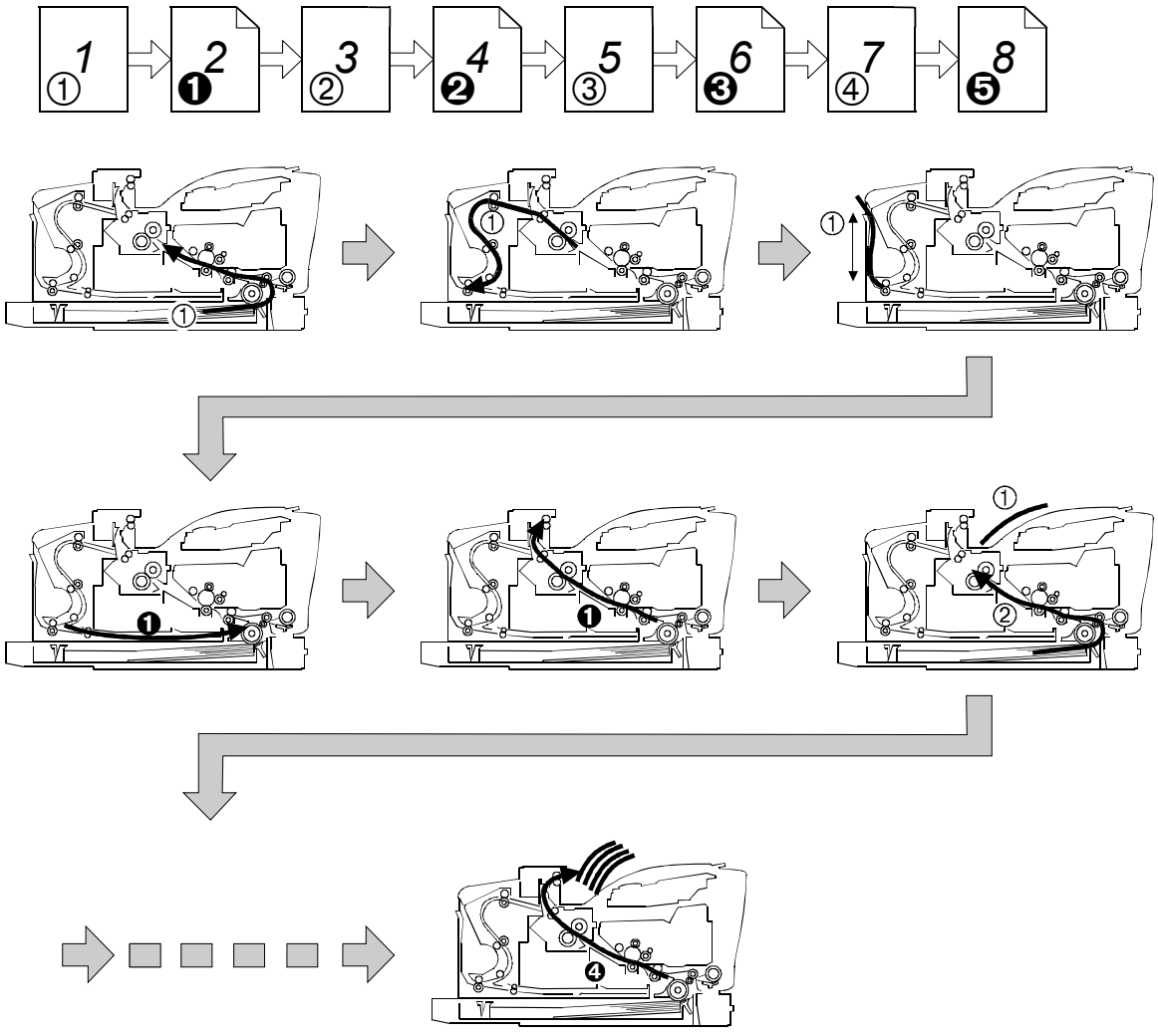
2.2 DETAILED DESCRIPTIONS

2.2.1 BASIC OPERATION

Longer than A4 LEF/LT LEF

- The duplex unit can store only one sheet of paper.

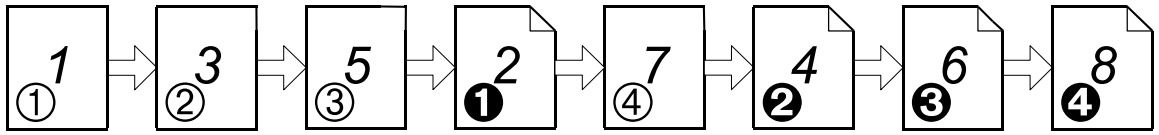
Example: 8 pages. The center number in the illustration shows the order of pages. The number with the circle in the illustration shows the order of sheets of print paper (if highlighted, this indicates the second side).

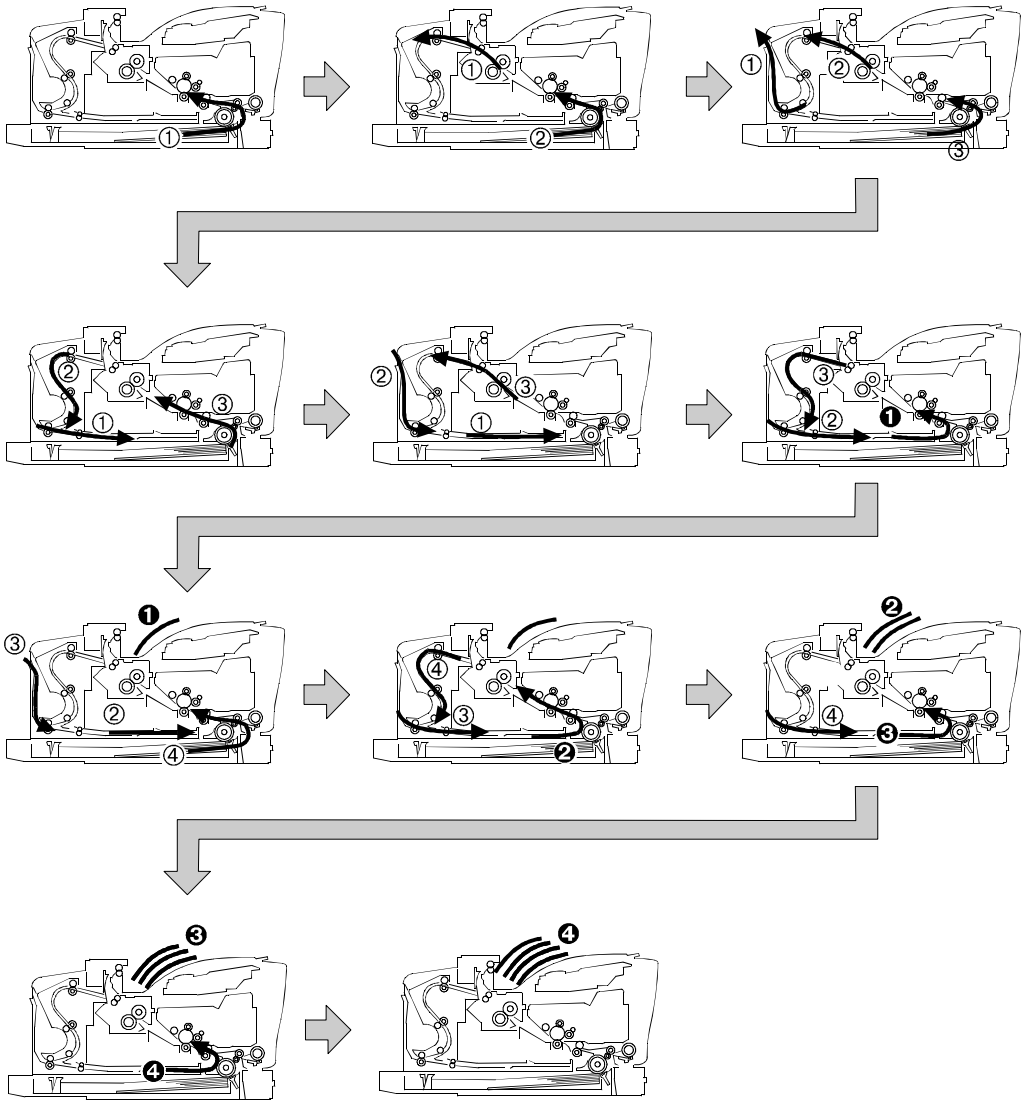


Length up to A4 LEF/LT LEF

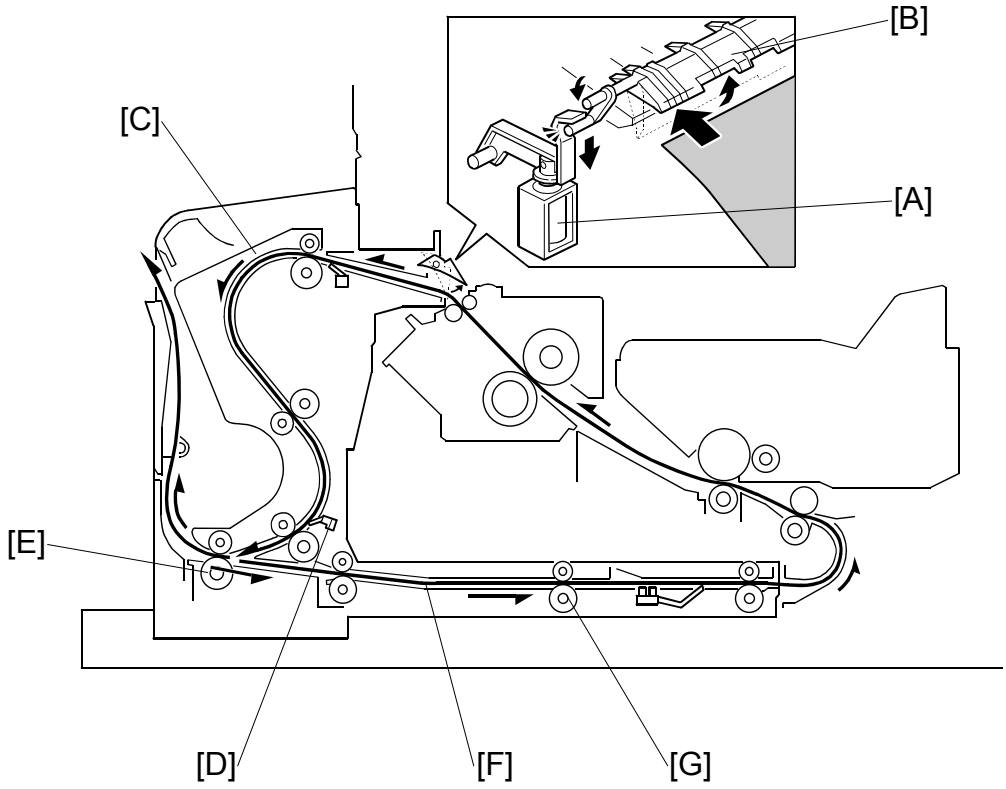
- The duplex unit can store three sheets of paper.

Example: 8 pages. The center number in the illustration shows the order of pages. The number with the circle in the illustration shows the order of sheets of print paper (if highlighted, this indicates the second side).





2.2.2 FEED IN AND EXIT MECHANISM



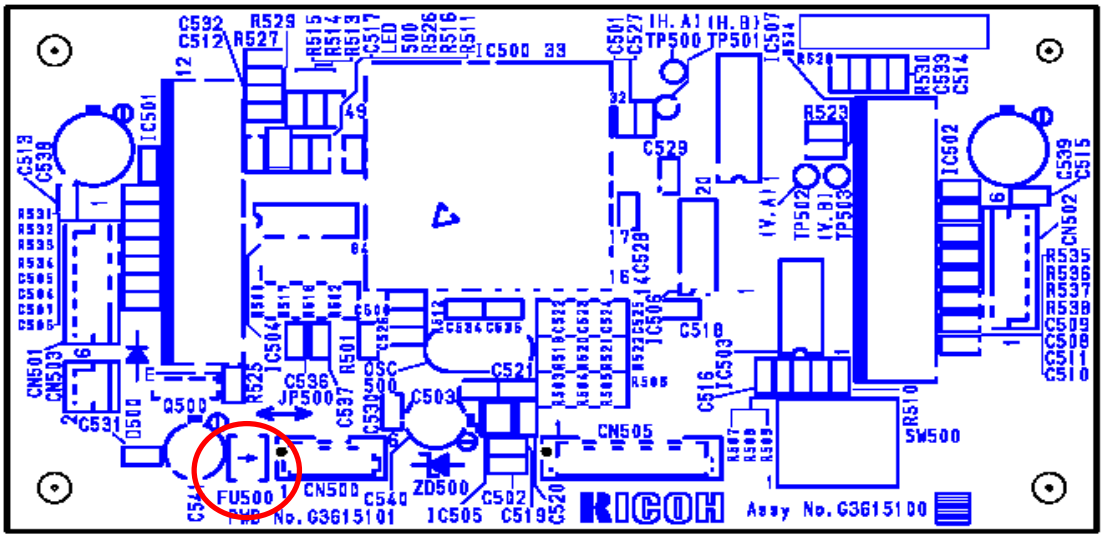
Feeding paper into the duplex unit:

- The junction gate solenoid [A] turns on to open the junction gate [B].
- The paper fed from the main frame is sent to the inverter section [C].

Inversion and exit:

- After the trailing edge of the paper passes the inverter sensor [D], the inverter roller [E] changes its rotation direction and the paper goes to the transport area [F].
- The transport rollers [G] send the paper to the registration rollers in the main frame.

2.3 PROTECTION FUSE



Name	Rating	Manufacturer	Type No.
FU500	DC50V/1.5A	ROHM CO .,LTD	ICP-N38

DUPLEX UNIT
G552

DUPLEX UNIT G552

TABLE OF CONTENTS

1. REPLACEMENT AND ADJUSTMENT

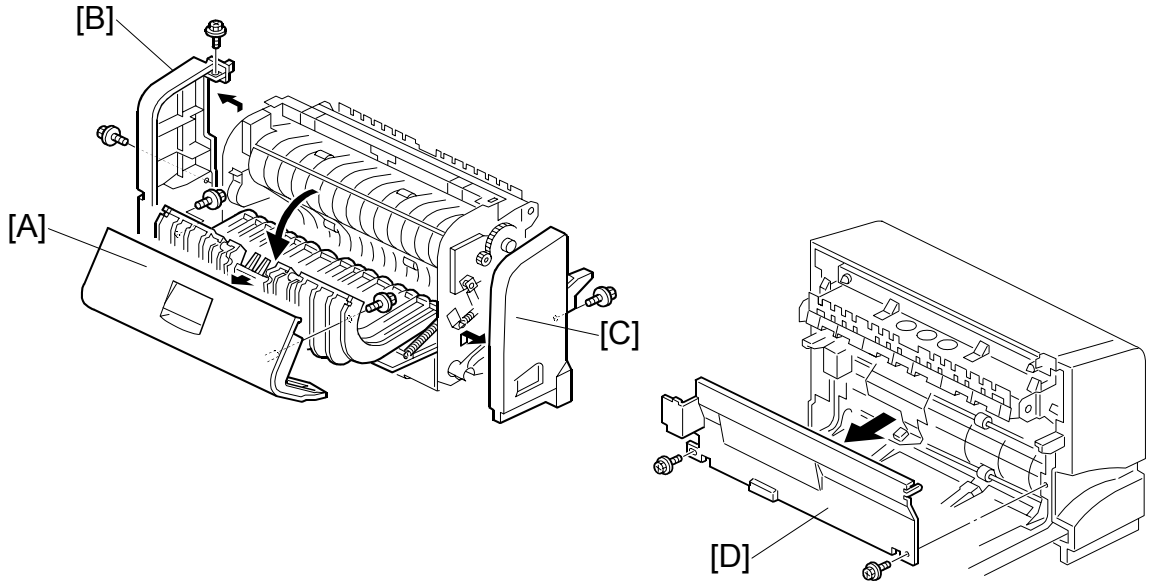
⚠CAUTION
Turn off the main power switch and unplug the machine before attempting any of the procedures in this section.

NOTE: This manual uses these symbols.

☛: See or Refer to : screw : connector

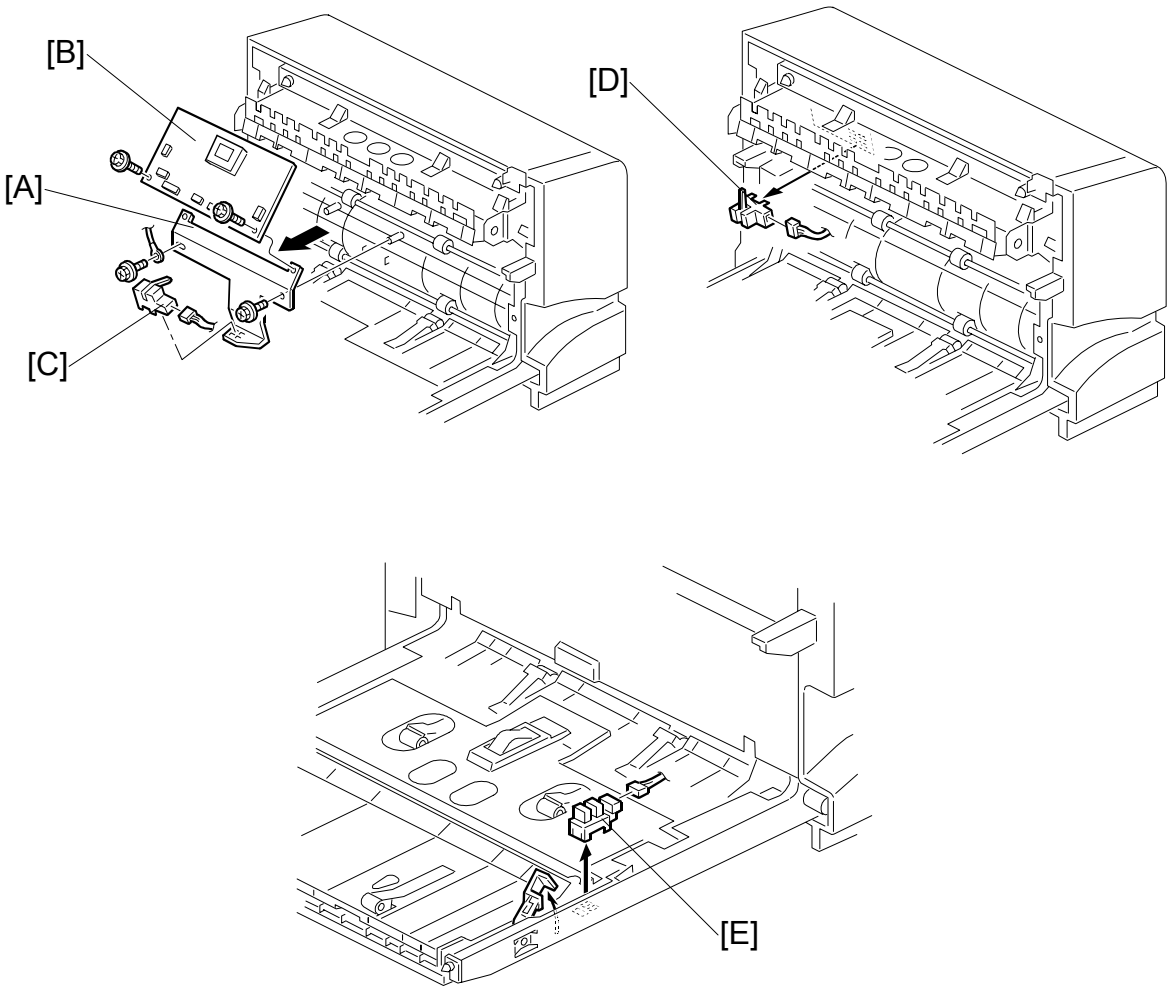
1.1 EXTERIOR COVERS

- Remove the duplex unit from the main unit.
- Open the upper cover [A].



[A]: Upper cover (x 2)
[B]: Right cover (x 2)
[C]: Left cover (x 1)
[D]: Front cover (x 2)

1.2 DUPLEX BOARD AND SENSORS



- Front cover (☛ Exterior Covers)

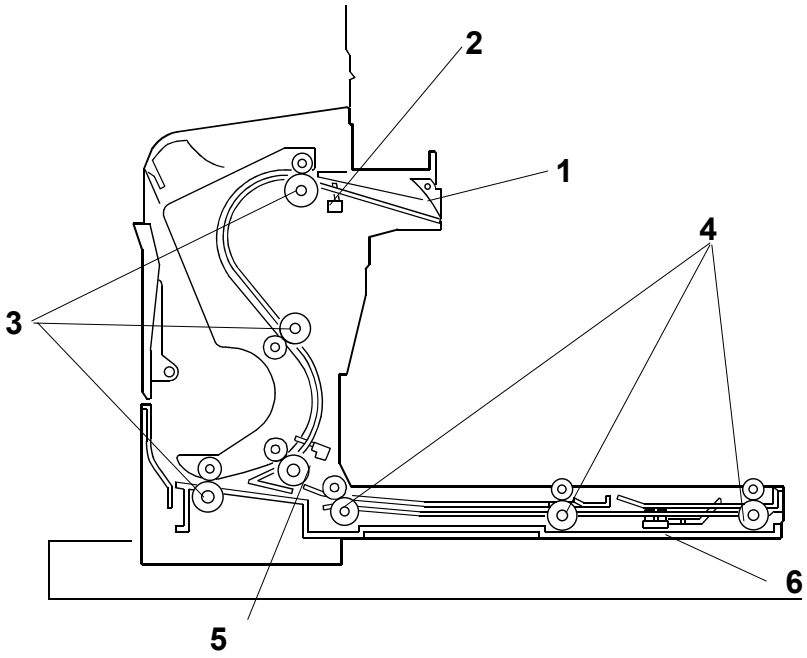
[A]: Duplex board bracket (🔩 x 2)
[B]: Duplex board (🔩 x 2, all connectors)
[C]: Inverter sensor (✋ x 1)
[D]: Entrance sensor (✋ x 1)
[E]: Exit sensor (✋ x 1)

NOTE: The Main Control Board has been changed so that the Duplex Unit will be compatible with G091, which has a faster engine than the G056/G058/G073/G074. Jamming will occur in duplex mode if the wrong main control board is installed in the Duplex Unit in a G091. To distinguish the unit containing the old board versus those containing the new, a circular black mark will be affixed or printed on the box of the new unit.

2. DETAILED DESCRIPTION

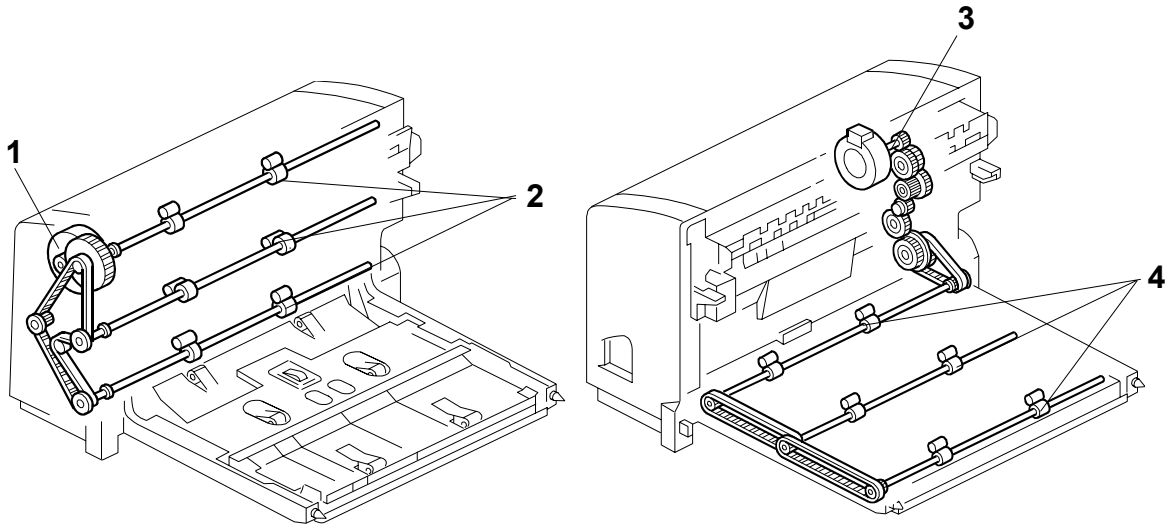
2.1 OVERALL MACHINE INFORMATION

2.1.1 MECHANICAL COMPONENT LAYOUT



1. Junction gate
2. Entrance sensor
3. Inverter rollers
4. Transport rollers
5. Transport sensor
6. Exit sensor

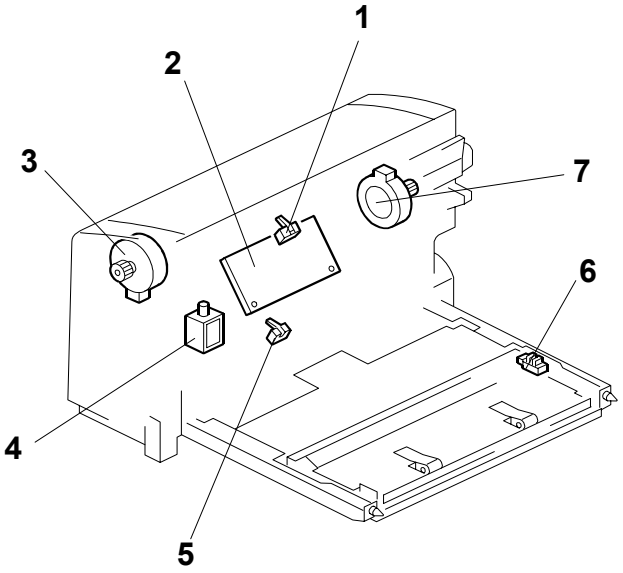
2.1.2 DRIVE LAYOUT



1. Inverter motor
2. Inverter rollers
3. Transport motor
4. Transport rollers

2.1.3 ELECTRICAL COMPONENT LAYOUT

1. Entrance sensor
2. Duplex board
3. Inverter motor
4. Junction gate solenoid
5. Inverter sensor
6. Exit sensor
7. Transport motor



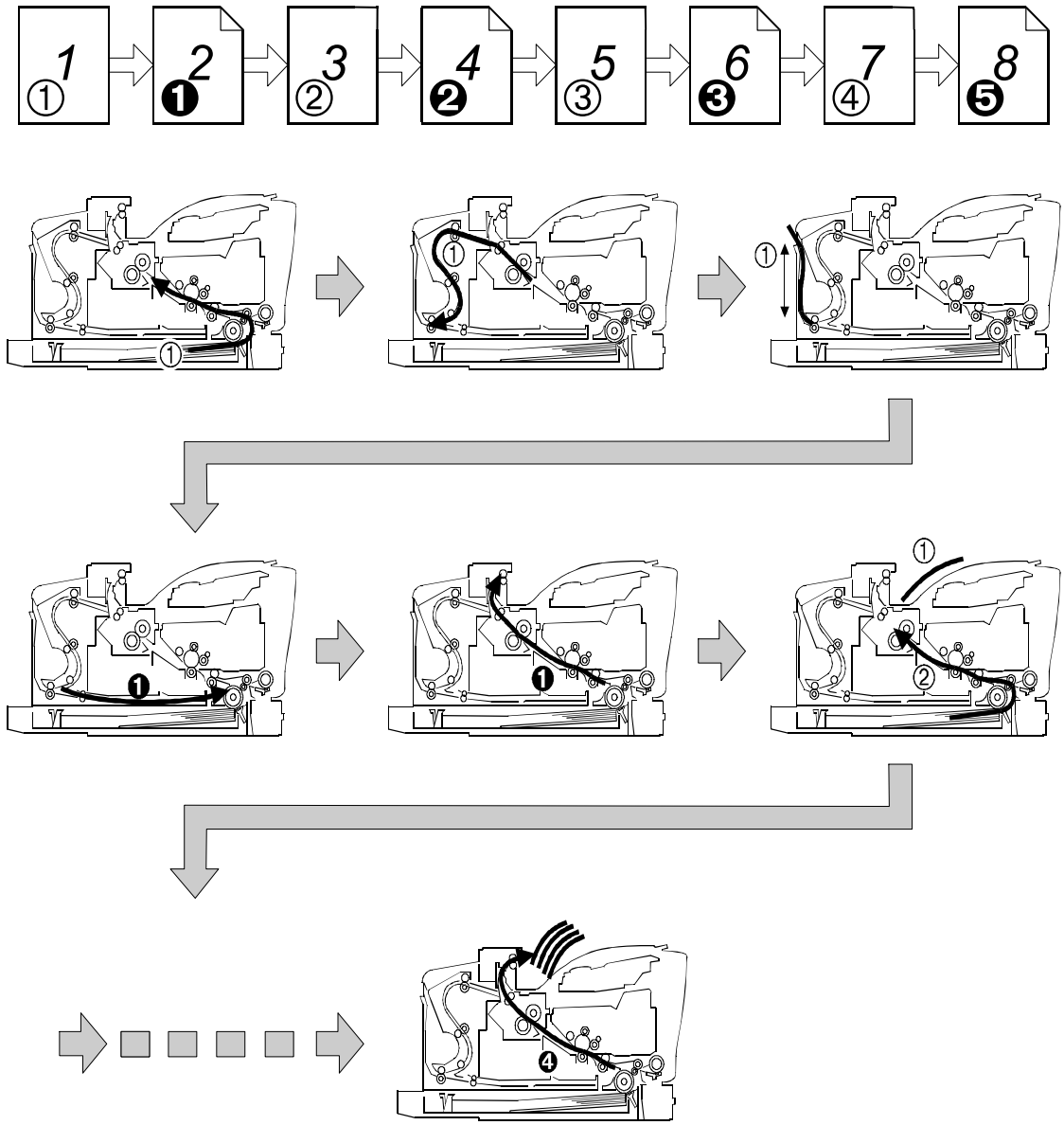
2.2 DETAILED SECTION DESCRIPTIONS

2.2.1 BASIC OPERATION

Longer than A4 LEF/LT LEF

- The duplex unit can store only one sheet of paper.

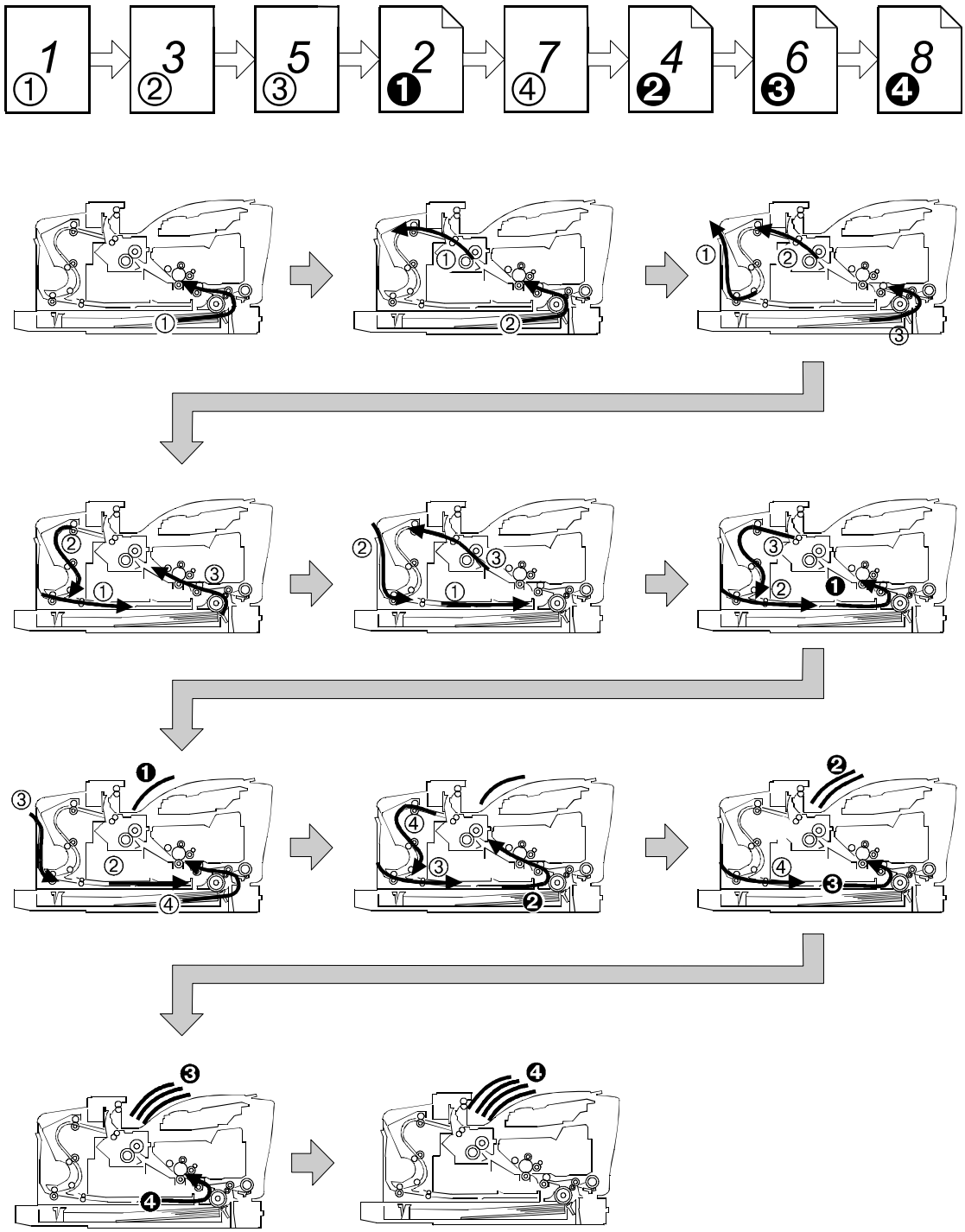
Example: 8 pages. The center number in the illustration shows the order of pages. The number with the circle in the illustration shows the order of sheets of print paper (if highlighted, this indicates the second side).



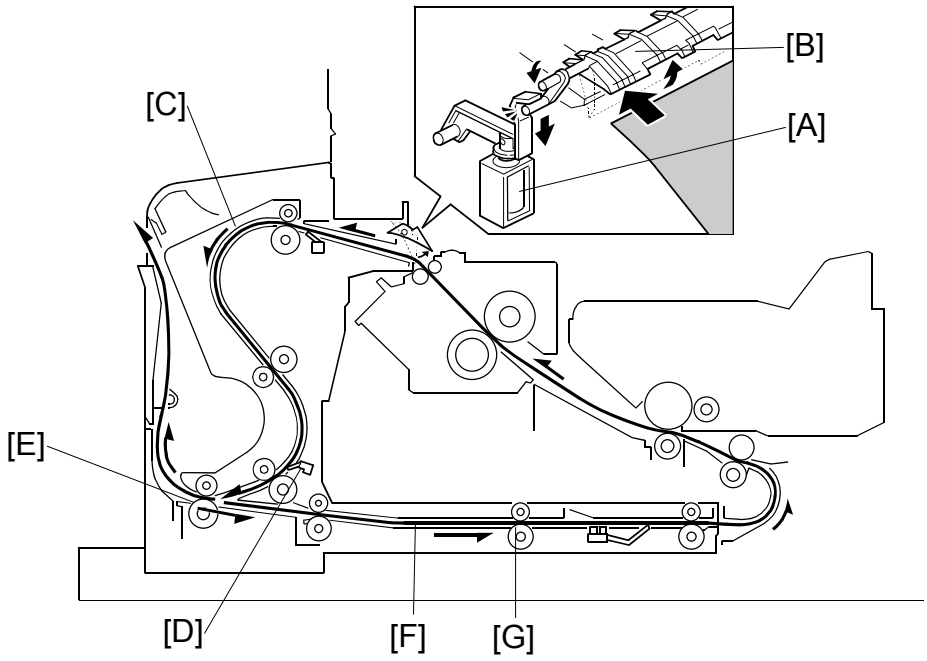
Length up to A4 LEF/LT LEF

- The duplex unit can store three sheets of paper

Example: 8 pages. The center number in the illustration shows the order of pages. The number with the circle in the illustration shows the order of sheets of print paper (if highlighted, this indicates the second side).



2.2.2 FEED IN AND EXIT MECHANISM



Feeding paper into the duplex unit:

- The junction gate solenoid [A] turns on to open the junction gate [B].
- The paper fed from the main frame is sent to the inverter section [C].

Inversion and exit:

- After the trailing edge of the paper passes the inverter sensor [D], the inverter roller [E] changes its rotation direction and the paper goes to the transport area [F].
- The transport rollers [G] send the paper to the registration rollers in the main frame.

FOUR-BIN MAILBOX
G553

FOUR-BIN MAILBOX G553

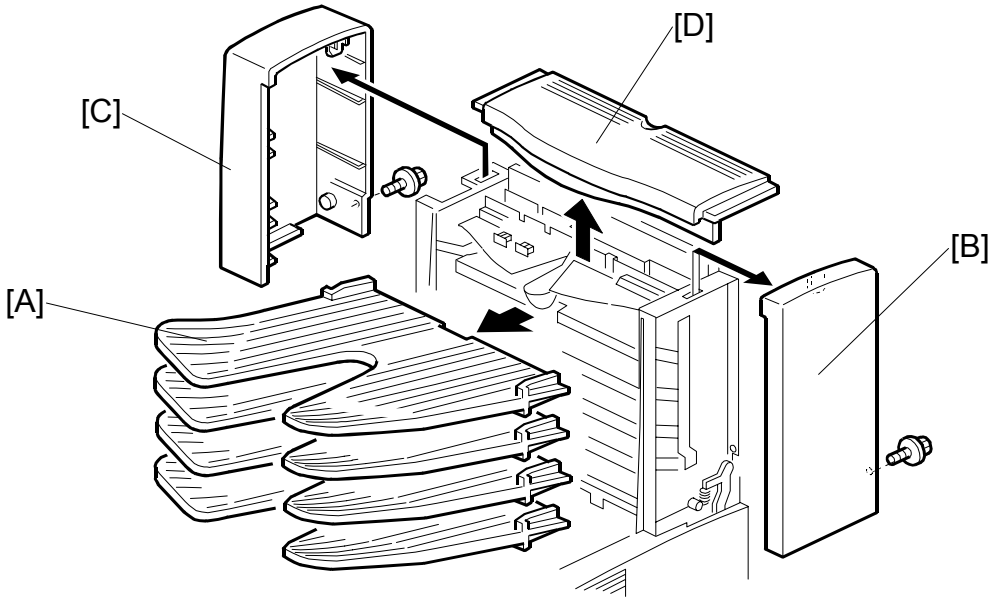
TABLE OF CONTENTS

1. REPLACEMENT AND ADJUSTMENT

⚠CAUTION
Turn off the main power switch and unplug the machine before attempting any of the procedures in this section.

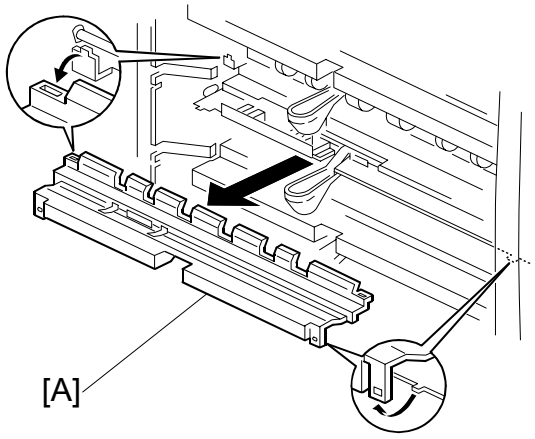
NOTE: This manual uses these symbols.
☛: See or Refer to : screw : connector

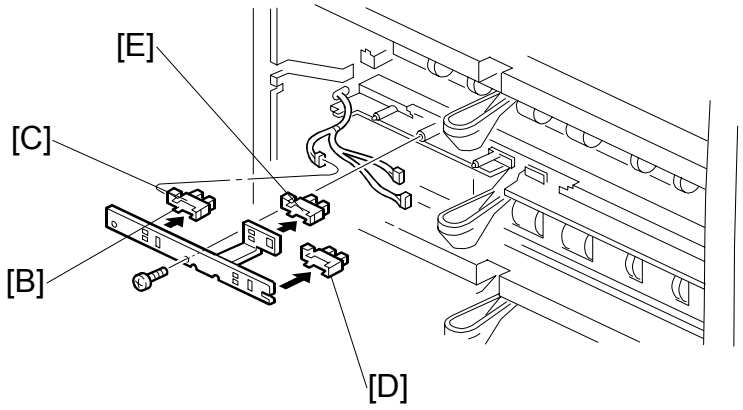
1.1 EXTERIOR COVERS



[A]: Each tray (4 x 1 tray)
[B]: Right cover (x 1)
[C]: Left cover (x 1)
[D]: Upper cover

1.2 OVERFLOW AND VERTICAL TRANSPORT SENSORS

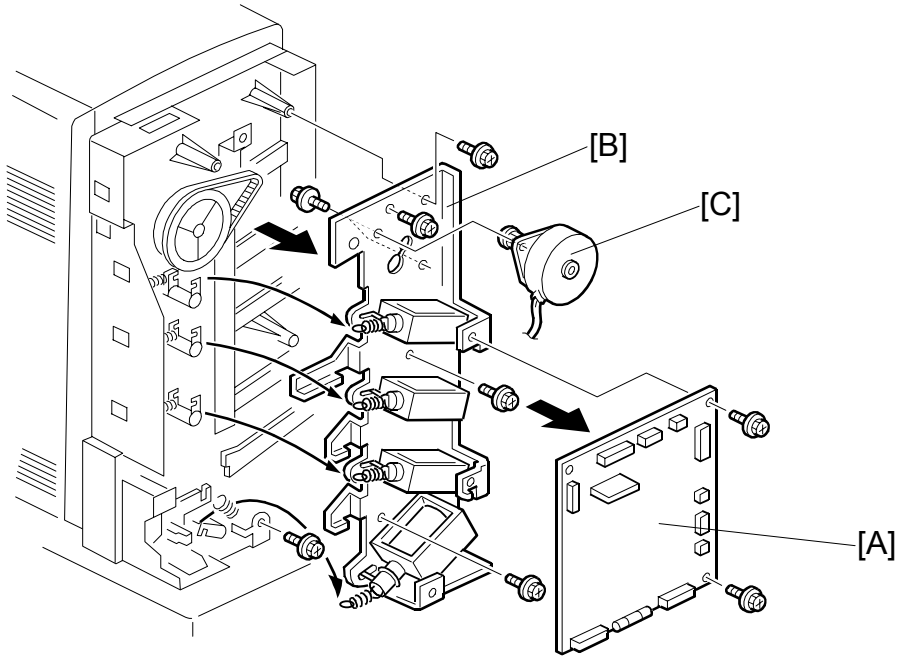




Each tray (☛ Exterior Covers)

[A]: Each tray cover (x 4)
[B]: Sensor holder (☞ x 1)
[C]: Tray paper sensor (☞ x 1)
[D]: Overflow sensor (☞ x 1)
[E]: Vertical transport sensor (☞ x 1)

1.3 MAIN MOTOR



Left cover (☛ Exterior Covers)

[A]: Mailbox board (x 2, x 11)

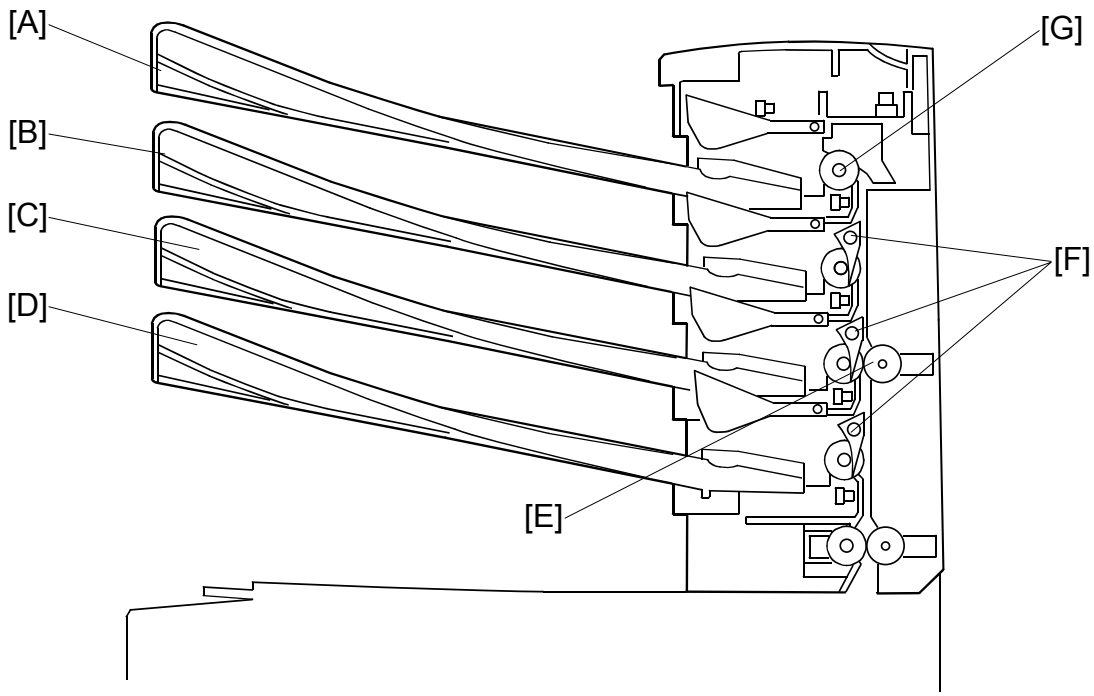
[B]: Drive bracket (x 5)

[C]: Main motor (x 2)

2. DETAILED DESCRIPTIONS

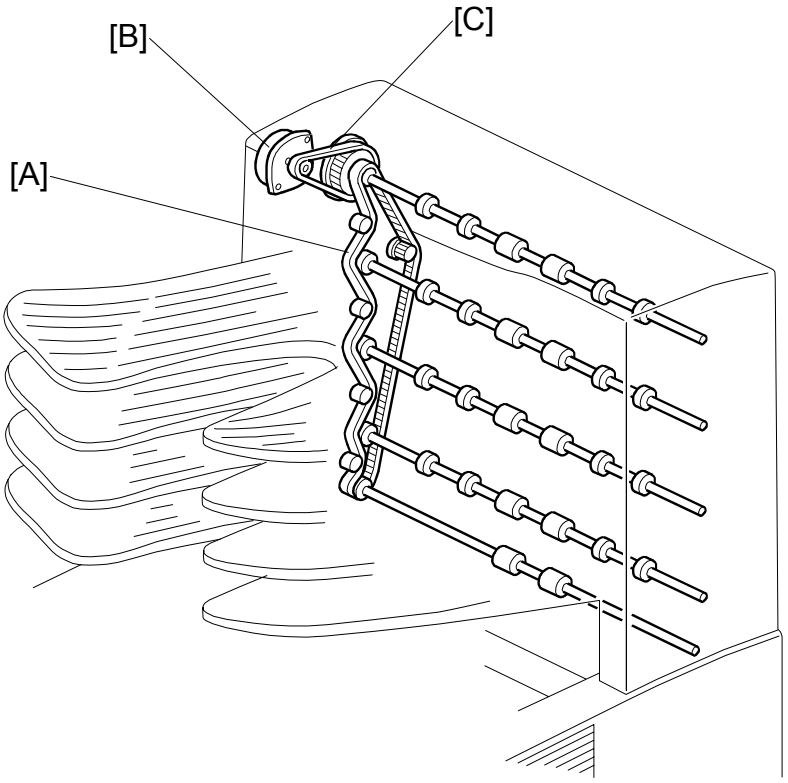
2.1 OVERALL MACHINE INFORMATION

2.1.1 MECHANICAL COMPONENT LAYOUT



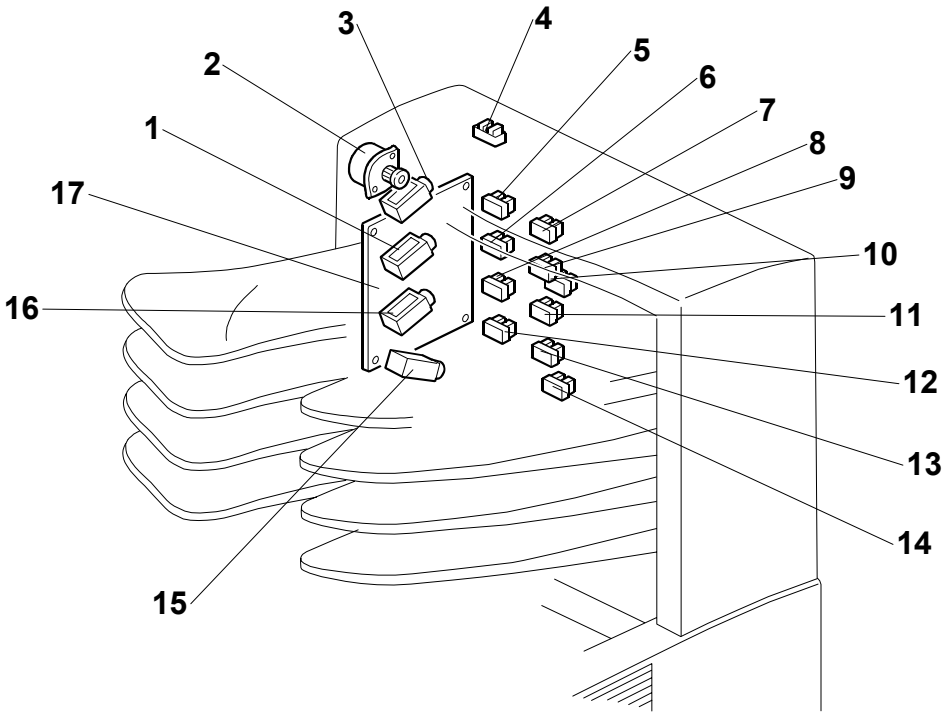
[A]: 4th tray
[B]: 3rd tray
[C]: 2nd tray
[D]: 1st tray
[E]: Vertical transport roller
[F]: Turn gate
[G]: Exit roller

2.1.2 DRIVE LAYOUT



[A]: Timing belt
[B]: Main motor
[C]: Main motor timing belt

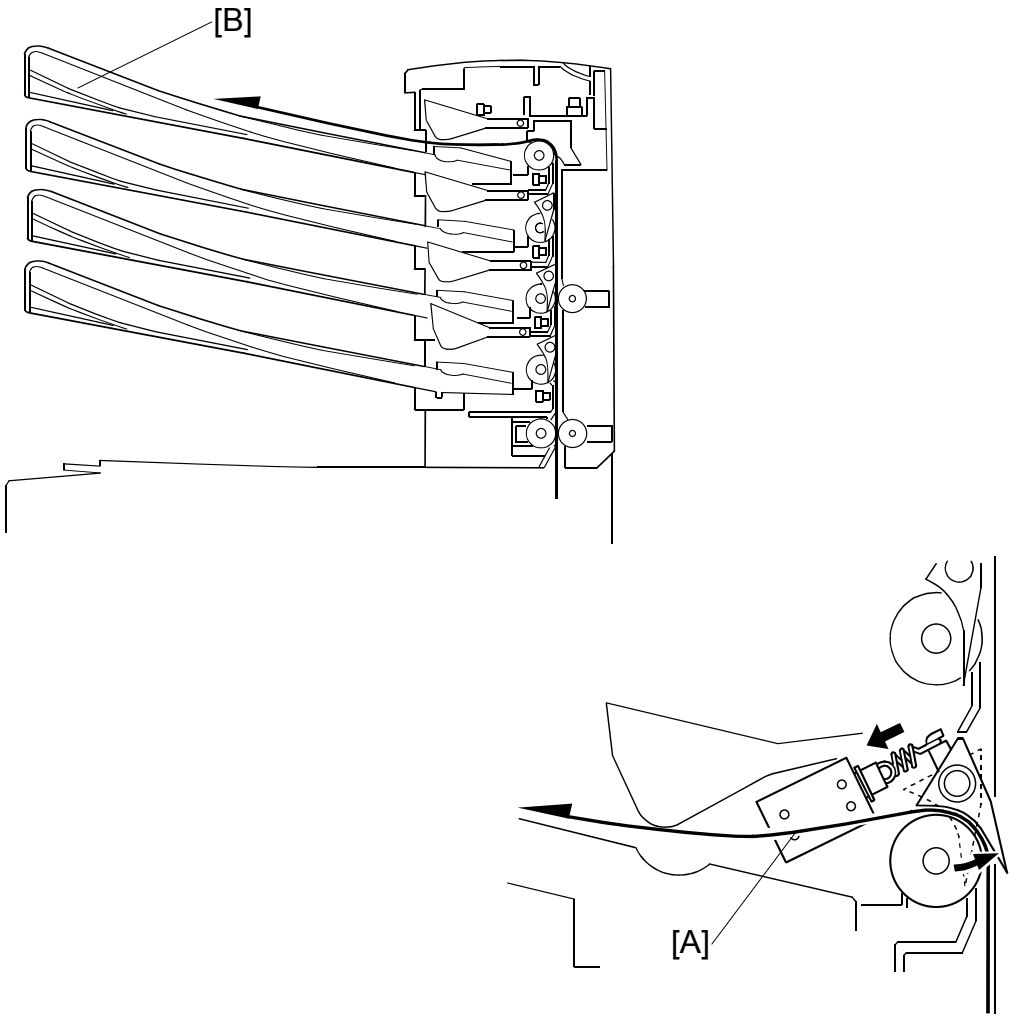
2.1.3 ELECTRICAL COMPONENT LAYOUT



1. 2nd turn gate solenoid
2. Main motor
3. 3rd turn gate solenoid
4. Cover sensor
5. 4th tray paper sensor
6. 3rd tray paper sensor
7. 4th tray overflow sensor
8. 2nd tray paper sensor
9. 3rd tray overflow sensor
10. Upper vertical transport sensor
11. 2nd tray overflow sensor
12. 1st tray paper sensor
13. 1st tray overflow sensor
14. Lower vertical transport sensor
15. Junction gate solenoid
16. 1st turn gate solenoid
17. Mailbox board

2.2 DETAILED SECTION DESCRIPTIONS

2.2.1 BASIC OPERATION



- When the leading edge of the paper activates the exit sensor on the main unit, the mailbox main motor turns on.
- Each turn gate solenoid [A] opens and closes its turn gate, to direct the paper to the selected tray [B].
- When the top tray (4th tray) is selected, none of the solenoids are activated.

After the last sheet passes the upper or lower vertical transport sensor (depending on the selected tray), the main motor, junction gate solenoid, and the turn gate solenoid for the selected tray turn off.

ONE-BIN SHIFT TRAY
G554

ONE-BIN SHIFT TRAY G554

TABLE OF CONTENTS

1. REPLACEMENT AND ADJUSTMENT

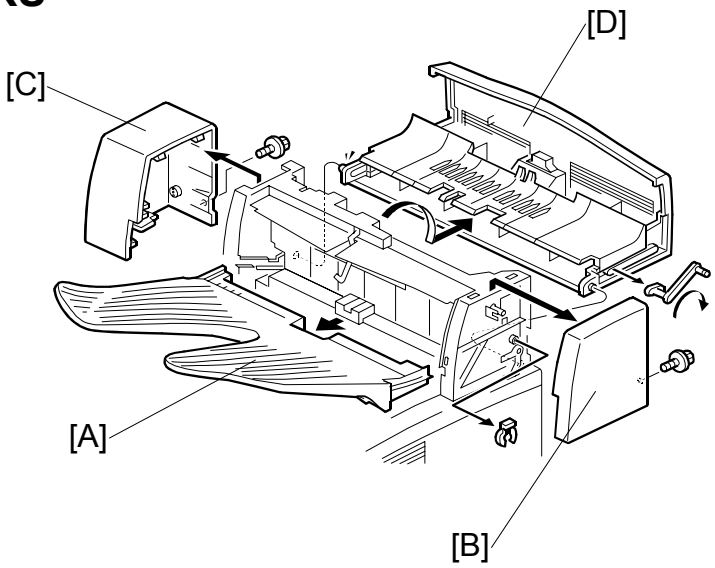
⚠CAUTION

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

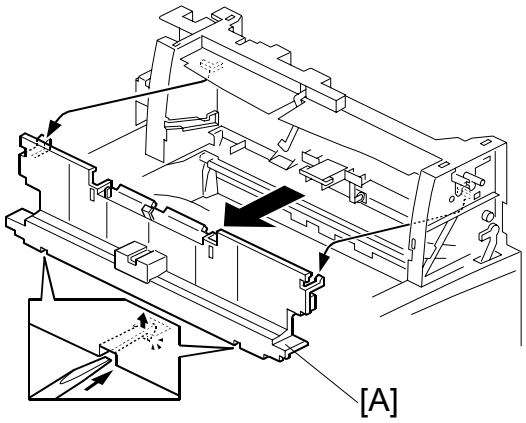
NOTE: This manual uses these symbols.
☛: See or Refer to : screw : connector

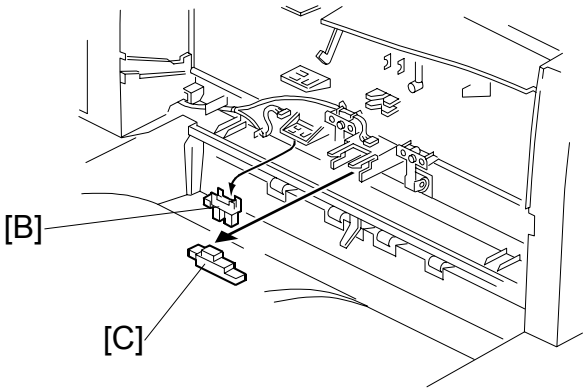
1.1 EXTERIOR COVERS

[A]: Tray
[B]: Right cover (x 1)
[C]: Left cover (x 1)
[D]: Upper cover (1 snap-ring)



1.2 SHIFT TIMING AND TRAY PAPER SENSORS

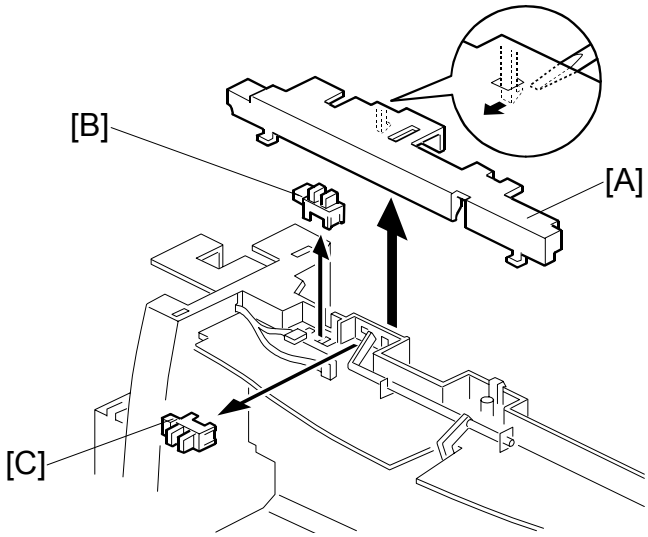




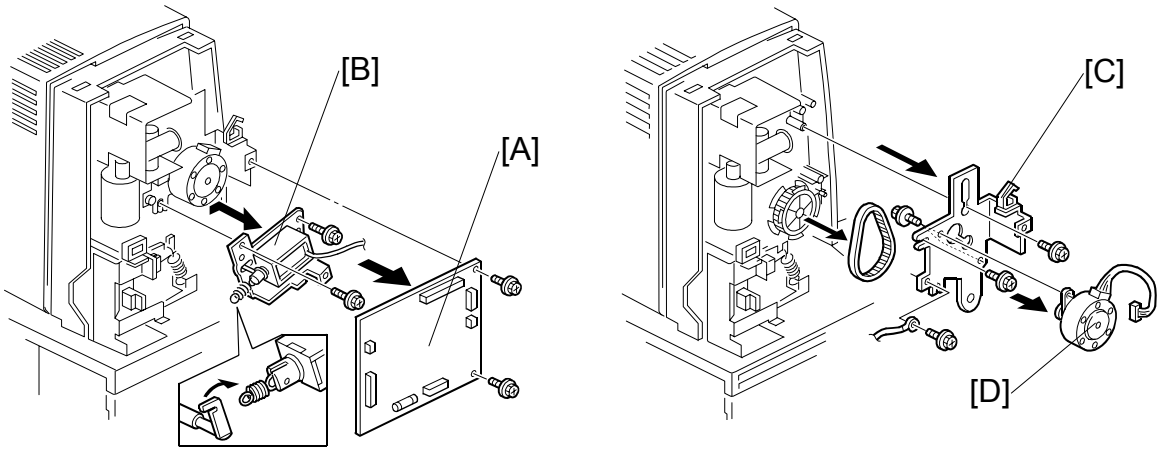
Right cover (☛ Exterior Covers)
[A]: Tray cover
[B]: Shift timing sensor (☞ x 1)
[C]: Tray paper sensor (☞ x 1)

1.3 COVER AND OVERFLOW SENSORS

[A]: Sensor cover
[B]: Cover sensor (☞ x 1)
[C]: Overflow sensor (☞ x 1)



1.4 MAIN MOTOR



Left cover (☛ Exterior Covers)

[A]: Shift tray board (🔩 x 2, 🖐 x 6)
[B]: Junction gate solenoid (🔩 x 2)
[C]: Main motor bracket (🔩 x 3)
[D]: Main motor (🔩 x 2)

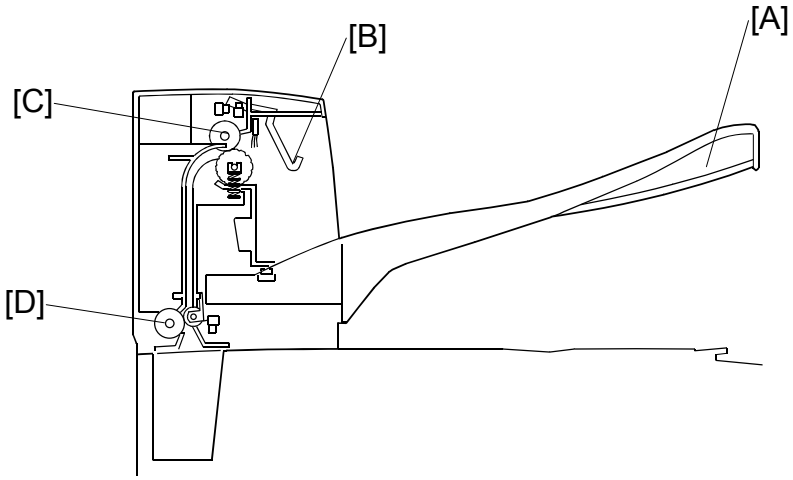
NOTE: The Stepping Motor has been changed so that the 1-Bin Shift Tray will be compatible with the G091, which has a faster engine than the G056/G058/G073/G074. Jamming will occur when using the 1-Bin Shift Tray if the wrong Stepping Motor is installed in the G091. To distinguish the Trays containing the old motor versus those containing the new, a circular black sticker will be affixed to the box of the new Tray.

2. DETAILED DESCRIPTIONS

2.1 OVERALL MACHINE INFORMATION

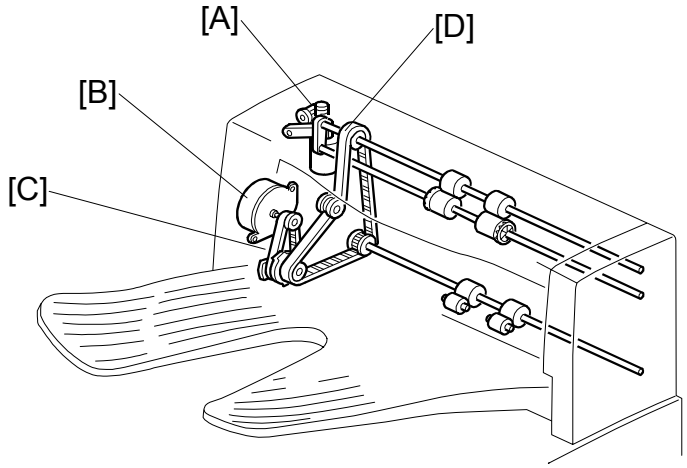
2.1.1 MECHANICAL COMPONENT LAYOUT

[A]: Tray
[B]: Overflow sensor feeler
[C]: Exit roller
[D]: Transport roller

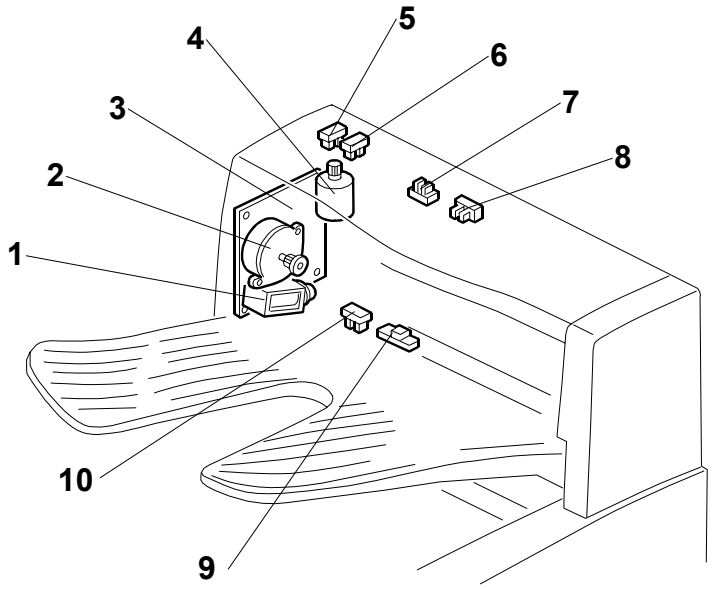


2.1.2 DRIVE LAYOUT

[A]: Shift motor
[B]: Main motor
[C]: Main motor timing belt
[D]: Timing belt

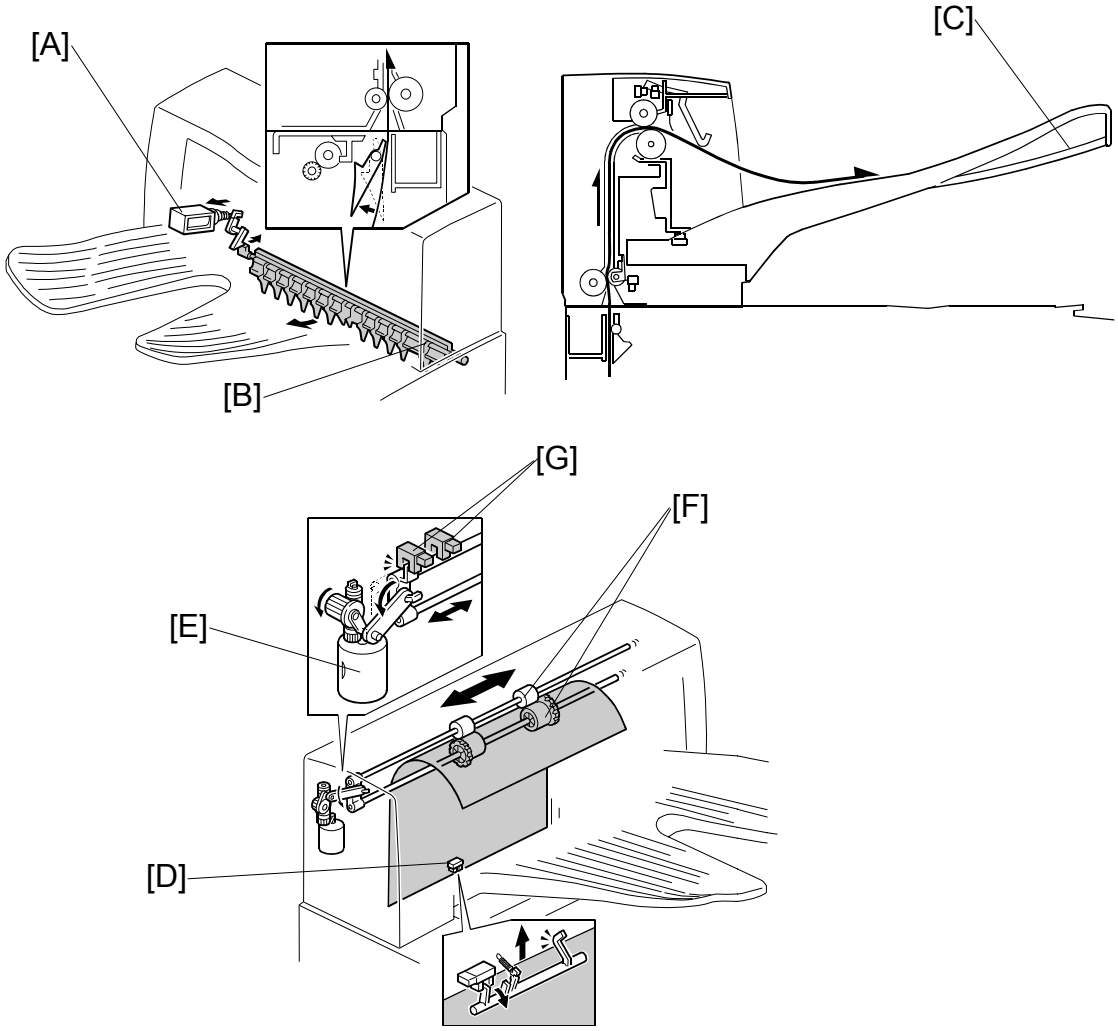


2.1.3 ELECTRICAL COMPONENT LAYOUT



1. Junction gate solenoid
2. Main motor
3. Shift tray board
4. Shift motor
5. Left shift sensor
6. Right shift sensor
7. Cover sensor
8. Paper overflow sensor
9. Tray paper sensor
10. Shift timing sensor

2.1.4 BASIC OPERATION



- The solenoid [A] opens the junction gates [B] to direct the paper to the tray.

2.1.5 SORT MODE OPERATION

- When the trailing edge of each page passes the shift timing sensor [D], the shift motor [E] shifts the exit rollers [F] across. When the left or right shift sensor [G] detects the rollers, the motor stops, then returns the rollers to the center.
- Each page of the first set is shifted to one side, then each page of the next set is shifted to the other side. The rollers move back to the central position after shifting each page.

PAPER TRAY UNIT
G555

ENVELOPE FEEDER
G556

PAPER TRAY UNIT G555/ENVELOPE FEEDER G556

TABLE OF CONTENTS

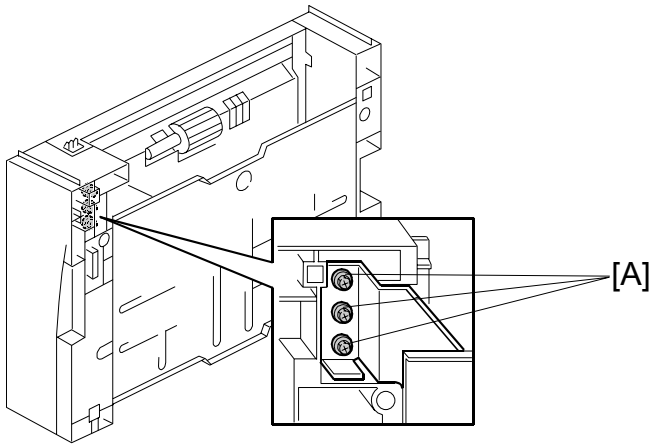
1. REPLACEMENT AND ADJUSTMENT

⚠CAUTION
Turn off the main power switch and unplug the machine before attempting any of the procedures in this section.

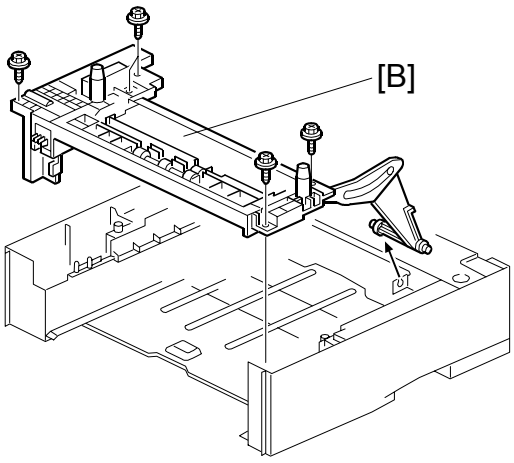
NOTE: This manual uses these symbols.
☛: See or Refer to : screw : connector

1.1 PAPER FEED UNIT

- Remove the paper tray unit from the main unit.
- Pull out the paper tray.

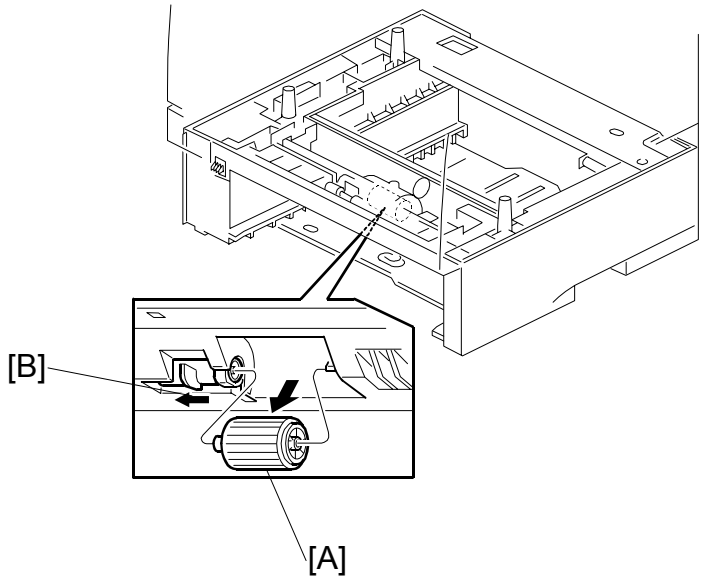


Turn the paper tray unit over and remove the three sliver screws [A] first. Do not remove the other screws from this side.



[B]: Remove the paper feed unit (x 5).
NOTE: You must remove eight screws in total to remove the paper feed unit [B].

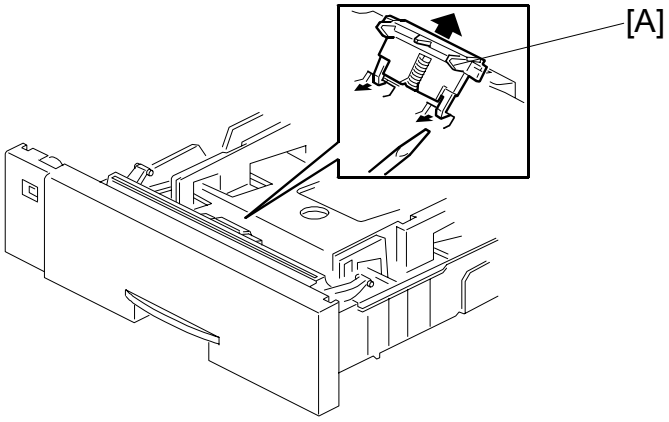
1.2 PAPER FEED ROLLER



- Pull out the paper tray

[A]: Paper feed roller (move the lever [B] to the left)

1.3 FRICTION PAD



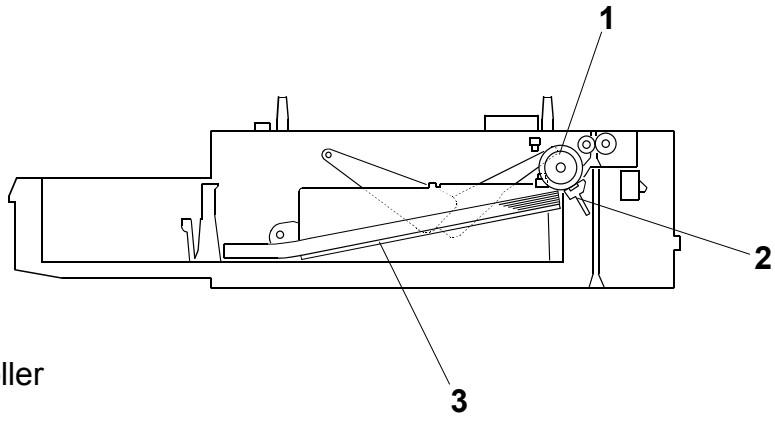
- Pull out the paper tray.

[A]: Friction pad

2. DETAILED DESCRIPTIONS

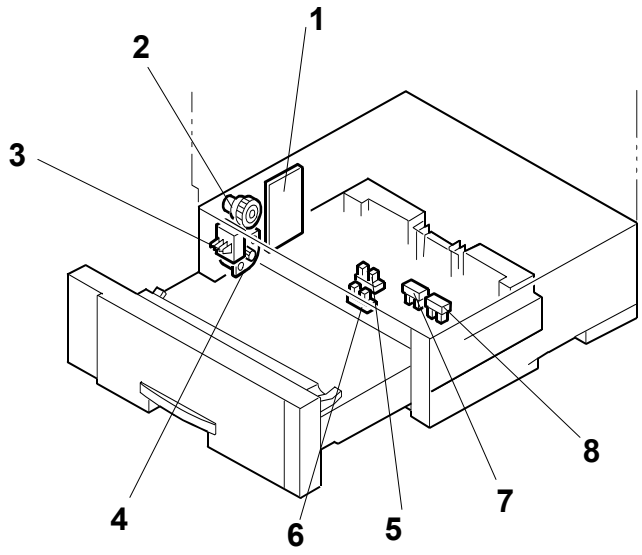
2.1 OVERALL MACHINE INFORMATION

2.1.1 MECHANICAL COMPONENT LAYOUT



1. Paper feed roller
2. Friction pad
3. Bottom plate

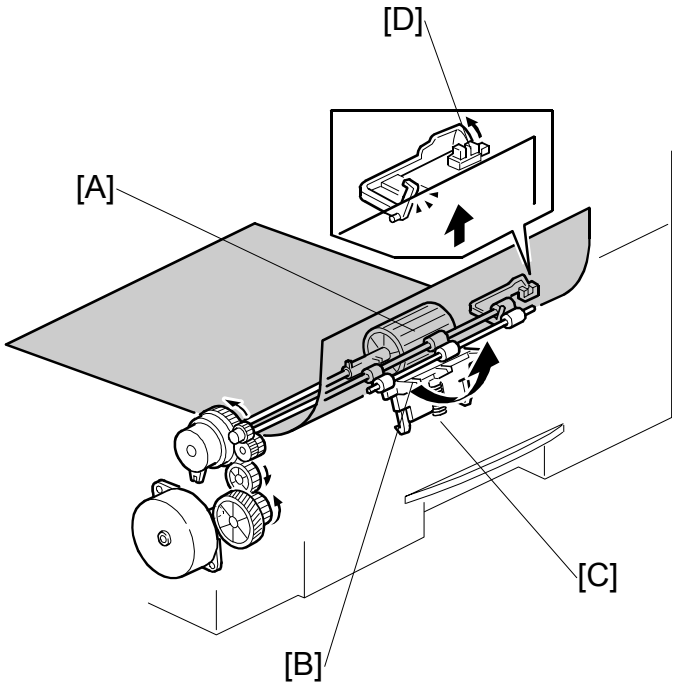
2.1.2 ELECTRICAL COMPONENT LAYOUT



1. Paper tray board
2. Paper feed clutch
3. Paper size switch
4. Paper feed motor
5. Paper feed sensor
6. Paper end sensor
7. Remaining paper sensor 1
8. Remaining paper sensor 2

2.2 DETAILED SECTION DESCRIPTIONS

2.2.1 PAPER FEED AND SEPARATION



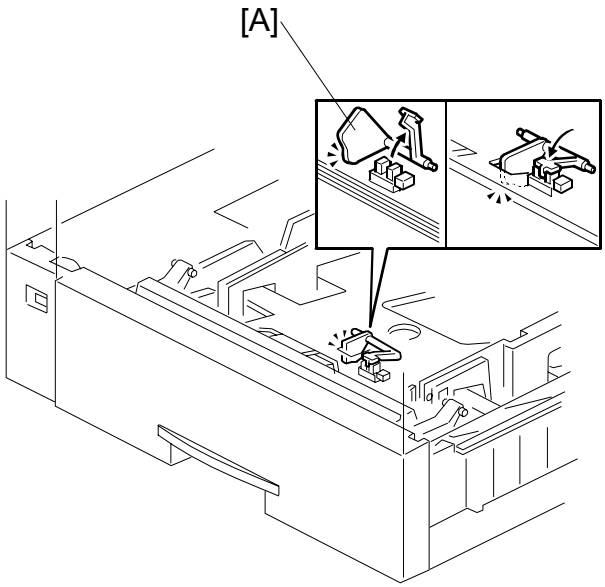
NOTE: The paper tray holds 500 sheets.

- The paper feed unit uses a feed roller and friction pad mechanism.
  [A]: Paper feed roller
  [B]: Friction pad
  [C]: Pressure spring
  [D]: Paper feed sensor

2.2.2 PAPER LIFT

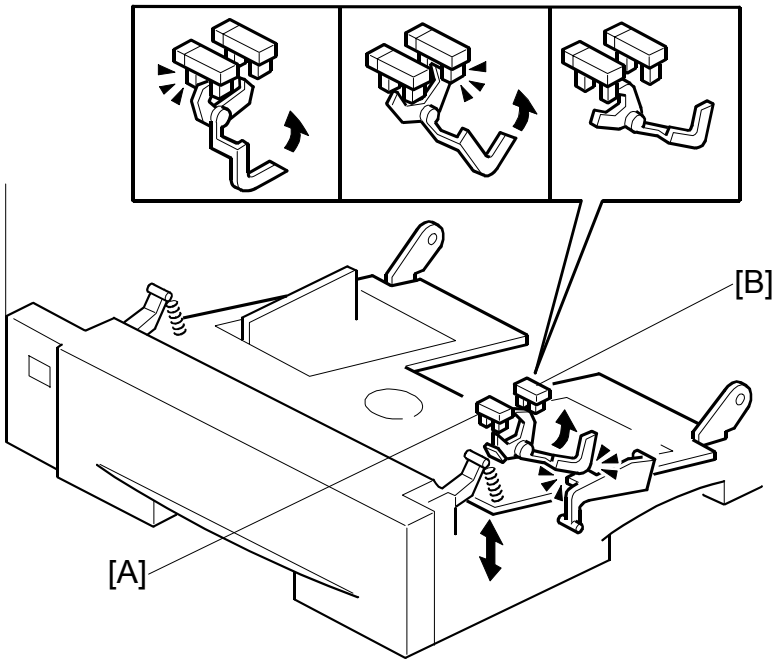
Paper lift is the same as for the main unit.

2.2.3 PAPER END DETECTION



- When the paper tray runs out of paper, the feeler [A] drops into the cutout in the bottom plate to actuate the paper end sensor.

2.2.4 REMAINING PAPER DETECTION



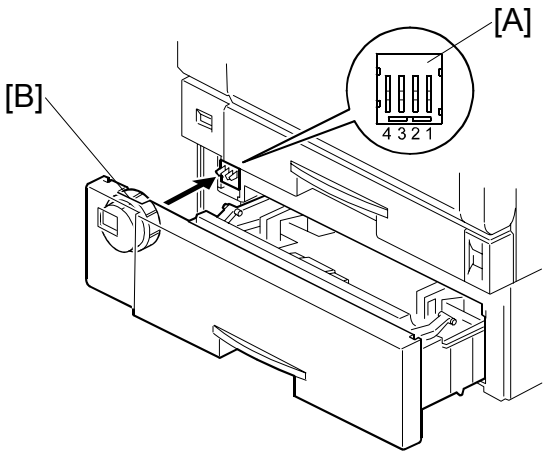
Amount of paper	Remaining paper sensor 1	Remaining paper sensor 2
0 sheets (0%)	On	On
50 sheets (10%)	On	On
250 sheets (50%)	On	Off
450 sheets (90%)	Off	Off
500 sheets (100%)	Off	On

OFF: Unblocked, ON: Blocked

2.2.5 PAPER SIZE DETECTION

SW / Size	1	2	3	4
A3	●	●	●	●
A4 LEF (Long Edge Feed)	●	●	❍	❍
A4 SEF (Short Edge Feed)	●	●	●	❍
8 1/2" x 11" LEF	●	❍	❍	●
11" x 17"	●	❍	●	●
14" x 8 1/2" SEF	●	❍	●	❍
11" x 8 1/2" SEF	●	●	❍	●
* (Asterisk)	●	❍	❍	❍

❍: ON (Not pushed)
●: OFF (Pushed)



[A]: Paper size switch
[B]: Paper size dial

- The machine disables paper feed from a tray if the paper size cannot be detected (if the paper size actuator is broken or no tray is installed)
- When the paper size dial is at the "*" mark, the paper tray can be set up to accommodate one of a wider range of paper sizes by using a User Tool at the machine's operation panel (Paper Input menu – Tray Paper Size).

3. ENVELOPE FEEDER

3.1 OVERALL MACHINE INFORMATION

3.1.1 MECHANICAL COMPONENT LAYOUT

- This optional unit is a tray that slides into the optional paper feed unit, replacing the paper tray.
- If two optional trays have been installed, the envelope feeder must go into the top tray.
- The layout is the same as the paper tray.
- The tray pushes down and locks the mechanism in place
- The paper size can be fixed using the end fence.
- The end fence prevents the envelopes from overflowing and spilling out of the envelope unit.

PAPER TRAY UNIT TYPE 610
G399

ENVELOPE FEEDER TYPE 610
G807

PAPER TRAY UNIT G399/ENVELOPE FEEDER G807

TABLE OF CONTENTS

1. REPLACEMENT AND ADJUSTMENT

⚠CAUTION

Turn off the main power switch and unplug the machine before you do any of the procedures in this section.

1.1 PAPER FEED UNIT

Refer to the G555 Service Manual for details

1.2 PAPER FEED ROLLER

Refer to the G555 Service Manual for details

1.3 FRICTION PAD

Refer to the G555 Service Manual for details

1.4 PAPER FEED CLUTCH

Refer to the G360 Service Manual for illustration. (Although this is the Service Manual for the G112/G113 machines, the procedures are the similar. However they are not in the same order)

1. Motor Bracket [C] (☞ x 3)
2. Paper feed gear [B] (⌀ x 1)
3. Paper feed clutch [A] (1 gear, 1 hook, ☜ x 1)
4. Motor [D] (☞ x 2, ☜ x 1)

1.5 PAPER TRAY BOARD

Refer to the G360Service Manual for details. (Although this is the Service Manual for the G112/G113 machines, the procedures are the similar. However they are not in the same order)

1. Paper tray board (2 hooks, ☜ x 4, ☞ x 2)

1.6 PAPER SIZE SWITCH

Refer to the G360 Service Manual for details. (Although this is the Service Manual for the G112/G113 machines, the procedures are the same)

2. DETAILED DESCRIPTIONS

2.1 OVERALL MACHINE INFORMATION

2.1.1 MECHANICAL COMPONENT LAYOUT

Refer to the G555 Service Manual for details

2.1.2 ELECTRICAL COMPONENT LAYOUT

Refer to the G555 Service Manual for details

2.2 DETAILED DESCRIPTIONS

2.2.1 PAPER FEED AND SEPARATION

Refer to the G555 Service Manual for details

2.2.2 PAPER LIFT

Refer to the G555 Service Manual for details

2.2.3 PAPER END DETECTION

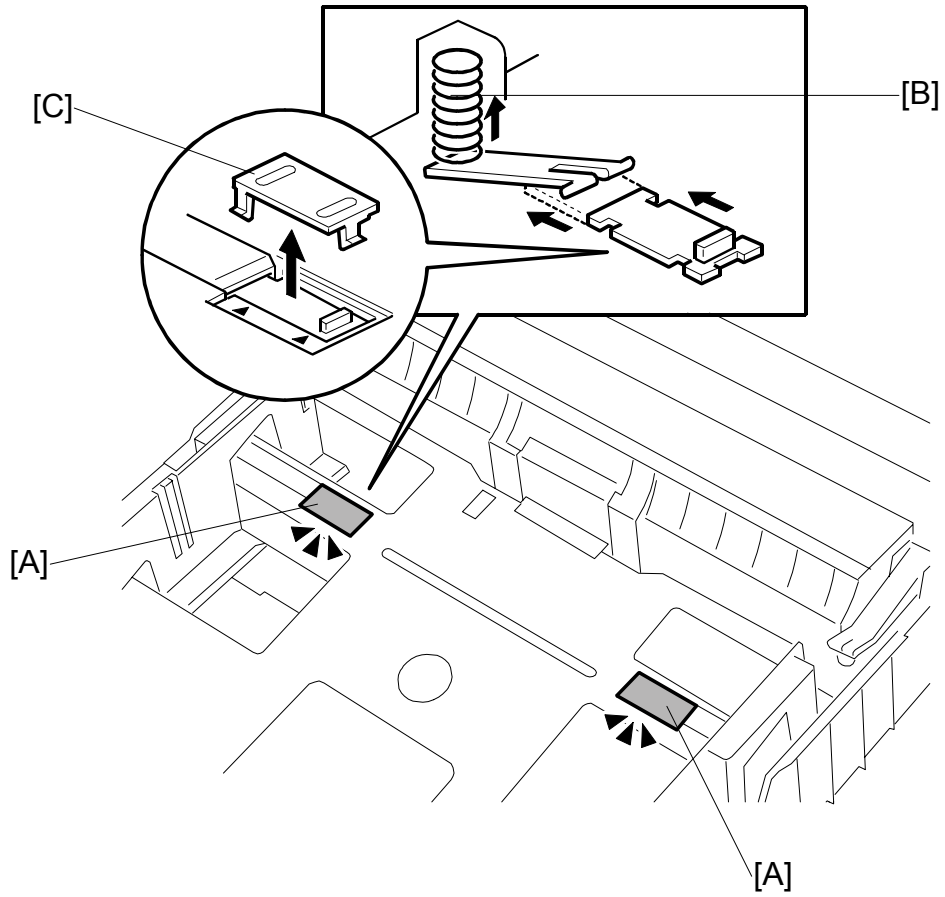
2.2.4 REMAINING PAPER DETECTION

Refer to the G555 Service Manual for details

2.2.5 PAPER SIZE DETECTION

Refer to the G555 Service Manual for details

2.2.6 PAPER PRESSURE SWITCH



The paper pressure switches [A] slide from left to right and from right to left. The switch is used to increase upward pressure on the paper from the bottom plate. This helps to prevent paper misfeeds.

Do this procedure to use the paper pressure switch:

1) Remove the two plastic latch covers [C].

- Be very careful when you remove these latches. They break very easily.
- Use a small screwdriver to remove the latches.

2) Slide the paper tension switches [A] away from the center of the paper tray unit.

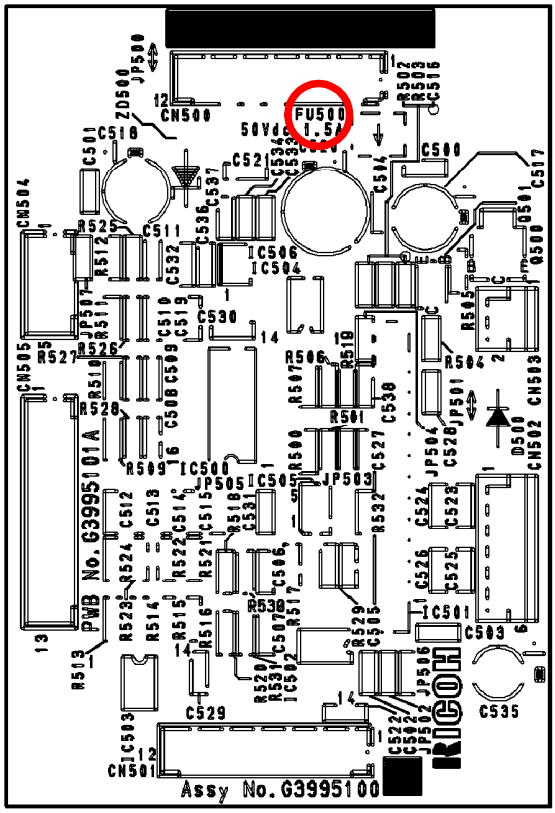
3) Replace the plastic latches [C]

The springs [B] increase the tension from the bottom plate when you move the paper pressure switches. At this time more pressure is applied to the paper.

Only use this procedure if the customer complains about paper misfeeds, especially double feed conditions. Otherwise the switch should not be used.

The default position is “not set”, or, both switches pushed toward the center of the paper tray unit.

2.3 PROTECTION FUSE



Name	Rating	Manufacturer	Type No.
FU500	DC50V/1.5A	ROHM CO. LTD	ICP-N38

3. ENVELOPE FEEDER

3.1 OVERALL MACHINE INFORMATION

3.1.1 MECHANICAL COMPONENT LAYOUT

Refer to the G555 Service Manual for details

DUPLEX UNIT TYPE 610
G806

DUPLEX UNIT G806

TABLE OF CONTENTS

1. REPLACEMENT AND ADJUSTMENT

⚠CAUTION

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

1.1 EXTERIOR COVERS

Refer to the G552 Service Manual for details.

1.2 DUPLEX BOARD AND SENSORS

Refer to the G552 Service Manual for details.

2. DETAILED DESCRIPTIONS

2.1 OVERALL MACHINE INFORMATION

2.1.1 MECHANICAL COMPONENT LAYOUT

Refer to the G552 Service Manual for details.

2.1.2 DRIVE LAYOUT

Refer to the G552 Service Manual for details.

2.1.3 ELECTRICAL COMPONENT LAYOUT

Refer to the G552 Service Manual for details.

2.2 DETAILED DESCRIPTIONS

2.2.1 BASIC OPERATION

Refer to the G552 Service Manual for details.

2.2.2 FEED IN AND EXIT MECHANISM

Refer to the G552 Service Manual for details.