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G176/G177
SERVICE MANUAL

003037MIU

Gestetner **LANIER RICOH SAVIN**



G176/G177
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SAVIN



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LEGEND

PRODUCT CODE	COMPANY			
	GESTETNER	LANIER	RICOH	SAVIN
G176	P7031n	LP131n	SP 4100N	MLP31n
G177	P7035n	LP136n	SP 4110N	MLP36n

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G176/G177

TABLE OF CONTENTS

INSTALLATION

1. INSTALLATION	1-1
1.1 INSTALLATION REQUIREMENTS	1-1
1.1.1 ENVIRONMENT	1-1
1.1.2 MACHINE LEVEL	1-2
1.1.3 REQUIRED SPACE	1-2
1.1.4 POWER SUPPLY	1-2
1.2 MACHINE INSTALLATION	1-3
1.3 DATA OVERWRITE SECURITY UNIT INSTALLATION	1-4
1.3.1 INSTALLATION	1-4
1.3.2 CHECKING AND COMPLETING THE INSTALLATION	1-5

PREVENTIVE MAINTENANCE

2. PREVENTIVE MAINTENANCE	2-1
2.1 USER MAINTENANCE	2-1
2.2 SERVICE MAINTENANCE	2-2

REPLACEMENT AND ADJUSTMENT

3. REPLACEMENT AND ADJUSTMENT	3-1
3.1 GENERAL	3-1
3.1.1 PRECAUTIONS ON DISASSEMBLY	3-1
3.1.2 RELEASING PLASTIC LATCHES	3-2
3.1.3 AFTER SERVICING THE MACHINE	3-3
3.2 SPECIAL TOOLS	3-4
3.3 COVERS	3-5
3.3.1 FRONT COVER	3-5
3.3.2 UPPER COVER	3-5

3.3.3 BY-PASS TRAY UNIT	3-6
3.3.4 EXTERIOR COVERS	3-6
3.4 LASER UNIT	3-7
3.4.1 CAUTION DECAL LOCATIONS	3-7
3.4.2 POLYGON MIRROR MOTOR	3-7
3.4.3 LASER SYNCHRONIZATION DETECTOR	3-8
3.4.4 LASER UNIT	3-9
3.4.5 LASER DIODE UNIT	3-10
3.4.6 LASER BEAM PITCH ADJUSTMENT	3-10
3.5 TRANSFER ROLLER	3-13
3.6 TONER END SENSOR	3-14
3.7 FUSING	3-15
3.7.1 FUSING UNIT	3-15
3.7.2 HOT ROLLER AND FUSING LAMP	3-16
3.7.3 PRESSURE ROLLER	3-18
3.7.4 THERMISTOR AND THERMOSTAT	3-18
3.7.5 HOT ROLLER STRIPPERS	3-19
3.8 PAPER FEED	3-20
3.8.1 PAPER FEED ROLLER	3-20
3.8.2 FRICTION PAD	3-21
3.9 BY-PASS TRAY	3-22
3.10 PRINTER CONTROLLER BOARD	3-23
3.11 ENGINE BOARD	3-24
3.12 MAIN MOTOR	3-25
3.13 CLUTCHES	3-26
3.14 PSU, HVPS	3-27
3.15 COOLING FAN	3-28

TROUBLESHOOTING

4. TROUBLESHOOTING	4-1
4.1 SERVICE CALL CONDITIONS	4-1
4.1.1 SUMMARY	4-1
4.1.2 SC CODE DESCRIPTIONS	4-2
4.2 ERROR MESSAGES	4-20
4.3 GENERAL TROUBLESHOOTING	4-27

4.3.1 IMAGE ADJUSTMENT	4-27
Registration Adjustment	4-27
Parallelogram Image Adjustment	4-27
4.3.2 ELECTRICAL DEFECTS	4-28
Fuses	4-30
4.3.3 SKEW ADJUSTMENT	4-31
4.3.4 STREAKS IN THE SUB SCAN DIRECTION.....	4-31
4.3.5 MISCELLANEOUS PROBLEMS.....	4-32

SERVICE TABLES

5. SERVICE TABLES.....	5-1
5.1 SERVICE PROGRAM MODE	5-1
5.1.1 SERVICE PROGRAM MODE: OVERVIEW.....	5-1
Entering the Service Mode	5-1
Setting a Service Program.....	5-2
Exiting Service Mode.....	5-2
5.2 PRINTER CONTROLLER SERVICE MODE	5-3
5.2.1 SERVICE MODE MENU ("1. SERVICE MENU").....	5-3
5.2.2 BIT SWITCH PROGRAMMING	5-3
5.3 PRINTER ENGINE SERVICE MODE	5-4
5.3.1 SERVICE MODE TABLE	5-4
SP1-xxx: Feed.....	5-4
SP2-xxx: Drum	5-10
SP3-xxx: Process	5-12
SP5-xxx: Mode	5-14
SP7-xxx: Data Log	5-57
SP8XXX: Data Log 2.....	5-73
5.4 FIRMWARE UPDATE	5-84
5.4.1 TYPE OF FIRMWARE	5-84
5.4.2 PRECAUTIONS	5-84
Handling SD Cards.....	5-84
Upload/Download	5-85
Network Connection	5-85
5.4.3 MACHINE FIRMWARE UPDATE	5-85
5.5 NVRAM DATA UPLOAD/DOWNLOAD.....	5-87

5.5.1 UPLOADING NVRAM DATA	5-87
5.5.2 DOWNLOADING NVRAM DATA	5-88
5.6 SD CARD APPLICATION MOVE.....	5-90
5.6.1 OVERVIEW.....	5-90
5.6.2 MOVE EXEC.....	5-90
5.6.3 UNDO EXEC.....	5-91
5.7 CONTROLLER SELF TEST AT POWER-ON.....	5-93
5.8 MENU MODE.....	5-94
5.9 CONTROLLER BOARD DIP SWITCHES.....	5-100

DETAILED DESCRIPTIONS

6. DETAILS	6-1
6.1 OVERVIEW.....	6-1
6.1.1 MECHANICAL COMPONENT LAYOUT	6-1
6.1.2 PAPER PATH	6-2
6.2 BOARD STRUCTURE	6-3
6.2.1 BLOCK DIAGRAM	6-3
6.2.2 CONTROLLER BOARD.....	6-4
6.3 PRINTING PROCESS	6-6
6.3.1 OVERVIEW.....	6-6
6.3.2 LASER EXPOSURE	6-7
Overview	6-7
Automatic Power Control (APC).....	6-8
LD Safety Mechanisms	6-9
6.3.3 CARTRIDGE OVERVIEW.....	6-10
6.3.4 DRUM CHARGE.....	6-10
6.3.5 DEVELOPMENT.....	6-11
Toner Supply and Development.....	6-11
Toner Density Control	6-12
6.3.6 TONER END DETECTION	6-13
Overview	6-13
Toner End Sensor	6-13
Main Motor Rotation Count.....	6-14
Toner Overflow Prevention.....	6-14
Summary.....	6-15

6.4 PAPER FEED	6-18
6.4.1 OVERVIEW.....	6-18
6.4.2 PAPER TRAY	6-20
Tray Extension	6-20
Paper Lift.....	6-21
Paper Feed and Registration.....	6-21
Paper Size Detection.....	6-22
Paper End Detection	6-23
Remaining Paper Detection.....	6-23
6.4.3 BY-PASS TRAY.....	6-24
6.5 IMAGE FUSING AND PAPER EXIT	6-25
6.5.1 OVERVIEW.....	6-25
6.5.2 FUSING DRIVE	6-26
6.5.3 FUSING ENTRANCE AND GUIDE SHAFT	6-26
6.5.4 PRESSURE ROLLER.....	6-27
6.5.5 NEW FUSING UNIT DETECTION	6-28
6.5.6 FUSING TEMPERATURE CONTROL.....	6-29
Overheat Protection	6-30
6.5.7 PAPER EXIT.....	6-31
6.5.8 ENERGY SAVER MODE.....	6-32
6.6 CONTROLLER FUNCTIONS.....	6-33

SPECIFICATIONS

7. SPECIFICATIONS.....	7-1
7.1 BASIC SPECIFICATIONS	7-1
7.1.1 GENERAL SPECIFICATIONS	7-1
7.1.2 EXTERNAL OPTIONS.....	7-4
7.1.3 PAPER SIZES	7-5
Plain Paper.....	7-5
Envelope	7-6
Custom.....	7-6
Envelopes.....	7-7
7.1.4 OPERATING ENVIRONMENT	7-8
7.1.5 OPERATION PANEL LED SPECIFICATIONS	7-10
7.2 CONTROLLER SPECIFICATIONS.....	7-11

7.2.1 CONTROLLER BOARD.....	7-11
7.2.2 PRINTING FUNCTIONS.....	7-12
7.2.3 PRINTER DRIVERS.....	7-13
7.2.4 SUPPORTED ENVIRONMENTS.....	7-16
Windows Environments.....	7-16
Notes.....	7-17
Mac OS Environments.....	7-17
Notes.....	7-17
UNIX Environment.....	7-18
Novell Netware.....	7-18
SAP R/3 Environment.....	7-19
7.2.5 CONTROLLER INTERFACE SPECIFICATIONS.....	7-20
7.2.6 SUPPORTED UTILITIES.....	7-22
Bundled Utilities.....	7-22
Optional Utilities.....	7-22
7.3 MACHINE CONFIGURATION.....	7-23
7.3.1 SYSTEM COMPONENTS.....	7-23

G893 DUPLEX UNIT AD1000

SEE SECTION G893 FOR DETAILED TABLE OF CONTENTS

G894 PAPER FEED UNIT TK1030 & G362 ENVELOPE FEEDER TYPE 400

SEE SECTION G894/G362 FOR DETAILED TABLE OF CONTENTS

INSTALLATION

TAB
POSITION 1

PREVENTIVE MAINTENANCE

**G894 PAPER FEED UNIT TK1030/G362 ENVELOPE
FEEDER TYPE 400**

TAB
POSITION 2

REPLACEMENT AND ADJUSTMENT

TAB
POSITION 3

TROUBLESHOOTING

TAB
POSITION 4

SERVICE TABLES

G893 DUPLEX UNIT AD1000

TAB
POSITION 5

DETAILED DESCRIPTIONS

TAB
POSITION 6

SPECIFICATIONS

TAB
POSITION 7

TAB
POSITION 8

Read This First

Safety, Conventions, Trademarks

Safety

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.
6. To prevent a fire or explosion, keep the machine away from flammable liquids, gases, and aerosols.

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

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

SAFETY AND ECOLOGICAL NOTES FOR DISPOSAL

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

CAUTION

- The controller board in this machine contains a lithium battery.
- The danger of explosion exists if a battery of this type is incorrectly replaced.
Replace only with the same or an equivalent type of battery recommended by the manufacturer.
- Dispose of batteries in accordance with the manufacturer's instructions and local laws and regulations.

LASER SAFETY

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

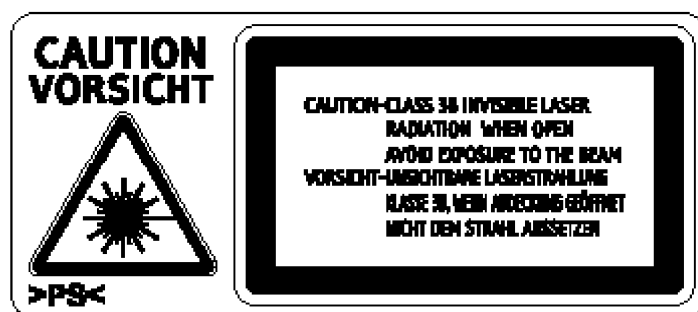
WARNING

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

WARNING

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







Caution Labels



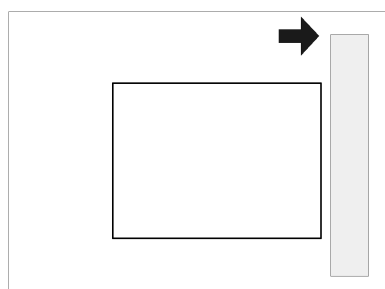
g176_labels

Conventions and Trademarks

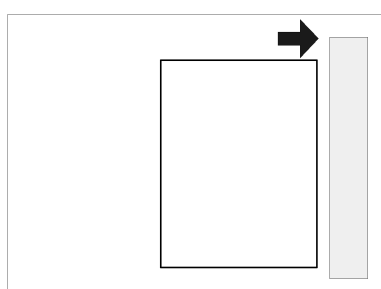
Conventions

Symbol	What it means
	Refer to section number
	See Core Tech Manual for details
	Screw
	Connector
	E-ring
	C-ring

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.)



SEF (Short Edge Feed)



LEF (Long Edge Feed)

Trademarks

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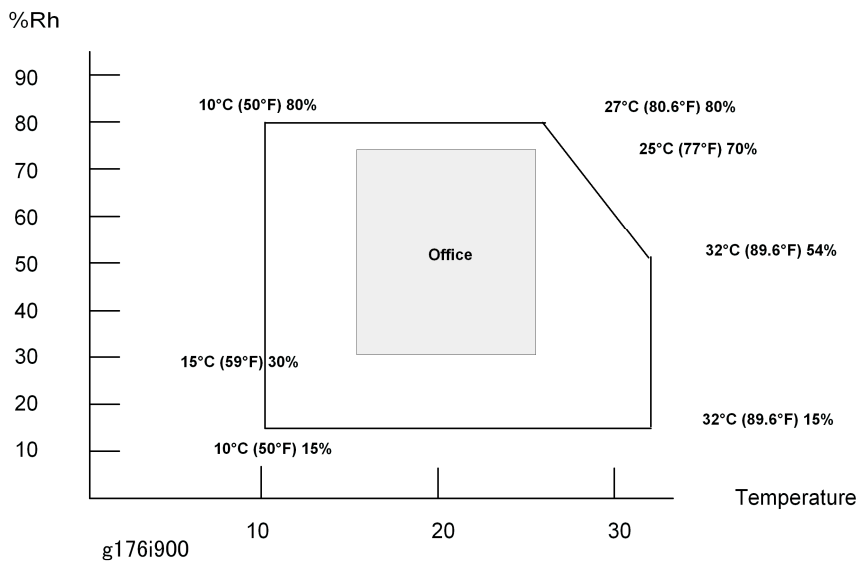
Other product names used herein are for identification purposes only and may be trademarks of their respective companies. We disclaim any and all rights involved with those marks. This manual uses several symbols and some simple abbreviations.

INSTALLATION

1. INSTALLATION

1.1 INSTALLATION REQUIREMENTS

1.1.1 ENVIRONMENT



Temperature/Humidity Ranges:	Acceptable: 10C (50F) 15% to 27C (80.6F) 80% Recommended (Office): 15C (59F) 30% to 25C (77F) 70%
Ambient Illumination:	Less than 2000 lux (do not expose to direct sunlight).
Ventilation:	3 times/hr/person

1. Avoid areas that are exposed to sudden temperature changes. This includes:
 - Areas directly exposed to cool air from an air conditioner.
 - Areas directly exposed to heat from a heater.
2. Do not install this machine in an area where it will be exposed to corrosive gases.
3. Do not install the machine at locations over 2,500 m (8,125 ft.) above sea level.
4. Put the machine on a strong and level base. Inclination on any side should not exceed 5 mm.
5. Do not put the machine where it may be subjected to strong vibrations.

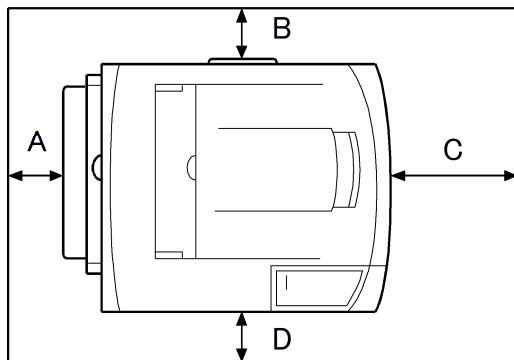
Installation Requirements

1.1.2 MACHINE LEVEL

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 REQUIRED SPACE

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



g176i500

A: Over 10 cm (4 inches)

B: Over 10 cm (4 inches)

C: Over 40 cm (15.8 inches)

D: Over 10 cm (4 inches)

1.1.4 POWER SUPPLY

⚠ CAUTION

- Make sure the plug is firmly inserted in the outlet.
- Avoid multi-wiring.
- Be sure to ground the machine.

Input voltage level	NA: 120 volts, 60 Hz
	EU: 220-240 volts, 50 Hz/60 Hz
Permitted voltage	Fluctuation: $\pm 10\%$

⚠ CAUTION

- Never place anything on the power cord.

1.2 MACHINE INSTALLATION

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

Main unit	Installing the Printer Unit: Quick Installation Guide.	
	Connecting the machine to a computer: Quick Installation Guide	
Options	Paper Feed Unit G894	Hardware Guide, Section 2
	Envelope Feeder G362	
	Duplex Unit G893	
	Memory Unit Type C 128 MB G331	
	Memory Unit Type C 256 MB G332	
	Hard Disk Drive Type 2650 M311	
	IEEE 802.11b interface Unit Type H G813 *1	
	IEEE 802.11b Interface Unity Type I G874 *1	
	Gigabit Ethernet Board Type A G874 *1	
	VM Card Type D G874	
	Data Storage Card Type A G874	
	Data Overwrite Security Unit Type E G874	See next section of this manual.
Drivers	For more about drivers and other software, see Section 1 of the Software Guide.	

*1 These units cannot be installed at the same time.

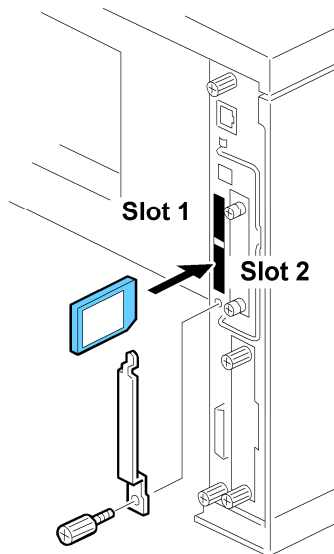
1.3 DATA OVERWRITE SECURITY UNIT

INSTALLATION

1.3.1 INSTALLATION

★ Important

- The correct number and type for this installation is Type E. Do not attempt to install any other type (Type C, Type D, for example).
 - The SD card that holds the DOS application must always reside in SD card slot C2. (This can be the original SD or another SD card where the DOS (Data Overwrite Security) application has been moved with SP5873.)
1. If the machine is on, turn off the main power switch.
 2. Disconnect the network cable.
 3. Turn the main power switch on.
 4. Turn the operation switch and main power switch off.



g176s510b

5. Remove the SD card slot cover (⚙️x1).
6. Insert the DOS SD card into Slot 2.
7. Reconnect the network cable, if the network is connected to the copier.
8. Turn the main power switch on.
9. Enter the SP mode and do SP5878 and push [#Enter] to enable the DOS application.
10. Go out of the SP mode, turn the operation switch off, then turn the main power switch off.

1.3.2 CHECKING AND COMPLETING THE INSTALLATION

Do this procedure to confirm that the data overwrite security feature is enabled and operating.

1. Turn the machine power on.
2. Do SP5990 005 (Diagnostic Report) to print the diagnostic report.
3. Check the diagnostic report.
 - Under [ROM No./Firmware Version] you should see "B7355060/0.03" displayed for "HDD Format Option".
 - Under [Loading Program] you should see "GW1a_zoffy:B7355060/0.03"

Important

- The numbers in the diagnostic report must match. (The ROM number and firmware version number change after the firmware has been upgraded.)
 - If the ROM numbers or version numbers do not match, this means that the DOS unit type was incorrect (not "Type E"),
 - If this occurs:
 - (1) Obtain the Type E DOS unit card or confirm that the DOS unit is Type E.
 - (2) Replace the NVRAM on the controller board.
 - (3) Insert the Type E DOS unit SD card in Slot 2.
 - (4) Do the DOS unit installation procedure again.
4. Push and release in this order: [#Enter]> [Escape]> [Menu].
 5. Push [▼] or [▲] to display "Maintenance" then push [#Enter].
 6. Push [▼] or [▲] to display "Memory Erase" and "Erase All Mem."
 7. If you see "Memory Erase" and "Erase All Mem." in the selections, then the DOS application has been enabled and is operating.

PREVENTIVE MAINTENANCE

2. PREVENTIVE MAINTENANCE

2.1 USER MAINTENANCE

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

The user can maintain this machine. For more see "Printer Engine Service Mode".

The operation panel shows "Replace Maintenance Kit" when the PM counter reaches 90K.

After the user replaces the fusing unit in the maintenance kit, the machine automatically resets the PM counter.

Item	Quantity	Remarks
Fusing unit	1	
Transfer roller	1	
Paper feed roller	3	For standard and optional tray(s)
Friction pad	3	For standard and optional tray(s)

2.2 SERVICE MAINTENANCE

To enable the machine for maintenance by the service technician, the meter-charge mode must be set to “enabled” with SP5930.

The table below shows the PM items serviced by the service technician.

After completing a PM procedure, reset the PM counter for the replaced part with SP7-804.

Symbol key:

- C: Clean
- R: Replace
- L: Lubricate
- I: Inspect

Main unit

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		3	
Fusing Thermistor	R	C	1	Clean with alcohol if necessary.
Bushings - Hot Roller	R		2	

Service Maintenance

Item	90K	EM	Quantity	Remarks
Bushings - Pressure Roller	R		2	
Fusing Entrance and Exit Guide Plates	C		1 each	Clean with water or alcohol
Fusing Unit Ass'y 110V/220 V	R		1	

Preventive
Maintenance

Paper Tray Unit

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

REPLACEMENT AND ADJUSTMENT

3. REPLACEMENT AND ADJUSTMENT

3.1 GENERAL

3.1.1 PRECAUTIONS ON DISASSEMBLY

CAUTION

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

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

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

Before servicing the machine:

1. Verify that documents are not stored in memory.
2. Remove the print 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.

Make sure all components are returned to their original positions.

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.

General

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.

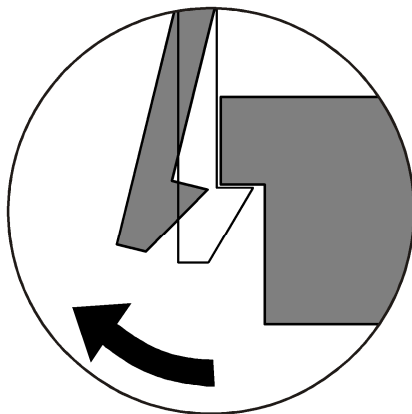
Fusing

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



g094r513

Many of the parts are held in place with plastic latches. The latches break easily, so release them carefully. To release a latch, press the hook end of the latch away from the part to which it is latched.

3.1.3 AFTER SERVICING THE MACHINE

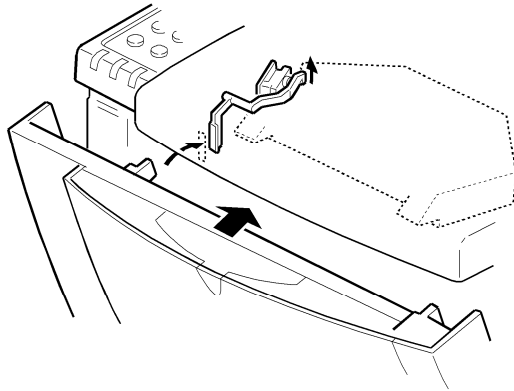
1. Make sure all parts that require grounding are properly grounded.
2. Make sure the interlock switch is functioning.
3. Do not leave unused solder or parts inside the machine.
4. Do not leave any tools inside the machine.
5. Make sure all wires are properly connected and routed.
6. Make sure wires are not jammed between parts of the machine.

3.2 SPECIAL TOOLS

	Part No.	Description	Q'ty	Remarks
1	B6455010	SD Card	1	Common
2	B6456700	PCMCIA Card Adapter	1	Common
3	B6456800	USB Reader/Writer	1	Common
4	VSSM9000	Digital Multimeter – FLUKE 187	1	Common
5	A0069104	Scanner Positioning Pin (4pcs/set)	1	Common
6	---	Ricoh System Information Tool (Support Tool Ver. 2)		
		Basic version	1	
		Mail version	1	

3.3 COVERS

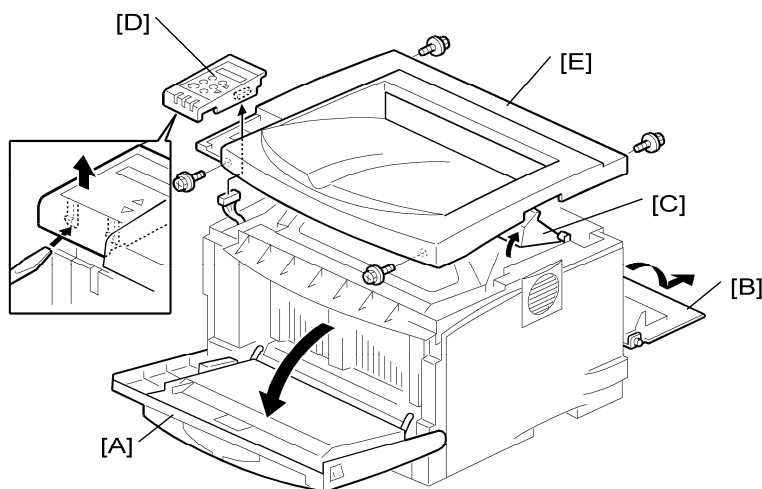
3.3.1 FRONT COVER



g094r514

To open the front cover, gently push the cover inward (hooks x2).

3.3.2 UPPER COVER



g112r201a

[A] Open the front cover.

[B] Open the rear cover, then remove the AIO.

[C] Open the exit guide plate.

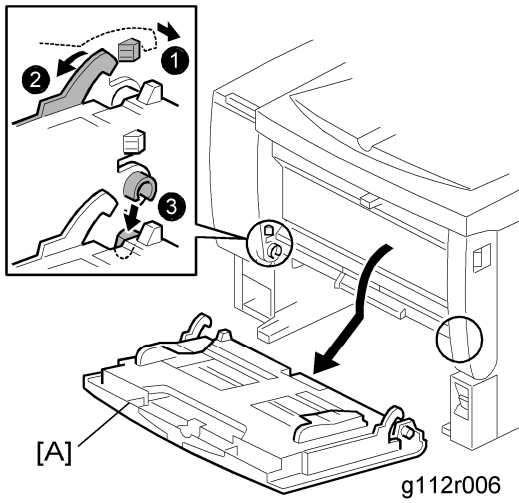
[D] Operation panel (2 hooks)

[E] Upper cover (🔩x4, 🛠️x1)

↓ Note

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

3.3.3 BY-PASS TRAY UNIT

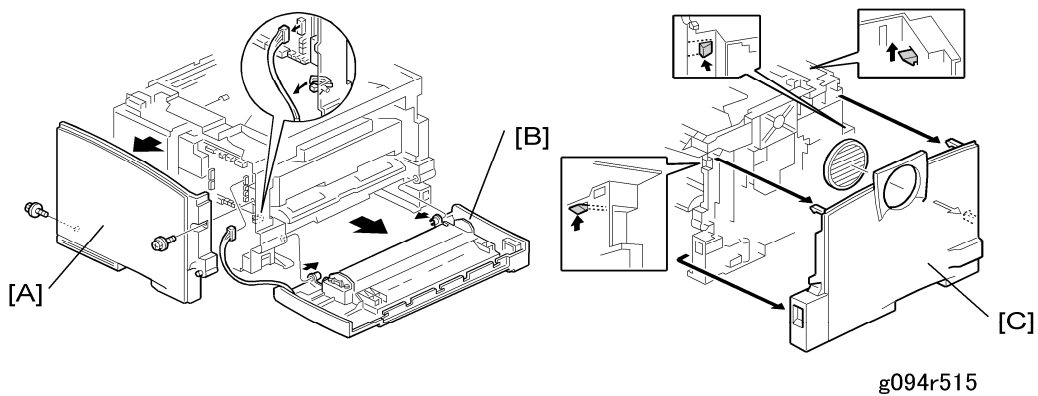


Note

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

[A] By-pass tray unit (hooks x2)

3.3.4 EXTERIOR COVERS



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 (x3, x2)

[C] Right cover (hooks x3, fan cover x1)

Note

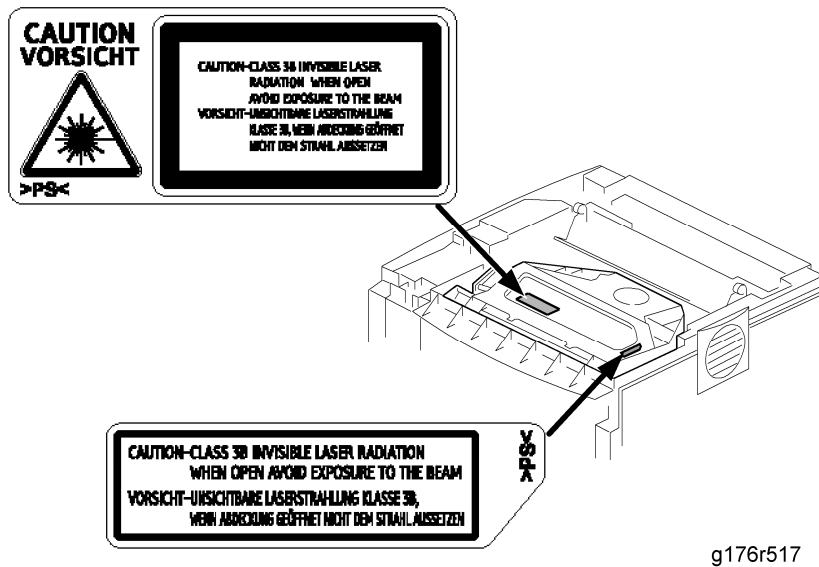
- Pull out the standard paper tray before removing the front cover.

3.4 LASER UNIT

⚠ CAUTION

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

3.4.1 CAUTION DECAL LOCATIONS



g176r517

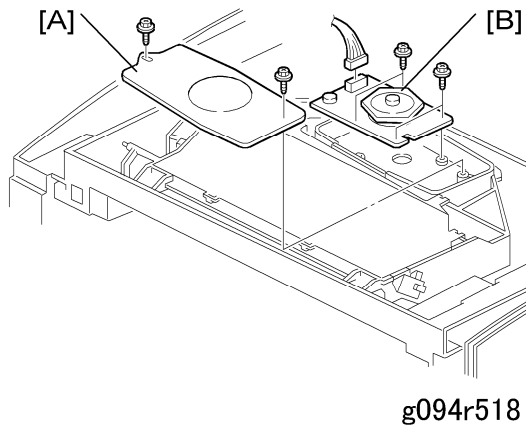
Replacement
and
Adjustment

3.4.2 POLYGON MIRROR MOTOR

⚠ CAUTION



- 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.

Laser Unit



- Upper cover (See "Upper Cover")

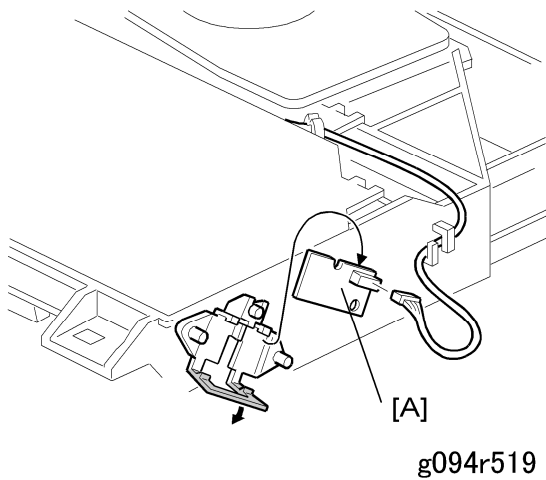
[A] Polygon mirror cover ( x 2)

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

↓ Note

- Never touch the surface of the mirror with bare hands.

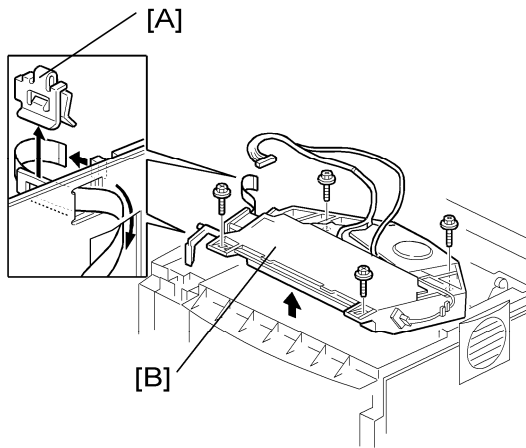
3.4.3 LASER SYNCHRONIZATION DETECTOR



- Upper cover (See "Upper Cover")
- By-pass tray unit (See "Bypass Tray Unit")
- Exterior covers (See "Exterior Covers")

[A] Laser synchronization detector ( x1)

3.4.4 LASER UNIT



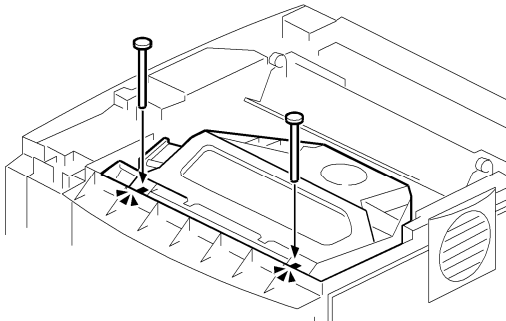
g094r520

- Upper cover (See "Upper Cover")
- Exterior covers (See "Exterior Covers")

[A] Clip

[B] Laser unit (⚙ x 4, 1 flat cable, ⚙ x 2)

When reinstalling the laser unit.

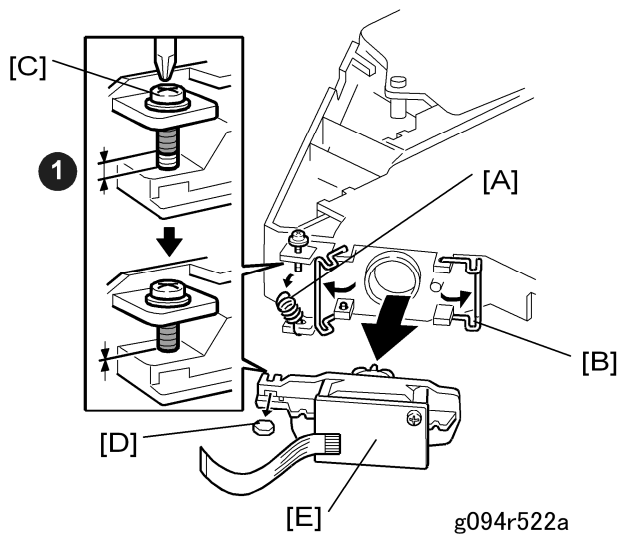


g094r521

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

Set the positioning pins as shown above. Then secure the laser unit.

3.4.5 LASER DIODE UNIT



- Laser Unit (See "Laser Unit")

[A] Spring

[B] LD unit holders (x 2)

[C] Loosen the screw

[D] Nut

[E] LD Unit

Note

- Do not remove the screws that secure the LD board.
- Do not touch any variable resistors on the LD board.

Reinstallation:

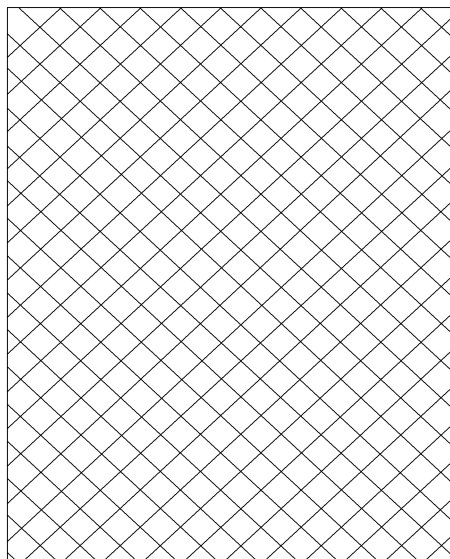
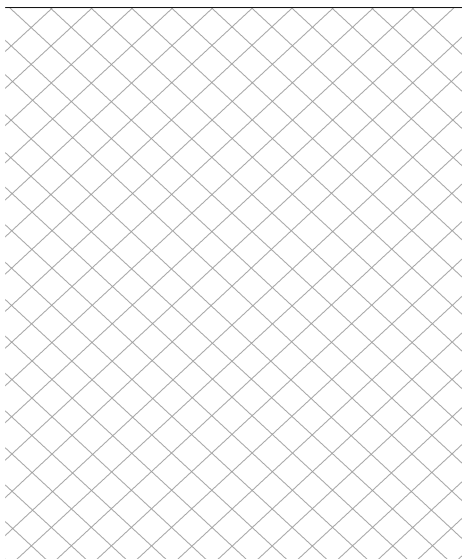
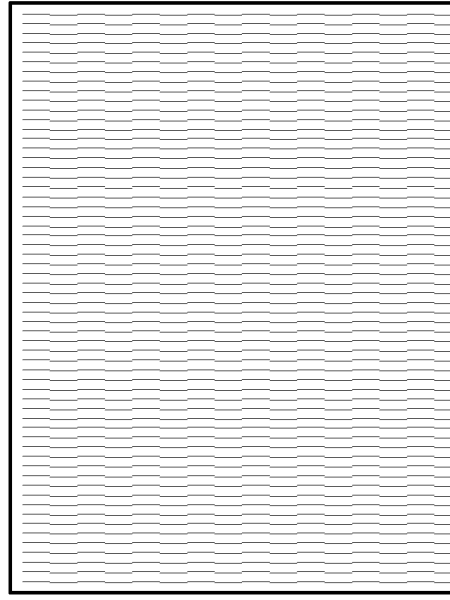
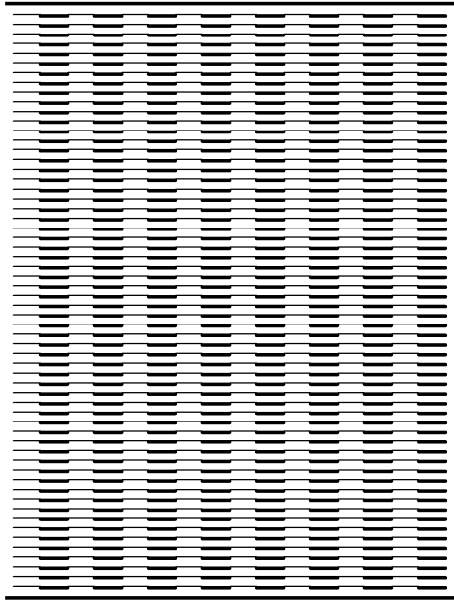
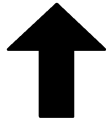
- Tighten the screw [C] until the unpainted portion of the screw ❶ is not visible.
- After installing the LD unit, check the test pattern for the final adjustment (see the following procedure).

3.4.6 LASER BEAM PITCH ADJUSTMENT

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.

Laser Unit

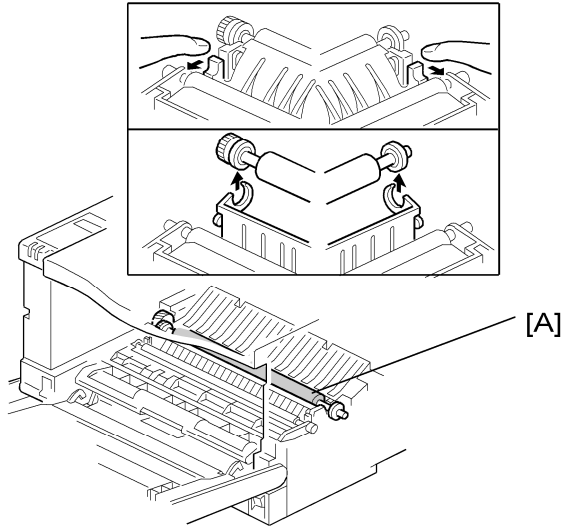


Adjustment not complete

Adjustment complete

g094r523

3.5 TRANSFER ROLLER



g094r524

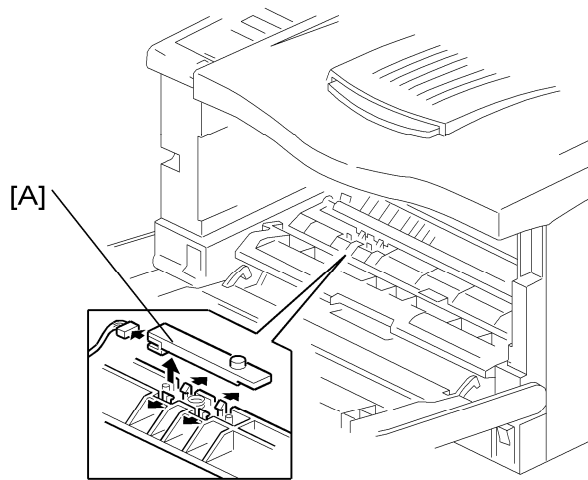
- Remove the AIO.

[A] Transfer roller

↓ Note


- Do not touch the transfer roller surface.

3.6 TONER END SENSOR



g094r525

- Remove the AIO.

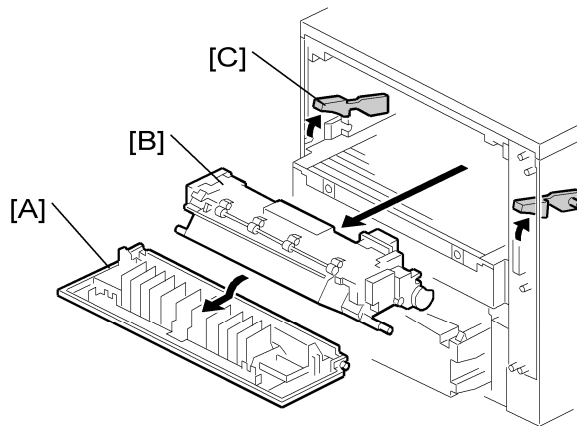
[A] Toner end sensor (hooks x4,  x 1)

3.7 FUSING

⚠ CAUTION

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

3.7.1 FUSING UNIT



g094r007

[A] Rear cover

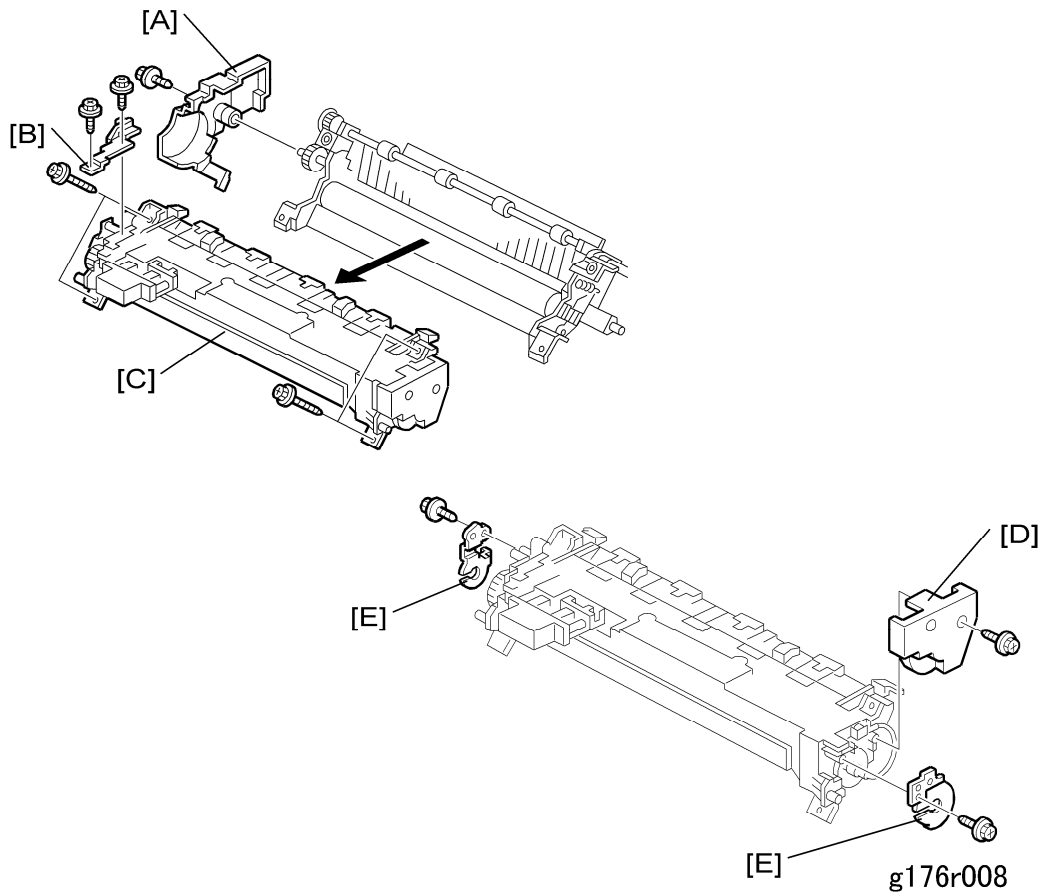
[B] Fusing unit hooks [C] (x2).

↓ Note

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

Fusing

3.7.2 HOT ROLLER AND FUSING LAMP



- Fusing Unit (See "Fusing Unit")

[A] Left cover (🔩 x 1)

[B] Plate (🔩 x 2)

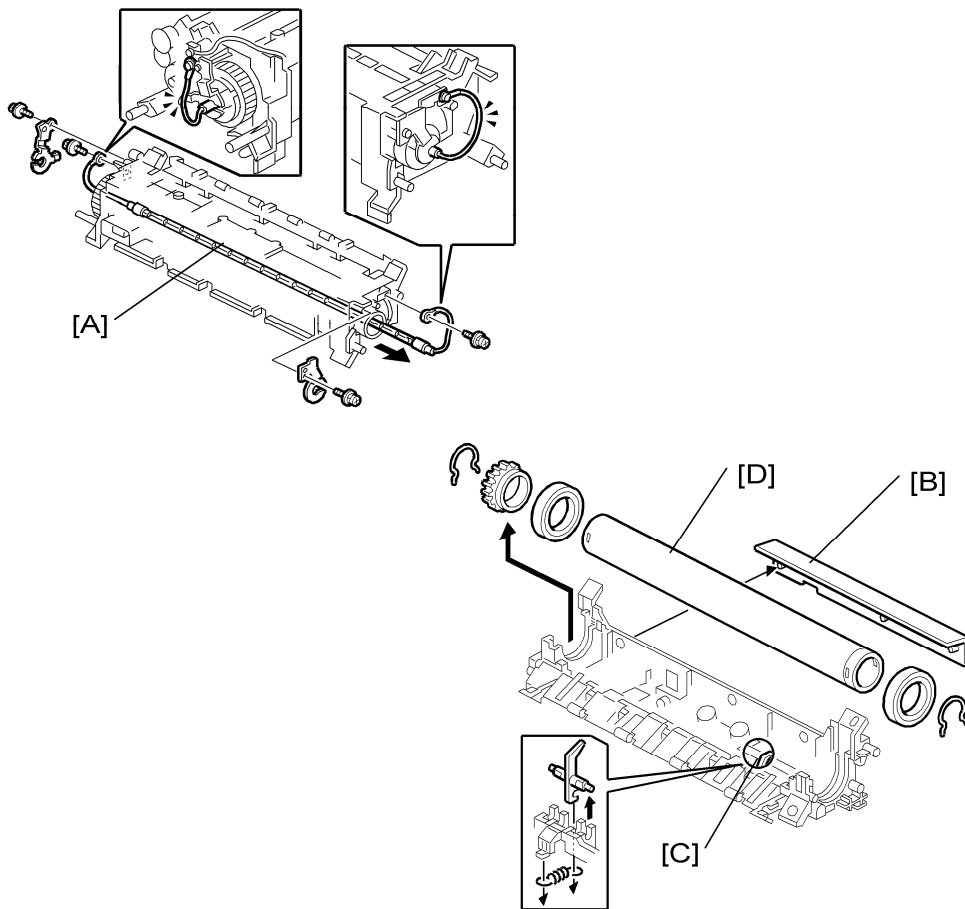
[C] Upper fusing unit assembly (🔩 x 4, Springs x2)

[D] Right cover (🔩 x 1)

[E] Lamp holders (🔩 x 1 each)

↓ Note

- Remove both springs before taking apart the fusing unit assembly. The reason for this is to relieve pressure on the unit.
- When reinstalling the fusing unit assembly, install both springs last. The reason for this is to reset the springs back to their default position.



g094r526

[A] Fusing Lamp ( x2)

 Note

- The colored cable must be at the hot roller gear side.

[B] Guide plate (3 hooks)

[C] Hot roller strippers (1 spring each)

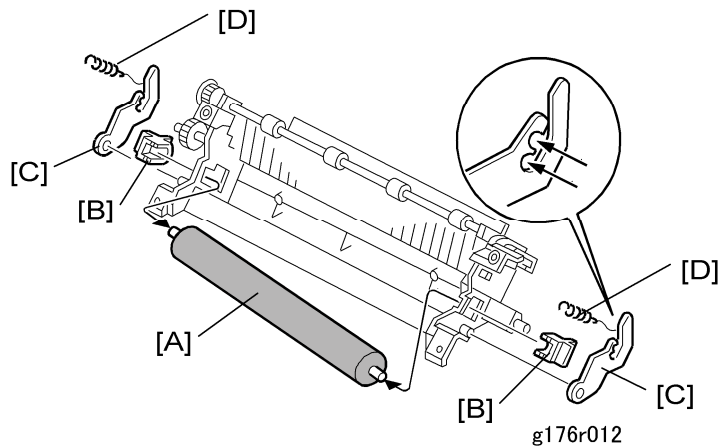
[D] Hot roller (2 C-rings, 1 gear, 2 bushings)

 Important

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

Fusing

3.7.3 PRESSURE ROLLER



- Fusing Unit (See "Fusing Unit")
- Hot roller and fusing lamp (See "Hot Roller and Fusing Lamp")

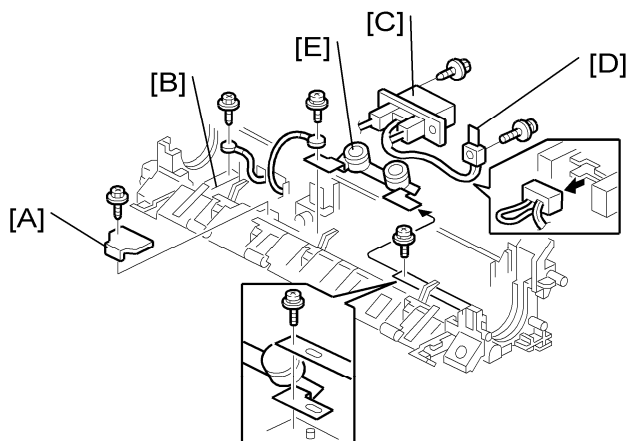
[A] Pressure roller

[B] Bushing

[C] Pressure roller lever

[D] Spring

3.7.4 THERMISTOR AND THERMOSTAT



g094r011

- Hot roller and fusing lamp (See "Hot Roller and Fusing Lamp")

[A] Wire cover (🔩 x 1)

[B] Grounding plate (🔩 x 2, 1 wire)

[C] Fusing unit connector (🔩 x 6, 📌 x1, 2 hooks)

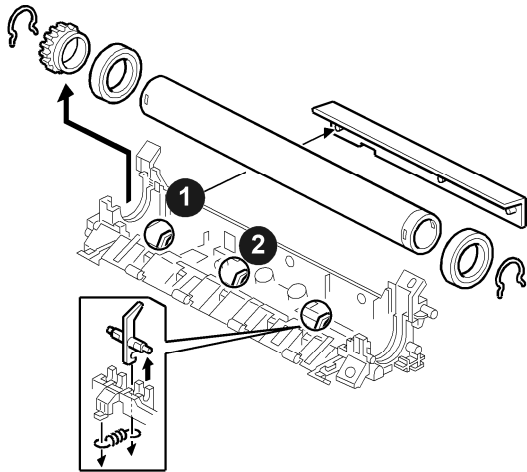
[D] Thermistor (🔩 x 1, 📌 x1)

[E] Thermostat (🔩 x 1)

★ Important

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

3.7.5 HOT ROLLER STRIPPERS



g094r003

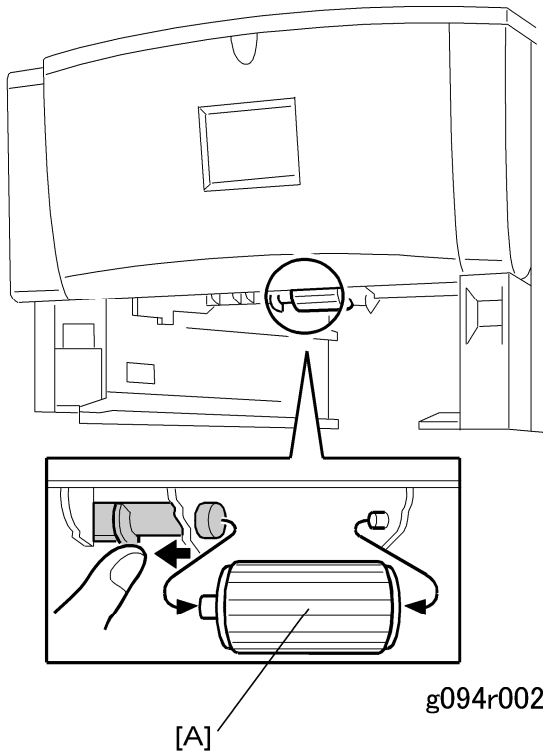
- Hot roller and fusing lamp (See "Hot Roller and Fusing Lamp")

↓ Note

- Two extra hot roller strippers A, B are installed for a better grip on narrow paper. This prevents paper from curling around the hot roller. When installing the extra hot roller strippers, insert them in the two slots using a small pair of pliers until they snap into place.

3.8 PAPER FEED

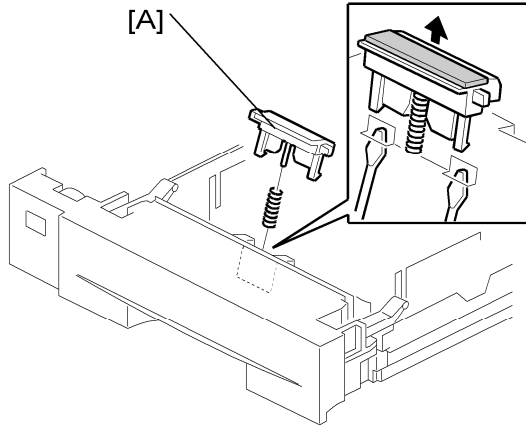
3.8.1 PAPER FEED ROLLER



- Pull out the paper tray before removing the paper feed roller.

[A] Paper feed roller

3.8.2 FRICTION PAD



g094r010

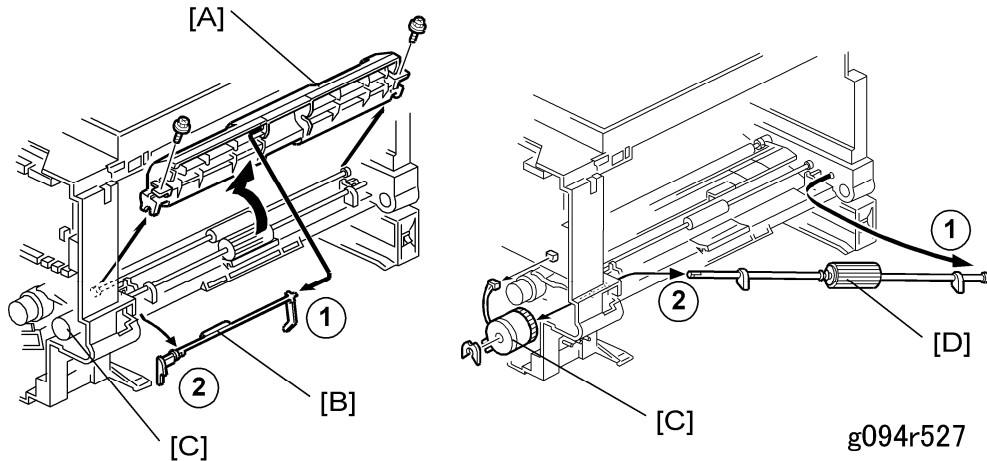
- Remove the paper tray unit from the machine before removing the friction pad.

[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



- Left Cover (See "Exterior Covers")
- Front Cover (See "Exterior Covers")
- Remove the AIO.

[A] Paper guide ( x 2)

[B] Actuator

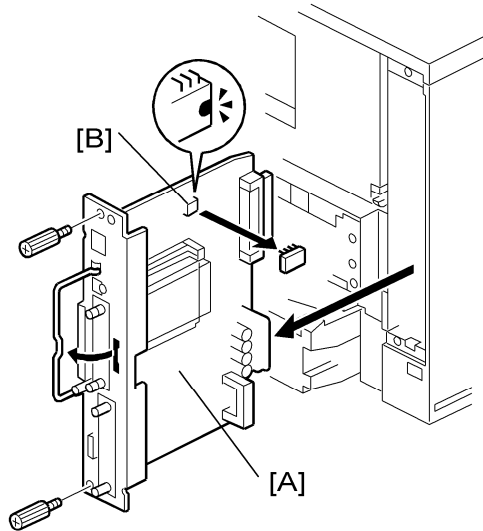
[C] Clutch ( x1)

[D] By-pass feed roller

When reinstalling the paper guide.

1. Set the paper guide on the bushing.
2. Install the right part of the actuator on the paper guide.
3. Install the left part 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



g176r005

[A] Printer controller board (2 x)

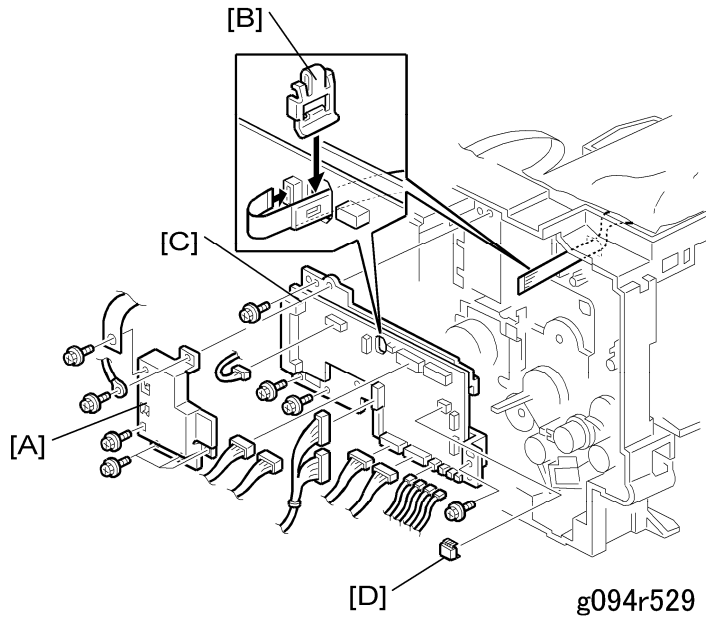
[B] NVRAM

- Remove the NVRAM from the old printer controller board and insert it on the new board.

Note

- The screws on the printer controller board are hand screws. Gently turn these screws when removing the printer control board.
- Pull on the handle to remove the printer controller board from the machine.

3.11 ENGINE BOARD



- Left cover (See "Exterior Covers")
- Printer controller board (See "Printer Controller Board")

[A] Bracket (⌘ x7, 1 grounding wire)

★ Important

- Be careful not to damage the flat cable.

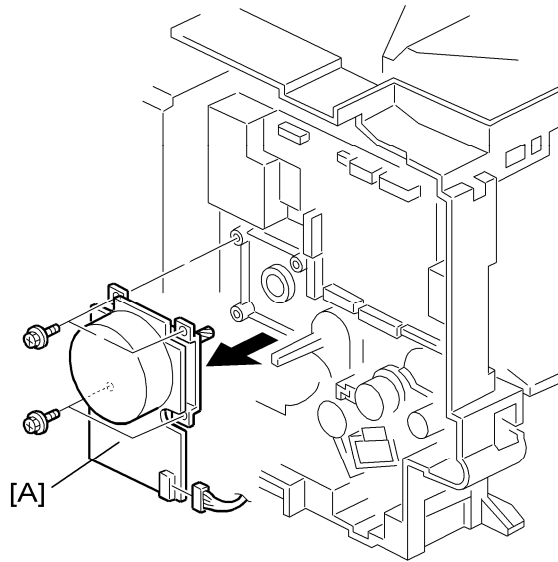
[B] Clip

[C] Engine board (⌘ x4, all connectors)

★ Important

- Remove the NVRAM [D] from the old engine board and insert it on the new board.

3.12 MAIN MOTOR

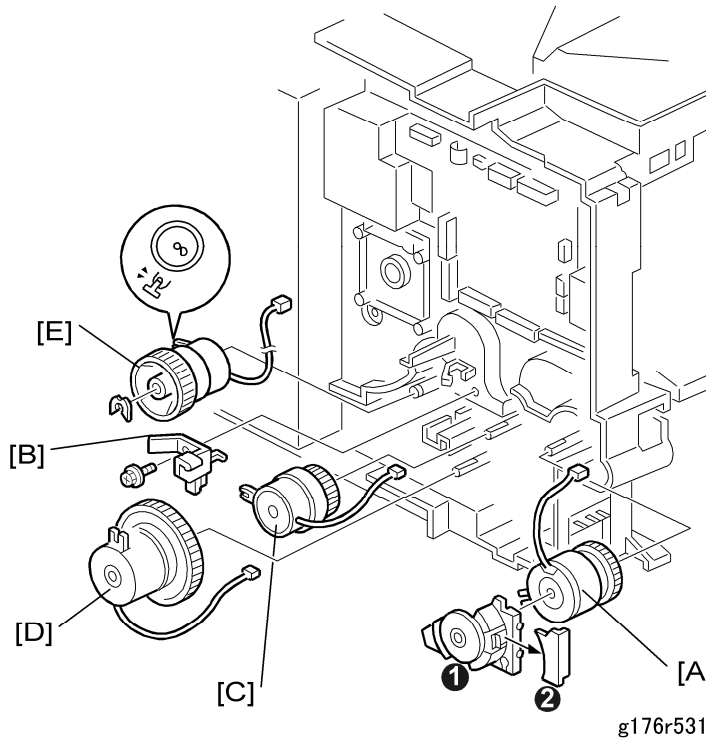


g176r530

- Left cover (See "Exterior Covers")

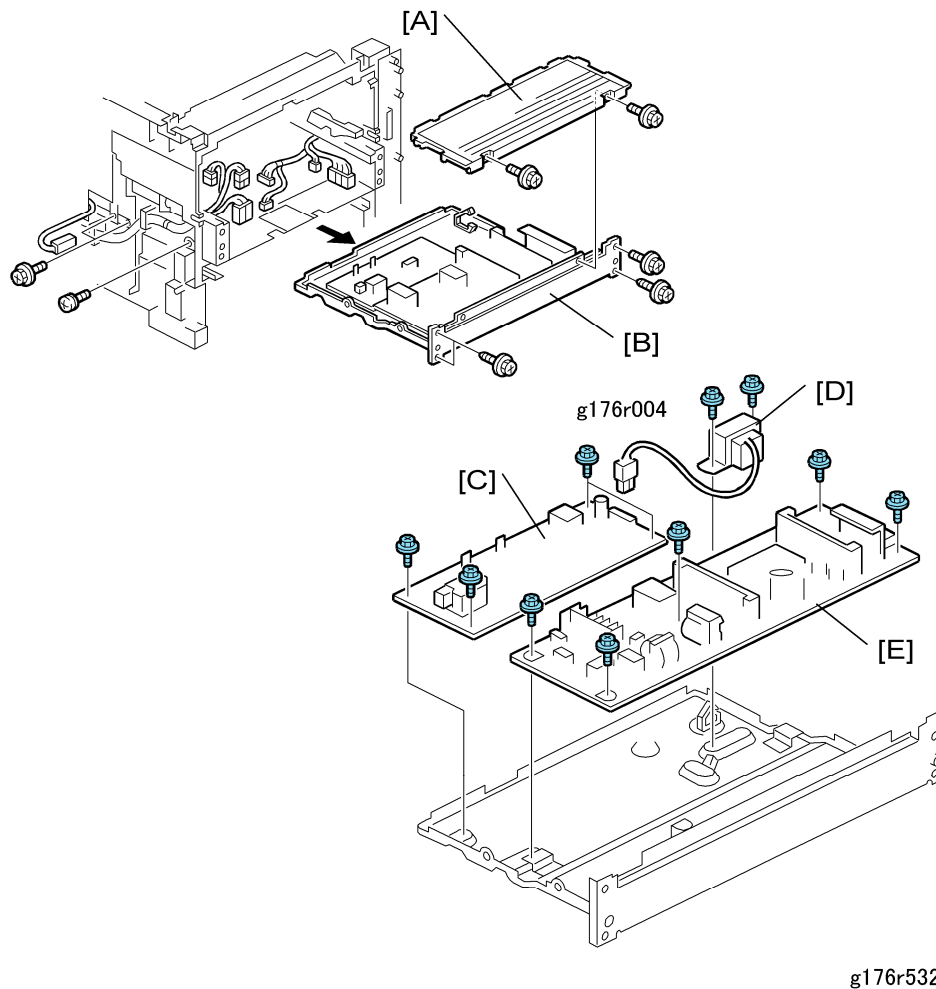
[A] Main motor (🔩 x4, 🌀 x 1)

3.13 CLUTCHES



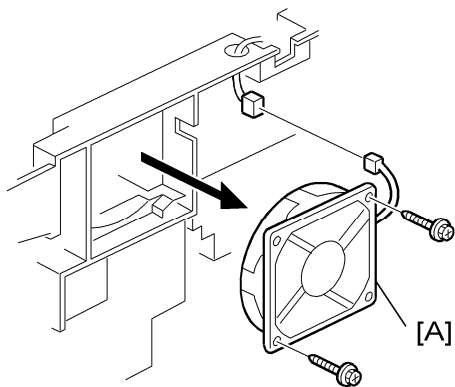
- Left cover (See "Exterior Covers")
- [A] By-pass feed clutch (☞x 1) with clutch bracket ①, holder ②
- [B] Stopper (☞ x 1)
- [C] Relay clutch (☞ x 1, ☞ x 1)
- [D] Paper feed clutch (☞ x 1)
- Main motor (See "Main Motor")
- [E] Registration clutch (☞x 1, ☞ x 1)

3.14 PSU, HVPS



- Left cover. See "Exterior Covers"
 - Fusing unit. See "Fusing Unit"
- [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



g176r501

- Right cover (See "Exterior Covers")

[A] Cooling fan (🌀 x 2, 📡 x 1)

⬇ Note

- The cooling fan must be reinstalled in its original position. Do not reinstall the cooling fan opposite to the original position.

TROUBLESHOOTING

4. TROUBLESHOOTING

4.1 SERVICE CALL CONDITIONS

4.1.1 SUMMARY

There are 4 levels of service call conditions

Level	Definition	Reset Procedure
A	Fusing unit SCs shown on the operation panel. The machine is disabled. The user cannot reset the SC.	<ol style="list-style-type: none"> 1. Do SP5810 and press [#Enter]. 2. When "execute" is displayed, press [#Enter] again. 3. Press [Escape]. 4. Turn the machine power off/on.
B	These SCs disable only the features that use the defective item. The user does not see these SCs in usual conditions. But, they are shown on the operation panel when the defective feature is used.	Set the main power switch to "off" then to "on".
C	SCs that are not shown on the operation panel. They are recorded internally.	Recorded only.
D	These SCs are shown on the operation panel. To reset these SCs, turn the operation switch or main power switch off and on. These SCs are shown again if the error occurs again.	Set the operation switch or the main power switch to "off" then to "on".

Service Call Conditions

Note

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

4.1.2 SC CODE DESCRIPTIONS

302	B	Charge roller current leak	<ul style="list-style-type: none"> ▪ Cartridge (charge roller) defective ▪ High voltage supply board defective ▪ Defective cartridge connection
		The PWM duty output exceeded 60% for longer than 200 ms., indicating a leak in the charge roller current.	

320	B	Polygon motor error	<ul style="list-style-type: none"> ▪ Polygon motor ▪ Polygon motor cable
		<p>The polygon motor did not enter the lock state within 20 sec. after it switched on.</p> <p>-or-</p> <p>Once the polygon motor was detected in the lock state after started to rotate, within 0.6 sec. it entered the unlock state..</p> <p>-or-</p> <p>After the polygon motor switched off, it did not enter unlock state within 20 sec.</p>	

322	B	1st beam laser synchronization error	<ul style="list-style-type: none"> ▪ 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
		With all doors closed the polygon motor is locked and not rotating, or the laser synchronization detector could not detect 1st beam laser detection signal within 5 ms..	

323	B	LD drive current exceeded	<ul style="list-style-type: none"> ▪ LD unit defective
		The LD driver detected an error for 500 ms.	

326	B	2nd beam laser synchronization error	<ul style="list-style-type: none"> ▪ Laser synchronization detector board out of position ▪ LD unit defective ▪ Engine board defective
		With all doors closed the polygon motor is locked and not rotating, or the laser synchronization detector could not detect 2nd beam laser detection signal within 500 ms.	

Trouble-shooting

Service Call Conditions

320	B	Polygon motor error	<ul style="list-style-type: none"> ▪ Polygon motor ▪ Polygon motor cable
		<p>The polygon motor did not enter the lock state within 10 sec. after it switched on.</p> <p>-or-</p> <p>Once the polygon motor was detected in the lock state after started to rotate, within 0.6 sec. it entered the unlock state..</p> <p>-or-</p> <p>After the polygon motor switched off, it did not enter unlock state within 20 sec.</p>	
391	B	Development bias leak	<ul style="list-style-type: none"> ▪ High voltage supply board defective ▪ Defective cartridge connection
		A development bias leak signal was detected for 200 ms.	
500	B	Main motor error	<ul style="list-style-type: none"> ▪ Main motor defective ▪ Mechanical overload on the drive mechanism
		A main motor lock signal was not detected within 700 ms after the main motor started to rotate.	
541	A	Fusing thermistor error	<ul style="list-style-type: none"> ▪ Thermistor disconnected, defective ▪ Fusing lamp disconnected, defective ▪ Fuse blown ▪ Power supply board defective ▪ Fusing unit connected improperly
		<p>The fusing temperature did not rise higher than 20°C within 11 sec. after the main motor switched off.</p> <p>-or-</p> <p>The fusing temperature was detected lower than 0°C for over 1 sec. after the power relay switched on.</p>	

542	A	Fusing temperature warm-up error	<ul style="list-style-type: none"> ▪ Thermistor defective ▪ Fusing lamp open ▪ Fusing thermostat open ▪ Power supply board Defective ▪ Defective connection of the fusing unit
		<p>Just before reaching warm-up temperature, the fusing temperature did not rise above 80°C within 17.5 sec. after the power relay switched on.</p> <p>Note:</p> <ul style="list-style-type: none"> ▪ The machine starts to test the temperature 2 sec. after the machine powers on if the machine temperature is above 45°C. ▪ If the machine temperature is below 45°C, the temperature is not sampled until the machine temperature reaches 45°C. 	

543	A	Fusing overheat error – software	<ul style="list-style-type: none"> ▪ Fusing thermistor defective ▪ Power supply board defective
		<p>The fusing temperature was detected higher than 245°C for longer than 200 ms while the main motor was on or within 60 sec. after the main motor switched off.</p> <p>-or-</p> <p>The fusing temperature was detected higher than 235°C for longer than 200 ms at any other time.</p>	

545	A	Fusing lamp remains on	<ul style="list-style-type: none"> ▪ Fusing thermistor defective ▪ Power supply board defective ▪ Defective connection of the fusing unit
		<p>The fusing lamp remained on longer than 12 sec. after the fusing unit reached optimum temperature and the main motor switched off.</p>	

Trouble-shooting

Service Call Conditions

546	A	Unstable fusing temperature	<ul style="list-style-type: none"> ▪ Fusing thermistor defective ▪ Power supply board defective ▪ Defective connection of the fusing unit
		During standby, the fusing temperature went below 60 °C twice or went above 60 °C three times within 500 ms.	
		A 60°C increase in fusing temperature was detected at five 1-sec. intervals within 60 to 90 sec. before reaching fusing temperature.	

547	B	Zero cross signal error	<ul style="list-style-type: none"> ▪ Power supply board defective ▪ Defective mains power supply condition
		Zero cross signals of wavelength 50-60 Hz were not detected within 5 sec after the fusing relay switched on. -or- Zero cross interrupts did not issue at the prescribed 1 sec. intervals.	

559	A	Fusing unit jam	<ul style="list-style-type: none"> ▪ Fusing unit installed incorrectly ▪ Fusing unit defective
		Three consecutive paper lag jams (paper failed to arrive) were detected in the fusing unit. -or- During printing of the 1st side during duplexing, the paper did not arrive at the duplex entrance sensor three times.	
		Note: SP1913 determines whether SC559 is issued. The default is off. SC559 is not issued after three consecutive jams in the paper unit. If SP1913 is set to on, turning the machine power off/on does not reset the jam counter.	

590	B	Fan motor error	<ul style="list-style-type: none"> ▪ Fan motor disconnected, defective ▪ Fan motor harness loose, broken, defective
		The machine detected an error in the fusing unit fan or the PSU fan. Either or both fan motors started to rotate within 10 sec. after power on.	

610	B	Communication error - duplex unit	<ul style="list-style-type: none"> ▪ Defective connection between engine board and duplex unit ▪ Engine board defective ▪ Duplex control board defective
		The engine board could not communicate with the duplex unit. (The duplex unit did not respond within 1 sec. to a status request.) Note: This SC is logged, not displayed.	

634	B	Key/card counter device error 3	<ul style="list-style-type: none"> ▪ Replace the RAM backup battery.
		The backup battery of the counter device RAM is low.	

635	B	Key/card counter device error 4	<ul style="list-style-type: none"> ▪ Device control board defective ▪ Device control board backup battery defective
		After installation of the device a message alerts user to a battery voltage abnormal error.	

Trouble-shooting

Service Call Conditions

650	B	Communication error – GAVD I2C	<ul style="list-style-type: none"> ▪ Engine board defective
		<p>The engine board detected an unknown device on the I2C I/F bus (internal bus on the engine control board).</p> <p>The engine board detected an I2C I/F bus error.</p> <p>The number of devices connected to the I2C bus exceeded 12.</p>	

621	B	Communication error – FCI I2C	<ul style="list-style-type: none"> ▪ Engine board defective
		<p>The engine board detected an unknown device on the I2C I/F bus (internal bus on the engine control board).</p> <p>The engine board detected an I2C I/F bus error.</p> <p>The number of devices connected to the I2C bus exceeded 12.</p>	

651	B	Communication error – FCI I2C	<ul style="list-style-type: none"> ▪ Engine board defective
		<p>The engine board detected an unknown device on the I2C I/F bus (internal bus on the engine control board).</p> <p>The engine board detected an I2C I/F bus error.</p> <p>The number of devices connected to the I2C bus exceeded 12.</p>	

669	A	NVRAM Error	
		The NVRAM was not connected at power on, or read/write operations on the NVRAM failed.	<ul style="list-style-type: none"> ▪ NVRAM connected improperly ▪ NVRAM missing

670	D	Engine startup error	
		The BCU failed to respond with the prescribed time when the machine was turned on.	<ul style="list-style-type: none"> ▪ Connections between BCU and controller board are loose, disconnected, or damaged ▪ Replace the BCU ▪ Replace the controller board

672	D	Controller startup error	
		<p>After power on, the line between the controller and the operation panel did not open for normal operation.</p> <p>After normal startup, communication with the controller stopped.</p>	<ul style="list-style-type: none"> ▪ Controller stalled ▪ Controller installed incorrectly ▪ Controller board defective ▪ Operation panel harness disconnected or defective

Trouble-shooting

Service Call Conditions

819	C	Fatal kernel error	
		Due to a control error, a RAM overflow occurred during system processing. One of the following messages was displayed on the operation panel.	<ul style="list-style-type: none"> ▪ System program defective ▪ Controller board defective ▪ Optional board defective ▪ Replace controller firmware
		0x696e	init died
		0x766d	vm_pageout: VM is full
		4361	Cache Error
		Other	

For more details about this SC code error, execute SP5990 to print an SMC report so you can read the error code. The error code is not displayed on the operation panel.

820	D	Self-Diagnostic Error: CPU	<ul style="list-style-type: none"> ▪ Controller board defective ▪ Software defective
		The central processing unit returned an error during the self-diagnostic test.	

821	D	Self-diagnostic error 2: ASIC	
		The ASIC provides the central point for the control of bus arbitration for CPU access, for option bus and SDRAM access, for SDRAM refresh, and for management of the internal bus gate.	<ul style="list-style-type: none"> ▪ ASIC (controller board defective)

For more details about this SC code error, execute SP5990 to print an SMC report so you can read the error code. The error code is not displayed on the operation panel.

822	B	Self-diagnostic error 3: HDD		
		3003	<p>Check performed when HDD is installed: HDD device busy for over 31 s. After a diagnostic command is set for the HDD, but the device remains busy for over 6 s. A diagnostic command is issued to the HDD device but the result is an error</p>	<ul style="list-style-type: none"> ▪ HDD defective ▪ HDD harness disconnected, defective ▪ Controller board defective
3004	No response to the self-diagnostic command from the ASIC to the HDDs		<ul style="list-style-type: none"> ▪ HDD defective 	

Trouble-shooting

823	B	Self-diagnostic Error: NIC	<ul style="list-style-type: none"> ▪ Network interface board defective ▪ Controller board defective
		The network interface board returned an error during the self-diagnostic test.	

824	D	Self-diagnostic error 4: NVRAM	
		NVRAM device does not exist, NVRAM device is damaged, NVRAM socket damaged	<ul style="list-style-type: none"> ▪ NVRAM defective ▪ Controller board defective ▪ NVRAM backup battery exhausted ▪ NVRAM socket damaged

Service Call Conditions

826	D	Self-diagnostic Error: NVRAM/Optional NVRAM	<ul style="list-style-type: none"> ▪ Make sure NVRAM is seated correctly in its socket ▪ Replace the NVRAM on the controller board
		The NVRAM or optional NVRAM returned an error during the self-diagnostic test.	

827	D	Self-diagnostic Error: RAM	<ul style="list-style-type: none"> ▪ Update controller firmware again ▪ Replace RAM DIMM
		The resident RAM returned a verify error during the self-diagnostic test.	

828	D	Self-diagnostic error 7: ROM	
		Measuring the CRC for the boot monitor and operating system program results in an error. A check of the CRC value for ROMFS of the entire ROM area results in an error.	<ul style="list-style-type: none"> ▪ Software defective ▪ Controller board defective ▪ ROM defective

For more details about this SC 833, SC834 error, execute SP5990 to print an SMC report so you can read the error code. The error code is not displayed on the operation panel. The additional error codes (0F30, 0F31, etc. are listed in the SMC report.

829	B	Self-diagnostic Error: Optional RAM	<ul style="list-style-type: none"> ▪ Replace the optional memory board ▪ Controller board defective
		The optional RAM returned an error during the self-diagnostic test.	

838	D	Self-diagnostic Error: Clock Generator	<ul style="list-style-type: none"> ▪ Replace the controller board
		A verify error occurred when setting data was read from the clock generator via the I2C bus.	

851	B	IEEE 1394 I/F error	<ul style="list-style-type: none"> ▪ NIB (PHY), LINK module defective; change the Interface Board ▪ Controller board defective
		Driver setting incorrect and cannot be used by the 1394 I/F.	

853	B	Wireless LAN Error 1	<ul style="list-style-type: none"> ▪ Wireless LAN card missing (was removed)
		During machine start-up, the machine can get access to the board that holds the wireless LAN, but not to the wireless LAN card (802.11b or Bluetooth).	

854	B	Wireless LAN Error 2	<ul style="list-style-type: none"> ▪ Wireless LAN card missing (was removed)
		During machine operation, the machine can get access to the board that holds the wireless LAN, but not to the wireless LAN card (802.11b or Bluetooth).	

855	B	Wireless LAN error 3	<ul style="list-style-type: none"> ▪ Wireless LAN card defective ▪ Wireless LAN card connection incorrect
		An error was detected on the wireless LAN card (802.11b or Bluetooth).	

Troubleshooting

Service Call Conditions

856	B	Wireless LAN error 4	
		An error was detected on the wireless LAN card (802.11b or Bluetooth).	<ul style="list-style-type: none"> ▪ Wireless LAN card defective ▪ PCI connector (to the mother board) loose

857	B	USB I/F Error	
		The USB driver is not stable and caused an error.	<ul style="list-style-type: none"> ▪ Bad USB card connection ▪ Replace the controller board

860	B	HDD startup error at main power on	
		<p>HDD is connected but a driver error is detected.</p> <p>The driver does not respond with the status of the HDD within 30 s.</p>	<ul style="list-style-type: none"> ▪ HDD is not initialized ▪ Level data is corrupted ▪ HDD is defective

861	D	HDD re-try failure	
		At power on the HDD was detected. Power supply to the HDD was interrupted after the system entered the energy save mode, but after the HDD was awakened from the energy save mode it did not return to the ready status within 30 sec.	<ul style="list-style-type: none"> ▪ Harness between HDD and controller board disconnected, defective ▪ HDD power connector disconnected ▪ HDD defective ▪ Controller board defective

863	D	HDD data read failure	
		<p>The data written to the HDD cannot be read normally, due to bad sectors generated during operation.</p>	<ul style="list-style-type: none"> ▪ HDD defective <p>Note: If the bad sectors are generated at the image partition, the bad sector information is written to NVRAM, and the next time the HDD is accessed, these bad sectors will not be accessed for read/write operation.</p>

864	D	HDD data CRC error	
		<p>During HDD operation, the HDD cannot respond to an CRC error query. Data transfer did not execute normally while data was being written to the HDD.</p>	<ul style="list-style-type: none"> ▪ HDD defective

865	D	HDD access error	
		<p>HDD responded to an error during operation for a condition other than those for SC863, 864.</p>	<ul style="list-style-type: none"> ▪ HDD defective.

866	B	SD card error 1: Confirmation	
		<p>The machine detects an electronic license error in the application on the SD card in the controller slot immediately after the machine is turned on. The program on the SD card contains electronic confirmation license data. If the program does not contain this license data, or if the result of the check shows that the license data in the program on the SD card is incorrect, then the checked program cannot execute and this SC code is displayed.</p>	
		<ul style="list-style-type: none"> ▪ Program missing from the SD card ▪ Download the correct program for the machine to the SD card 	

Trouble-shooting

Service Call Conditions

867	D	SD card error 2: SD card removed	
		The SD card in the boot slot when the machine was turned on was removed while the machine was on.	<ul style="list-style-type: none"> ▪ Insert the SD card, then turn the machine off and on.

868	D	SD card error 3: SC card access	
		An error occurred while an SD card was used.	<ul style="list-style-type: none"> ▪ SD card not inserted correctly ▪ SD card defective ▪ Controller board defective ▪ Note: If you want to try to reformat the SC card, use SD Formatter Ver 1.1.

870	B	Address book data error	
		Address book data on the hard disk was detected as abnormal when it was accessed from either the operation panel or the network. The address book data cannot be read from the HDD or SD card where it is stored, or the data read from the media is defective.	<ul style="list-style-type: none"> ▪ HDD defective. ▪ Initialize the HDD with SP5832. If this does not solve the problem, replace the HDD and initialize with SP5832. <p>Note: If you turn off the machine while the HDD is being accessed, this can damage the HDD.</p>

872	B	HDD mail receive data error	
		<p>The machine detected that the HDD was not operating correctly at power on.</p> <p>The machine detected that the HDD was not operating correctly (could neither read nor write) while processing incoming email</p>	<ul style="list-style-type: none"> ▪ HDD defective. ▪ Initialize the HDD with SP5832. If this does not solve the problem, replace the HDD and initialize with SP5832. <p>Note: If you turn off the machine while the HDD is being accessed, this can damage the HDD.</p>

873	B	HDD mail send data error	
		<p>An error was detected on the HDD immediately after the machine was turned on, or power was turned off while the machine used the HDD.</p>	<ul style="list-style-type: none"> ▪ HDD defective. ▪ Initialize the HDD with SP5832. If this does not solve the problem, replace the HDD and initialize with SP5832. <p>Note: If you turn off the machine while the HDD is being accessed, this can damage the HDD.</p>

874	D	Delete All error 1: HDD	
		<p>A data error was detected for the HDD/NVRAM after the Delete All option was used.</p> <p>Note: The source of this error is the Data Overwrite Security Unit B660 running from an SD card.</p>	<ul style="list-style-type: none"> ▪ Turn the main switch off/on and try the operation again. ▪ Install the Data Overwrite Security Unit again. For more, see section “1. Installation”. ▪ HDD defective

Trouble-shooting

Service Call Conditions

875	D	Delete All error 2: Data area	
		<p>An error occurred while the machine deleted data from the HDD.</p> <p>Note: The source of this error is the Data Overwrite Security Unit B660 running from an SD card.</p>	<ul style="list-style-type: none"> ▪ Turn the main switch off/on and try the operation again.
876	D	Log data abnormal	<ul style="list-style-type: none"> ▪ Software error. Update the firmware ▪ NVRAM defective ▪ HDD defective
		<p>An error was detected in the handling of the log data at power on or during machine operation. This can be caused by switching the machine off while it is operating.</p>	
880	B	File Format Converter (MLB) error	
		<p>A request to get access to the MLB was not answered within the specified time.</p>	<ul style="list-style-type: none"> ▪ MLB defective, replace the MLB
900	D	Electrical total counter error	
		<p>The total counter contains something that is not a number.</p>	<ul style="list-style-type: none"> ▪ NVRAM incorrect type ▪ NVRAM defective ▪ NVRAM data scrambled ▪ Unexpected error from external source

920	B	Printer error 1	
		An internal application error was detected and operation cannot continue.	<ul style="list-style-type: none"> ▪ Software defective; turn the machine off/on, or change the controller firmware ▪ Insufficient memory

990	D	Software error 1	
		The software performs an unexpected function and the program cannot continue.	Software defective, re-boot*1

991	C	Software error 2	
		The software performs an unexpected function. However, unlike SC990, recovery processing allows the program to continue.	Software defective, re-boot*1

Trouble-shooting

*1: In order to get more details about SC990 and SC991:

1. Execute SP7403 or print an SMC Report (SP5990) to read the history of the 10 most recent logged errors.
2. If you press the zero key on the operation panel with the SP selection menu displayed, you will see detailed information about the recently logged SC990 or SC991, including the software file name, line number, and so on. 1) is the recommended method, because another SC could write over the information for the previous SC.

995	A	Model information error	<ul style="list-style-type: none"> ▪ Engine firmware not installed correctly
		The CPM information sent from the controller to the engine immediately after power on did not match the DIP SW settings.	

4.2 ERROR MESSAGES

Here is a list of common error messages, a description of the problems, and their solutions. This is just a reference information.

1st/2nd Message	Problem/Solution
Cannot check, Signal in Ad hoc	Disable Ad hoc in the Comm. Mode settings.
Cannot duplex Tray #/ Press Form Feed or reset the Job	Duplexing prohibited from specified tray. Cancel duplex mode Press [Form Feed] or [Job Reset].
Cannot install from this SD card	SD card contains a DOS (Data Overwrite Security) program that has already been installed for another machine. <ul style="list-style-type: none"> ▪ Contact system administrator.
Certificate auto renewal failed	Automatic certificate renewal has failed. <ul style="list-style-type: none"> ▪ Call your service provider.
Change Setting Tray #/Paper Size:, Paper Type:	The paper size/paper type settings in the application program and printer driver do not match. <ul style="list-style-type: none"> ▪ Change the paper type on the paper type setting menu on the machine operation panel ▪ Push [Form Feed] ▪ Cancel the print job.
Change Setting Tray #/ Paper Size:, Paper Type:	The paper size/paper type settings in the application program and printer driver do not match. Do one of the following: <ul style="list-style-type: none"> ▪ Load the tray with the correct paper ▪ Change the paper size using the dial or the special paper size setting menu on the operation panel. ▪ Push [Form Feed] ▪ Cancel the print job.

1st/2nd Message	Problem/Solution
Close Duplex Unit Cover	The duplex unit cover is open. <ul style="list-style-type: none"> ▪ Close the duplex unit cover.
Close Front Cover	The front cover is open. <ul style="list-style-type: none"> ▪ Close the front cover.
Close Rear/Paper Exit Cover	The paper output tray cover or the rear cover is open, or both covers are open. <ul style="list-style-type: none"> ▪ Check the covers, make sure they are closed.
DHCP assigned, Cannot change	DHCP has been enabled to assign network addresses of: IP address, subnet mask, gateway address. <ul style="list-style-type: none"> ▪ Disable DHCP in host interface network setup to change any of these addresses.
Error: Enter 10, or 26 Characters	Number of hex characters entered for the WEP key is incorrect. <ul style="list-style-type: none"> ▪ Enter correct number of characters.
Error: Enter 5, or 13 Characters	Number of ASCII characters entered for the WEP key is incorrect. <ul style="list-style-type: none"> ▪ Enter correct number of characters.
Hardware Problem, Ethernet	Machine detected an Ethernet error. <ul style="list-style-type: none"> ▪ Replace controller board.
Hardware Problem, HDD	Machine identified a HDD Board error. <ul style="list-style-type: none"> ▪ Replace HDD board.
Hardware Problem, Option RAM	Machine detected an optional RAM error. <ul style="list-style-type: none"> ▪ Replace optional RAM.
Hardware Problem, Parallel I/F	Machine failed self-diagnostic test due to a loop back error. <ul style="list-style-type: none"> ▪ If parallel I/F is in use, replace the IEEE1284 interface board.

Error Messages

1st/2nd Message	Problem/Solution
Hardware Problem, Printer Font	<p>Problem with machine font file.</p> <ul style="list-style-type: none"> ▪ Replace print module.
Hardware Problem, USB	<p>Machine detected a USB I/F board error.</p> <ul style="list-style-type: none"> ▪ Replace the USB I/F board.
Hardware Problem, Wireless Board	<p>Access to the IEEE 802.11b board was possible, but an error has been detected.</p> <p>Machine can access IEEE802.11b board but an error was detected.</p> <ul style="list-style-type: none"> ▪ Confirm that the board is installed correctly.
Hardware Problem, Wireless Card	<p>Machine failed to access IEEE 802.11b board.</p> <ul style="list-style-type: none"> ▪ Confirm that the board is installed correctly.
Invalid Data, Power Off On	<p>Machine has received spurious data.</p> <ul style="list-style-type: none"> ▪ Turn the printer off/on.
Invalid Password, Try again	<p>The invalid password was entered and Locked Print or Saved File Print is not applicable.</p> <p>Invalid password entered, Locked Print or Saved File Print cannot apply.</p> <p>Printer displays this message for 4 sec., then returns to previous display.</p> <ul style="list-style-type: none"> ▪ Enter correct password.
Load Correct Size Paper/ Paper Size:, Paper Type:	<p>Size of paper selected does not match size selected with dial on paper tray.</p> <ul style="list-style-type: none"> ▪ Use the dial to select the correct paper size. <p>-or-</p> <ul style="list-style-type: none"> ▪ Press [Form Feed].
Load Paper: Tray# or Form Feed	<p>The specified tray is out of paper.</p> <ul style="list-style-type: none"> ▪ Load paper in the specified tray.

1st/2nd Message	Problem/Solution
Menu Protected, Cannot change	The operation panel has been digitally locked, settings cannot be changed. Message displays for 5 sec., returns to previous display.
Misfeed: Duplex Check paper size/ Open Duplex Unit cover	Paper fed from bypass tray jammed in duplex unit.
Misfeed: Internal, Check paper size/ Open Front Cover	Paper fed from bypass tray jammed in duplex unit.
Misfeed: Ppr, Exit Check paper size/ Open Paper Exit Cover	Paper fed from bypass tray jammed in duplex unit.
Misfeed: Ppr. Tray, Check paper size/ Pull out Tray	Paper is jammed in the duplex unit.
No Files exist	No files available for deleting or printing. This error displays for 3 sec., then machine returns to previous display.
Press # to continue/ Paper Size:, Paper Type:	Requested paper size does not match dial setting on the paper tray. <ul style="list-style-type: none"> ▪ Press [#] to start printing.
Proxy User Name, Password error	Proxy user name and password are incorrect. <ul style="list-style-type: none"> ▪ Change current user name and password to the correct user name and password.
Proxy setting or connection error	1) Proxy address port No. is invalid, 2) proxy is not active, 3) invalid center URL is set, 4) center is not active, 5) proxy is not set. <ul style="list-style-type: none"> ▪ Check all proxy settings.

Error Messages

1st/2nd Message	Problem/Solution
RC Gate, Connection error	<p>Cannot communicate with remote communication gate.</p> <ul style="list-style-type: none"> ▪ Check printer connection. ▪ Check remote communication gate.
ROM Update, Waiting for Data	<p>The printer is waiting for updated data. The image file will be downloaded from an Internet Web site. The image data will overwrite previous ROM , engine firmware, PS DIMM, and other data on the machine.</p> <ul style="list-style-type: none"> ▪ No action required.
ROM Update:, Waiting for Data	<p>The printer is receiving updated data.</p> <ul style="list-style-type: none"> ▪ No action required.
Remove Misfeed Duplex Unit/ Open Duplex Unit cover	<p>Paper is jammed under the paper exit cover.</p> <ul style="list-style-type: none"> ▪ Remove and re-install the duplex unit. ▪ Remove any jammed paper from the duplex unit and under the rear cover.
Remove Misfeed Internal Path/ Open Front Cover	<p>Paper is jammed in the specified input paper feed tray.</p> <ul style="list-style-type: none"> ▪ Open the front and rear cover. ▪ Remove jammed paper.
Remove Misfeed Paper Exit Cover/ Open Paper Exit Cover	<p>Paper is jammed in the specified input paper tray.</p> <ul style="list-style-type: none"> ▪ Open the front and rear cover ▪ Remove jammed paper.
Remove Misfeed Paper Tray/ Pull out Tray	<p>Paper is jammed in the specified input paper tray.</p> <ul style="list-style-type: none"> ▪ Remove paper from the input paper tray. ▪ Reload paper. ▪ Open and close front cover to extinguish message.
Remove Paper Standard Tray	<p>The standard output tray is full.</p> <ul style="list-style-type: none"> ▪ Remove paper from output tray.

1st/2nd Message	Problem/Solution
Replace Maintenance Kit	It is time to replace: feed roller, transfer unit, fusing unit, development unit.
Replace Print Cartridge	Print cartridge requires replacement.
Replace Print Cartridge	Print cartridge requires replacement (out of toner).
Replace Print Cartridge	Print cartridge requires replacement (used toner tank full).
Replace Print Cartridge soon	The print cartridge is out of toner or has reached the end of its service life. Print cartridge requires replacement.
Reset Fusing Unit correctly	<p>Fusing unit not set correctly, or incorrect type installed.</p> <ul style="list-style-type: none"> ▪ Check the type of fusing unit installed. ▪ Confirm that unit is installed correctly.
Reset Print Cartridge	<p>AIO unit not installed or is not installed correctly.</p> <ul style="list-style-type: none"> ▪ Insert AIO. ▪ Check that it is inserted properly.
Reset Tray # or Form Feed	<p>Specified paper input tray is not set correctly. (Current resident printer languages only).</p> <ul style="list-style-type: none"> ▪ Set input tray correctly.
Reset the Job or Form Feed/ Paper Size:, Paper Type:	<p>Actual paper type and size do not match the paper tray size and type setting.</p> <ul style="list-style-type: none"> ▪ Load the indicated tray with the correct paper. ▪ Or, change the paper size using tray dial or operation panel. ▪ Or, push [Form Feed] to print on current paper. ▪ Or, cancel job.

Error Messages

1st/2nd Message	Problem/Solution
SD authentication failed	Authentication from the SD card failed. <ul style="list-style-type: none">▪ Turn the machine off/on.
SD card not set, Contact admin.	The SD card for DOS is not set.
SSID not entered	This message confirms that no ID has been entered. Enter correct ID
Supply order failed.	Call for supply order has failed. <ul style="list-style-type: none">▪ Confirm the setting of @Remote.
Update Mode Err, Power Off On	The printer has failed to restart the update. <ul style="list-style-type: none">▪ Turn the machine off/on.

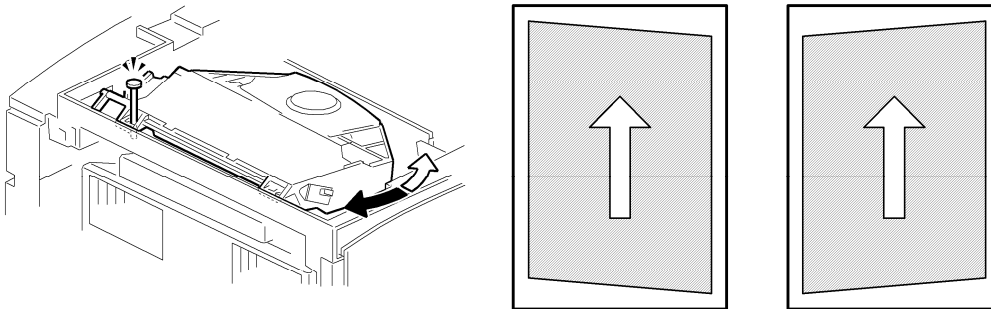
4.3 GENERAL TROUBLESHOOTING

4.3.1 IMAGE ADJUSTMENT

Registration Adjustment

The registration is adjusted in the user mode ("Maintenance-Registration"). For details, see the Printer Reference operation manual.

Parallelogram Image Adjustment



g094r533

Do the following procedure if a parallelogram is printed while adjusting the printing registration using a trimming pattern.

Note

- Use the scanner positioning pin (P/N: A0069104) for this adjustment.
1. Remove the upper cover (See "Upper Cover")
 2. Put a positioning pin in one of the holes
 3. Loosen four screws and move the laser unit.
 4. Tighten the laser unit.
 5. Print the trimming area pattern to check the image. If it is still the same, repeat steps 3 to 5.

4.3.2 ELECTRICAL DEFECTS

Sensors



- The "CN" numbers describe the connector number on the engine board.

CN	Component	Condition	Symptom
17-5	Paper Exit	Open	The Paper Jam indicator will light whenever a print is made.
		Shorted	The Paper Jam indicator lights even if there is no paper.
17-8	Paper Overflow	Open	The paper overflow message is not displayed even when a paper overflow condition exists.
		Shorted	The paper overflow message is displayed.
6-A2	Registration	Open	The Paper Jam indicator will light whenever a print is made.
		Shorted	The Paper Jam indicator lights even if there is no paper.
6-A5	Remaining paper sensor 1	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.

CN	Component	Condition	Symptom
6-A8	Remaining paper sensor 2	Open	The machine cannot determine the paper near-end condition properly.
		Shorted	
4-3	Toner End	High	Toner near-end (toner end) is not detected.
		Low	The add toner message is displayed.

Switches



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

CN	Component	Condition	Symptom
103-1.3 (PSU 120V) 101-1.2 (PSU 230V)	Main	Open	The machine does not turn on.
		Shorted	The machine does not turn off.
11-1	Front Cover Safety	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.
18-3	Rear Cover Safety	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.

Trouble-shooting

General Troubleshooting

Fuses

North America

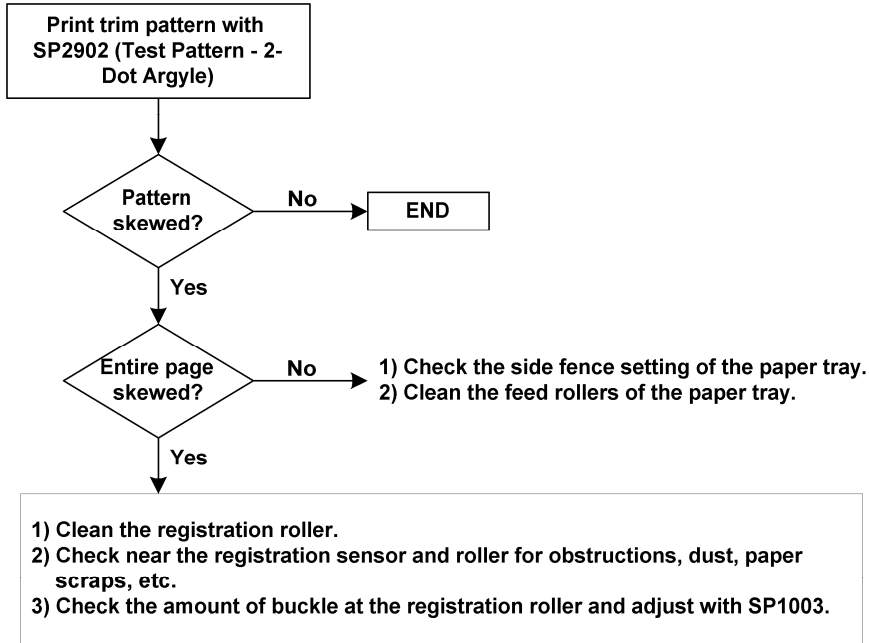
Fuse	Current	Voltage
FU1	15.0 A	AC 100V/120V
FU2	5.0 A	AC 100V/120V
FU3	4.0 A	DC 5V
FU4	4.0 A	DC 5V

Europe

Fuse	Current	Voltage
FU1	6.3 A	AC 220V-240V
FU2	3.15 A	AC 220V-240V
FU3	4.0 A	DC 5V
FU4	4.0 A	DC 5V

4.3.3 SKEW ADJUSTMENT

Follow the instructions in this flowchart to correct image skew.



g176r901

Trouble-shooting

4.3.4 STREAKS IN THE SUB SCAN DIRECTION

If you see streaks or lines at a regular interval in the sub scan direction:

1. Measure the width of the interval between the streaks.
2. Identify the component in the table below that is causing the problem (based on the size of the measured interval), then inspect that component.

Interval Width (approx.)	Check:
94 mm	OPC Drum (diameter 30 mm)
50 mm	Transfer Roller (diameter 16 mm)
105 mm	Fusing Roller (diameter 33 mm)
100 mm	Pressure Roller(diameter 32 mm)

4.3.5 MISCELLANEOUS PROBLEMS

Here is a summary of some problems, what causes them, and how they can be solved.

Problem	Probable Cause/Solution
Black spots at approximately 94 mm intervals.	AIO is defective, transfer roller is dirty. <ul style="list-style-type: none"> ▪ Replace AIO ▪ Clean the transfer roller
Spurious noise during printing	Relay clutch defective. <ul style="list-style-type: none"> ▪ Replace relay clutch
Vertical positioning of printed image is not consistent (sub scan direction)	Registration clutch defective <ul style="list-style-type: none"> ▪ Replace registration clutch
Multiple vertical stripes appear in areas of black coverage	NIC defective <ul style="list-style-type: none"> ▪ Replace NIC
Entire page appears gray, text appears light and enlarged	Synchronization defective. <ul style="list-style-type: none"> ▪ Replace main (engine) board
Frequent paper jams, or message prompts to load correct paper size and type.	Registration sensor defective, registration sensor actuator defective. (High usage can foul the actuator with paper dust.) <ul style="list-style-type: none"> ▪ Replace registration sensor ▪ Replace registration sensor actuator
HDD unit not recognized	The HDD unit of another machine cannot be used. <ul style="list-style-type: none"> ▪ Replace the HDD unit with the new HDD.

SERVICE TABLES

5. SERVICE TABLES

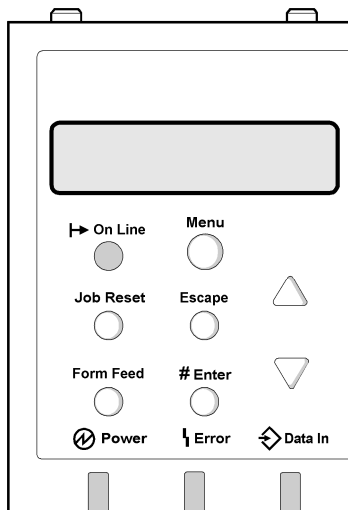
5.1 SERVICE PROGRAM MODE

★ Important

- Before calling for service, first, confirm that there is no print data in the printer buffer (the Data-in LED should not be lit or blinking). If the LED is blinking, this means there is data in the buffer. Wait until all data has been printed.

5.1.1 SERVICE PROGRAM MODE: OVERVIEW

Entering the Service Mode



g094s509

There are two ways to enter the service mode.

Method 1: Fast Start (Power Off)

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

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

Method 2: Normal Start (Power On)

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

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

Service Program Mode

Setting a Service Program

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

Exiting Service Mode

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

5.2 PRINTER CONTROLLER SERVICE MODE

5.2.1 SERVICE MODE MENU ("1. SERVICE MENU")

SPMode	Description	Function
1001	Bit switch	Adjusts bit switch settings. Note: Currently the bit switches are not being used.
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

Currently, the bit switches are not being used.

1. Enter the sp mode, select "Service Menu", then press [Enter] twice.
2. Select #1, #2, #3, or #4 for the desired bit switch, then press [Enter].
 - [▲] [▼]: Move to the next switch.
3. Adjust the bit switch using the following keys.
 - [▲] [▼]: Move to the next bit.
 - [Escape]: Exit without saving changes.
 - [Enter]: Exit and save changes.
 - The left digit on the display is bit 7 and the right digit is bit 0.
4. Press [Enter] to save changes and exit.

5.3 PRINTER ENGINE SERVICE MODE

5.3.1 SERVICE MODE TABLE

Notation	What it means
[range/default/step]	Example: [-9 to +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.
DFU	Denotes "Design or Factory Use". Do not change this value.

SP1-xxx: Feed

	Lead Edge Regist	Leading Edge Registration
1001	Adjusts the printing leading edge registration for feeding from the trays and duplex tray using the trimming area pattern (SP2-902 f No. 12). Push [▲] or [▼] to select the settings (plus or minus). The specification is 4 ± 2 mm	
1001 001	Bypass Tray Plain	[-40 to +40/0/1]
1001 002	Bypass Tray Thick	
1001 003	Main Tray Plain	
1001 004	Main Tray Thick	
1001 005	Optional Tray	
1001 006	Duplex	

1002	Side to Side Reg	Side-to-Side Registration
	Adjusts the printing side-to-side registration from the 1st paper feed station using the trimming area pattern (SP2-902 No.12). Push [▲] or [▼] to select the settings (plus or minus). Specification: 0 ±2.0 mm.	
1002 001	1st Tray	[-40 to +40/ 0 /1]
1002 002	2nd Tray	
1002 003	3rd Tray	
1002 004	Bypass Tray	
1002 005	Duplex	

1003	Regist sag	Registration Buckle Adjustment
	Adjusts the relay clutch timing at registration. Relay clutch timing determines the amount of paper buckle at registration. (A “+” setting causes more buckling.)	
1003 001	Cassette	[-8 mm to+8 mm/ 0 /2 mm step]
1003 002	Multi Tray	[-8 mm to+8 mm/ 0 /2 mm step]
1003 003	Duplex Tray	[-8 mm to+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. Off: Normal On: Phase Control Defaults: NA Off (Normal), EU On (Phase Control)	

Service Tables
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Printer Engine Service Mode

1105	Fusing Temp DFU	
	Adjusts the fusing temperatures for printing and standby mode.	
1105 001	Fusing Temp	Adjusts the fusing temperature for printing on normal paper. [150 to 195/ 180 /5 deg.]
1105 002	Fusing T Stand	Adjusts the fusing temperature for standby mode. [140 to 185/ 168 /1 deg.]

1106	Fusing T Disp(lay)	
	Displays the current fusing temperature.	

1901	OP LoopBack Check		
	Do the loop-back check to test the operation of the optional tray and duplexer.		
1901 001	Summary	Displays a bit array to indicate the status of the engine components. "000" indicates all normal. A "1" indicates a problem at the component designated by its position in the array.	
		Bit	What It Means If "1" Appears
		0	Bank problem (optional tray)
		1	Bin problem (Ignore, not used for this machine)
		2	Duplexer problem

1901 002	Optional Tray	If SP1901 001 indicates a problem by displaying a "1" at the 1st bit, do this SP to show more details	
		No.	What It Means
		0	Normal
		1	D5 did not go HIGH
		2	D5 did not go LOW
		3	X2FCL did not go ON
		4	X2FCL did not go OFF
		5	X2MOTOR did not go ON
		6	X2 MOTOT did not go OFF
		7	X3FCL did not go ON
		8	X3FCL did not go OFF
		9	X3MOTOR did not go ON
		10	X3MOTOR did not go OFF
		11	D4 did not go LOW
		255	Tray is not connected
1901 004	Duplex	If SP1901 001 indicates a problem by displaying a "1" at the 3rd bit, do this SP to show more details	
		No.	What It Means
		0	Normal
		1	Serial signal failure
		2	DPXSET did not go LOW
255	Duplexer not connected		

Service Tables

Printer Engine Service Mode

1902	OHP Clutch Rt	OHP Clutch Rotations
	<p>Selects the number of rotations for the bypass feed roller when the paper type is set for "Transparencies". Change this setting to "2" if jams occur frequently when feeding transparencies from the bypass tray.</p> <p>1 = 1 rotation, 2 = 2 rotations</p>	

1910	Fusing Start DFU
	<p>Roller Turn: Warms up the fusing unit for 20 sec. just after the power switch has been turned on or when the machine warms up from energy saver mode.</p> <p>Normal: There is no 20 sec. warm-up period. However, just after the main power switch is turned on, the motor rotates to clean the drum.</p> <p>Normal, Roller Turn</p>

1911	Curl Control
	<p>Thin paper has a tendency to jam or wrinkle, especially during duplex printing. When this SP code is switched on:</p> <ul style="list-style-type: none"> ▪ The machine ignores the fusing temperature set for SP1105. ▪ When the machine is powered on or recovers from the low power mode the machine requires about 20 sec. to warm up (this is longer than normal). <p>[0 to 1/0/1] 0: Normal 1: Curl Control</p>

1913	SC559 Detect	Fusing Jam SC Setting
	<p>This SP setting determines whether SC559 is issued after three paper late jams occur in the fusing unit. After this SP code is turned on, a counter monitors the number of paper late jams that occur in the fusing unit. After the 3rd occurrence of a fusing jam, SC559 is issued and the machine cannot be used until the service technician releases the error.</p> <p>Note: Switching the machine off/on does not reset this jam counter. The counter is reset after the cause of the jam has been removed and a sheet of paper successfully passes the fusing exit sensor.</p> <p>[0~1/0/1] 0:OFF 1:ON</p>	

SP2-xxx: Drum

2001	Charge Rol Bias DFU	
	Adjusts the voltage applied to the charge roller for printing. [-2000 to 1000/ -1670 /10V step]	

2112	Mainscan Mag	Main Scan Magnification
	Adjusts the main scan magnification. [-0.5% to 0.5%/0/0.1% step]	

2113	Subscan Mag	Sub Scan Magnification
	Adjusts the sub scan magnification. [-0.5% to 0.5%/0/0.1% step]	

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

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

2301	Transfer Curr	Transfer Current
	Adjusts the correction current applied to the transfer roller. [-2 to +4/ 0 /2 mu A/step]	

2902	Test Pattern	
	Selects a printer test pattern. 1. After selecting the pattern, the display automatically goes to SP 5902. 2. Use SP 5902 to print either one test pattern (5902-1) or more than one pattern. (5902-2). 3. Reset SP 2902 to "Not Specified" after printing the test pattern. Note: If SP2902 is not reset to "Not Specified", the pattern will continue to print on every page of every page printed by the operator.	
	Pattern	
	Not Specified	
	Checker Flag	
	Cross-Stitch	
	2Dot Argyle (Use for SP1001, SP1002)	
	1Dot Argyle	
	2Dot Trim	
	2Dot Grid	
	1Dot Grid	

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

2980	Waste Toner Cnt	Used Toner Count
	Displays the waste toner count.	

SP3-xxx: Process

3923	Cartridge Stop	
	<p>Determines whether the machine stops printing after the cartridge counter reaches a set number of main motor rotations.</p> <p>[No/Yes]</p> <p>No: Does not stop after the number of rotations is exceeded.</p> <p>Yes: Stops after the number of rotations is exceeded.</p>	

3924	Toner End Sensor	
3924 001	Toner Near-end	Threshold adjustment for toner near-end detection. [100 to 1000/ 200 /100 ms step]
3924 002	Toner End	Threshold adjustment for toner end detection. [100 to 1000/ 200 /100 ms step]

3926	Prevention of fi	Prevention of Filming
	<p>No, Yes</p> <p>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.</p> <p>Set this to yes to prevent the following:</p> <ul style="list-style-type: none"> ▪ 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 	

3927	TonerEndJudg
	<p>This SP code determines whether the machine disables printing when the machine detects toner end.</p> <ul style="list-style-type: none"> ▪ Even when toner end is detected, there is a small amount of toner left in the AIO. If a user wants to print with the AIO until all toner is used up, then set this SP to 1. But then, there is no toner end detection, and the user must watch the print quality and change the AIO when prints become too pale. <p>[0 to 1/0/1]</p> <p>0: Printing stops when toner end is detected</p> <p>1: Printing can continue even after toner end is detected</p>

SP5-xxx: Mode

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

5051	Toner Refill Displ	Toner Refill Detect Display
	This SP switches on/off the message that prompts the operator when it is necessary to replenish toner in the machine. ON: Message displayed (Default) OFF: Message not displayed	

5055	Display IP add	Display IP Address
	Switches the banner display of the IP address off and on. [0-1/0/1] 0= No, 1= Yes For example, if this SP is switched on, the IP address will be displayed below "Ready" while the printer is in standby mode: Ready 169.254.187.055	

5112	Non-Std Paper	Non-Standard Paper
	Determines whether a non-standard paper size can be input for the universal cassette trays (Tray 2, Tray 3) [0 to 1/0/1] 0: No 1: Yes. If "1" is selected, the customer will be able to input a non-standard paper size using the UP mode.	

5307	Summer Time		
	<p>Lets you set the machine to adjust its date and time automatically with the change to Daylight Savings time in the spring and back to normal time in the fall. This SP lets you set these items:</p> <p>Day and time to go forward automatically in April.</p> <p>Day and time to go back automatically in October.</p> <p>Set the length of time to go forward and back automatically.</p> <p>The settings for 002 and 003 are done with 8-digit numbers:</p>		
	Digits	Meaning	
	1st, 2nd	Month. 4: April, 10: October (for months 1 to 9, the first digit of 0 cannot be input, so the eight-digit setting for 002 or 003 becomes a seven-digit setting)	
	3rd	Day of the week. 0: Sunday, 1: Monday	
	4th	The number of the week for the day selected at the 3rd digit. If "0" is selected for "Sunday", for example, and the selected Sunday is the start of the 2nd week, then input a "2" for this digit.	
	5th, 6th	The time when the change occurs (24-hour as hex code). Example: 00:00 (Midnight) = 00, 01:00 (1 a.m.) = 01, and so on.	
	7th	The number of hours to change the time. 1 hour: 1	
	8th	If the time change is not a whole number (1.5 hours for example), digit 8 should be 3 (30 minutes).	
	001	Setting	Enables/disables the settings for 002 and 003. [0 to 1/1] 0: Disable 1: Enable
	003	Rule Set (Start)	The start of summer time.
	004	Rule Set (End)	The end of summer time.

Service Tables

Printer Engine Service Mode

5404	UCodeCtrClr	User Code Count Clear
	Clears the counts for the user codes assigned by the key operator to restrict the use of the machine. Press [#Enter] to clear.	

5501	PM Alarm	
	[0 to 9999/ 0 /1 step] 0: Alarm off 1 to 9999: Alarm goes off when Value (1 to 9999) ≥ PM counter	

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

5505	Error Alarm DFU	
	Sets the error alarm level. [0to255/30/100 copies per step]	

5507	Supply Alarm	
5507 001	Paper Supply Ala(rn)	Switches the control call on/off for the paper supply. DFU 0: Off, 1: On 0: No alarm. 1: Sets the alarm to sound for the specified number transfer sheets for each paper size (A3, A4, B4, B5, DLT, LG, LT, HLT)
5507 004	MaintenanceKit A	When switched on this function informs the @Remote supply center that the maintenance kit requires servicing. [OFF/ON]
5507 009	Cartridge Alarm	When switched on this function informs the @Remote supply center that the toner cartridge is almost empty (near-end). [OFF/ON]
5507 128	Interval: Others	The "Paper Supply Call Level: nn" SPs specify the paper control call interval for the referenced paper sizes. DFU [00250 to 10000/1000/1 Step]
5507 132	Interval: A3	
5507 133	Interval: A4	
5507 134	Interval: A5	
5507 141	Interval: B4	
5507 142	Interval: B5	
5507 160	Interval: DLT	
5507 164	Interval: LG	
5507 166	Interval: LT	
5507 172	Interval: HLT	

Service Tables

Printer Engine Service Mode

5515	SC/Alarm Setting	
	<p>Determines whether an SC call is issued when an SC error occurs while either CSS or @Remote is enabled: [0 to 1/1/1] 1: An SC call is issued when an SC error occurs. 0: An SC call is not issued when an SC error occurs.</p>	

5801	Memory Clear	
	Resets NVRAM data to the default settings. Before executing any of these SP codes, print an SMC Report.	
5801 001	All	Initializes items 2 to 15 below.
5801 002	Eng Memory Clr	Initializes all registration settings for the engine and process settings.
5801 003	SCS	Initializes default system settings, SCS (System Control Service) settings, operation display coordinates, and ROM update information.
5801 004	IMH	Initializes the image file system. (IMH: Image Memory Handler)
5801 005	MCS	Initializes the automatic delete time setting for stored documents. (MCS: Memory Control Service)
5801 008	PRT	Initializes the printer defaults, programs registered, the printer SP bit switches, and the printer CSS counter.
5801 010	WebService	Deletes the Netfile (NFA) management files and thumbnails, and initializes the Job login ID. Netfiles: Jobs to be printed from the document server using a PC and the DeskTopBinder software

5801 011	NCS	Initializes the system defaults and interface settings (IP addresses also), the SmartNetMonitor for Admin settings, WebStatusMonitor settings, and the TELNET settings. (NCS: Network Control Service)
5801 014	DCS Setting	Initializes the DCS (Delivery Control Service) settings.
5801 015	Clr UCS Setting	Initializes the UCS (User Information Control Service) settings.
5801 016	MIRS Setting	Initializes the MIRS (Machine Information Report Service) settings.
5801 017	CCS	Initializes the CCS (Certification and Charge-control Service) settings.
5801 018	SRM	Initializes information in non-volatile RAM.
5801 019	LCS Setting	Initializes information in non-volatile RAM.

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.

Service Tables

Printer Engine Service Mode

5803	Input check	
	Displays signals received from sensors and switches. SP Modes other than those listed in this table, are not used in the machine.	
	Operation Panel	Component Name
5803 001	Front Cover	Front cover safety switch
5803 002	Main Moter CLK	Main Motor Lock
5803 003	PollyMoter CLK	Polygon Motor Lock
5803 005	Duplex Cover	Duplex Unit cover switch
5803 006	Duplex UnitSet	Duplex Unit
5803 007	Fuser UnitSet	Fusing Unit
5803 008	Fuser New	New Fusing Unit Detection Note: The fusing unit included in maintenance kit has a detection sensor. This SP displays the signal received from new fusing unit after it has been replaced.
5803 011	Paper Full Sens	Paper Overflow Sensor
5803 016	Regist Sens	Registration Sensor
5803 017	Exit Sens	Paper Exit Sensor
5803 018	Dplx Turn Sens	Duplex Inverter Sensor
5803 019	Dplx Ent Sens	Duplex Entrance Sensor
5803 020	Dplx Exit Sens	Duplex Exit Sensor
5803 021	Mlt PaperEnd	Bypass paper sensor
5803 022	Tray1 PaperEnd	Paper end sensor, Standard Tray

5803 023	Tray1 PSize	Paper size switch, Standard tray
5803 024	Tray1 RestSens	Remaining paper sensor-Standard tray
5803 026	Tray2 PaperEnd	Paper end sensor, 1st Opt. Paper Tray
5803 029	Tray3 PaperEnd	Paper end sensor, 2nd Opt. Paper Tray
5803 030	Tray3 PSize	Paper size switch, 2nd Opt. Paper Tray
5803 031	Tray3 RestSens	Remaining paper sensor, 2nd Opt. Paper Tray
5803 032	No2 Carry Sens	Paper feed sensor, 1st Opt. Paper Tray
5803 033	No3 Carry Sens	Paper feed sensor, 2nd Opt. Paper Tray
5803 034	Tray2 PSize	Paper size switch, 1st Opt. Paper Tray
5803 036	Tray2 RestSens	Remaining paper sensor, 1st Opt. Paper Tray

5804	Output check	
	Turns on electrical components individually for test purposes. SP Modes other than those listed in this table, are not used in the machine.	
	Operation Panel	Component Name
5804 001	Main Motor	Main Motor
5804 002	Middle CL	Relay Clutch
5804 003	Regist CL	Registration Clutch
5804 005	No1 CL	Paper Feed Clutch
5804 006	Multi SOL	Bypass Feed Clutch
5804 011	Fan High	Exhaust fan
5804 012	Fan Low	Exhaust fan

Service
Tables

Printer Engine Service Mode

5804 013	Fuser Re	Fusing Lamp Relay
5804 019	Poly + LD1 Both	Polygon Motor + LD 1
5804 020	LD2 Compulsion	Force Test LD 2
5804 021	Poly + LD Both	Polygon Motor + LD 1 + LD 2
5804 022	Polygon Motor	Polygon Motor
5804 023	Pol + LD	Polygon Motor and Laser Diode
5804 026	No2 CL	Paper Feed Clutch-1st Opt. Paper Tray
5804 027	Bank2 Motor	Paper Tray Motor-1st Opt. Paper Tray
5804 028	No3 CL	Paper Feed Clutch-2nd Opt. Paper Tray
5804 029	Bank3 Motor	Paper Tray Motor-2nd Opt. Paper Tray
5804 041	Dplx Mt Normal	Duplex Inverter Motor-forward
5804 042	Dplx Mt Revers(e)	Duplex Inverter Motor-reverse
5804 043	Dplx Mt Long	Duplex Transport Motor
5804 044	Dplx Split SOL	Inverter Gate Solenoid
5804 047	Charge Bias	
5804 048	Developer Bias	
5804 049	Transfer Plus	
5804 050	Transfer minus	

5810	Fusing Err Clr
	Resets an SC code for a fusing unit error. After using this SP mode, turn the main switch off and on.

5811	Machine No. Sett DFU
	Used to input the machine serial number. This is normally done at the factory.

5812	Tel. No. Setting	
	Use these SP modes to input service and support telephone numbers. Enter the number and press [#Enter].	
5812 1	Service	Use this to input the telephone number of the CE printed on the SP print mode printout.
5812 2	Fax Tel No.	Use this to input the fax number of the CE printed on the SP print mode printout.

5816	Remote Service	
5816 001	I/F Setting	
	Selects the remote service setting. [0 to 2 / 2 / 1 /step] 0: Remote service off 1: CSS remote service on 2: @Remote remote service on	
5816 002	CE Call	
	Performs the CE Call at the start or end of the service. [0 or 1 / 0 / 1 /step] 0: Start of the service 1: End of the service NOTE: This SP is activated only when SP 5816-001 is set to "2".	

Service Tables

Printer Engine Service Mode

5816 003	Function Flag	
	<p>Enables or disables the remote service function. [0 to 1 / 0 / 1 /step] 0: Disabled 1: Enabled</p>	
5816 007	SSL Disable	
	<p>Uses or does not use the RCG certification by SSL when calling the RCG. [0 to 1 / 0 / 1 /step] 0: Uses the RCG certification 1: Does no use the RCG certification</p>	
5816 008	RCG Connect Timeout	
	<p>Specifies the connect timeout interval when calling the RCG. [1 to 90 / 10 / 1 second /step]</p>	
5816 009	RCG Write Timeout	
	<p>Specifies the write timeout interval when calling the RCG. [1 to 100 / 60 / 1 second /step]</p>	
5816 010	RCG Read Timeout	
	<p>Specifies the read timeout interval when calling the RCG. [1 to 100 / 60 / 1 second /step]</p>	
5816 011	Port 80 Enable	-
	<p>Enables/disables access via port 80 to the SOAP method. [0 or 1 / 0 / -] 0: Disabled 1: Enabled</p>	

5816 021	RCG-C Registered	
	<p>This SP displays the embedded RCG installation end flag.</p> <p>0: Installation not completed 1: Installation completed</p>	
5816 022	RCG-C Regist Det	
	<p>This SP displays the external RCG installation status.</p> <p>0: External RCG not registered 1: External RCG registered 2: Device registered</p>	
5816 023	Type (N/M)	
	<p>This SP displays and selects the embedded RCG connection method.</p> <p>[0 or 1 / 0 / 1 /step 0: Internet connection 1: Dial-up connection</p>	
5816 061	Cert Expire Tim(ing) DFU	Proximity of the expiration of the certification.
5816 062	HTTP Proxy (Use)	This SP setting determines if the proxy server is used when the machine communicates with the service center.
5816 063	HTTP Proxy (Host)	
	<p>This SP sets the address of the proxy server used for communication between embedded RCG-N and the gateway. Use this SP to set up or display the customer proxy server address. The address is necessary to set up embedded RCG-N.</p> <p>Note: The address display is limited to 128 characters. Characters beyond the 128 character are ignored.</p> <p>This address is customer information and is not printed in the SMC report.</p>	

Service Tables

Printer Engine Service Mode

5816 064	Proxy Port Number	
	<p>This SP sets the port number of the proxy server used for communication between embedded RCG-N and the gateway. This setting is necessary to set up embedded RCG-N.</p> <p>Note: This port number is customer information and is not printed in the SMC report.</p>	
5816 065	Proxy/User Name	
	<p>This SP sets the HTTP proxy certification user name.</p> <p>Note:</p> <ul style="list-style-type: none"> ▪ The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored. ▪ This name is customer information and is not printed in the SMC report. 	
5816 066	Proxy Password	
	<p>This SP sets the HTTP proxy certification password.</p> <ul style="list-style-type: none"> ▪ The length of the name is limited to 31 characters. Any character beyond the 31st character is ignored. ▪ This name is customer information and is not printed in the SMC report. 	
5816 067	Cert: Vp State	
	Displays the status of the certification update.	
	0	The certification used by embedded RCG is set correctly.
	1	The certification request (setAuthKey) for update has been received from the GW URL and certification is presently being updated.
	2	The certification update is completed and the GW URL is being notified of the successful update.
	3	The certification update failed, and the GW URL is being notified of the failed update.
4	The period of the certification has expired and new request for an update is being sent to the GW URL.	

	11	A rescue update for certification has been issued and a rescue certification setting is in progress for the rescue GW connection.
	12	The rescue certification setting is completed and the GW URL is being notified of the certification update request.
	13	The notification of the request for certification update has completed successfully, and the system is waiting for the certification update request from the rescue GW URL.
	14	The notification of the certification request has been received from the rescue GW controller, and the certification is being stored.
	15	The certification has been stored, and the GW URL is being notified of the successful completion of this event.
	16	The storing of the certification has failed, and the GW URL is being notified of the failure of this event.
	17	The certification update request has been received from the GW URL, the GW URL was notified of the results of the update after it was completed, but an certification error has been received, and the rescue certification is being recorded.
	18	The rescue certification of No. 17 has been recorded, and the GW URL is being notified of the failure of the certification update.
5816 068	CERT:Error	
	Displays a number code that describes the reason for the request for update of the certification.	
	0	Normal. There is no request for certification update in progress.
	1	Request for certification update in progress. The current certification has expired.
	2	An SSL error notification has been issued. Issued after the certification has expired.

Service Tables

Printer Engine Service Mode

	3	Notification of shift from a common authentication to an individual certification.
	4	Notification of a common certification without ID2.
	5	Notification that no certification was issued.
	6	Notification that GW URL does not exist.
5816 069	Cer Updt ID	The ID of the request for certification.
5816 083	Firm Up Status	Displays the status of the firmware update.
5816 084	Non-HDD Firm Up	This setting determines if the firmware can be updated, even without the HDD installed. 0: Not allowed update 1: Allowed update
5816 085	Firm Up User Che(ck)	This SP setting determines if the operator can confirm the previous version of the firmware before the firmware update execution. If the option to confirm the previous version is selected, a notification is sent to the system manager and the firmware update is done with the firmware files from the URL.
5816 086	Firmware Size	Allows the service technician to confirm the size of the firmware data files during the firmware update execution.
5816 087	CERT: Macro Ver.	Displays the macro version of the @Remote certification.
5816 088	CERT: PAC Ver.	Displays the PAC version of the @Remote certification.

5816 089	CERT: ID2Code	Displays ID2 for the @Remote certification. Spaces are displayed as underscores (_). Asterisks (***) indicate that no @Remote certification exists.
5816 090	CERT: Subject	Displays the common name of the @Remote certification subject. CN = the following 17 bytes. Spaces are displayed as underscores (_). Asterisks (***) indicate that no DESS exists.
5816 091	CERT: SerialNo.	Displays serial number for the @Remote certification. Asterisks (***) indicate that no DESS exists.
5816 092	CERT: Issuer	Displays the common name of the issuer of the @Remote certification. CN = the following 30 bytes. Asterisks (***) indicate that no DESS exists.
5816 093	CERT: Valid Start	Displays the start time of the period for which the current @Remote certification is enabled.
5816 094	CERT: Valid End	Displays the end time of the period for which the current @Remote certification is enabled.
25816 00	Manual Polling	
	Executes manual polling. Cumin periodically polls the @Remote Gateway by HTTPS. This is called "center polling". Use this SP at any time to poll the @Remote supply center.	

Service Tables

Printer Engine Service Mode

5816 201	Regist Status	
	<p>Displays a number that indicates the status of the @Remote service device.</p> <p>0: Neither the registered device by the embedded RCG nor embedded RCG device is set.</p> <p>1: The embedded RCG device is being set. Only Box registration is completed. In this status the external RCG unit cannot answer a polling request.</p> <p>2: The embedded RCG device is set. In this status the external RCG unit cannot answer a polling request.</p> <p>3: The registered device by the embedded RCG is being set. In this status the embedded RCG device cannot be set.</p> <p>4: The registered module by the embedded RCG has not started.</p>	
5816 202	Letter Number	Allows entry of the number of the request needed for the embedded RCG device.
5816 203	Confirm Execute	Executes the inquiry request to the @Remote GateWay URL.
5816 204	Confirm Result	
	<p>Displays a number that indicates the result of the inquiry executed with SP5816 203.</p> <p>0: Succeeded</p> <p>1: Inquiry number error</p> <p>2: Registration in progress</p> <p>3: Proxy error (proxy enabled)</p> <p>4: Proxy error (proxy disabled)</p> <p>5: Proxy error (Illegal user name or password)</p> <p>6: Communication error</p> <p>7: Certification update error</p> <p>8: Other error</p> <p>9: Inquiry executing</p>	

5816 205	Confirm Place		
	Displays the result of the notification sent to the device from the GW URL in answer to the inquiry request. Displayed only when the result is registered at the GW URL.		
5816 206	Register Execute	Executes Embedded RCG Registration.	
5816 207	Register Result		
	<p>Displays a number that indicates the registration result.</p> <p>0: Succeeded</p> <p>2: Registration in progress</p> <p>3: Proxy error (proxy enabled)</p> <p>4: Proxy error (proxy disabled)</p> <p>5: Proxy error (Illegal user name or password)</p> <p>6: Communication error</p> <p>7: Certification update error</p> <p>8: Other error</p> <p>9: Registration executing</p>		
5816 208	Error Code		
	Displays a number that describes the error code that was issued when either SP5816-204 or SP5816-207 was executed.		
	Cause	Code	Meaning
	Illegal Modem Parameter	-11001	Chat parameter error
		-11002	Chat execution error
		-11003	Unexpected error
Operation Error, Incorrect Setting	-12002	Inquiry, registration attempted without acquiring device status.	
	-12003	Attempted registration without execution of an inquiry and no previous registration.	

Service Tables

Printer Engine Service Mode

		-12004	Attempted setting with illegal entries for certification and ID2.
	Error Caused by Response from GW URL	-2385	Attempted dial up overseas without the correct international prefix for the telephone number.
		-2387	Not supported at the Service Center
		-2389	Database out of service
		-2390	Program out of service
		-2391	Two registrations for same device
		-2392	Parameter error
		-2393	External RCG not managed
		-2394	Device not managed
		-2395	Box ID for External RCG is illegal
		-2396	Device ID for External RCG is illegal
		-2397	Incorrect ID2 format
		-2398	Incorrect request number format
5816 209	Instl Clear	Releases the machine from its embedded RCG setup.	
5816 250	Comm Log Print	Prints the communication log.	

Note: The proxy number, user name, and password comprise proprietary customer information required by the service technician to do the necessary settings for Cumin-N. To prevent unauthorized access this information, these SP settings do not appear in the SMC report.

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

5823	Paper Supply for DFU	
	An @Remote setting. Not required for service technician.	

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

5825	NVRAMDownload	
	Downloads the content of a flash memory card to the NVRAM on the control board.	

Service Tables

Printer Engine Service Mode

	Network	
5828	This machine supports both Internet Protocols IPv4 and IPv6. IPv6 is the next generation protocol designed by the IETF to replace IPV4. IPv6 adds many improvements such as routing and network auto-configuration.	
5828 001	IPv4 Address	This SP allows you to confirm and reset the IPv4 address for Ethernet and a wireless LAN (802.11b): aaa.bbb.ccc.ddd For example, if the 8-bit entry is "192.168.000.001" this is read "0C0A80001h"
5828 002	IPv4 Subnet Mask	This SP allows you to confirm and reset the IPv4 subnet mask for Ethernet and a wireless LAN (802.11b): aaa.bbb.ccc.ddd For example, if the 8-bit entry is "255.255.255.00" this is read "FFFFFF00h".
5828 003	IPv4 DefaultGate	This SP allows you to confirm and reset the IPv4 default gateway used by the network for Ethernet and wireless LAN (802.11b): aaa.bbb.ccc.ddd For example, if the 8-bit entry is "192.169.000.001" this is read "0C0A80001h"
5828 006	DHCP	This SP code allows you confirm and change the setting that determines whether the IP address is used with DHCP on an Ethernet or wireless (802.11b) LAN network. [0~1/1/0] 0: Not used (manual setting) 1: Used

5828 021	ActIPv4Add	This SP allows you to confirm the IPv4 address that was used when the machine started up with DHCP. For example, if the the setting of the the IPv4 address is "0C0A80001h " this is displayed as "192.169.000.001".
5828 022	ActIPv4 SbNet	This SP allows you to confirm the IPv4 subnet mask setting that was used when the machine started up with DHCP. For example, if the setting for the IPv4 subnet mask is "FFFFFF00H" this is displayed as "255.255.255.000"
5828 023	ActIPv4Gatew	This SP allows you to confirm the IPv4 default gateway setting that was used when the machine started up with DHCP. For example, if the setting for the IPv4 gateway is "0C0A80001h" this is displayed as "192.168.000.001".
5828 050	1284 Compatible	Enables and disables bi-directional communication on the parallel connection between the machine and a computer. [0~1/1] 0:Off 1: On
5828 052	ECP	Disables and enables the ECP feature (1284 Mode) for data transfer. [0~1/1] 0: Disabled 1: Enabled
5828 065	Job Spool	Switches job spooling spooling on and off. 0: No spooling 1: Spooling enabled

Service
Tables

Printer Engine Service Mode

5828 066	HD job Clear	<p>This SP determines whether the job interrupted at power off is resumed at the next power on. This SP operates only when SP5828 065 is set to 1.</p> <p>1: Resumes printing spooled jog. 0: Clears spooled job.</p>			
5828 069	JobSpool Protocol	<p>This SP determines whether job spooling is enabled or disabled for each protocol. This is a 8-bit setting.</p>			
		0	LPR	4	BMLinks (Japan Only)
		1	FTP (Not Used)	5	DIPRINT
		2	IPP	6	Reserved (Not Used)
		3	SMB	7	Reserved (Not Used)
5828 090	TELNET	<p>Disables or enables Telnet operation. If this SP is disabled, the Telnet port is closed.</p> <p>[0~1/1] 0: Disable 1: Enable</p>			
5828 091	Web	<p>Disables or enables the Web operation.</p> <p>[0~1/1] 0: Disable 1: Enable</p>			
5828 145	ActIPv6LinkLocal	<p>This is the IPv6 local address referenced on the Ethernet or wireless LAN (802.11b) in the format: "Link-Local address" + "Prefix Length"</p> <p>The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. These notations can be abbreviated. See "Note: IPV6 Addresses " below this table.</p>			

5828 147	ActIPv6Sttles1	<p>These SPs are the IPv6 stateless addresses (1 to 5) referenced on the Ethernet or wireless LAN (802.11b) in the format: "Stateless Address" + "Prefix Length"</p> <p>The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each.</p>
5828 149	ActIPv6Sttles2	
5828 151	ActIPv6Sttles3	
5828 153	ActIPv6Sttles4	
5828 155	ActIPv6Sttles5	
5828 156	IPv6Manual Address	<p>This SP is the IPv6 manually set address referenced on the Ethernet or wireless LAN (802.11b) in the format: "Manual Set Address" + "Prefix Length"</p> <p>The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. These notations can be abbreviated. See "Note: IPV6 Addresses" below this table.</p>
5828 158	IPv6 Gateway	<p>This SP is the IPv6 gateway address referenced on the Ethernet or wireless LAN (802.11b). The IPv6 address consists of a total 128 bits configured in 8 blocks of 16 bits each. These notations can be abbreviated. See "Note: IPV6 Addresses " below this table.</p>

Note: IPV6 Addresses

Ethernet and the Wireless LAN (802.11b) reference the IPV6 "Link-Local address + Prefix Length". The IPV6 address consists of 128 bits divided into 8 blocks of 16 bits:

aaaa:bbbb:cccc:dddd:eeee:ffff:gggg:hhhh:

The prefix length is inserted at the 17th byte (Prefix Range: 0x0~0x80). The initial setting is 0x40(64).

For example, the data:

2001123456789012abcdef012345678940h

is expressed:

2001:1234:5678:9012:abcd:ef01:2345:6789: prefixlen 64

However, the actual IPV6 address display is abbreviated according to the following rules.

Printer Engine Service Mode

Rules for Abbreviating IPV6 Addresses

1. The IPV6 address is expressed in hexadecimal delimited by colons (:) with the following characters:
0123456789abcdefABCDEF
2. A colon is inserted as a delimiter every 4th hexadecimal character.
fe80:0000:0000:0000:0207:40ff:0000:340e
3. The notations can be abbreviated by eliminating zeros where the MSB and digits following the MSB are zero. The example in "2" above, then, becomes:
fe80:0:0:0207:40ff:0:340e
4. Sections where only zeros exist can be abbreviated with double colons (::). This abbreviation can be done also where succeeding sections contain only zeros (but this can be done only at one point in the address). The example in "2" and "3" above then becomes: fe80::207:40ff:0:340e (only the first null sets zero digits are abbreviated as "::")
-or-
fe80:0:0:0:207:40ff::340e (only the last null set before "340e" is abbreviated as "::")

5832	HDD Init.
	Initializes the hard disk and clears all data. Use this only if there is a hard disk error.

5837	Prog Checksum
	Displays the checksum for the engine firmware.

5840	IEEE 802.11b
	Channel Max
5840 006	Sets the maximum range of the bandwidth for the wireless LAN. This bandwidth setting varies for different countries. [1 to 14/1]
	Channel Min
5840 007	Sets the minimum range of the bandwidth for operation of the wireless LAN. This bandwidth setting varies for different countries. [1 to 14/1]
	WEP key number
5840 011	Determines how the initiator (SBP-2) handles subsequent login requests. [00 to 11/00/1] Note: There are four settings (binary numbers): 00, 01, 10, 11. These settings are possible only after the wireless LAN card has been installed. 00: 1st key. If the initiator receives another login request while logging in, the request is refused. 01, 10, 11: 2nd, 3rd, 4th keys are "Reserved".

Printer Engine Service Mode

5842	NFA analysis DFU	Netfile Analysis	
	This is a debugging tool. It sets the debugging output mode of each Net File process. Bit SW 0011 1111	Bit	Groups
		0	System & other groups (LSB)
		1	Capture related
		2	Certification related
		3	Address book related
		4	Machine management related
		5	Output related (printing, delivery)
		6	Repository related

5845	Delivery Srv	
	Provides items for delivery server settings.	
5845 003	Retry Interval	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. [60 to 900/300/1]
5845 004	No. of Retries	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. [0 to 99/3/1]

5845 022	InstantTrans Off
	<p>Switches instant transmission off/on. [0 to 1/1/1] 0: Off. Instant transmission not possible with network setting errors. 1: On. Instant transmission possible with network setting errors.</p> <p>Note:</p> <ul style="list-style-type: none"> ▪ The machine will continue to transmit over the network, even if the network settings are incorrect. (This causes multiple errors, of course.) ▪ With this SP off, the machine will stop communicating with the network if the settings are wrong. This reduces the amount of spurious network traffic caused by errors due to incorrect settings.

5846	UCS Setting
5846 043	<p>AddB Media</p> <hr/> <p>Displays the location of the address book currently in use. 0: Not specified 1: SD Card Slot 1 2: SD Card Slot 2 20: HDD 30: None</p>

Printer Engine Service Mode

5846 046	Init All Set&Dir	Initialize Address Book Settings & Directories
	<p>The SP clears all the setting information managed in UCS and address book information (local, delivery, LDAP) and restores these settings to their default values. Use this SP to initial the account information (user codes and passwords) for system managers and users as well.</p> <ul style="list-style-type: none"> ▪ Note: ▪ Be sure to cycle the machine off and on after you execute this SP code. ▪ Once this SP has been executed, a message on the screens of applications that use the address book will prompt users that the address book is being updated. This prevents the machine from issuing SC870. ▪ The machine initializes to determine if the address book is stored on the HDD or on an SD card. In order for the machine to determine whether to recognize an address book on the HDD or the SD card, the machine must be cycled off and on once more to determine whether the machine should recognize the address book on the HDD or the SD card. 	
5846 047	Init Local Add B	
	Clears all of the address information from the local address book of a machine managed with UCS.	
5846 050	Init All Dir	
	Clears everything (including users codes) in the directory information managed by UCS. However, the accounts and passwords of the system administrators are not deleted.	

5846 060	Search Option	
	This SP uses bit switches to set up the fuzzy search options for the UCS local address book.	
	Bit	Meaning
	0	Checks both upper/lower case characters
	1	Japan Only
	2	
	3	
	4	--- Not Used ---
	5	--- Not Used ---
	6	--- Not Used ---
7	--- Not Used ---	
5846 062	Complexity Opt1	
	<p>Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to upper case and sets the length of the password. [0 to 32/1]</p> <p>Note:</p> <ul style="list-style-type: none"> ▪ This SP does not normally require adjustment. ▪ This SP is enabled only after the system administrator has set up a group password policy to control access to the address book. 	

Service Tables

5846 063	<p>Complexity Opt 2</p> <p>Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to lower case and defines the length of the password. [0 to 32/1]</p> <p>Note:</p> <ul style="list-style-type: none"> ▪ This SP does not normally require adjustment. ▪ This SP is enabled only after the system administrator has set up a group password policy to control access to the address book.
5846 064	<p>Complexity Opt 3</p> <p>Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to numbers and defines the length of the password. [0 to 32/1]</p> <p>Note: This SP does not normally require adjustment. It is enabled only after the system administrator has set up a group password policy to control access to the address book.</p>
5846 065	<p>Complexity Opt 4</p> <p>Use this SP to set the conditions for password entry to access the local address book. Specifically, this SP limits the password entry to symbols and defines the length of the password. [0to32/1]</p> <p>Note: This SP does not normally require adjustment. It is enabled only after the system administrator has set up a group password policy to control access to the address book.</p>

5848	WebService	
5848 004	ac:ud	Switches access control on and off. 0000: OFF, 0001: ON
5848 009	ac:jc	
5848 011	ac:dm	
5848 210	Log Type:Job 1 DFU	
	[0 to 0xFFFFFFFF/0/1]	
5848 211	Log Type:Job 2 DFU	
	[0 to 0xFFFFFFFF/0/1]	
5848 212	Log Type Access DFU	
	[0 to 0xFFFFFFFF/0/1]	
5848 213	PrimarySrv DFU	
5848 214	Secondary Srv DFU	
5848 215	StartTime DFU	
	[0 to 0xFFFFFFFF/0/1]	
5848 216	IntervalTime DFU	
	[1 to 100/1/1]	
5848 217	Timing DFU	
	[0 to 2/0/1]	
	0: Transmission off 1: Transmission 1 by 1 2: Periodic transmission	

Note: These SP codes are for display only; they cannot be changed.

Service
Tables

Printer Engine Service Mode

5849	Installation Date	
	Displays or prints the installation date of the machine.	
5849 002	Switch to Print	<p>Determines whether the installation date is printed on the printout for the total counter.</p> <p>[0 to 1/1]</p> <p>0: No Print</p> <p>1: Print</p>
5849 003	Total Counter	<p>The “Counter Clear Day” has been changed to “Installation Date” or “Inst. Date”.</p> <p>0: Japan</p> <p>1: Outside Japan</p>

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

5857	Save Debug Log
	On/Off
5857 001	Switches on the debug log feature. The debug log cannot be captured until this feature is switched on. [0 to 1/1] 0: OFF 1: ON
5857 006	Save to SD
	Saves the debug log of the input SC number in memory to SD card.
5857 012	Erase SD Log
	Erases all debug logs on the SD Card. If the card contains only debugging files generated by an event specified by SP5858, the files are erased when SP5857 010 or 011 is executed. To enable this SP, the machine must be cycled off and on.
5857 013	FreeSpaceonSD
	Displays the amount of space available on the SD card.
5857 014	SD to SD (4MB)
	Copies the last 4MB of the log (written directly to the card from shared memory) onto an SD card.
5857 015	SD to SD (Any)
	This SP copies the log on an SD card (the file that contains the information written directly from shared memory) to a log specified by key number.
5857 017	Make SD LogFile
	This SP creates a 4 MB file to store a log on an SD card.

Printer Engine Service Mode

5858	Debug Save When	
	These SPs select the content of the debugging information to be saved to the destination. Refer to Section 4 for a list of SC error codes.	
5858 001	EngineSC Error	Stores SC codes generated by copier engine errors.
5858 002	SystemSC Error	Stores SC codes generated by GW controller errors.
5858 003	Any SC Error	[0 to 65535/0/1]
5858 004	Jam	Stores jam errors.

5859	LogSaveKey No.	
5859 001	Key 1	<p>These SPs allow you to set up to 10 keys for log files for functions that use common memory on the controller board.</p> <p>[-9999999 to 9999999/0/1]</p>
5859 002	Key 2	
5859 003	Key 3	
5859 004	Key 4	
5859 005	Key 5	
5859 006	Key 6	
5859 007	Key 7	
5859 008	Key 8	
5859 009	Key 9	
5859 010	Key 10	

5860	SMTP/POP3/IMAP	
5860 002	SMTP SW Port No.	Input the SMTP server port number
5860 003	SMTP Auth Encryp	SMTP authentication enable/disable. [0-1/0/2] 0: Disable 1: Enable
5860 006	SMTP Auth encryp	Encryption mode for SMTP authentication enable/disable (Only valid if 5860 3 is set to "enable") [0-2/0/1] 0: Automatic 1: No encryption 2: Encrypt
5860 007	POP Before SMTP	Enable/disable POP before SMTP. If the SMTP server does not have authentication, you can enable POP before SMTP, then POP authentication is available (SP 5860 13) [0-1/0/1] 0: Disable 1: Enable
5860 008	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. [0-3000/300]
5860 009	Rcv Protocol	This SP specifies POP3 protocol or switches off receiving. 0: No receiving 1: POP3 2: IMAP4 3: SMTP

Printer Engine Service Mode

5860	SMTP/POP3/IMAP	
5860 013	POP Auth Encrypt	<p>If POP before SMTP is enabled, then you can use this SP to enable or disable encryption mode for POP authentication.</p> <p>[0-2/0/1]</p> <p>0: Automatic 1: No encryption 2: Encrypt</p>
5860 014	POP Srv Port No.	Input the POP server port number
5860 015	IMAP Srv Port No	<p>This SP sets the number of the IMAP4 server port.</p> <p>[1~65535/143/1]</p>
5860 016	SMTP Rcv Port No	<p>This SP sets the number of the port that receives SMTP mail.</p> <p>[1~65535/25/1]</p>
5860 017	Receive Interval	<p>This SP sets the timing for mail received at regular intervals.</p> <p>[2~1440/3/1 min.]</p> <p>Note: Setting this SP to "0" switches off receiving mail at timed intervals.</p>
5860 019	Mail Keep Sett.	<p>This SP setting determines whether received mail is stored on the server.</p> <p>0: Received mail not stored 1: All received mail stored 2: Stores only mail that generated errors during receiving</p>

5860	SMTP/POP3/IMAP	
5860 020	<p>ParMail RectOut</p> <p>[1 to 168/72/1]</p> <p>Sets the amount of time to wait before saving a mail that breaks up during reception. The received mail is discarded if the remaining portion of the mail is not received during this prescribed time.</p>	
5860 021	<p>MDN Res RFC2298</p> <p>Determines whether RFC2298 compliance is switched on for MDN reply mail.</p> <p>[0 to 1/1]</p> <p>0: No</p> <p>1: Yes</p>	
5860 022	<p>SMTPAut FieldRep</p> <p>Determines whether the FROM item of the mail header is switched to the validated account after the SMTP server is validated.</p> <p>[0 to 1/1]</p> <p>0: No. "From" item not switched.</p> <p>1: Yes. "From" item switched.</p>	
5860 025	<p>SMTP Auth Direct</p> <p>Occasionally, all SMTP certifications may fail with SP5860 006 set to "2" to enable encryption during SMTP certification for the SMTP server. This can occur if the SMTP server does not meet RFC standards. In such cases you can use this SP to set the SMTP certification method directly. However, this SP can be used only after SP5860 003 has been set to "1" (On).</p> <p>Bit0: LOGIN</p> <p>Bit1: PLAIN</p> <p>Bit2: CRAM_MD5</p> <p>Bit3: DIGEST_MD5</p> <p>Bit4 to Bit 7: Not Used</p>	

Printer Engine Service Mode

5866	E-Mail Report	
	This SP controls operation of the email notification function.	
5866 001	E-Mail Validity	Disables and re-enables the email notification feature. [0~1/0/1] 0: Enable 1: Disable
5866 005	ForceDateField	Disables and re-enables the addition of a date field to the email notification. [0~1/0/1]

5869	RAM Disk Setting	
	This SP enables and disables email sending and receiving. This setting determines the size of the RAM disk (MB) that the machine uses to manage email sending and receiving. [0 to 1/1/1] 0: Use. Allocates 46 MB for sending and 8 MB for receiving. 1: Do not use	

5870	Common KeyInfo W(riting)	
	Writes to flash ROM the common proof for validating the device for @Remote specifications. Note: <ul style="list-style-type: none"> ▪ These SP settings are required to connect @Remote or must also be set after the board is replaced. ▪ Even if @Remote is not connected, these settings are used for Web validation, so at least SP5870 003 must be enabled. 	
5870 001	Writing	Writes the authentication data (used for NRS) in the memory.
5870 003	Initialize	Initializes the authentication data in the memory.

5873	SDCardAppliMove	
	Allows you to move applications from one SD card another. For more, please refer to the "SD Card Application Move" section.	
5873 001	MoveExec	Executes the move from one SD card to another.
5873 002	UndoExec	This is an undo function. It cancels the previous execution.

5876	Security Clear DFU	
	This SP code clears all security data, only security data in the NCS area, or only security data in the UCS area.	
5876 001	All Clear	
5876 011	Clear NCS Sec.	
5876 015	Clr UCS Security	

5878	Option Setup	Data Overwrite Security (DOS) Setup
	Press [#Enter] to initialize the Data Overwrite Security option.	

5886	ROM update	
	The setting of this SP allows or prohibits updating the ROM. 0:Yes, 1:No	

5887	GetSDCounter	
	This SP outputs a text file (.txt) that lists the counts for the application SD card inserted into the SD service slot. Before executing this SP, you must first create a folder entitled "SD_COUNTER" in the root directory of the SD card.	

Printer Engine Service Mode

5902	Test Print	
	Prints the test pattern that you selected with SP 2902.	
5902 001	1 Sheet Test	
	Prints one test pattern	
5902 002	Cont Test	
	Prints consecutive copies of the test pattern	

5907	Plug / Play	
	<p>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.</p> <p>To set the plug and play model name, enter the model number, and then press [#Enter].</p>	

5930	Meter Charge
5930 001	<p>Meter Charge</p> <p>Switches the meter-click charge mode on and off. [No], [Yes]</p> <p>Important: Turn the main switch off/on after changing this setting.</p> <p>No: Meter charge mode disabled (default). This setting is for machines where the operator is responsible for replacing the AIO and the Maintenance Kit.</p> <ul style="list-style-type: none"> ▪ Alert messages are displayed on the operation panel when the AIO or PM parts reach the limit of their yield. ▪ The PM counter resets automatically after the user replaces the fusing unit. <p>Yes: Meter charge mode enabled. This setting is for machines where the service technician has responsibility for servicing the machine.</p> <ul style="list-style-type: none"> ▪ Alert messages are not displayed when the AIO or PM parts reach the limits of their yield. ▪ Pressing the [Menu] button displays the meter charge count. ▪ The service technician must reset the PM counter after completing machine maintenance.
5930 002	<p>M C Display</p> <p>Switches the PM alerts on and off. [No], [Yes]</p> <p>No: Maintenance Kit alerts will not display. Yes: Maintenance Kit alerts will display.</p> <p>Important:</p> <ul style="list-style-type: none"> ▪ The setting of SP5930 002 is ignored unless SP5930 001 is set to "Yes". ▪ In order for the PM alerts to display both SP5930 001 and SP5930 002 must be set to "Yes".

Service Tables

Printer Engine Service Mode

5930 003	Pcon. Life Alert
	<p>This SP switches the near-end and end alerts on/off for the service life of the OPC (not toner), based on the accumulated operation time of the main motor.</p> <p>Note: "Pcon" (photoconductor) means OPC drum.</p> <p>[No], [Yes]</p> <p>No: Near-end and end alerts will not display.</p> <p>Yes: Near-end and end alerts will display.</p> <p>Important:</p> <ul style="list-style-type: none"> ▪ The setting of SP5930 003 is ignored unless SP5930 001 is set to "Yes". ▪ In order for the OPC alerts to display (near-end, end of service life) for the AIO, both SP5930 001 and SP5930 003 must be set to "Yes".

5990	SP Print Mode	
5990 001	All (Data List)	Prints the summary sheet for the item selected.
5990 002	SP (Mode Data Li(st)	
5990 004	Logging Data	
5990 005	Diagnostic Repor(t)	
5990 006	Non-Default	
5990 007	NIB Summary	

SP7-xxx: Data Log

7001	Operation Time	
	Displays the total number of engine rotation cycles made so far. Note: <ul style="list-style-type: none"> ▪ One cycle is calculated as 3.9 sec. of drum rotation. ▪ However, this counter also includes idle rotations. ▪ This counter is not reset at PM. 	

7401	SC Counter	Displays the total number of service calls that have occurred. Display range: 0000 to 9999
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7403	Latest10SCLog	
7403 001	Latest	Displays the most recent service calls successive groups of 10.
7403 002	Latest 1	
7403 003	Latest 2	
7403 004	Latest 3	
7403 005	Latest 4	
7403 006	Latest 5	
7403 007	Latest 6	
7403 008	Latest 7	
7403 009	Latest 8	
7403 010	Latest 9	

Printer Engine Service Mode

7502	Total Jam	Displays the total number of jams. Display range: 0000 to 9999
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7504	Jam Location	
	<p>Displays the total number of jams by location. A "Paper Late" error occurs when the paper fails to activate the sensor at the precise time. A "Paper Lag" paper jam occurs when the paper remains at the sensor for longer than the prescribed time. Display range: 0000 to 9999</p>	
	Error No.	Error
	1	At Power On
	11	Off-1 VerticalSN
	12	Off-2 VerticalSN
	13	Off-RegistBypass
	14	Off-Regist Tray1
	15	Off-Regist Tray2
	16	Off-Regist Tray3
	17	Off-RegistDuplex
	18	On-Regist SN
	19	Off-Exit SN
	20	On-Exit SN
	31	Off-Duplx Exit
32	On- Duplx Exit	

	33	Off-Dup Inverter
	34	On- Dup Inverter
	35	Off-Duplex Exit
	36	On- Duplex Exit

7506	Paper Size	
7506 006	A5 LEF	Displays the total number of jams by paper size
7506 044	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	

Service
Tables

Printer Engine Service Mode

7507	Jam History	
	<p>Displays the copy jam history in groups of 10, starting with the most recent 10 jams. Display contents are as follows:</p> <p>CODE is the SP7-504-nnn number.</p> <p>SIZE is the ASAP paper size (hexadecimal).</p> <p>TOTAL is the total jam error count (SP7-003)</p> <p>DATE is the date the jams occurred.</p>	
7507 001	Latest	<p>Sample Display:</p> <p>CODE: 007</p> <p>TOTAL: 0000334</p>
7507 002	Latest 1	
7507 003	Latest 2	
7507 004	Latest 3	
7507 005	Latest 4	
7507 006	Latest 5	
7507 007	Latest 6	
7507 008	Latest 7	
7507 009	Latest 8	
7507 010	Latest 9	

Paper Size	Code (hex)	Paper Size	Code (hex)
A4 LEF	05	B4 SEF	8D
A5 LEF	06	B5 SEF	8E
B5 LEF	0E	DLT SEF	A0
LT LEF	26	LG SEF	A4
HLT LEF	2C	LT SEF	A6
A3 SEF	84	HLT SEF	AC
A4 SEF	85	Others	FF
A5 SEF	86		

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 001	Paper
7803 002	Transfer Rol(ler)
7803 003	Paper Feed Rol(ler)
7803 004	Fusing Unit

7804	PM Counter Reset
	Resets the PM counter. To reset, press [#Enter].

Printer Engine Service Mode

7807	SC/Jam Clear
	Resets the SC and jam counters. To reset, press [#Enter]. Note: This SP does not reset the jam history counter: SP7-507

7832	DiagResult
	Press [#Enter] to display a list of error codes. Nothing is displayed if no errors have occurred.

7836	TotalMemorySize
	Displays the memory capacity of the controller system.

7901	Assert Info	
7901 001	File Name	Records the location where a problem is detected in the program. The data stored in this SP is used for problem analysis.
7901 002	# of Lines	
7901 003	Location	

7910	ROM No.	
7910 001	System	
7910 002	Engine	
7910 013	Duplex	
7910 018	NIB	
7910 132	Netware Opt.	
7910 150	RPCS	
7910 151	PS	
7910 158	PCL	
7910 159	PCLXL	
7910 180	FONT	
7910 181	FONT1	
7910 182	FONT2	
7910 183	FONT3	
7910 200	Factory	
7910 202	Net File	
7910 204	Printer	
7910 209	Test Suite	
7910 210	MIB	
7910 211	Web System	
7910 213	SDK1	
7910 214	SDK2	
7910 215	SDK3	

Printer Engine Service Mode

7911	Firmware Version	
7910 001	System	
7910 002	Engine	
7910 013	Duplex	
7910 018	NIB	
7910 132	Netware Opt.	
7910 150	RPCS	
7910 151	PS	
7910 158	PCL	
7910 159	PCLXL	
7910 180	FONT	
7910 181	FONT1	
7910 182	FONT2	
7910 183	FONT3	
7910 200	Factory	
7910 202	Net File	
7910 204	Printer	
7910 209	Test Suite	
7910 210	MIB	
7910 211	WebSystem	
7910 213	SDK1	
7910 214	SDK2	
7910 215	SDK3	

7931	Cartridge info	
	<p>Displays information about the cartridge.</p> <ul style="list-style-type: none"> ▪ Returns a value of "0" if the number stored in the cartridge is not recognized. ▪ This is information on the AIO ID Chip so if the cartridge is not installed, if the AIO is not set properly, or if the front door is open, no value will be displayed because the machine cannot communicate with the AIO. 	
7931 001	Machine ID	Identification number of the machine (Model Name)
7931 002	Version	Cartridge version number
7931 003	Brand ID	<p>Acquires value at "01H" on the AIO ID chip and for the OEM brand displays:</p> <p>1: Ricoh 2: NRG 3: Komachi 4: Fujitsu</p>
7931 004	Area ID	<p>Acquires value at "03H" on the AIO ID chip and displays:</p> <p>1: DOM (Japan) 2: NA (North America) 3: EU (Europe) 4: Asia</p>
7931 005	Kind ID	<p>Acquires value at "04H" on the AIO ID chip and for the part code number displays:</p> <p>1: 3K 2: 6K 3: 15K</p>
7931 006	Color ID	<p>Acquires value at "05H" on the AIO ID chip and displays "1" for the color of the toner (Black). This is the only setting for this machine.</p>

Printer Engine Service Mode

7931 007	Maintenance ID	Acquires value at "06H" on the AIO ID chip and displays: 1: Printer (no maintenance contract) 3: Accessories 99: AIO
7931 008	New AIO	Acquires value at "08H" on the AIO ID chip and displays: 0: Normal 64: New AIO
7931 009	Recycle Count	Acquires value at "09H" on the AIO ID chip and displays 0 to 3.
7931 010	EDP Code	Acquires value at "0FH" on the AIO ID chip and displays the toner order code. The code is a string of ASCII characters.
7931 011	Maker ID	Acquires values at "10H" to "17H" on the AIO ID chip and displays an ASCII string that identifies the manufacturer. Note: <ul style="list-style-type: none"> ▪ This data is originally entered as BCD and changes into a 16-character string in order to convert it to ASCII. ▪ However, only 10 bytes can be used to communicate with the controller, so the 16 bytes are truncated to 10 bytes.
7931 012	Remaining Toner	Acquires the value at the AIO ID Chip address "2CH" and displays "0" to "100" (the percentage of toner remaining in the cartridge).
7931 013	Toner End	Acquires the value at the AIO ID Chip address "2DH" and displays: N: Toner near end E: Toner end

7931 014	Refill Flag	Acquires the values at the AIO ID Chip addresses "2EH" to "2FH" and displays "RF" when the cartridge requires refilling.
7931 015	R:Total Counter	Acquires the values at the AIO ID Chip addresses "30H" to "3BH" and displays a number in the range "0" to "99999999". This is the total count at time of installation.
7931 016	E:Total Counter	Acquires the values at the AIO ID Chip addresses "38H" to "3BH" and displays a number in the range "0" to "99999999". This is the total count at toner end.
7931 017	Unit Counter	Acquires the values at the AIO ID Chip addresses "40H" to "43H" and displays a number in the range "0" to "99999999". This is the total number of pages output by the AIO unit. Counter adds once for each sheet output.
7931 018	Install Date	Acquires the values at the AIO ID Chip addresses "58H" to "5BH" and displays Year-Month-Date of installation for the AIO unit. This setting updates automatically through a serial interface with the machine when the new unit is installed.

Printer Engine Service Mode

7931 019	Toner End Date	Acquires the values at the AIO ID Chip addresses "5CH" to "5FH" and displays Year-Month-Date when toner end occurred.
7931 020	Conductor Time1	Acquires the values at 68H, 69H displays a number in the range "0" to "00000000". This is the count for OPC. Note: <ul style="list-style-type: none"> ▪ This information resides at four locations (020, 021, 022, 023. The recycle count determines where the value is written. ▪ The counter increments by "1" for every 6 sec. of drum rotation time. ▪ To calculate the actual time in sec., multiply the displayed value by 6.
7931 021	Conductor Time2	
7931 022	Conductor Time3	

7931 023	Conductor Time4	
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7932	CartRidge Life
	<p>Displays information about the cartridge service life.</p> <ul style="list-style-type: none"> ▪ Returns a value of "0" if the number stored in the cartridge is not recognized. ▪ This is information on the AIO ID Chip so if the cartridge is not installed, if the AIO is not set properly, or if the front door is open, no value will be displayed because the machine cannot communicate with the AIO.

7932 001	ConductorTime	The is the same information retrieved from 68H, 69H of the AIO ID Chip with SP7931 (see 7931 020to023 above), but the value displayed here	
7932 002	PreConductTime	<p>calculated with the rotation time numbers at 46H, 47H of the EEPROM (sec.)</p> <ul style="list-style-type: none"> ▪ Conductor Time. Rotation count of the OPC presently installed. ▪ PreConduct Time. Rotation count of the previous OPC. <p>Note:</p> <ul style="list-style-type: none"> ▪ The counter increments by "1" for every 6 sec. of drum rotation time. ▪ To calculate the actual time in sec., multiply the displayed value by 6. 	
7932 003	Cart Alert	<p>Displays a 6-bit array that provides information about toner, used toner, and OPC service life of the cartridge presently installed in the machine.</p> <p>Note: "000000" indicates "Normal". A "1" indicates that a change has occurred for the in the alert status at one or more of the bit positions below.</p>	
		Bit	What It Means
		0	Toner near-end
		1	Toner end
		2	Used toner near-end
		3	Used toner end
		4	OPC service life near-end
		5	OPC service life end

Printer Engine Service Mode

7932 04	Pre Cart Alert	<p>Displays a 6-bit array that provides information about toner, used toner, and OPC service life of the cartridge previously installed in the machine.</p> <p>Note: "000000" indicates "Normal". A "1" indicates that a change has occurred for the in the alert status at one or more of the bit positions below.</p>	
		Bit	What It Means
		0	Toner near-end
		1	Toner end
		2	Used toner near-end
		3	Used toner end
		4	OPC service life near-end
		5	OPC service life end
7932 005	VarietyID	<p>This is the same type of information read with SP7931 005 from the AIO ID Chip for the cartridge presently installed in the machine. However, this SP displays the value read from 4CH of the EEPROM.</p> <p>1: 3K 2: 6K 3: 15K</p>	

7932 006	Pre VarietyID	<p>This is the same type of information read with SP7931 005 from the AIO ID Chip for the cartridge presently installed in the machine, but this SP displays the value read from 4CH of the EEPROM for the previously installed cartridge.</p> <p>1: 3K 2: 6K 3: 15K 4: 20K</p>
7932 007	RFConductTime	<p>This SP saves the rotation count (sec.) for the OPC when a re-filled cartridge is detected. When a re-filled cartridge is detected, the value for the OPC rotation count is copied from the AIO ID Chip and saved this SP.</p> <p>Note:</p> <ul style="list-style-type: none"> ▪ If the cartridge is not installed, if the AIO is not set properly, or if the front door is open, no value will be displayed because the machine cannot communicate with the AIO. ▪ The counter increments by "1" for every 6 sec. of drum rotation time. ▪ To calculate the actual time in sec., multiply the displayed value by 6.

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Printer Engine Service Mode

7932 008	RemainingCart	<p>This SP displays the length of the service life that remains for the OPC.</p> <ul style="list-style-type: none"> ▪ The value is read from the AIO ID Chip. ▪ The number displayed indicates as a percentage the amount of time remaining for the OPC based on the number of drum rotations. ▪ If the cartridge is not installed, if the AIO is not set properly, or if the front door is open, no value will be displayed because the machine cannot communicate with the AIO. <p>Important Note: This SP reads only the engine information. This information is not sent to the controller.</p>
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7993	Total counter	
	Displays the engine total counter. It counts up for all prints, including service reports.	

SP8XXX: Data Log 2

The SPs in this group are prefixed with a letter that indicates the mode of operation. The mode of operation is referred to as an 'application'. Before reading the Group 8 Service Tables, make sure that you understand what these prefixes mean.

Prefix	Application	What It Means
T:	Total	Grand total of the items counted for all applications (C, F, P, etc.).
P:	Print	Totals (pages, jobs, etc.) executed for each application when the job was not stored on the document server.
O:	Other	Other applications (external network applications, etc.). Refers to network applications such as Web Image Monitor. Utilities developed with the SDK (Software Development Kit) are also counted.

Group 8 SP codes are limited to 17 characters, forced by the necessity of displaying them on the small LCDs of printers and faxes that also use these SPs.

 Note

- All of the Group 8 SPs are reset with SP5 801 1 Memory All Clear.

8381	T:2-2-01	These SPs count the number of pages printed by the customer.
8384	P:2-2-01	The counter for the application used for storing the pages increments.
8387	O:2-2-01	[0 to 9999999/0/1]

- When the A3/DLT double count function is switched on with SP5104, 1 A3/DLT page is counted as 2.
- When several documents are merged for a print job, the number of pages stored are counted for the application that stored them.
- These counters are used primarily to calculate charges on use of the machine, so the following pages are not counted as printed pages:
 - Blank pages in a duplex printing job.
 - Reports printed to confirm counts.

Printer Engine Service Mode

- All reports done in the service mode (service summaries, engine maintenance reports, etc.)
- Test prints for machine image adjustment.
- Error notification reports.
- Partially printed pages as the result of a jam.

8391	T:2-2-02	Large Size Pages Printed
	These SPs count pages printed on paper sizes A3/DLT and larger. [0 to 9999999/0/1]	

8411	T:2-2-04	Total Duplex Pages Printed
	This SP counts the amount of paper (front/back counted as 1 page) used for duplex printing. Last pages printed only on one side are not counted. [0 to 9999999/0/1]	

8421	T:2-2-05	Total Simplex/Duplex Pages
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing. This is the total for all applications. [0 to 9999999/0/1]	
8424	P: 2-2-05	Total Simplex/Duplex Pages
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by the printer application. [0 to 9999999/0/1]	
8427	O: 2-2-05	Total Simplex/Duplex Pages
	These SPs count by binding and combine, and n-Up settings the number of pages processed for printing by Other applications [0 to 9999999/0/1]	

842x 1	Simplex> Duplex	
842x 4	Simplex Combine	
842x 5	Duplex Combine	
842x 6	2>	2 pages on 1 side (2-Up)
842x 7	4>	4 pages on 1 side (4-Up)
842x 8	6>	6 pages on 1 side (6-Up)
842x 9	8>	8 pages on 1 side (8-Up)
842x 10	9>	9 pages on 1 side (9-Up)
842x 11	16>	16 pages on 1 side (16-Up)
842x 12	Booklet	
842x 13	Magazine	

- These counts are especially useful for customers who need to improve their compliance with ISO standards for the reduction of paper consumption.
- Pages that are only partially printed with the n-Up functions are counted as 1 page.

Service
Tables

8441	T:2-2-07	Total Printed/Paper Size: All Applications
	These SPs count by print paper size the number of pages printed by all applications. [0 to 9999999/0/1]	
8444	P: 2-2-07	Total Printed/Paper Size: Printer Application
	These SPs count by print paper size the number of pages printed by the printer application. [0 to 9999999/0/1]	

Printer Engine Service Mode

	O: 2-2-07	Total Printed/Paper Size: Other
8447	These SPs count by print paper size the number of pages printed by Other applications. [0 to 9999999/0/1]	
844x 1	A3	
844x 2	A4	
844x 3	A5	
844x 4	B4	
844x 5	B5	
844x 6	DLT	
844x 7	LG	
844x 8	LT	
844x 9	HLT	
844x 10	Full Bleed	
844x 254	Other (Standard)	
844x 255	Other (Custom)	

- These counters do not distinguish between LEF and SEF.

	2-2-08	Printed Pages/Paper Tray
8451	These SPs count the number of sheets fed from each paper feed station. [0 to 9999999/0/1]	
001	Bypass Tray	Bypass Tray
002	Tray 1	Main Machine
003	Tray 2	Main Machine

004	Tray 3	Paper Tray Unit (Option)
005	Tray 4	Paper Tray Unit (Option)
006	Tray 5	LCT (Option)
007	Tray 6	Currently not used.
008	Tray 7	
009	Tray 8	
010	Tray 9	

8461	T:2-2-09	Printed Pages/Paper Type
	<p>[0 to 9999999/0/1]</p> <p>These SPs count by paper type the number pages printed by all applications.</p> <ul style="list-style-type: none"> ▪ These counters are not the same as the PM counter. The PM counter is based on feed timing to accurately measure the service life of the feed rollers. These counts are based on output timing. ▪ Blank sheets (covers, chapter covers, slip sheets) are also counted. ▪ During duplex printing, pages printed on both sides count as 1, and a page printed on one side counts as 1. 	
8464	P: 2-2-09	[0 to 9999999/0/1]
	<p>These SPs count by paper type the number pages printed by the printer application.</p>	
846x 1	Normal	
846x 2	Recycled	
846x 3	Special	
846x 4	Thick	
846x 5	Normal (Back)	
846x 6	Thick (Back)	

Service Tables

Printer Engine Service Mode

846x 7	OHP
846x 8	Other

8521	T:2-2-15	Total Pages/Finish
	[0 to 9999999/0/1] These SPs count by finishing mode the total number of pages printed by all applications.	
8524	P: 2-2-15	Total Pages/Finish
	These SPs count by finishing mode the total number of pages printed by the Print application. [0 to 9999999/0/1]	
852x 1	Sort	
852x 2	Stack	
852x 3	Staple	
852x 4	Booklet	
852x 5	Z-Fold	
852x 6	Punch	
852x 7	Other	

- If stapling is selected for finishing and the stack is too large for stapling, the unstapled pages are still counted.
- The counts for staple finishing are based on output to the staple tray, so jam recoveries are counted.

8581	T:2-2-26	Total Counter: Breakdown
	These SPs count the total output broken down by color output, regardless of the application used. In addition to being displayed in the SMC Report, these counters are also displayed [0 to 9999999/0/1]	

8591	O: 2-2-26	Total Counter: Other
	These SPs count the totals for A3/DLT paper used, number of duplex pages printed, and the number of staples used. These totals are for Other (O:) applications only. [0 to 9999999/0/1]	
8591 001	A3/DLT	
8591 002	Duplex	

8601	T:2-2-28	Coverage Counter
	These counts correspond to the total counts recorded with the mechanical counter.	
8601 001	Cvg: BW %	Coverage: BW Pages
8601 011	Cvg: BW Pages	Coverage: BW Percent

8771	3-0-01	Dev Counter
	This SP counts the number of development roller rotations for development. [0 to 9999999/0/1]	

Printer Engine Service Mode

8781	3-0-03	Pixel Coverage Ratio
	This SP displays the count for the number of toner bottles used. The count is done based on the assumption that one toner bottle yields about 1,000 printed pages.	

8801	3-0-05	Toner Remain
	This SP displays (as a percentage) the amount of toner remaining. This precise method of measuring remaining toner supply (1% steps) is better than other machines in the market that can only measure in increments of 10 (10% steps). [0 to 100/0/1]	

8851	3-2-03	Toner Coverage 0-10%
	These SPs count the percentage of dot coverage for K toner. [0 to 9999999]	
8851 011	0 ~ 2%:BK	
8851 021	3 ~ 4%:BK	
8851 031	5 ~ 7%:BK	
8851 041	8 ~ 10%:BK	

8861	3-2-04	Toner Coverage 11-20%
	This SP counts the number of prints that had a percentage of black dot coverage in the range 11-20%. [0 to 9999999]	

8871	3-2-05	Toner Coverage 21-30%
	This SP counts the number of prints that had a percentage of black dot coverage in the range 21-30%. [0 to 9999999]	

8881	3-3-06	Toner Coverage 31 -%
	This SP counts the number of prints that had a percentage of black dot coverage in the range above 31%. [0 to 9999999]	

8891	3-2-07	Coverage Display (Current)
8901	3-2-08	Coverage Display (Previous)
8911	3-2-09	Coverage Display (Before Previous)

8921	3-2-10	Dot Coverage Count Total
	These counters count the percentage of dot coverage for K toner. (This machine uses only black toner)	
8921 001	Coverage (%):BK	
8921 011	Coverage/P:BK	

Printer Engine Service Mode

8941	3-6-01	Machine Status
	<p>These SPs count the amount of time the machine spends in each operation mode. These SPs are useful for customers who need to investigate machine operation for improvement in their compliance with ISO Standards. [0 to 9999999/0/1]</p>	
8941 001	Operation Time	Engine operation time. Does not include time while controller is saving data to HDD (while engine is not operating).
8941 002	Standby Time	Engine not operating. Includes time while controller saves data to HDD. Does not include time spent in Energy Save mode.
8941 003	Energy Save Time	Includes time while the machine is performing background printing.
8941 004	Low Power Time	Includes time in Energy Save mode with Engine on. Includes time while machine is performing background printing.
8941 005	Off Mode Time	Includes time while machine is performing background printing. Does not include time machine remains powered off with the power switches.
8941 006	SC	Total down time due to SC errors.
8941 007	PrtJam	Total down time due to paper jams during printing.
8941 008	OrgJam	Total down time due to original paper jams.
8941 009	PM Unit End	Total down time due to toner end.

	AdminCounter	Machine Administration Counter
8999	<p>This SP displays the counts for the items listed below. Use this SP as a quick reference to see the total counts of the corresponding SP codes listed below.</p> <p>Note: This machine supports K printing only, so the counts for 015 and 017 are identical.</p>	
8999 001	Total (SP8381 001)	Total output (sheets fed out)
8999 007	Printer: BW	Total output for black & white
8999 013	Duplex (SP8411 001)	Total output of duplexed sheets
8999 015	Cvg:BW% (SP8601 001)	Total output of K pages
8999 017	Cvg:BW Pages (SP8601 011)	Total output of K pages

5.4 FIRMWARE UPDATE



- Never turn off the machine while downloading the firmware.

5.4.1 TYPE OF FIRMWARE

The table lists the firmware programs used by the machine. All programs can fit on one SD card.

Program	What It Updates
Engine	Printer engine control
Network DocBox	Document server firmware
Printer	Printer feature applications
System	Printer management
Network Support	Network application
Update Mode Err.	Displays if an error occurs.
Verify Data	Verifies that the update executed successfully.

5.4.2 PRECAUTIONS

Handling SD Cards

Observe these precautions when handling SD cards:

- Always turn off the main power switch before you insert or remove an SD card. Data on an SD card can be corrupted if you insert or remove an SD card while the main power switch is on.
- Never turn off the main power switch during downloading.
- Keep SD cards in a safe location. Never store SD cards in locations where they will be exposed to:
 - High temperature, high humidity
 - Direct sunlight
 - Strong vibrations
 - Magnetic fields generated by machines or electronic devices
- Handle SD cards carefully to avoid dropping them, bending, scratching, etc.

Upload/Download

In this service manual, “upload” and “download” have these meanings:

- Upload: Copying data from the printer to the SD card
- Download: Copying data from the SD card to the printer

Network Connection

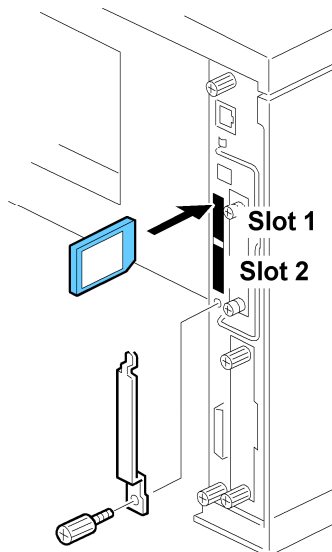
A print job sent to the machine during firmware update will interrupt the procedure. Before you start the firmware update procedure tell the operator:

- The machine must be disconnected from the network.
- The machine cannot be used during firmware update.

5.4.3 MACHINE FIRMWARE UPDATE

Each program must be updated one a time. Follow the procedure below to update one program.

1. Prepare a card that contains the required program.
2. If the machine is on, switch it off.



g176s510a

3. Remove the SD card cover (⚙️x1).
4. Insert the SD card into Slot 1.
5. Turn on the power. The screen remains blank for about 20 to 30 sec., "Please Wait" appears, then you will see "Engine", the first item available for selection.

Note

- The first selection "Engine" will appear about 1 min. after switching the power on.

Firmware Update

6. Scroll to the program to upgrade, then press [#Enter].
7. Press the [Online] to start the upgrade. You will see a series of messages. If you selected "Engine", for example", you would see:

```
ROM Update
*****
```

```
Updating
*****
```

```
Updated
Power Off On
```

The "Power Off On" message appears after about 90 sec.

8. Turn off the power, remove the SD card from Slot 1, and turn on the power.
-or-

If you intend to update another program, leave the SD card in Slot 1 and turn on the power.

↓ Note

- The firmware has not updated successfully if the "Power Off On" message does not appear. If this occurs, turn the machine power off/on and repeat the procedure.

5.5 NVRAM DATA UPLOAD/DOWNLOAD

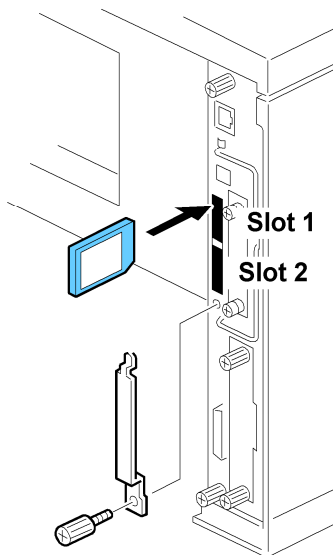
5.5.1 UPLOADING NVRAM DATA

Follow this procedure to upload the NVRAM data to an SD card.

Note

- If the NVRAM data cannot be uploaded successfully before NVRAM replacement, you must manually input the required settings after the NVRAM has been replaced. For this reason, you should always print an SMC report before NVRAM replacement.

1. Enter the SP mode and do SP5990 1 (All) to print the SMC Report.
2. Exit the SP mode.
3. Turn off the main power switch.



g176s510a

4. Remove the SD card slot cover.
5. Insert an SD card into Slot 1.
6. Turn on the main power switch.
7. Enter the SP mode and do SP5824 (NVRAM Upload).
8. Push [#Enter].

```
<NVRAM Upload>
execute?
```

NVRAM Data Upload/Download

9. Push [#Enter].
10. You will see "Processing". Then when you see "result=OK" the NVRAM data has been uploaded successfully.

This procedure creates an NVRAM folder on the SD card with one file that holds the NVRAM data. The file name is the serial number and the file extension is *.nv.

Example: G1772700016.nv,

11. Exit the SP mode.
12. Turn off the main power switch.
13. Remove the SD card.
14. Mark the SD card with the machine code for later reference. You will need this SD card to download NVRAM to the new NVRAM.

↓ Note

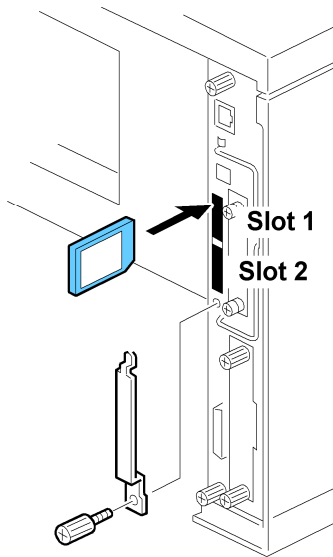
- One SD card can store the NVRAM data of two or more machines.

5.5.2 DOWNLOADING NVRAM DATA

Follow this procedure to download the data from the SD card to the NVRAM, after the NVRAM has been replaced.

↓ Note

- If the NVRAM data file cannot be downloaded successfully, the settings must be restored manually using the SMC report that was printed before NVRAM uploading.
1. Confirm that the main power switch is off.
 2. Confirm that you have the SD card that contains the proper NVRAM data for the machine.



g176s510a

3. Remove the SD card slot cover.
4. Insert the SD card into Slot 1.
5. Turn on the main power switch.
6. Enter the SP mode and do SP5825 (NVRAM Download).
7. Push [#Enter].

<NVRAM Download>
execute?

8. Push [#Enter].
You will see "Processing". Then when you see "result=OK", the NVRAM data has been downloaded successfully.

Note

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

9. Exit the SP mode.
10. Turn off the main power switch.
11. Remove the SD card.
12. Turn on the main power switch.

5.6 SD CARD APPLICATION MOVE

5.6.1 OVERVIEW

The service program “SD Card Appli Move” (SP5873) moves application programs from one SD card to another.

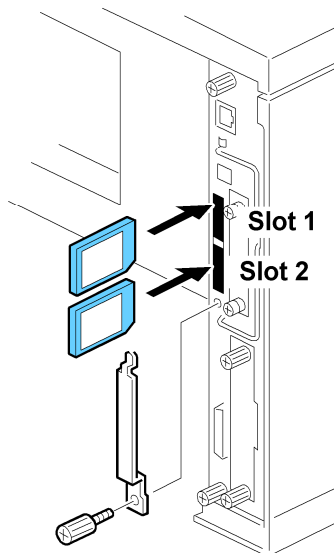
Obey these precautions during the SD Card Appli move procedure:

- The authentication data is moved 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 move the application program from this card to another SD card.
- 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.
- Store the original SD card in a safe location after the procedure. The original SD card cannot be used but it must be saved because (1) the original card is the only proof that the user is licensed to use the application program, and (2) you may need to check the SD card and its data to solve a problem in the future.

5.6.2 MOVE EXEC

“Move Exec” (SP5873 1) moves application programs from the original SD card to another SD card. The application programs are moved from Slot 1 to Slot 2.

1. Turn off the main power switch.



g176s510c

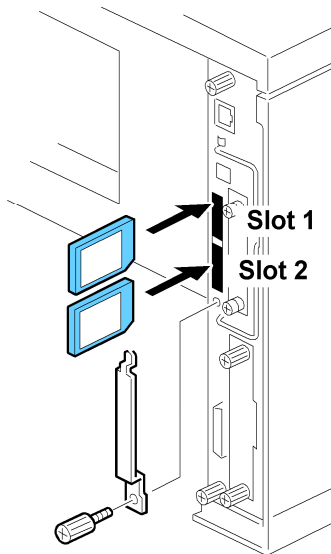
2. Remove the SD card slot cover.
3. Insert the original SD card with the application in Slot 1.
4. Insert the SD card to receive the application in Slot 2.

5. Turn on the main power switch.
6. Enter the SP mode and do SP5873 1 “Move Exec.”
7. Follow the messages on the operation panel to complete the procedure.
8. Exit the SP mode.
9. Turn off the main power switch.
10. Remove the original SD card from Slot 1.
11. Leave the other SD card in Slot 2.
12. Turn on the main power switch.
13. Confirm that the application program runs normally.
14. Tell the customer to store the original SD card in a safe place.

5.6.3 UNDO EXEC

“Undo Exec” (SP5873 2) restores an application to its original SD card. The application is moved from Slot 2 to Slot 1.

1. Turn off the main power switch.



g176s510c

2. Remove the SD card slot cover.
3. Insert the SD card that currently holds the application in Slot 2.
4. Insert the original SD card to receive the restored application in Slot 1.
5. Turn on the main power switch.
6. Enter the SP mode and do SP5873 “Undo Exec.”
7. Follow the messages on the operation panel to complete the procedure.
8. Exit the SP mode.
9. Turn off the main power switch.
10. Remove both SD cards.

SD Card Application Move

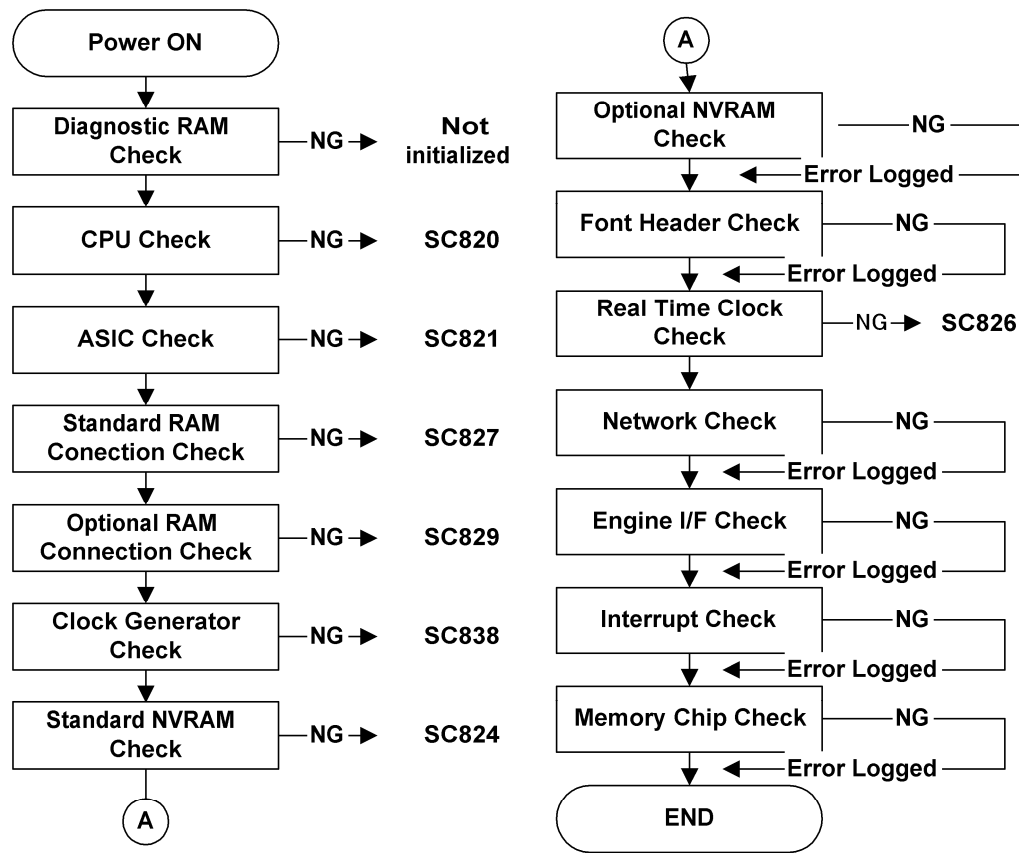
11. Insert the SD card with the restored application in Slot 2.
12. Turn on the main power switch.
13. Confirm that the application operates normally.

5.7 CONTROLLER SELF TEST AT POWER-ON

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

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

The following flowchart shows flow of the power-on self-diagnostic test



g176s904

5.8 MENU MODE

There are two menu modes:

- User menu mode
- System administrator menu mode

To enter and use the user menu mode:

1. Press [Menu]
2. Press [▼] or [▲] to scroll through the menu listing.
3. To return to the previous level, press [Escape].
4. After changing the settings, press [On Line] to return to standby mode

To enter and use the system administrator menu mode:

1. Push and release in order: [#Enter]> [Escape]> [Menu]
2. Press [▼] or [▲] to scroll through the menu listing.
3. To return to the previous level, press [Escape].
4. After changing the settings, press [On Line] to return to standby mode

↓ Note

- The user menu list shown below can be printed: [Menu]> "List/Test Print"> [▼] 4 times> "Menu List"> [#Enter].
- The first four items (Sample, Locked, Hold, Stored Print) are not included in the printed list.

Menu Mode Tree

Here is quick summary of the menus. The system administrator mode menus have some additional items that are not displayed in the user menu mode.

★ Important

- The items that are displayed only in the system administrator menu mode are enclosed in square brackets in the table below.

1st Level	2nd Level
Sample Print	Print One File
	Print All Files
	Delete One File
	Del. All Files

1st Level	2nd Level
	Error File(s)
Locked Print	Print One File
	Print All Files
	Delete One File
	Del. All Files
	Error File(s)
Hold Print	Print One File
	Print All Files
	Delete One File
	Del. All Files
	Error File(s)
Stored Print	Print One File
	Print All Files
	Delete One File
	Del. All Files
	Error File(s)
Paper Input	Bypass Size
	Tray Paper Size
	Paper Type
	Aut. Tray Select
	Tray Priority
List/Test Print	Multiple Lists

Menu Mode

1st Level	2nd Level
	Config. Page
	Error Log
	Network Summary
	Menu List
	PCL Config. Page
	PS Config. Page
	PDF Config. Page
	Hex Dump
Maintenance	Image Density
	Registration
	Curl Prevention
	Del. All Temp
	Del. All Stored
	HD Format
	Date/Time
	[Network Security]
	Key Repeat
	Panel Key Sound
	Warm-Up Beeper
	[Menu Protect]
	[List Print Lock]
	[Ppr. Size Err.]

1st Level	2nd Level
	[File Locking]
	[Memory Erase]
	[Erase All Memory]
	[Log Transfer]
	[@Remote Service]
System	Print Err. Report
	Auto Continue
	Memory Overflow
	Copies
	Printer Lang
	Sub Paper Size
	Page Size
	Edge-Edge Print
	Def. Print Lang.
	Blank Pages
	Rotate 180 Deg.
	Energy Saver
	Auto Reset Time
	Auto Del. Temp
	Auto Del. Stored
	Memory Usage
	Unit of Measure

Menu Mode

1st Level	2nd Level
	Edge Smoothing
	Toner Saving
	Spool Printing
	Letterhead Mode
	Bypass Priority
	Auto Tray SW
	Auto Email Ntfy
Host Interface	I/O Buffer
	I/O Timeout
	Network Setup
	[USB Speed]
	Fixed USB Port
PCL Menu	Orientation
	Form Lines
	Font Source
	Font Number
	Point Size
	Font Pitch
	Symbol Set
	Courier Font
	Ext. A4 Width
	Append CR to LF

1st Level	2nd Level
	Resolution
PS Menu	Data Format
	Resolution
PDF Menu	PDF: Change PW
	PDF Group PW
	Resolution
Language	(Select 1 of 14 available languages)

5.9 CONTROLLER BOARD DIP SWITCHES

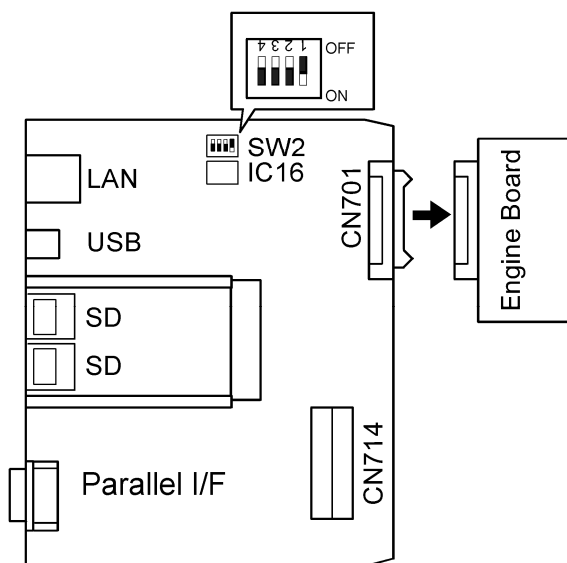
The controller board DIP switches must always be set as shown below.

Controller Board Default DIP SW Settings

DIP SW	Setting
1	ON
2	OFF
3	OFF
4	OFF

★ Important

- Do not change these settings.



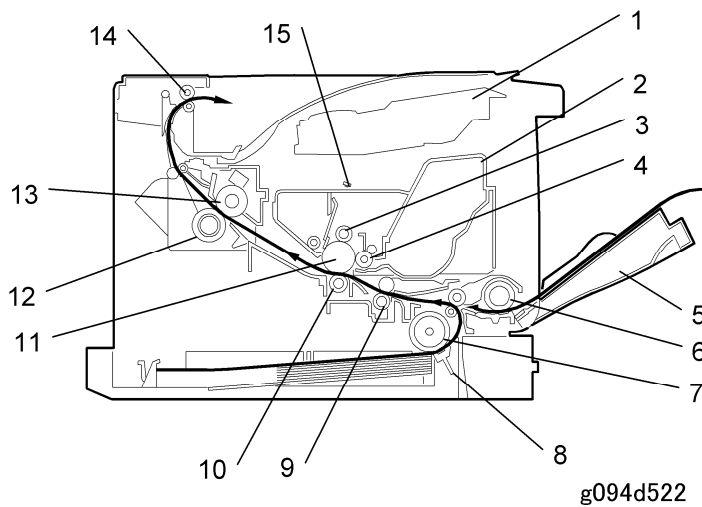
g176s504

DETAILS

6. DETAILS

6.1 OVERVIEW

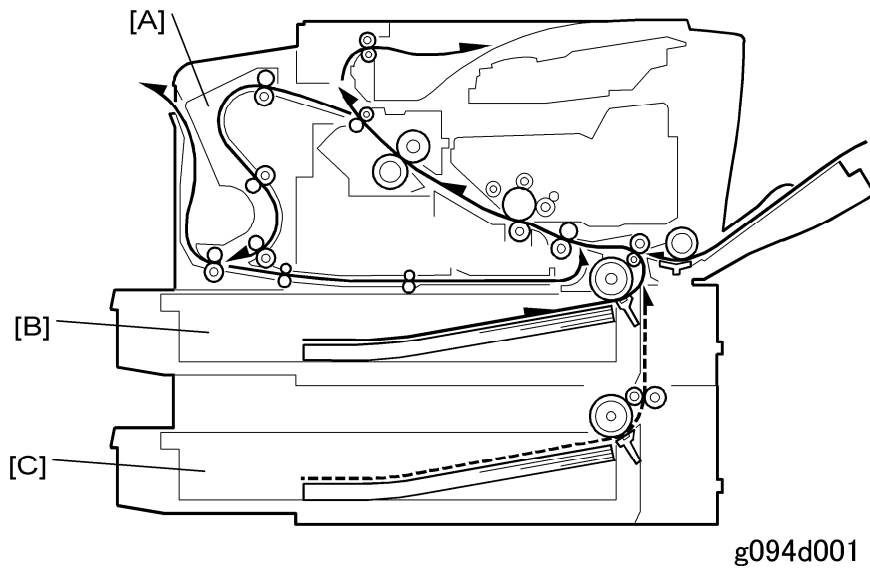
6.1.1 MECHANICAL COMPONENT LAYOUT



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

Overview

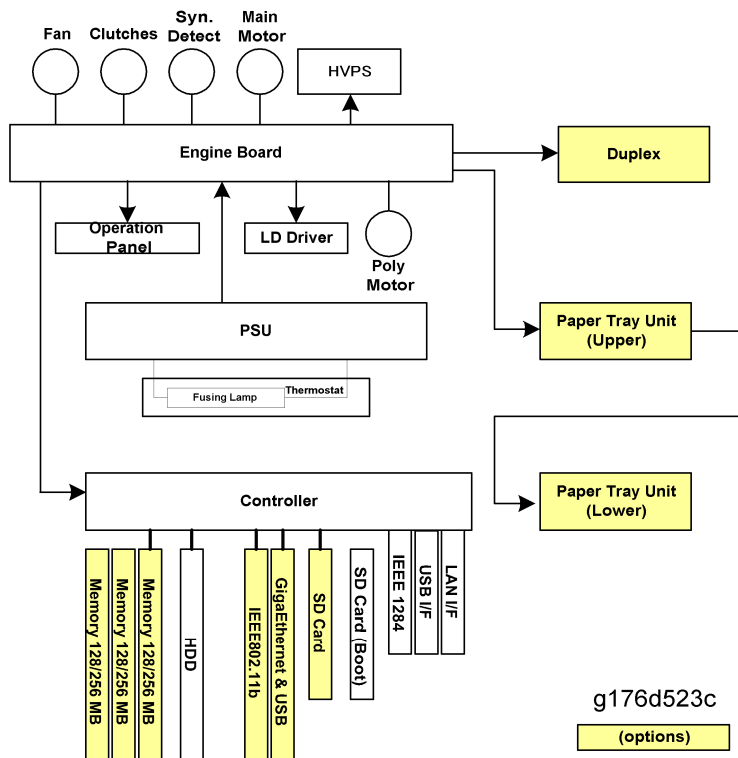
6.1.2 PAPER PATH



- [A] Optional duplex unit
- [B] Standard paper tray unit
- [C] Optional paper tray unit

6.2 BOARD STRUCTURE

6.2.1 BLOCK DIAGRAM



The engine board controls all the mechanical components.

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

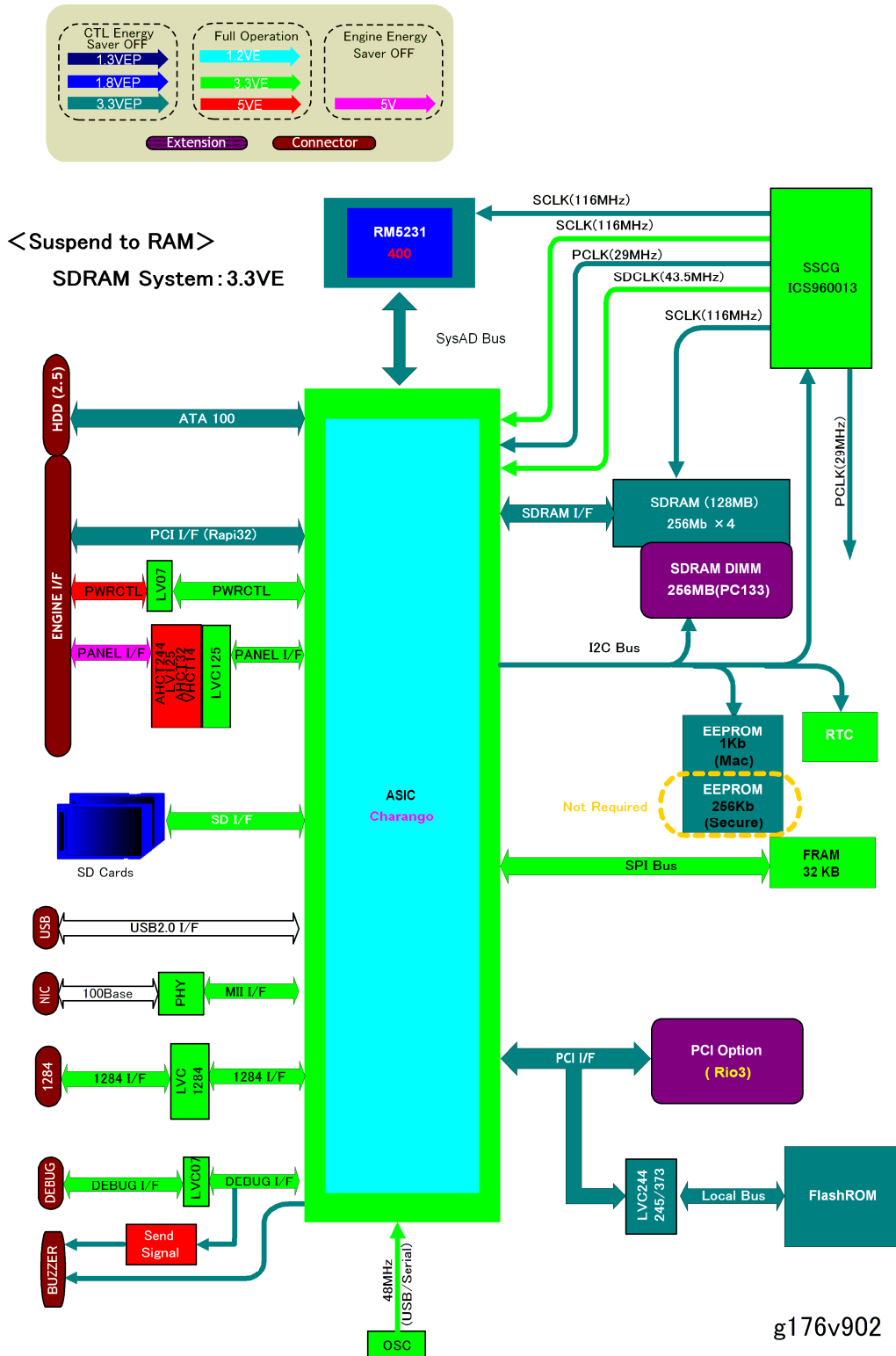
Note

- The IEEE 802.11b Interface Unit (G813/B874) and Gigabit Ethernet Board (G874) cannot be installed at the same time.

Details

Board Structure

6.2.2 CONTROLLER BOARD



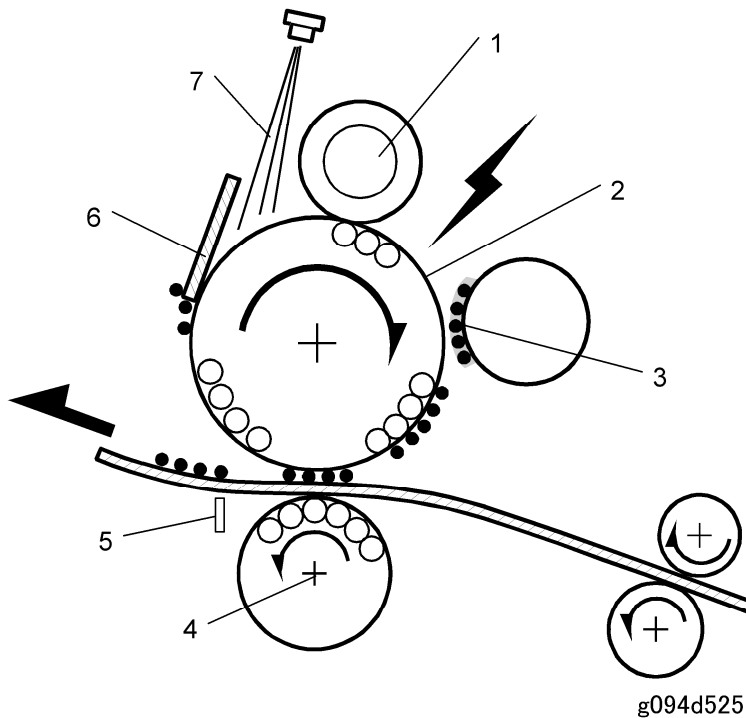
The controller controls all applications. Optional features can be added by inserting application an SD card into the controller SD slot.

ASIC. Contains the dedicated GW controller chips of the shared resources (the CPU, memory, and HDD hardware) for the copying and printing functions.

- **CPU.** The central processing unit that controls the operation of the controller board.
- **SD Card Slot.** Service slot for firmware version updates, moving applications to other SD cards, and downloading/uploading NVRAM contents.
- **SDR SDRAM.** The image memory for the printer functions where image compression, image rotation and other operations are done.
- **Board Option Slots.** One slot (CN714) is available for the optional HDD unit and another slot (CN704) is available for either the IEEE 802.11b Interface Unit or Gigabit Ethernet Board.
- **Flash ROM.** Stores the program. Maximum capacity: 32 MB.
- **USB.** The interface for USB 2.0. Supports both low-speed and high-speed modes. USB support is built into the controller. No installation is required for the USB function.
- **NIB.** The Ethernet interface connection. Ethernet support is built into the controller. No installation is required for the Ethernet function.
- **EEPROM.** Stores the data for the SP code settings.
- **NVRAM.** The memory that stores the system configuration and other information.

6.3 PRINTING PROCESS

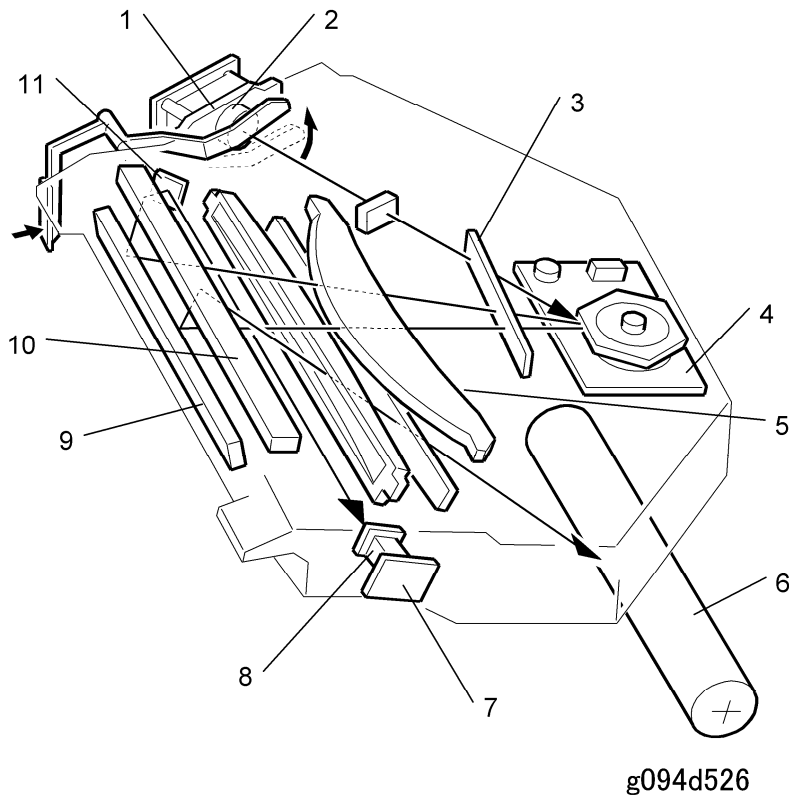
6.3.1 OVERVIEW



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

Overview



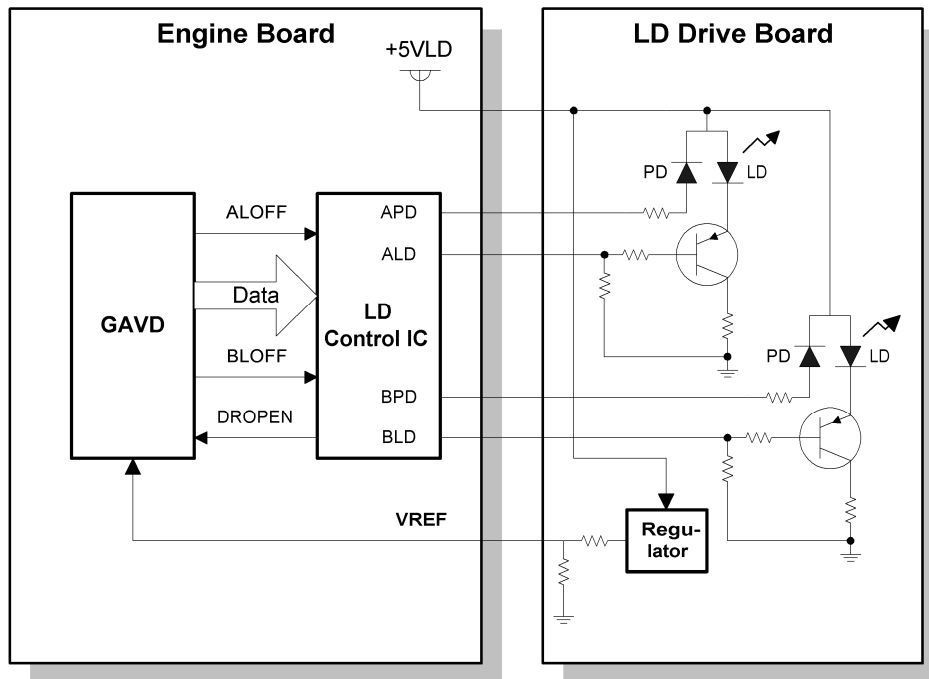
- | | |
|-------------------|-----------------------------|
| 1. LD unit | 7. Synchronization detector |
| 2. Laser shutter | 8. Toroidal lens |
| 3. Shield glass | 9. 1st mirror |
| 4. Polygon mirror | 10. 2nd mirror |
| 5. F-Theta lens | 11. Detector mirror |
| 6. Drum | |

- **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.

Printing Process

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 Power Control (APC)



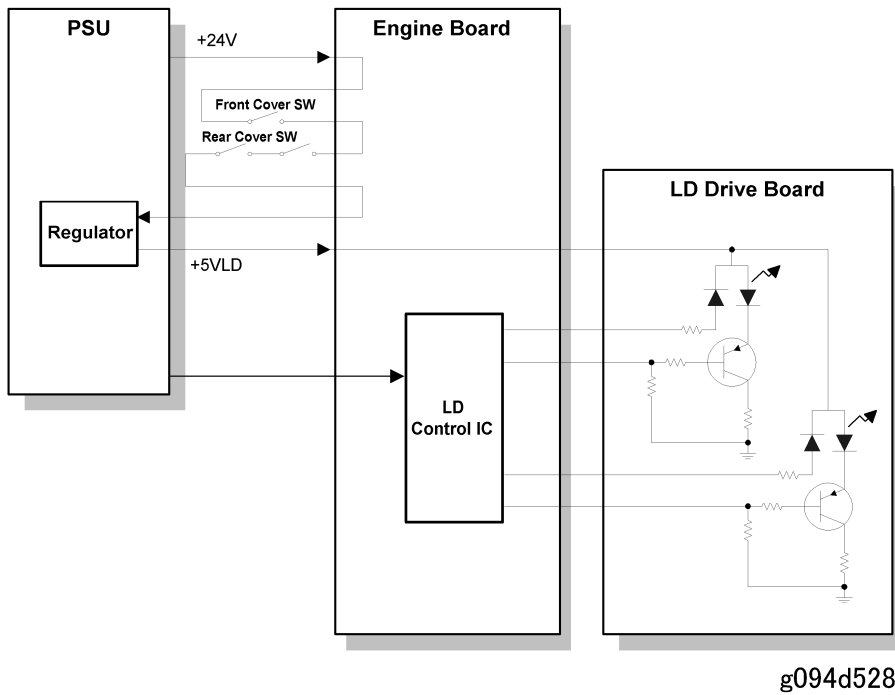
g094d527

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

- Never touch the variable resistors on the LD unit in the field.

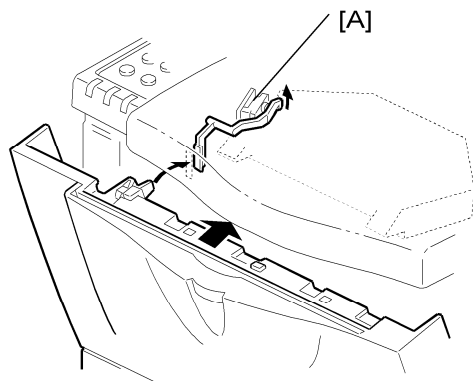
LD Safety Mechanisms



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



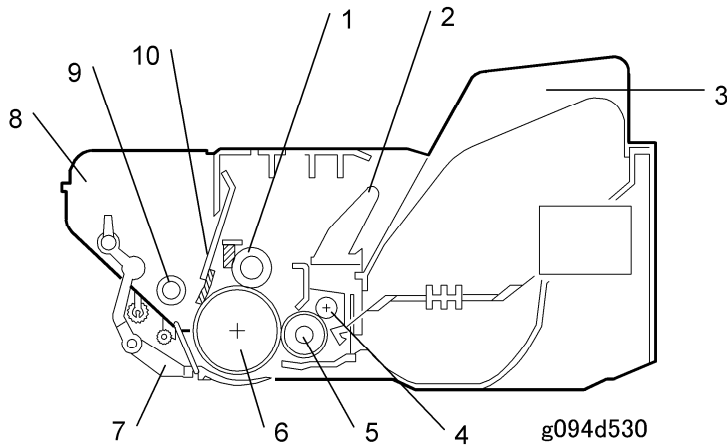
g094d529

The laser shutter [A] is for back-up safety. If the switches do not work, the +5VLD power gets to the laser diodes if the cover is open.

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

Details

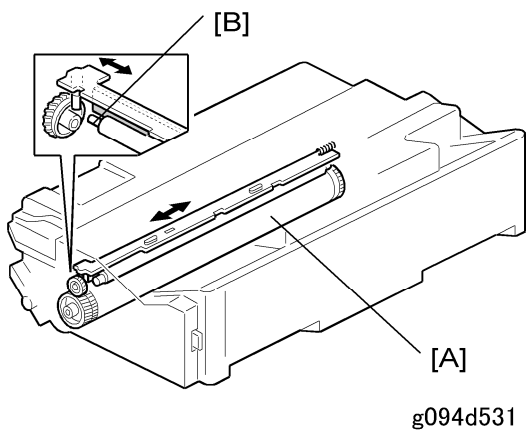
6.3.3 CARTRIDGE OVERVIEW



- | | |
|-----------------------|----------------------------|
| 1. Charge roller | 6. Drum |
| 2. Developer tank | 7. Drum shutter |
| 3. Toner tank | 8. Waste toner tank |
| 4. Reverse roller | 9. Toner collection roller |
| 5. Development roller | 10. Cleaning blade |

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

6.3.4 DRUM CHARGE



[A] Charge roller

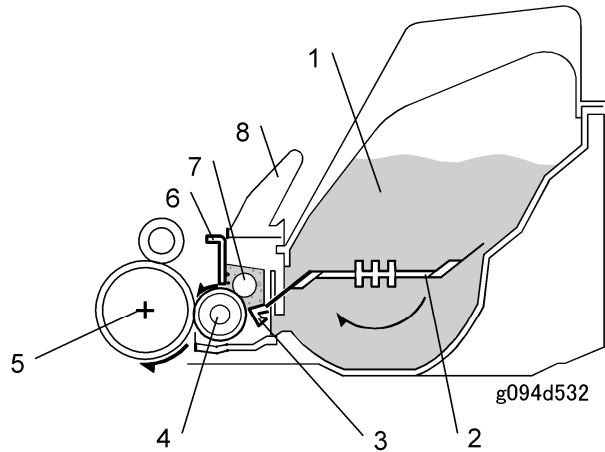
[B] Cleaning pad

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

Toner Supply and Development



- | | |
|-----------------------|-------------------|
| 1. Toner tank | 5. Drum |
| 2. Agitator | 6. Doctor blade |
| 3. Pre-doctor blade | 7. Reverse roller |
| 4. Development roller | 8. Developer tank |

Toner Supply

The agitator [2] mixes toner and sends it to the development roller.

Development Unit

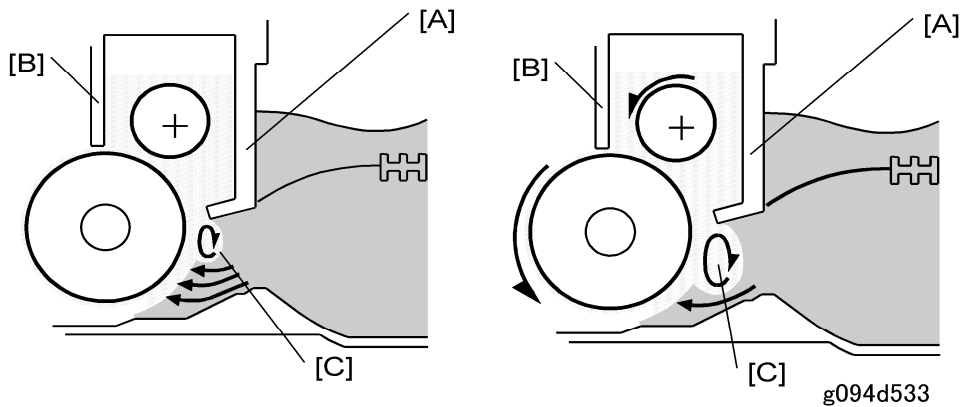
This machine uses a one-roller development system. The high voltage supply applies -700V to the development roller.

When the user removes the developer seal, the developer falls and the magnetic reverse roller [7] mixes the developer.

This machine does not use a TD sensor or ID sensor to control toner density. The pre-doctor blade [3] and the doctor blade [6] control the toner density.

Printing Process

Toner Density Control



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

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

[A]: Pre-doctor blade

[B]: Doctor blade

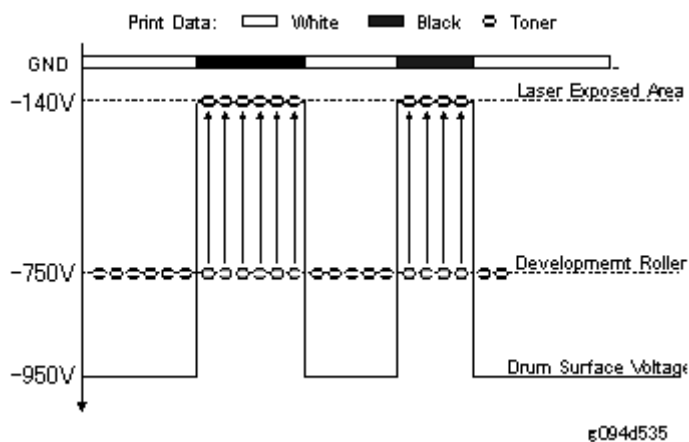
[C]: Circulation of developer

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.

6.3.6 TONER END DETECTION

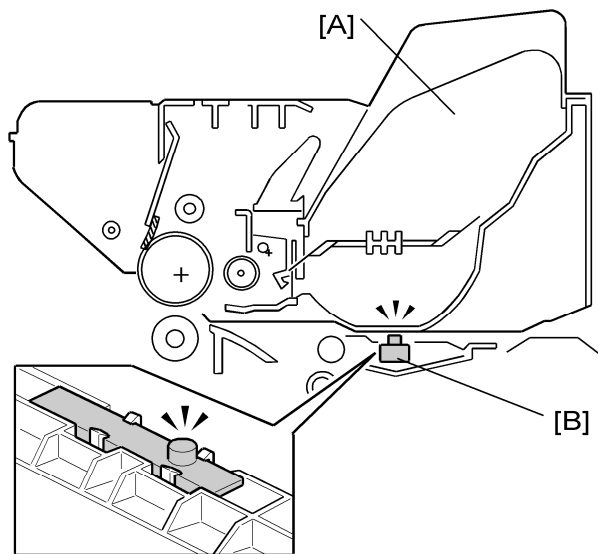
Overview

This machine uses two methods to detect toner near-end and toner end:

- A toner-end sensor, mounted below the print cartridge, monitors the level of the toner in the cartridge.
- The machine monitors the length of time the main motor has been running with the same AIO cartridge.

Note that print quality between toner near-end and toner end cannot be guaranteed. This is because toner end is not detected directly; it is automatically detected 200 pages after near-end (or, in the case of main motor rotation count, after the motor rotates enough to print an additional 200 A4 pages at 2 pages/job). Toner can run out more quickly than this, if the coverage ratio is high.

Toner End Sensor



g094d536

[A] Toner tank

[B] Toner end sensor

The toner end sensor detects toner near-end by the voltage output. When the output from the toner end sensor is below a given level, the machine displays “Low on Toner”.

After toner near-end, the machine can print approximately 200 additional pages. At this time, the “Replace Printer Cartridge Soon” message appears.

After the additional pages have printed, printing stops and then the “Replace Printer Cartridge” message remains in the display.

Printing Process

↓ Note

- The 200 page limit for after the near-end alert appears can be adjusted with SP2213. However, the print quality of these pages cannot be completely guaranteed. This is because the 200-page limit is calculated for A4, with a 5% coverage ratio (depending on the coverage ratio of these 200 pages, toner could run out before the 200 pages are made).

Main Motor Rotation Count

The time to replace the AIO cartridge can also be determined by the length of time the main motor has been rotating.

When toner end is detected, 'Replace Print Cartridge' is displayed alternately with 'Ready'.

↓ Note

- The servicing alert messages are not displayed when SP5930 001 (meter click charge) is set to "Yes". The default setting of SP 5930 001 is "No". For more, please refer to "5. Service Tables".

At about 200 pages before this (based on A4 prints at 2 pages/job), the machine detects toner near-end. At this time, 'Replace Print Cartridge Soon' is displayed.

- Note that toner can run out more quickly 200 pages after near-end, if the coverage ratio is high. Because of this, after toner near-end, printing quality cannot be guaranteed.

Toner Overflow Prevention

With the main motor rotation count feature, the machine can be set to stop printing after the print total exceeds a certain set value. If the print count exceeds this value, then 'Replace Print Cartridge' remains in the display. Then a new AIO cartridge must be installed.

This feature is a safety measure to prevent the used toner tank from becoming full (there is no toner overflow detection mechanism).

To enable this feature, you must set SP3923 (Cartridge Stop) to "Yes".

Why do we need this feature?

Normally, the AIO is replaced by the user at about 15k. But some users will refill the old AIO with toner, and use the same AIO again. If this occurs, the used toner tank will not be emptied. So there must be a way to stop users from repeatedly filling the old AIO with fresh toner. If you enable SP 3923, then after a certain number of prints are made with the same AIO, the machine prevents printing, and a completely new AIO must be installed. If you try to print again by removing/replacing the old AIO or adding new toner or other trickery, there will be no printing.

How does the machine know if the AIO is a new one?

The AIO has serial number information on a chip. The machine checks this number when the AIO is placed in the machine.

Why is this feature disabled?

Ricoh does not support the practice of refilling old AIOs with fresh toner, so the feature is disabled by default. But if field service stations know that this practice occurs in their region, or they know a customer who is doing this, then they can enable the feature.

Summary

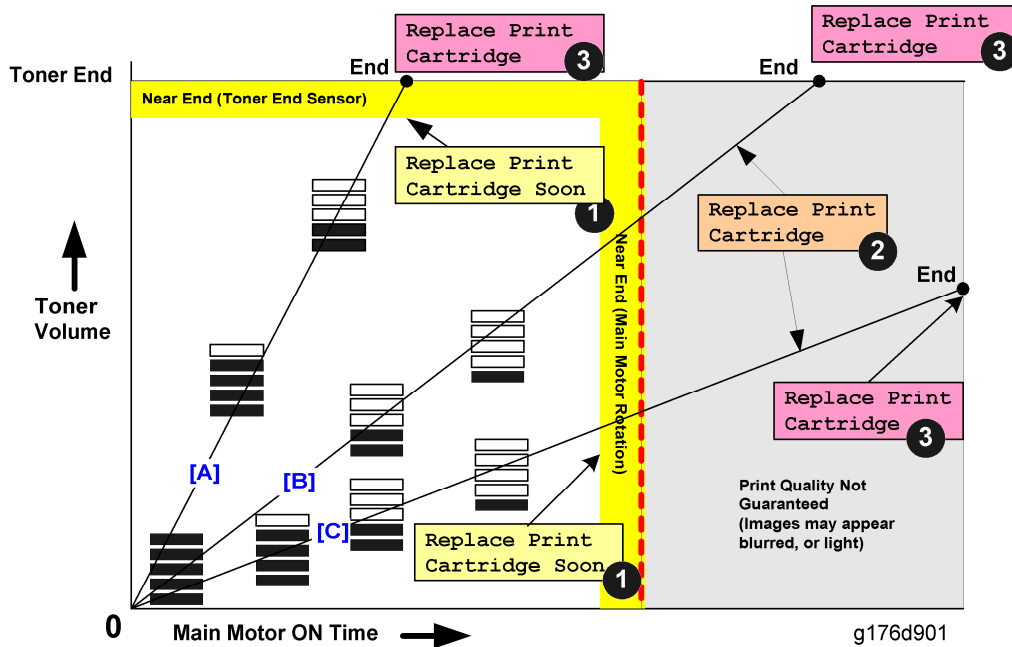
In the illustration below [A], [B], and [C] have these meanings:

- [A] Heavy usage (jobs that require large amounts of toner)
Toner coverage is 5% more than normal. The machine detects toner near end based on main motor rotation before the toner end sensor detects that toner is low.
- [B] Toner coverage is 5% lower than normal. The machine detects toner near end based on main motor rotation before the toner end sensor detects that toner is low. The toner overflow prevention mechanism is triggered before toner is completely exhausted.
- [C]

Details

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Printing Process



<p>①</p>	<p>"Replace Print Cartridge Soon"</p>	<p>Displays at toner near-end (based on the toner end sensor), or when the print cartridge is near the end of its service life (based on main motor rotation). Printing can continue but print quality is not guaranteed.</p>
<p>②</p>	<p>"Replace Print Cartridge" flashes and alternates with "Ready".</p>	<p>The print cartridge is at the end of its service life (about 200 pages or more after near end is detected by main motor rotation) but some toner still remains (toner end sensor did not detect toner end). Printing can continue but print quality is not guaranteed. This condition will occur if an old AIO is refilled with toner. The grey area in the diagram is marked 'out of guaranteed range' because Ricoh cannot guarantee the operation of the machine if an old AIO is refilled with toner.</p>

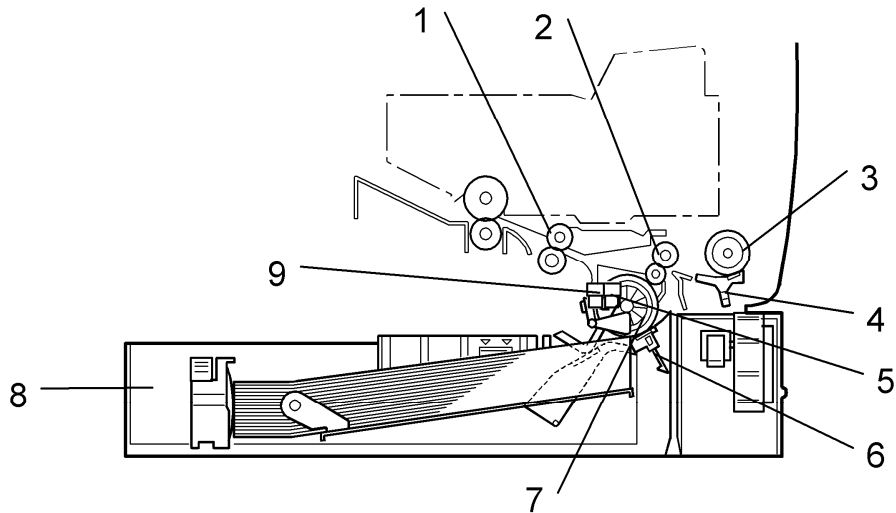
<p>③</p>	<p>"Replace Print Cartridge" remains in the display</p>	<p>Toner is exhausted (200 pages after the toner end sensor detects near end), or the toner overflow prevention mechanism is triggered (based on main motor rotation). Printing cannot continue and "Replace Print Cartridge" will remain in the display until the AIO unit is replaced.</p>
----------	---	--

The following items have been added to the SMC Report (printed with SP5990).

1. Previous Running Time
2. Previous Number of Alerts
3. Previous AIO Type (Accessory or 15 K)
4. Present Running Time
5. Present Number of Alerts
6. Present AIO Type (Accessory or 15 K)
7. Running Time When AIO Replaced
8. Current Running Time Remaining (%)

6.4 PAPER FEED

6.4.1 OVERVIEW



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

Paper Tray

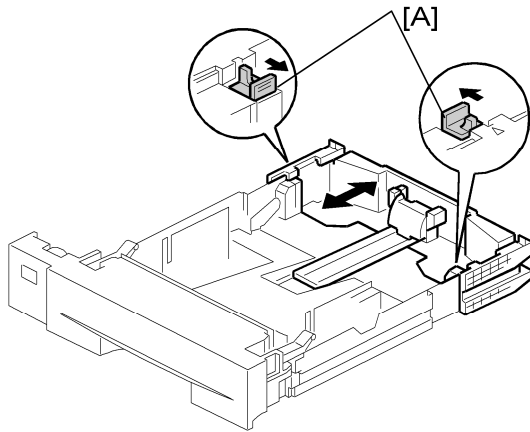
Paper Feed System:	Feed roller and friction pad
Paper Lift Mechanism:	Tray arm and spring
Paper End Detection:	Remaining paper sensors Paper end sensor
Paper Size Detection:	Paper size switch
Tray Capacity:	500 sheets
Tray Extension:	Available

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

Tray Extension



g094d003

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

To use longer paper:

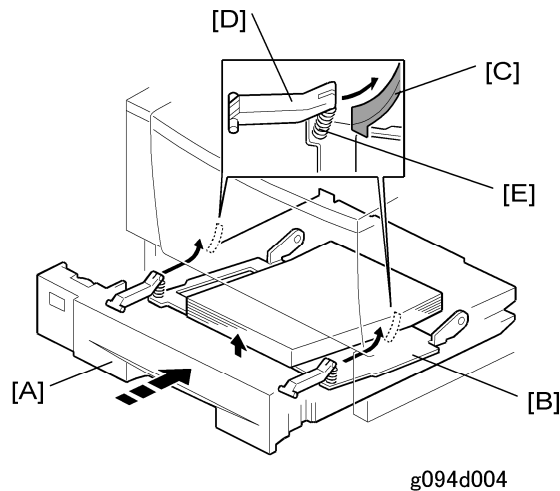
- Release the two locks [A]
- Extend the tray and close the locks.

These paper sizes can be used:

Paper Sizes

Tray Mode	Possible Paper Sizes
Short (default)	A5 (LEF/SEF), B5 (SEF), A4 (SEF), LT (SEF)
Long	LG (SEF), 8.5" x 13" (SEF), 8" x 13" (SEF), 8.25" x 13" (SEF)

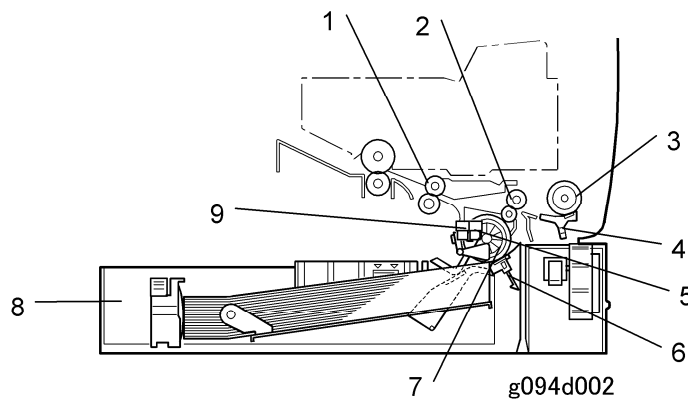
Paper Lift



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



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

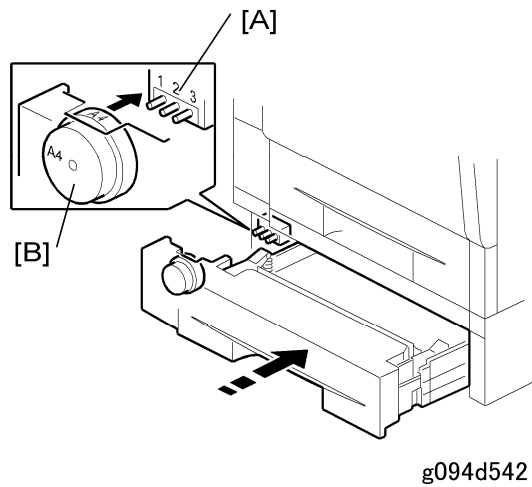
The friction pad cannot be adjusted.

The machine makes a paper buckle at the registration roller to correct paper skew.

The paper buckle can be adjusted with engine SP 1003.

Paper Feed

Paper Size Detection



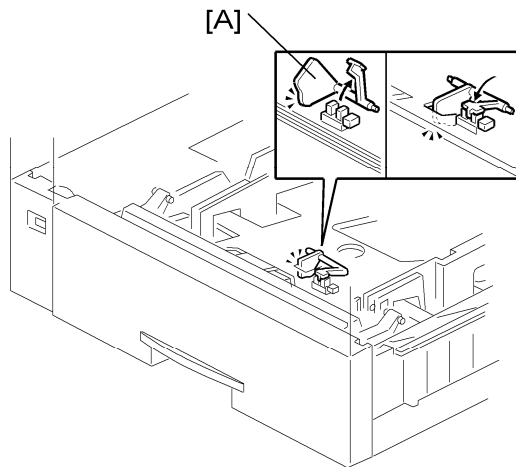
[A] Paper size switch

[B] Paper size dial

Paper Size Detection Table

Size	SW1	SW2	SW3
A4 SEF	ON	ON	OFF
A5 SEF	ON	OFF	ON
B5 SEF	OFF	ON	OFF
Custom Size	ON	OFF	OFF
LG SEF	OFF	OFF	OFF
LT SEF	OFF	OFF	ON
HLT SEF	OFF	ON	ON

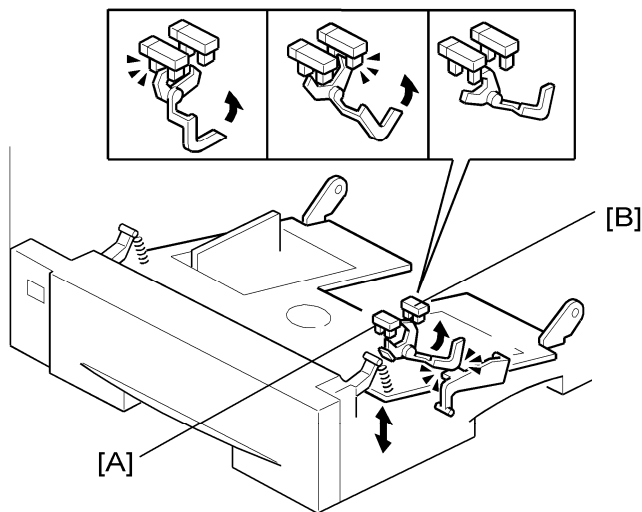
Paper End Detection



g094d543

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

Remaining Paper Detection



g094d002

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.

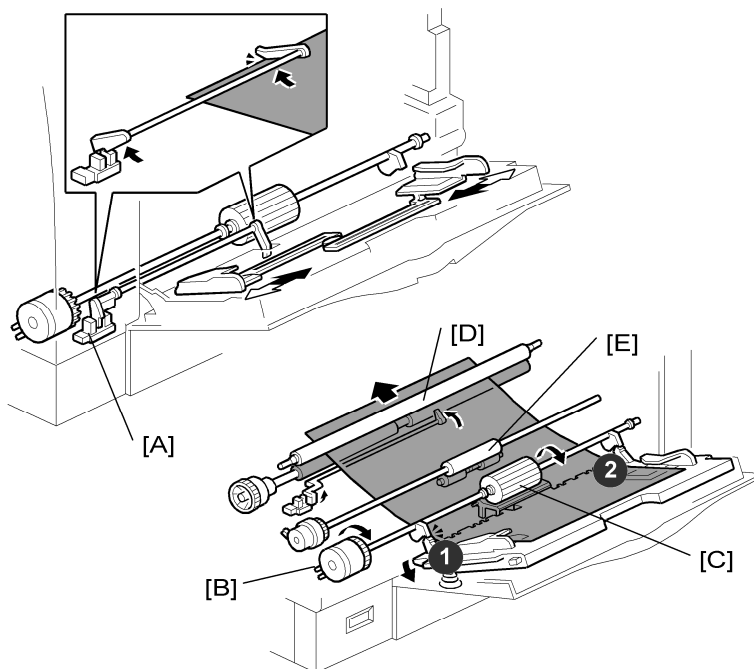
[A] Remaining paper sensor 1

[B] Remaining paper sensor 2

Paper Feed

Amount of paper	Rem. paper sensor 1	Rem. 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

6.4.3 BY-PASS TRAY



g176d103

The by-pass paper sensor [A] detects when paper is placed on the tray.

The CPU energizes the by-pass clutch [B]. Then the by-pass feed roller [C] starts to feed paper to the registration roller [D] through the relay roller [E].

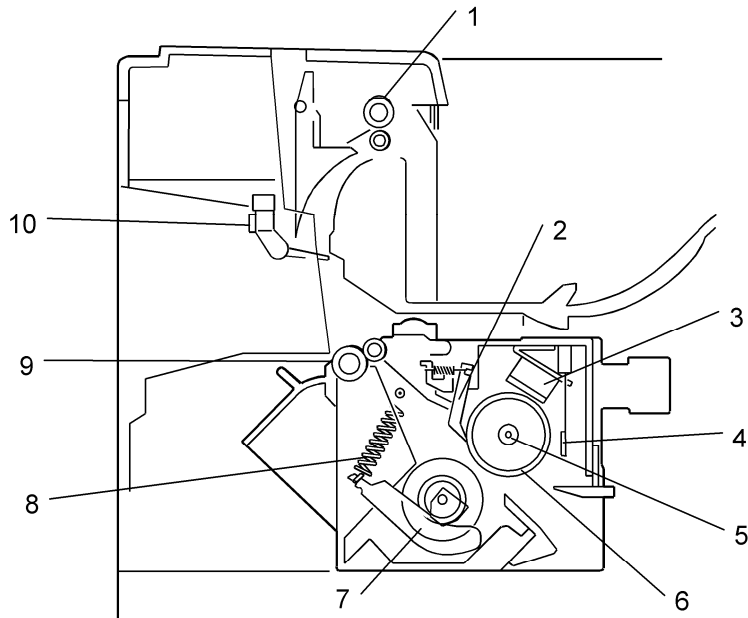
The by-pass feed roller shaft has two cams ❶, ❷. These cams release the bottom plate to press the stack of paper against the feed roller. There is no width sensor.

↓ Note

- To prevent bad effects from too much friction between the feed roller and friction pad, the feed roller contains a metal plate.

6.5 IMAGE FUSING AND PAPER EXIT

6.5.1 OVERVIEW

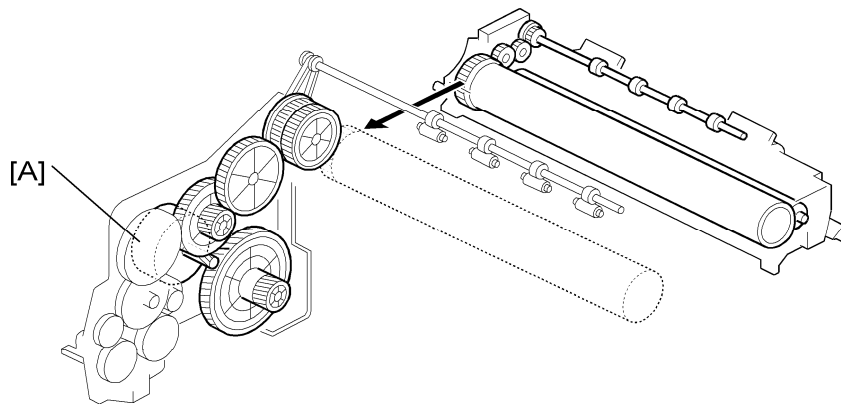


g094d503

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

Details

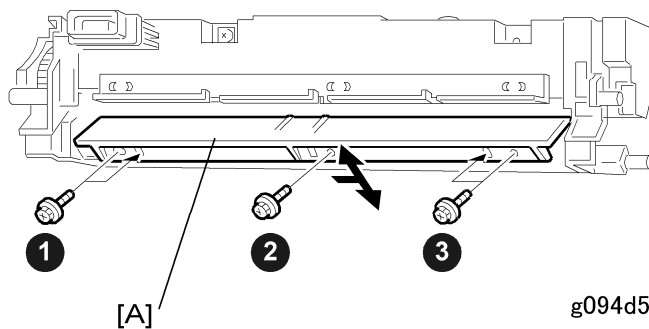
6.5.2 FUSING DRIVE



g094d504

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

6.5.3 FUSING ENTRANCE AND GUIDE SHAFT

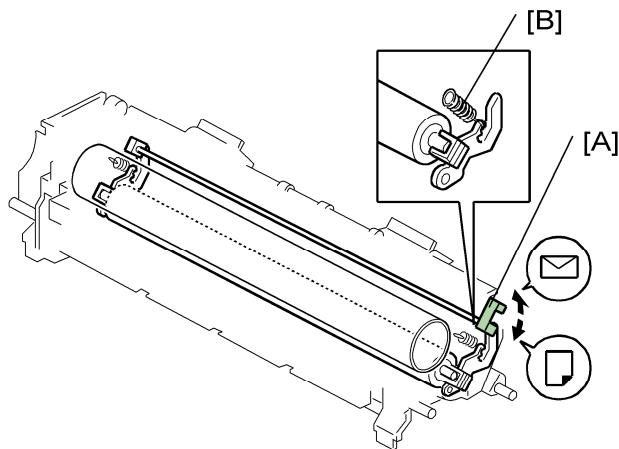


g094d545

The entrance guide [A] is adjustable for paper thickness to prevent creasing.

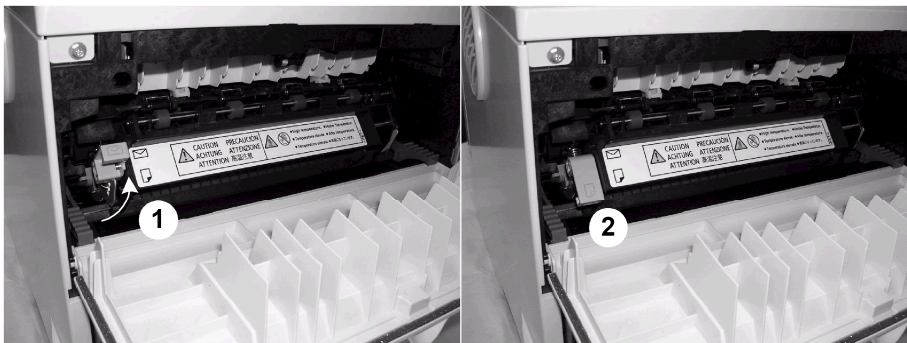
If creasing occurs frequently in the fusing unit, remove all screws (1 2 3) and slide the entrance guide to the right. Replace the two end screws only. Do not replace the middle screw. This procedure allows paper to have more direct access to the gap between the hot roller and the pressure roller.

6.5.4 PRESSURE ROLLER



g176d505

To change the applied pressure (for example, if the customer complains of insufficient fusing), adjust the position of the pressure springs [B]. The factory setting for the spring position is at the top (minimum pressure).

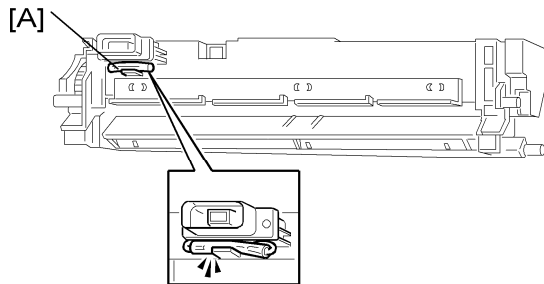


g176r900

The envelope lever [A] is used by the operator to adjust the size of the gap between the pressure roller and hot roller. A larger gap is needed for envelopes, which are thicker than paper.

- Raise the lever ❶ to increase the size of the gap between the hot roller and pressure roller. This prevents jams and wrinkling when printing on envelopes.
- Lower the lever ❷ to reduce the gap for all other print jobs. Normally this lever should be down.

6.5.5 NEW FUSING UNIT DETECTION



g094d546

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

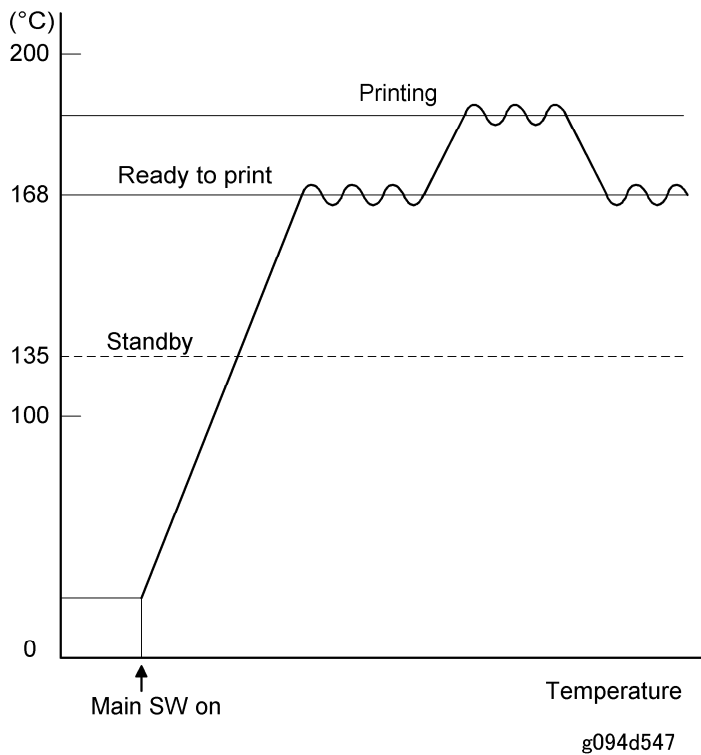
Only the fusing unit in the maintenance kit has the detection mechanism.

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 SP mode 7804.
- If Meter Charge Mode is disabled (default), after the fusing unit has been replaced: (1) the CPU detects the new unit, (2) the “Replace Maintenance Kit” message disappears automatically, and (3) the maintenance counter resets automatically.

6.5.6 FUSING TEMPERATURE CONTROL



When the main switch turns on, the CPU turns on the fusing lamp using the soft start process. (The soft start process prevents the room lights from flickering.) 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.

Image Fusing and Paper Exit

The fusing temperature for each mode is as follows:

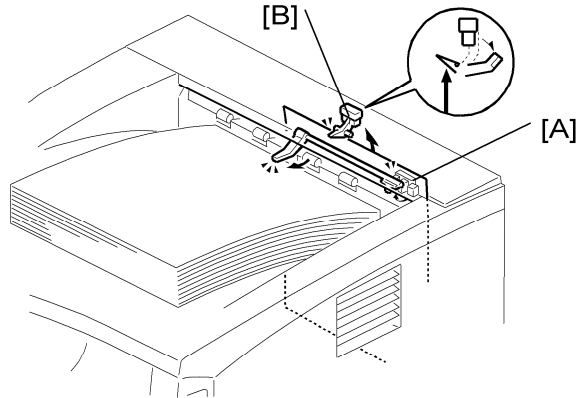
Condition			Temperature (°C)				
Standby Mode			135				
Ready to Print			168				
Printing							
Charge Thermistor	Paper	Feed	Start-30s	0.5-2min.	2-4min	4-6min.	6min.-
<15°C	Plain, OHP	Bypass	190	185	180	175	170
	Env.	Bypass, Env. Feeder	195	195	190	190	190
	Postcard	Bypass	195	195	190	190	190
	Thick	Bypass	195	195	190	190	190
>15°C	Plain, OHP	Bypass	180	180	175	170	170
	Env.	Bypass, Env. Feeder	190	190	190	190	190
	Postcard	Bypass	190	190	190	190	190
	Thick	Bypass	190	190	190	190	190

Overheat Protection

If the hot roller temperature becomes greater than 245 °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 common ground line 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



g094d601

[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

When the machine is not being used, the energy saver feature reduces power consumption by switching off the fusing lamp.

Entering Energy Saver Mode

Energy saver mode starts after the machine has been idle for a specified time. The operator can set the time on the System menu. ([Menu]> "System"). Several settings are available: Off, 1, 5, 15, 30, 45, 60 min (Default: 5 min.)

When the machine is in energy saver mode, the CPU turns off the fusing lamp. The +5VE (power enabled in energy saver mode) line is active in energy saver mode; however, the +24V and +5V lines are not active.

Leaving Energy Saver Mode

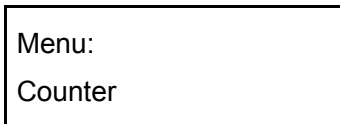
The machine leaves energy saver mode when one of the following events occur:

- Print command received from the PC
- Any cover opened and closed
- Any operation panel keys pressed

6.6 CONTROLLER FUNCTIONS

Meter-charge Counter Display

When meter charge mode is switched on with SP5930-001, the meter-charge counter menu is the first item shown on the user menu:



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

PM Warning Display

When meter charge mode is switched on with SP5930, “Replace Maintenance Kit” will not be displayed at 90k prints. The default setting for this machine is meter-charge mode off.

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”

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

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

★ Important

- The meter-charge counter cannot be reset.

SPECIFICATIONS

7. SPECIFICATIONS

7.1 BASIC SPECIFICATIONS

7.1.1 GENERAL SPECIFICATIONS

Type	Desktop	
Technology	Laser beam scanning & Electro photographic printing and Dual-component toner development	
Operation Panel	<ul style="list-style-type: none"> ▪ 8 keys, 4 LEDs ▪ 2-line display (2 lines x 16 characters/line) 	
Resolution (dpi)	1,200 x 600 dpi, 600 x 600 dpi, 300 x 300 dpi	
Printing Speed	P1b 31 ppm, P1c 36 ppm (plain paper, A4/LT SEF) Note: 31 ppm/36 ppm applies to both simplex and duplex printing.	
First Print	6.9 sec or less (A4/LT, SEF, Std. Tray)	
Duplex Printing	A4/LT Approx. 100% productivity (from the standard tray)	
Dimensions (WxDxH)	Standard	388 x 450 x 345 mm 15.3 x 17.8 x 13.6 in.
	With back cover	388 x 455 x 345 mm 15.3 x 18.0 x 13.6 in.
	LG Mode	388 x 509 x 345 mm 15.3 x 20.1 x 13.6 in.
	With duplex attached	388 x 543 x 345 mm 15.3 x 21.4 x 13.6 in.
	With Opt. Tray (x1 500)	388 x 450 x 477 mm 15.3 x 17.8 x 18.8 in.
	With Opt. Trays (x2)	388 x 450 x 609 mm 15.3 x 17.8 x 24.0 in.

Basic Specifications

Weight	17.5 kg / 38.6 lb. (with std. tray and AIO) 15.5 kg / 34.2 lb. (without AIO)		
Input capacity	Standard	Std Tray	500 sheets (75g/m ² , 20 lb.)
		Bypass tray	100 sheets (75g/m ² , 20 lb.)
	Op. Paper Tray	PFU	500 sheets x 2 (75g/m ² , 20lb)
	Max	1600 sheets (75g/m ² , 20 lb.)	
Output capacity	Standard Tray Face down	250 sheets (A4/LT, 75g/m ² , 20lb)	
Input Paper Size	Std. Tray	A4 SEF-A5 SEF, LG SEF-A5 SEFB, Width 98 to 216 mm - Length 140 to 356 mm (Width 3.9 to 8.5 in - Length 5.6 to 14 in.)	
	Bypass Tray	A4 SEF-A6 SEF, LG SEF-A6 SEF, Width 64 to 216 mm - Length 140 to 356 mm (Width 2.6 to 8.5 in - Length 5.6 to 14 in.)	
	Opt. Tray	A4 SEF-A5 SEF, LG SEF-A5 SEF, Width 98 to 216 mm - Length 160 to 356 mm (Width 3.9 to 8.5 in - Length 6.3 to 14 in.)	
Media Type	Std./Opt. Tray, Duplex Unit	Plain Paper, Thick Paper, Recycled Paper	
	Bypass tray	Plain Paper, Thick Paper, Transparency, Recycled Paper, Envelope	
	Env. Feeder	Envelope	
Paper Weight	Standard Tray	60-130g/m ² , 16-34 lb.	
	Op. Paper Tray	60-130g/m ² , 16-34 lb.	
	Bypass tray	60-162g/m ² , 16-43 lb.	
Warm-up Time	19 sec or less, 12 sec or less recovery from sleep mode		

Target Yield	Toner (AIO)	15K prints. Starter: 6K prints
	Maint. Kit	90K prints
	<p>Note:</p> <p>1) A4 (8.5"x11")/ 5% Chart is used to measure the above yield.</p> <p>2) The condition is standard temperature and humidity.</p> <p>3) This yield number may change depending on the circumstances and printing conditions.</p>	
Environment	Energy Star Mode	5 min (default) Selectable: 1, 5, 15, 30, 45, 60, Off
	Safety Standard	US: UL60950, CUL EU: CE Marking, TUV(EN60950), ICE60950
	Environmental Standard	US: Energy Star EU: BAM specifications
	Total counter	Electric Counter
	NRS	Supported
	DESS	Supported
	HDD	40 GB
RAM	Standard	192 MB
	Maximum	384 MB

Basic Specifications

7.1.2 EXTERNAL OPTIONS

Paper Tray (500 x1)	
Paper Size	A4 SEF-A5 SEF, LG SEF-A5 SEF
Paper Weight	60-130g/m ² , 16-34 lb.
Paper capacity	500 sheets x 2 tray (2 unit installable)
Dimensions(w x d x h)	388 x 496 x 140 mm (1.53 x 1.96 x 0.56 in.)
Weight	6.0 kg or less, 13.3 lb. or less
Envelope Feeder	
Paper Size	Crane Crest Com#10, Strathmore Writing Com#10, Neenah Classic Crest Com#10, C5,C6, DL
Paper capacity	60 Envelopes
Dimensions (w x d x h)	534 × 464 × 180 mm, 2.1 x 1.83 x 0.71 in.
Weight	1.7 kg or less, 3.75 lb or less
Duplex Unit (G893)	
Paper Size	A4 SEF-A5 SEF, LG SEF-A5 SEF
Paper Weight	64-105g/m ² , 17-28 lb.
Dimensions (w x d x h)	340 x 380 x 250 mm, 1.34 x 1.50 x 0.99 in.
Weight	6.0 kg or less, 13.3 lb or less
Printing Speed	S-P1b: 31 ppm S-P1c: 36 ppm

7.1.3 PAPER SIZES

Plain Paper

Type	Orient	Size	Std. Tray	Opt. Tray	Bypass	Env. Feed	Dup.
A4	SEF	210x297 mm	D	D	C	N	A
B5	SEF	182x257 mm	D	D	C	N	A
A5	SEF	148x210 mm	D	D	C	N	A
	LEF	210x148 mm	B	N	C	N	A
B6	SEF	128x182 mm	N	N	N	N	N
A6	SEF	105x148 mm	N	N	C	N	N
Legal	SEF	8 1/2"x14" mm	D	D	C	N	A
Letter	SEF	8 1/2"x11" mm	D	D	C	N	A
HLT	SEF	5 1/2" x 8 1/2"	D	D	C	N	A
	LEF	5 1/2" x 8 1/2"	B	N	C	N	A
Exec	SEF	7 1/4"x10 1/2"	N	B	C	N	A
F	SEF	8" x 13"	B	B	C	N	A
Foolscap	SEF	8 1/2" x 13"	B	B	C	N	A
Folio	SEF	8 1/4" x 13"	B	B	C	N	A

Basic Specifications

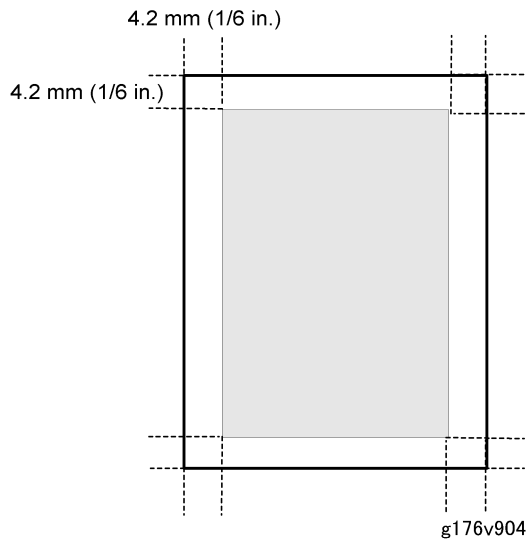
Envelope

Type	Orient	Size	Std. Tray	Opt. Tray	Bypass	Env. Feed	Dup.
Com10	SEF	4 1/8" x 9 1/2"	N	N	C	C	N
Monarch	SEF	3 7/8" x 7 1/2"	N	N	C	C	N
C6	SEF	114 x 162 mm	N	N	C	C	N
C5	SEF	162 x 229 mm	N	N	C	C	N
DL Env	SEF	110 x 220 mm	N	N	C	C	N

Custom

		Std. Tray	Opt. Tray	Bypass	Env. Feed	Dup.
Width	98-216 mm (3.9-8.5 in.)	B	B	/	N	N
Length	140-356 mm (5.5-14 in.) 160-356 mm (6.3-14 in.) Opt. Tray	B	B	/	N	N
Width	64-216 mm (2.5-8.5 in.)	/	/	C	N	N
Length	140-356 mm (5.5-14 in. in.)	/	/	C	N	N

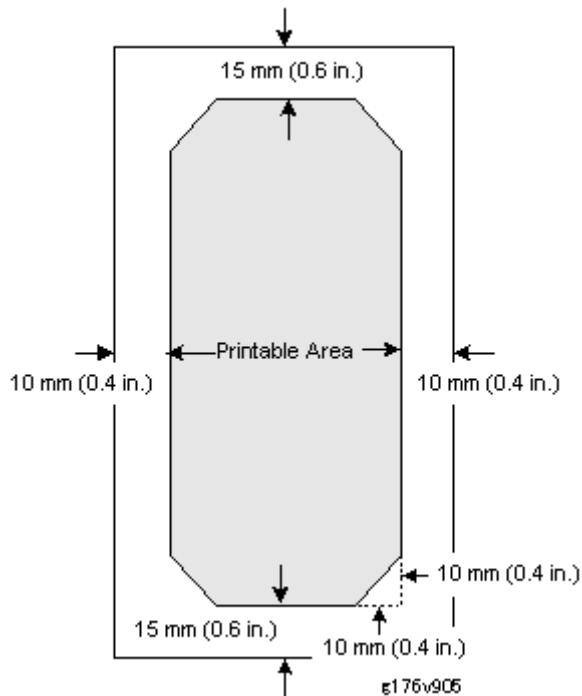
A	Supported and the size is automatically detected.
B	Need to select paper size by operation panel after the dial is set to
C	Need to input paper size by operation panel and driver.
D	Need to specify paper size by using dial.
N	Not supported.
/	Does not apply



Note

- The printable area may vary depending on paper size, printer language and printer driver settings.

Envelopes



7.1.4 OPERATING ENVIRONMENT

Power Source	North America: 120 V, 60 Hz		
	Europe: 220-240 V, 50/60 Hz		
Power Consumption (North America)	North America	Main Unit	Full System
	Maximum	930 W or less	960 W or less
	Printing	630 W or less	630 W or less
	Energy Saver (P1b)	4.5 W or less	10 W or less
	Energy Saver (P1c)	4.5 W or less	10 W or less
Power Consumption (Europe)	Europe	Main Unit	Full System
	Maximum	970 W or less	990 W or less
	Printing	630 W or less	630 W or less
	Energy Saver (P1b)	6.5 W or less	12.5 W or less
	Energy Saver (P1c)	6.5 W or less	12.5 W or less
Noise Emission (All Models)	S-P1b	Main Unit	Full System
	Printing	65 dB or less	69 dB or less
	Standby	42 dB or less	42 dB or less
	S-P1c	Main Unit	Full System
	Printing	67 dB or less	71 dB or less
	Standby	42 dB or less	42 dB or less

Basic Specifications

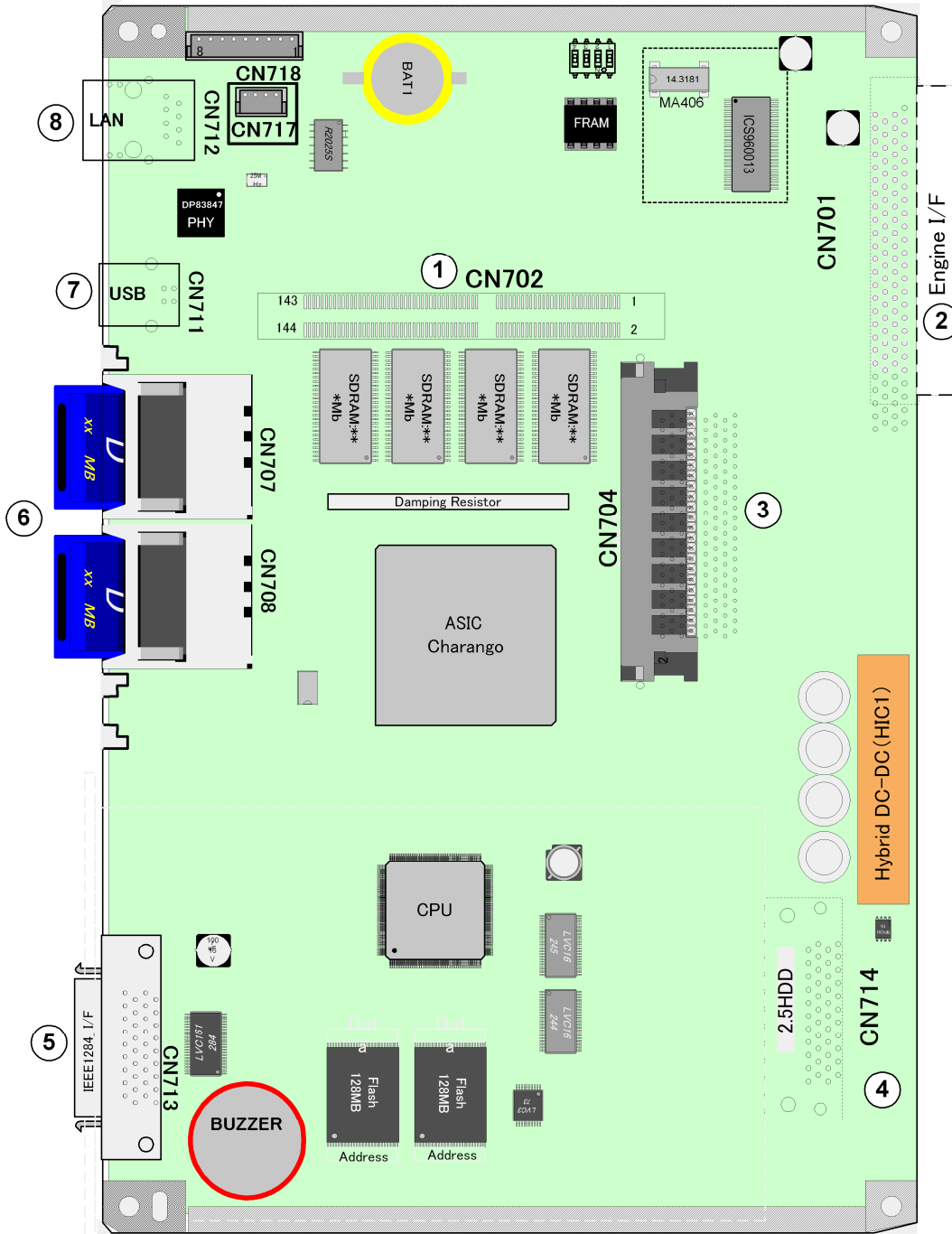
Sound Pressure Level (All Models) (Operating Position)	S-P1b	Main Unit	Full System
	Printing	59 dB or less	63 dB or less
	Standby	36 dB or less	36 dB or less
	S-P1c	Main Unit	Full System
	Printing	61 dB or less	65 dB or less
	Standby	36 dB or less	36 dB or less

7.1.5 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

7.2 CONTROLLER SPECIFICATIONS

7.2.1 CONTROLLER BOARD



g176v903

Controller Specifications

1. SDRAM DIMM I/F
2. Engine I/F
3. PCI Option
4. HDD I/F
5. IEEE1284 I/F
6. SD Card I/F (Slots x2)
7. USB I/F
8. LAN I/F

7.2.2 PRINTING FUNCTIONS

Job Spool	Y*
Adjustment Registration	Y
Adjustment Image Density	Y
* With HDD	

7.2.3 PRINTER DRIVERS

Item	PCL5e/6	RPCS	PostScript3				
			Windows			Mac	
			9x/Me	NT4	2000/ XP	OS 8.6-9.2	OSX
Job Binding	N	Y	N	N	N	N	N
Send to Document Server	N	N	N	N	N	N	N
Sample Print	Y	Y	Y	Y	Y	Y	Y*3
Locked Print	Y	Y	Y	Y	Y	Y	Y*3
Reduce/Enlarge (Scaling)	N	Y	Y	Y	Y	Y	Y
Reduce/Enlarge Centering	Y	Y	N	N	N	N	N
Collate	Y	Y	Y	Y	Y	Y	Y
Layout (N-up)	Y	Y	Y	Y	Y	Y	Y
Poster	N	Y	N	N	N	Y	N
Duplex	Y	Y	Y	Y	Y	Y	Y
Booklet1	N	Y	N	N	N	N	N
Booklet2 (Magazine)	Y	Y	N	N	N	N	N
Non-Reduction Booklet	N	Y	N	N	N	N	N
Punch	N	N	N	N	N	N	N
Staple	N	N	N	N	N	N	N
Front Cover Sheet	Y	Y	N	N	N	Y*1	Y*1

Controller Specifications

Front and Back Cover Sheets	N	N	N	N	N	N	N
Slip Sheet	Y	Y	Y	N	N	N	N
Chaptering (Page Layout)	N	N	N	N	N	N	N
Chaptering (Single Page Insert)	N	N	N	N	N	N	N
Chaptering (Page Block Insert)	N	N	N	N	N	N	N
User Defined Pages	Y	N	N	N	N	N	N
Tab Stock Printing	N	N	N	N	N	N	N
Mirror Image Print	N	N	Y	Y	Y	Y	N
Negative Image Print	N	N	Y	Y	Y	Y	N
Dithering	Y	Y	Y	Y	Y	Y	Y
Image Smoothing	/	/	Y	Y	Y	Y	Y
Edge Smoothing	Y	Y	Y	Y	Y	Y	Y
Toner Saving	Y	Y	Y	Y	Y	Y	Y
Watermark	Y	Y	Y	Y*2	Y*2	Y	Y*2
Form Overlay	N	Y	N	N	N	N	N
Header/Footer	N	Y	N	N	N	N	N
Adjust image position	N	Y	N	N	N	N	N
Binding Margins	N	Y	N	N	N	N	N
User ID	Y	Y	Y	Y	Y	Y	Y*3
User Code	Y	Y	Y	Y	Y	Y	Y*3

Controller Specifications

Rotate Print	Y	Y	Y	Y	Y	N	N
Reverse Order Print	N	Y	N	N	Y	Y	Y
Do not print Blank pages	N	Y	N	N	N	N	N
Edge to Edge Print	Y	Y	Y	Y	Y	Y	Y
Y*3: After Mac OSX10.2							

7.2.4 SUPPORTED ENVIRONMENTS***Windows Environments***

Windows OS	Type	PCL5e	PCL6	RPCS	PS3
Win 9x/Me	-	Yes	Yes	Yes	Yes
Win NT*7	WorkStation 4.0	Yes *1	Yes *1	Yes *1	Yes *2
	Server 4.0	Yes *1	Yes *1	Yes *1	Yes *2
	Server 4.0 TSE (*5)	Yes *2	Yes *2	Yes *2	Yes *2
	Server 4.0 Enterprise Ed.	No	No	No	No
Win 2000	Professional	Yes	Yes	Yes	Yes *3
	Server (*5)	Yes	Yes	Yes	Yes *3
	Advanced Server (*5)	Yes	Yes	Yes	Yes *3
	Datacenter Server	No	No	No	No
Win XP	Professional	Yes	Yes	Yes *4	Yes *3
	Professional x64 Ed.	Yes*7	Yes*7	Yes *4*8	Yes *3*7
	Home Ed.	Yes	Yes	Yes *4	Yes *3
Win Server 2003/2003R2	Standard	Yes	Yes	Yes	Yes *3
	Enterprise	Yes	Yes	Yes	Yes *3
	Datacenter Ed.	No	No	No	No
	Standard x64 Ed.	Yes*7	Yes*7	Yes*8	Yes *3 *7
	Enterprise x64 Ed.	Yes*7	Yes*7	Yes*8	Yes *3 *7
	Datacenter x64 Ed.	No*7	No*7	No*8	No*7
	Web Ed.	No	No	No	No

Notes

*1	Service Pack 6a or Later is required
*2	Service Pack 6 or Later is required
*3	Adobe does not release PS driver for Windows 2000 and XP. Only MS-PostScript driver is available and PPD file for MS-PS is included in the Driver CD.
*4	RPCS driver does not support "Fast User Switching" function of Windows XP.
*5	See "Point & Print" and "Terminal Service and Citrix Metaframe"
*6	NT4 drivers are not included in driver CD-ROM and are provided by web site.
*7	64bit drivers are not included in driver CD-ROM and are provided by web site(English only)
*8	RPCS64bit driver is in the progress of release schedule.

Mac OS Environments

Mac OS	PS3	Printer Utility for MAC
Mac OS 8.6 - 9.2.X (OS X Classic)	Y	Y
Mac OS X Native (v. 10.1 or Later) *1	Y	Y*2

Notes

*1 Mac OS X v.10.0.X is not supported. Plug-in function for "Sample Print", "Locked Print" and "User Code" is supported from Mac OS X 10.2 and later.

*2 Mac OS X v.10.2.0 is not supported.

Controller Specifications

UNIX Environment

Supported Platforms	Network Installation	Device Option Support*
Sun Solaris	2.6 / 7 / 8/ 9 /10	2.6 / 7 / 8/ 9 / 10
HP-UX	10.X / 11.X / 11iv2	10.X / 11.X / 11iv2
SCO OpenServer	5.07 , 6.0	5.07 , 6.0
RedHat Linux	6.X / 7.X / 8.X / 9.X / Enterprise	6.X / 7.X / 8.X / 9.X / Enterprise
IBM AIX	V4.3 / 5L V5.1 / 5L V5.2 / 5 L V5.3	V4.3 / 5L V5.1 /5L V5.2 / 5L V5.3
Data Stream	PostScript, PCL, ASCII	
Localization	English only	
* Device Option feature is not supported in PCL.		

Novell Netware

Netware Server	Supported Version	Netware 3.12, 3.2, 4.1, 4.11, 5.0, 5.1, 6 , 6.5
	Client OS	Windows 95 /98 /Me, NT4.0 / 2000, XP(Professional)
NDPS Gateway (V4 Release)	Supported Server OS	NetWare 5.1with SP7 or later, 6.0 with SP4 or later, 6.5
	Supported Client OS	Microsoft Windows 95/98 with Novell Client 3.32 or later Microsoft Windows NT4.0/2000/XP Professional with Novell Client 4.83 or later *Windows Me/XP Home Edition is not supported since Novell Client does not support this OS.
	Localization	English, German, French, Italian, Spanish

SAP R/3 Environment

Supported environment	R/3 version	3.x or later (4.x = Supported, 3.x, 6.x = Compatible)
	Platform	Independent
	PDL	PCL5e
	Character Set	Latin 1(Western European), Latin 2 (Eastern European)
	Localization	English only
Supported features	i.e: Input/Output Bin, Duplex, Stapling, Punching, Resolution, Collation, EconoMode/TonerSaving, Smoothing, Page Protect, Auto Tray Change/Opt Tray select	
Supported Barcode & OCR Fonts*	Barcode Fonts (Support Latin 1 only)	Code 128, Code 39, Code 93, Codebar, 2 of 5 interleaved/Industrial/Matrix, MSI, USPS, UPC/EAN
	OCR Fonts	OCR A, OCR B
* Need to purchase Barcode & OCR Package		

7.2.5 CONTROLLER INTERFACE SPECIFICATIONS

Network Interface (Standard)	
Data Transmission Speed	10M bps, 100 Mbps
Protocol	TCP/IP, IPX/SPX, SMB, AppleTalk
Supported OS	Windows 9x/Me/NT/2000/XP, Mac OS
Distance between devices	100m
USB 2.0 Interface (Standard)	
Data Transmission Speed	480 Mbps (High Speed:USB 2.0), 12 Mbps (Full Speed)
Supported OS	Windows 98 SE/Me/2000/XP (USB 1.1), Windows 2000/XP (USB 2.0)
IEEE 1284 Interface (Standard)	
Data Transmission Speed	Compatible/Nibble/Byte/ECP mode
Supported OS	Windows 9x/ Me/ NT4.0/ 2000 /XP /Server2003, Mac OS
Distance between devices	2.5m
Wireless LAN Interface (Option)	
Data Transmission Speed	11 Mbps, 5.5 Mbps, 2 Mbps, 1 Mbps
Protocol	TCP/IP, IPX/SPX, SMB, AppleTalk
Supported OS	Windows 9x/Me/NT/2000/XP, Mac OS
Distance between devices	140m (11M bps), 200m (5.5 Mbps), 270 m (2 Mbps), 400 m (1 Mbps)
Frequency	From 2,400 MHz to 2,497 MHz

Controller Specifications

Channel	1-11 ch (US model), 1-13 ch (EU model)
Type of connection	Ad hoc mode, 802.11b Ad hoc mode, Infrastructure mode, WPA
Gigabit Ethernet (Option)	
Data Transmission Speed	10M bps, 100 Mbps, 1000 Mbps
Protocol	TCP/IP, IPX/SPX, SMB, AppleTalk
Supported OS	Windows 9x/Me/NT/2000/XP, Mac OS
Distance between devices	100m

7.2.6 SUPPORTED UTILITIES

Bundled Utilities

No.	Utility Name	Supported?
1	SmartDeviceMonitor for Admin	YES
2	Printer Utility for Mac	YES* ¹ , * ²
3	DeskTopBinderLite –SmartDeviceMonitor for Client	YES
4	Font Manager 2000	YES
5	WebImageMonitor (embedded web server)	YES

*1Mac OS X v.10.0.x is not supported.

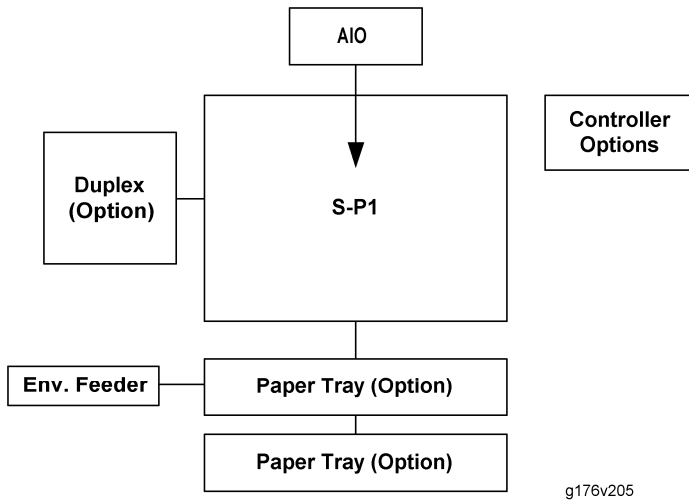
*2Mac OS X v.10.2.0 is not supported

Optional Utilities

No.	Utility Name	Supported?
1	DeskTopBinder Professional	YES
2	Web Smart Device Monitor	YES

7.3 MACHINE CONFIGURATION

7.3.1 SYSTEM COMPONENTS



All the options listed below can be installed by the customer, except the Data Overwrite Security Unit.

Main		
Mainframe (31 ppm)	G176	31 ppm
Mainframe (36 ppm)	G177	36 ppm
Options		
Paper Feed Unit TK1030	G894	1 or 2 trays can be installed.
Duplex Unit AD1000	G893	
Envelope Feeder Type 400	G362	If 2 PFUs are installed, the envelope feeder must go in the top tray.

Machine Configuration

Internal Options		
Memory Unit Type C 128 MB	G331	
Memory Unit Type C 256 MB	G332	
Hard Disk Drive Type 2650	M311	
IEEE 802.11b interface Unit Type H	G813	
IEEE 802.11b Interface Unit Type I	G874	
Gigabit Ethernet Board Type A	G874	
VM Card Type D	G874	
Data Storage Card Type A	G874	
Data Overwrite Security Unit Type E	G874	Must be installed by a technician.

G893

DUPLEX UNIT AD1000

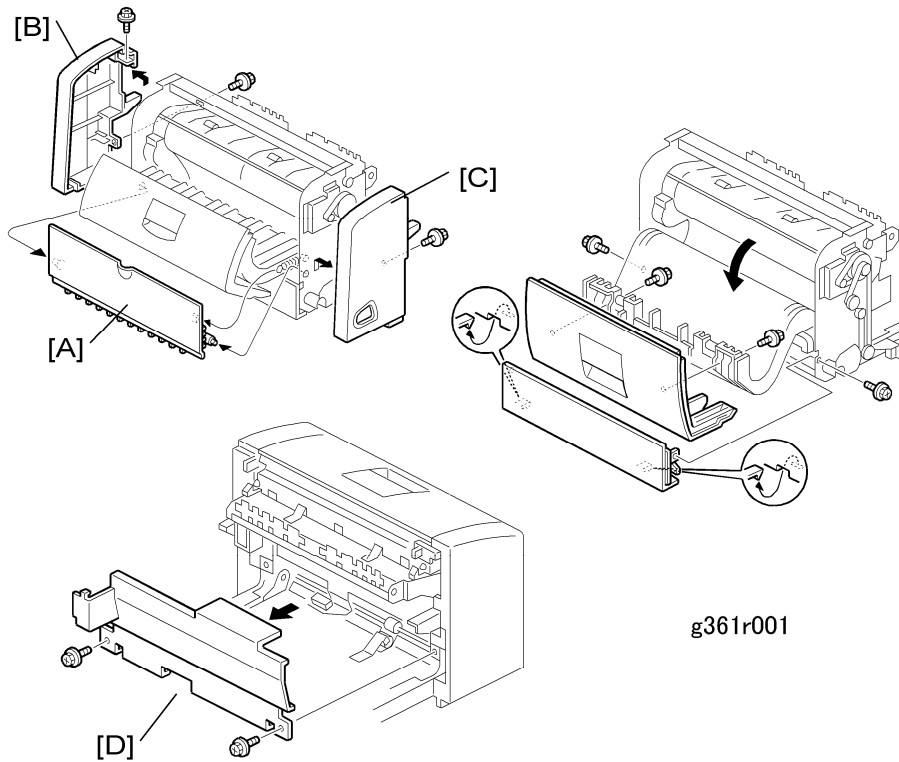
G893

TABLE OF CONTENTS

1. REPLACEMENT AND ADJUSTMENT	1
1.1 COVERS	1
1.2 DUPLEX BOARD AND SENSORS	2
1.3 INVERTER MOTOR.....	3
2. DETAILED DESCRIPTIONS	4
2.1 OVERVIEW.....	4
2.1.1 MECHANICAL COMPONENTS	4
2.1.2 DRIVE COMPONENTS	5
2.1.3 ELECTRICAL COMPONENTS	5
2.2 DUPLEXING	7
2.2.1 A4 LEF/LT LEF AND LONGER PAPER.....	7
2.2.2 PAPER SMALLER THAN A4 LEF/LT LEF.....	7
2.2.3 FEED IN AND EXIT MECHANISM	9
2.3 SAFETY FUSE.....	10

1. REPLACEMENT AND ADJUSTMENT

1.1 COVERS



CAUTION

- Turn off the main power switch and unplug the machine before attempting any of the procedures in this section.
- Remove the duplex unit from the main unit.
- Open the upper cover [A]

[A] Upper cover (⚙️x 2)

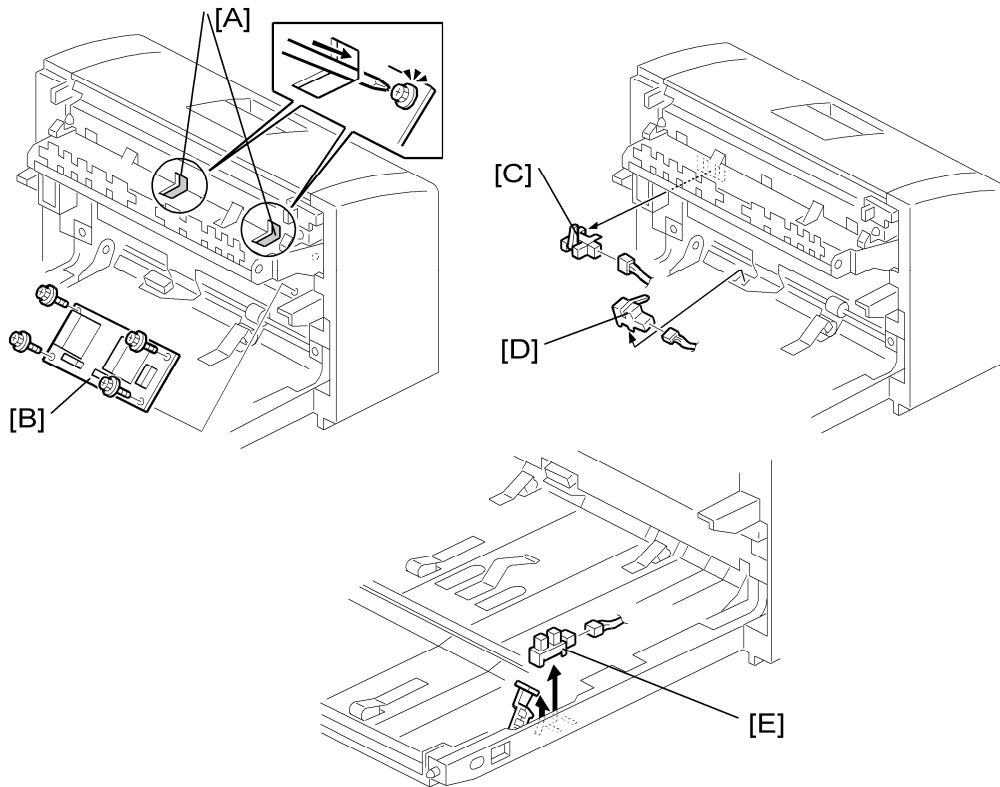
[B] Right cover (⚙️x 2)

[C] Left cover (⚙️x 1)

[D] Front cover (⚙️x 2)

G893
Duplex Unit
AD1000

1.2 DUPLEX BOARD AND SENSORS



g361r102

- Remove front cover (see previous section).

[A] Duplex board bracket (🔩 x2)

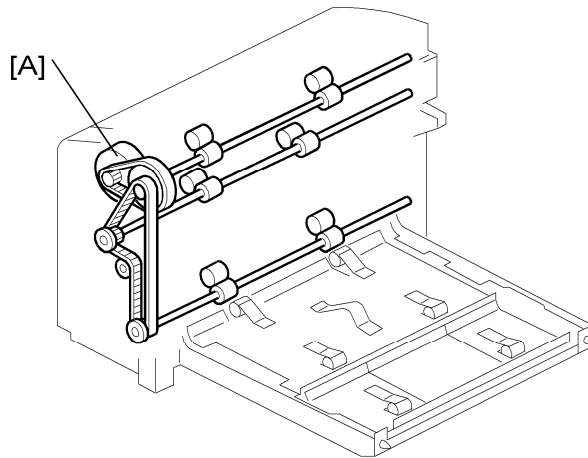
[B] Duplex board (🔩 x4)

[C] Inverter sensor (🔩 x1)

[D] Entrance sensor (🔩 x1)

[E] Exit sensor (🔩 x1)

1.3 INVERTER MOTOR



g361d002

★ Important

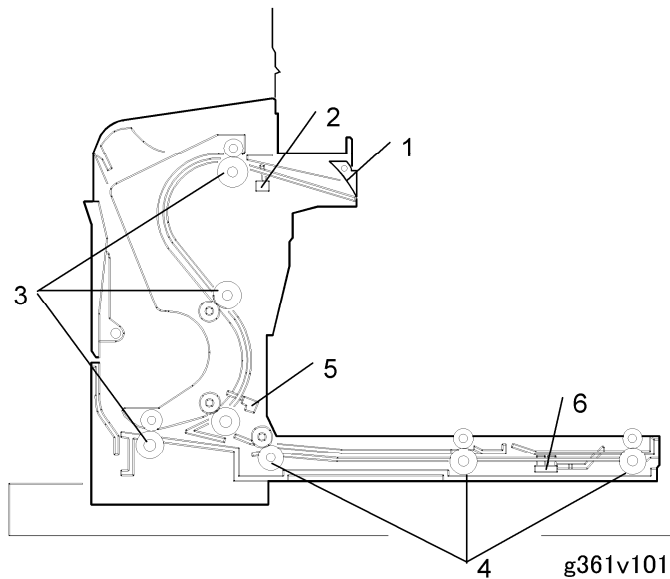
- Remove the motor bracket before removing the inverter motor.

[A] Inverter motor (Timing belts x2, Ⓒ x1, Gear x1)

2. DETAILED DESCRIPTIONS

2.1 OVERVIEW

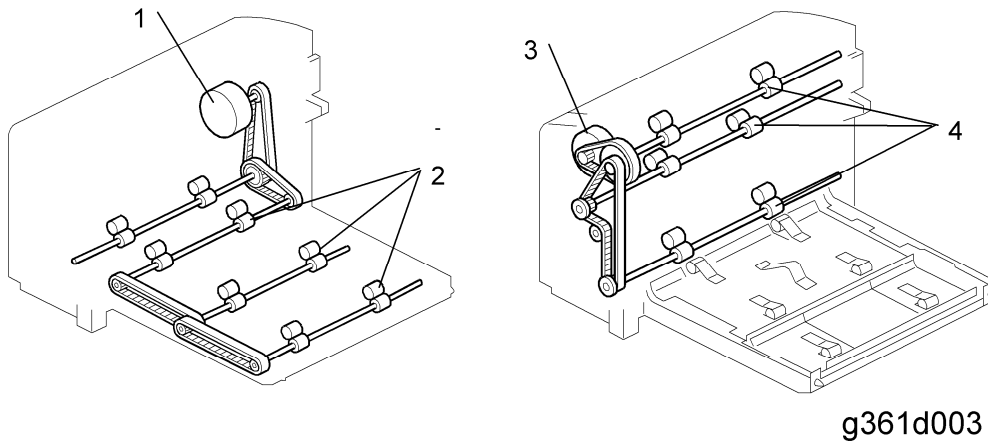
2.1.1 MECHANICAL COMPONENTS



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

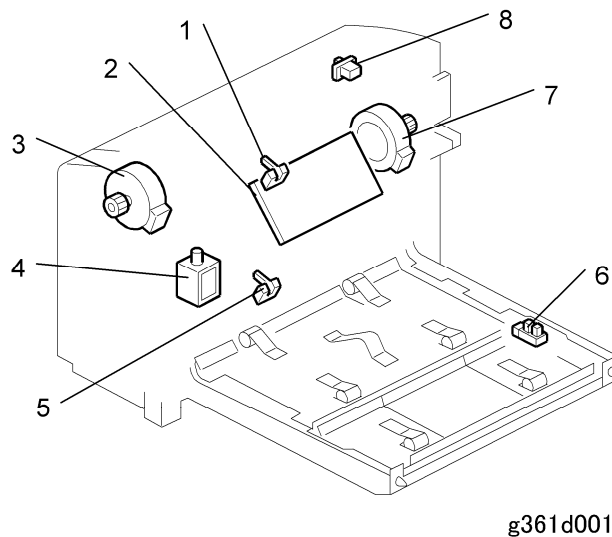
Overview

2.1.2 DRIVE COMPONENTS



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

2.1.3 ELECTRICAL COMPONENTS



1. Entrance sensor
2. Duplex board
3. Inverter motor

G893
Duplex Unit
AD1000

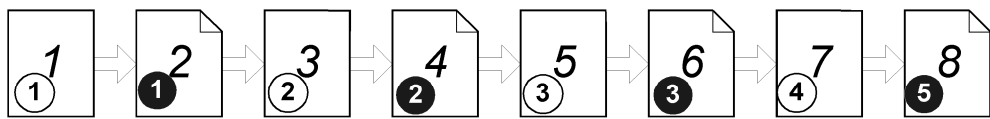
4. Junction gate solenoid
5. Inverter sensor
6. Exit sensor
7. Transport motor
8. Cover switch

2.2 DUPLEXING

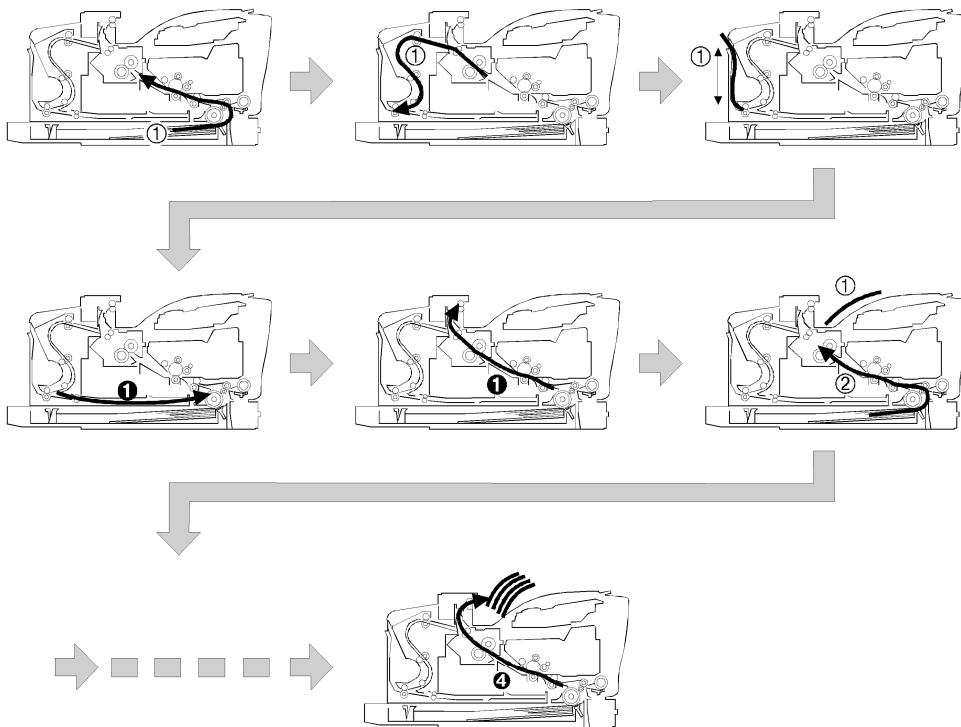
2.2.1 A4 LEF/LT LEF AND LONGER PAPER

The duplex unit can store only one sheet of paper.

Example: 8 pages. The center number (not circled) in the illustration shows the page order in the job. The circled numbers show the printing order (white circles: 1st side, black circles: 2nd side).



g361i500

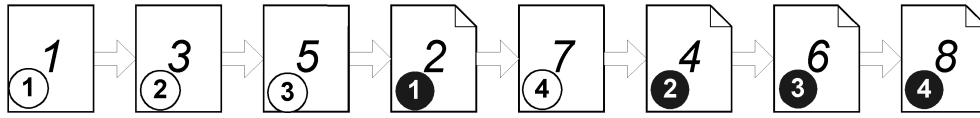


g361d106

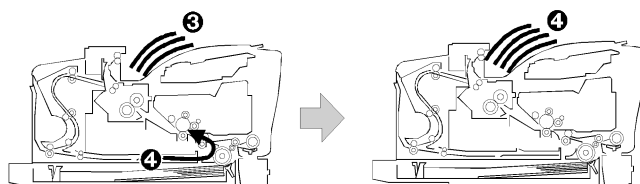
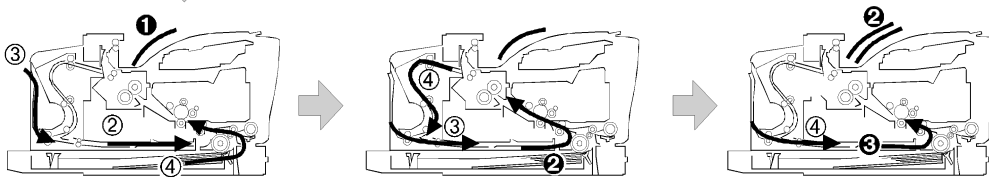
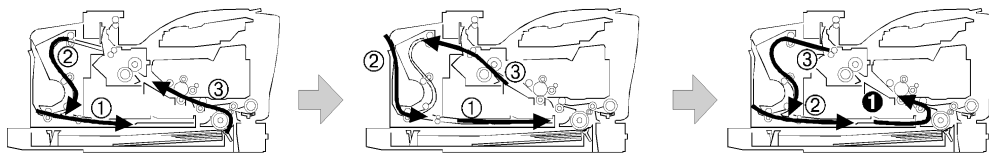
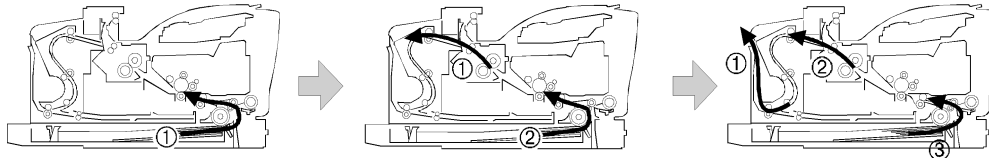
2.2.2 PAPER SMALLER THAN A4 LEF/LT LEF

The duplex unit can store three sheets of paper.

Example: 8 pages. The center number (not circled) in the illustration shows the page order in the job. The circled numbers show the printing order (white circles: 1st side, black circles: 2nd side).

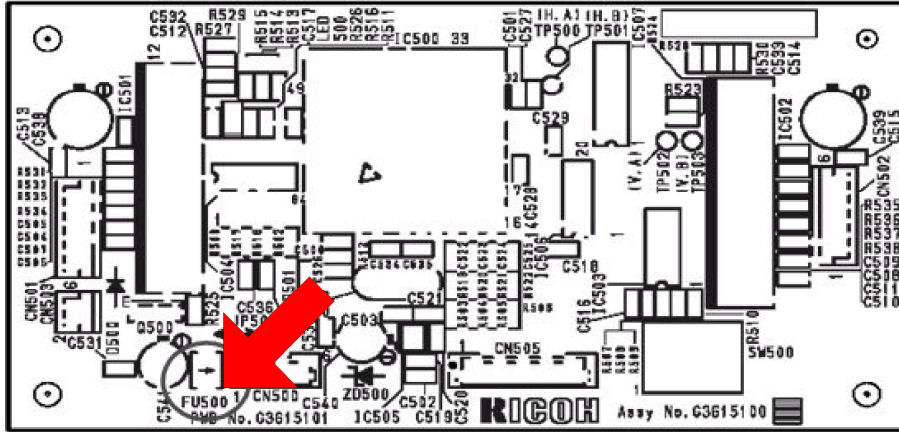


g361i501



g361d107

2.3 SAFETY FUSE



g361d901a

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

G894 PAPER FEED UNIT TK1030
&
G362 ENVELOPE FEEDER TYPE 400

G894/G362

TABLE OF CONTENTS

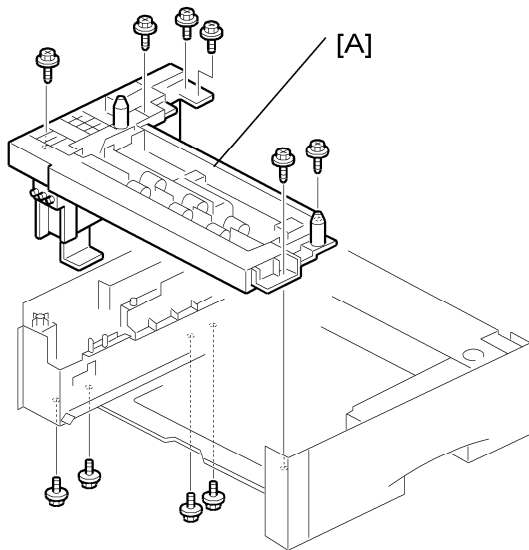
1. REPLACEMENT AND ADJUSTMENT	1
1.1 PAPER FEED UNIT	1
1.2 PAPER FEED ROLLER	2
1.3 FRICTION PAD	3
1.4 PAPER FEED CLUTCH, MOTOR.....	4
1.5 PAPER TRAY BOARD.....	5
1.6 PAPER SIZE SWITCH.....	6
2. DETAILED DESCRIPTIONS.....	7
2.1 OVERVIEW.....	7
2.1.1 MECHANICAL COMPONENTS	7
2.1.2 ELECTRICAL COMPONENTS	7
2.2 PAPER FEED AND SEPARATION.....	8
2.3 PAPER LIFT	9
2.4 PAPER END DETECTION.....	10
2.5 REMAINING PAPER DETECTION	11
2.6 PAPER SIZE DETECTION	12
2.7 SAFETY FUSE.....	13
3. ENVELOPE FEEDER.....	14
3.1 ENVELOPE FEEDER (G362)	14

1. REPLACEMENT AND ADJUSTMENT


1.1 PAPER FEED UNIT

CAUTION

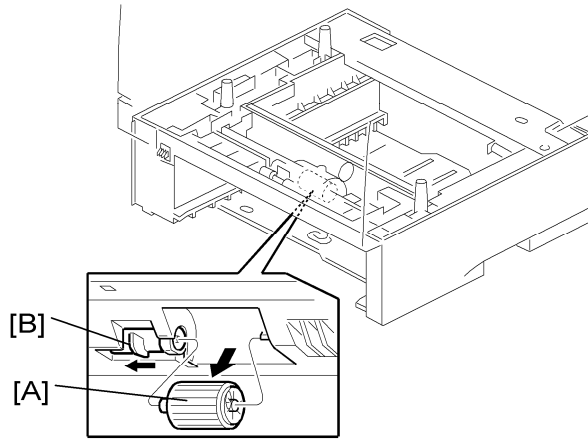
- Turn off the main power switch and unplug the machine before attempting any of the procedures in this section.



g360r001

1. Remove the paper tray unit from the main unit.
2. Pull out the paper tray.
3. Before removing the paper feed unit, turn the main unit over.
4. Remove the paper feed unit [A] ( x10)

1.2 PAPER FEED ROLLER

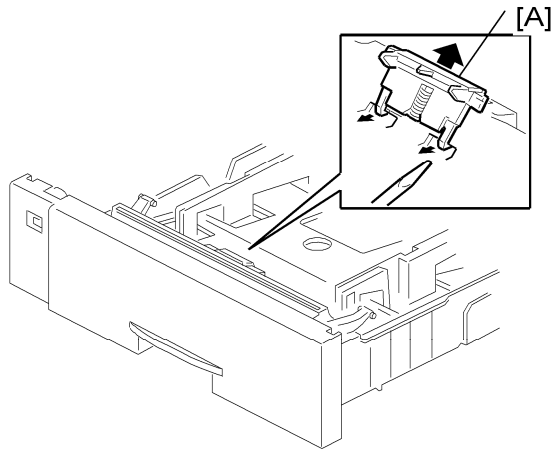


g360r103

1. Pull out the paper tray.
2. Pull lever [B] to remove the paper feed roller [A].

Friction Pad

1.3 FRICTION PAD

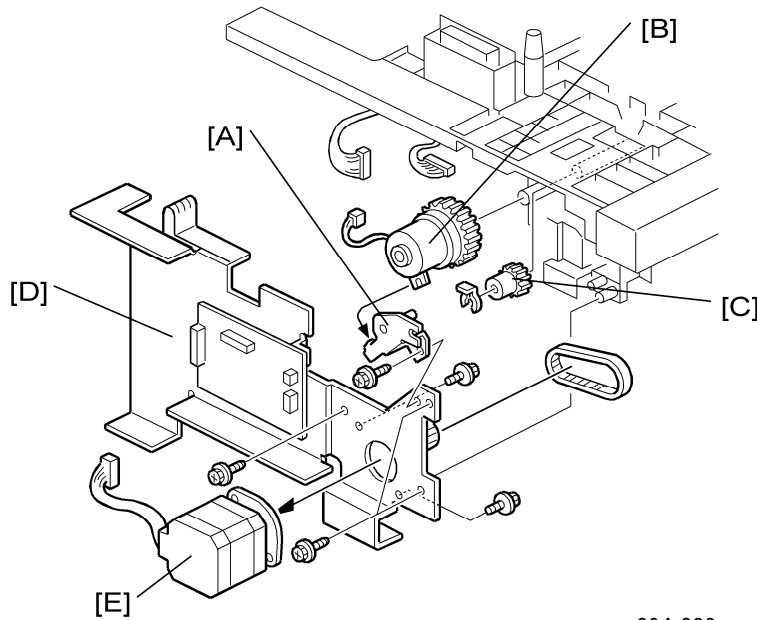


g360r102

1. Pull out the paper tray
2. Remove friction pad [A].

G894 Paper
Feed Unit
&
G362
Envelope
Feeder

1.4 PAPER FEED CLUTCH, MOTOR



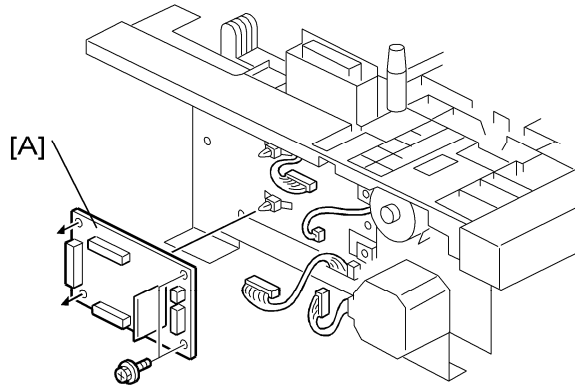
g894r003

- [A] Bracket (🔩 x1)
- [B] Paper feed clutch (🔩 x1, gear x1)
- [C] Paper feed gear (🔩 x1)
- [D] Feed motor bracket (🔩 x3, 🌀 x2)
- [E] Feed motor (🔩 x2, Timing belt x1, 🌀 x1)


manuals4you.com

Paper Tray Board

1.5 PAPER TRAY BOARD

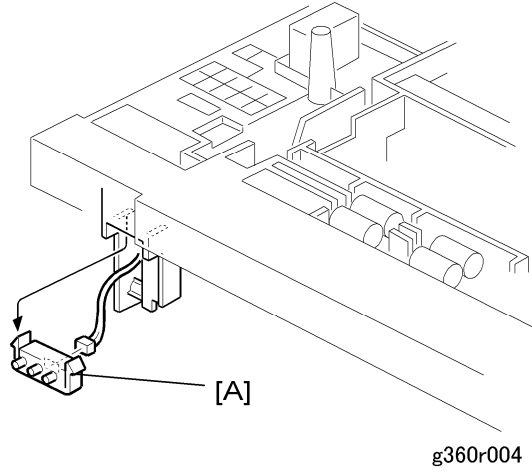



g894r002

[A] Paper tray board (Hooks x3,  x2)

G894 Paper
Feed Unit
&
G362
Envelope
Feeder

1.6 PAPER SIZE SWITCH

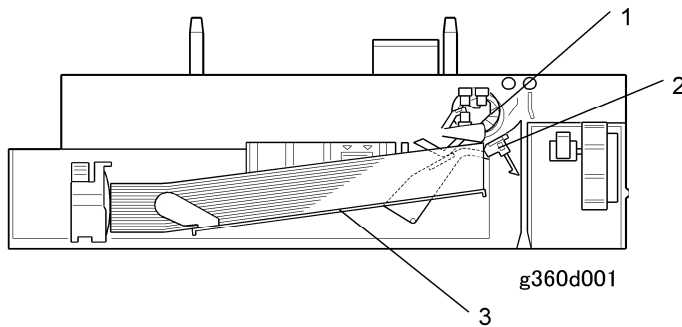


[A] Paper size switch (Hook x1,  x1)

2. DETAILED DESCRIPTIONS

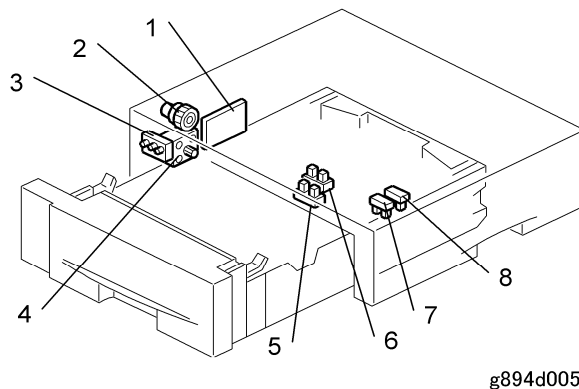
2.1 OVERVIEW

2.1.1 MECHANICAL COMPONENTS



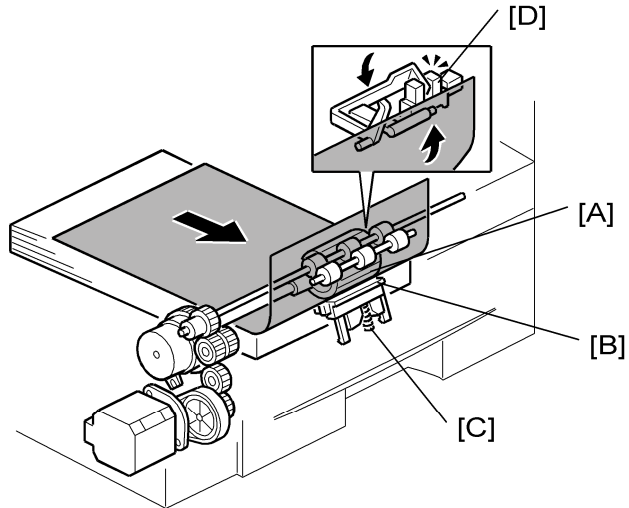
1. Paper feed roller
2. Friction pad
3. Bottom plate

2.1.2 ELECTRICAL COMPONENTS



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

2.2 PAPER FEED AND SEPARATION



g894d004

The paper tray holds 500 sheets of paper

The paper feed unit uses the feed roller and friction pad method to separate paper.

[A] Paper feed roller

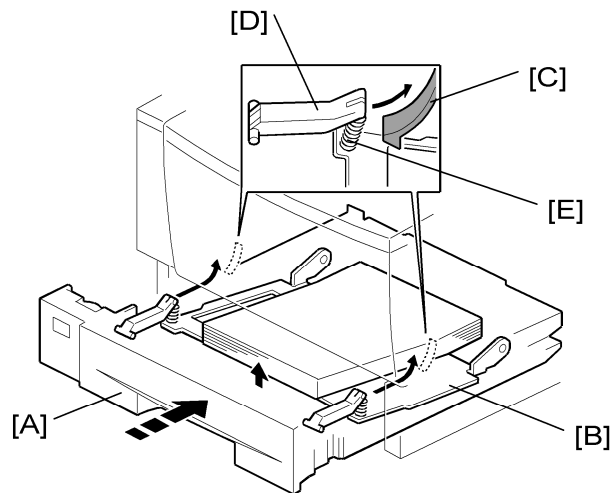
[B] Friction pad

[C] Pressure spring

[D] Paper feed sensor

2.3 PAPER LIFT

Paper lift is the same as for the main unit.

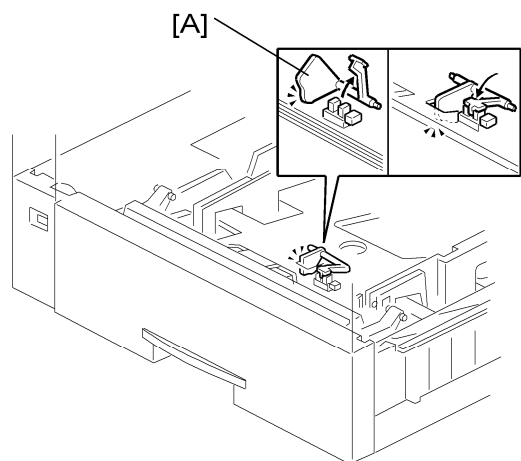


g094d004

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.

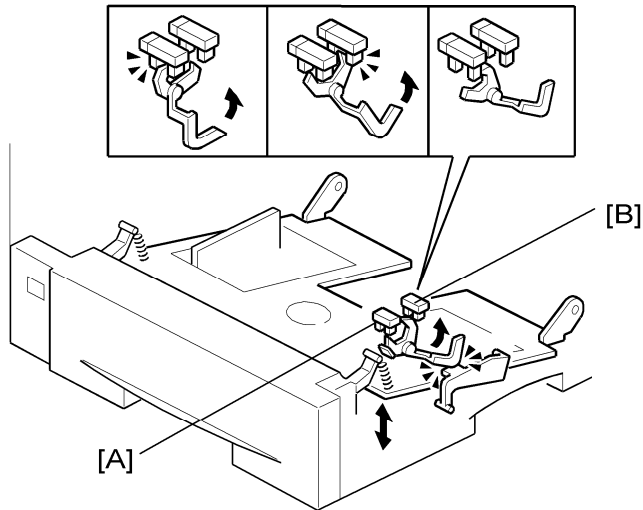
2.4 PAPER END DETECTION



g360d103

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.

2.5 REMAINING PAPER DETECTION



g094d002

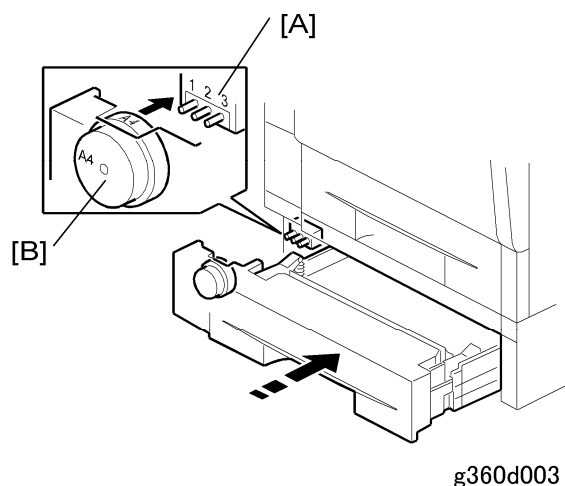
[A] Remaining paper sensor 1

[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: Actuator Out, ON: Actuator In

2.6 PAPER SIZE DETECTION



[A] Paper size switch

[B] Paper size dial

Paper Size	SW1	SW2	SW3
A4 SEF	ON	ON	OFF
A5 SEF	ON	OFF	ON
B5 SEF	OFF	ON	OFF
Custom Size	ON	OFF	OFF
LG SEF	OFF	OFF	OFF
LT SEF	OFF	OFF	ON
HLT SEF	OFF	ON	ON

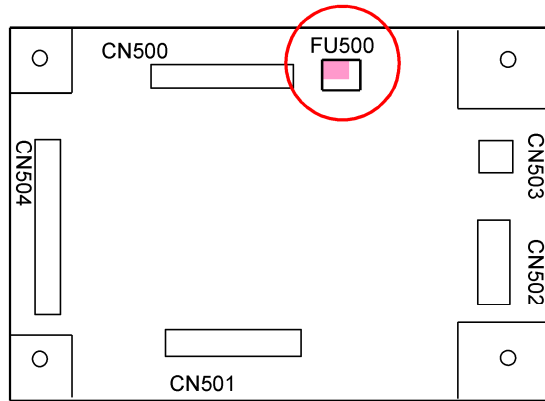
ON (Not pushed)

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).

2.7 SAFETY FUSE



g894d901b

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

3. ENVELOPE FEEDER

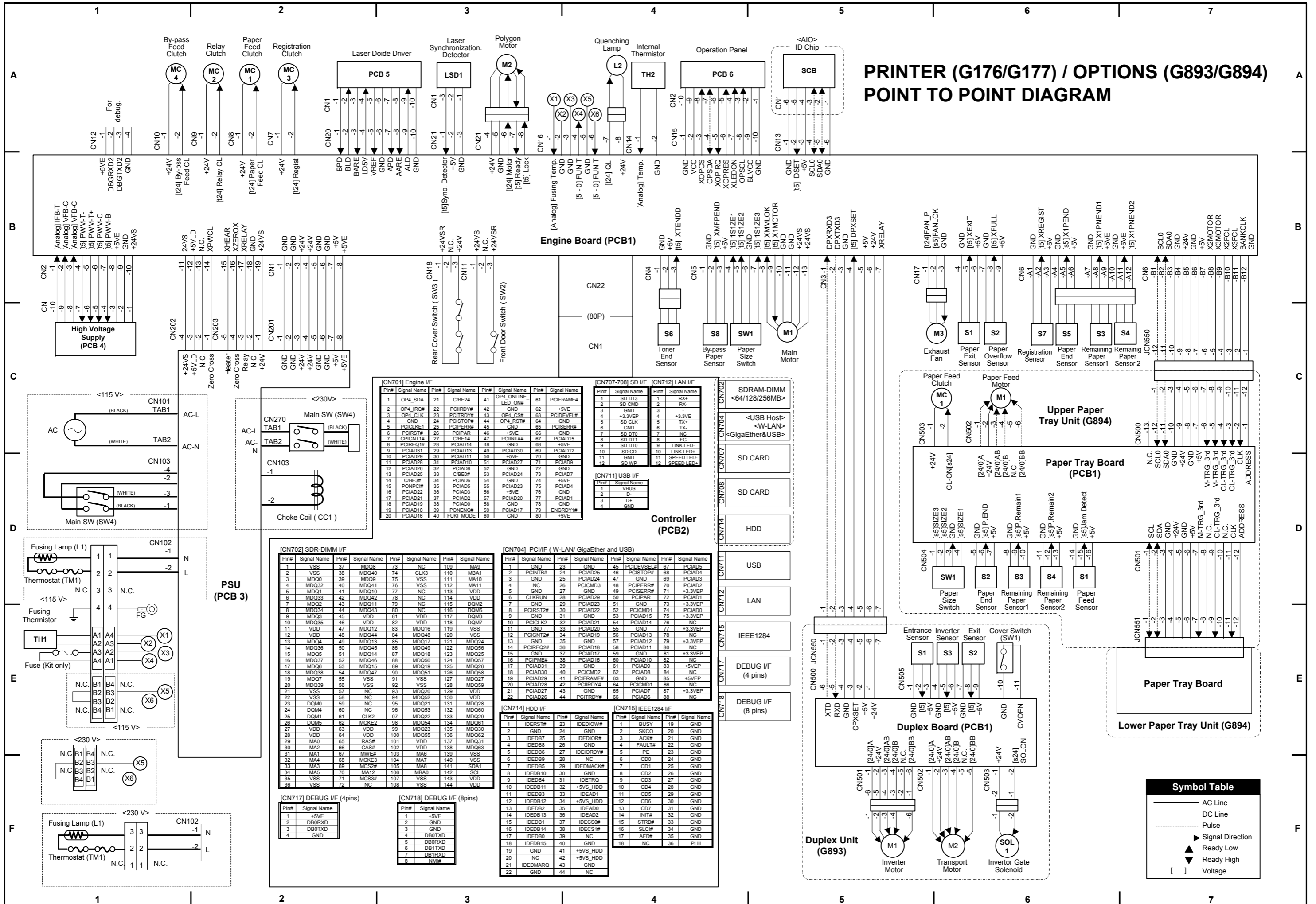
3.1 ENVELOPE FEEDER (G362)

This envelope feeder 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.

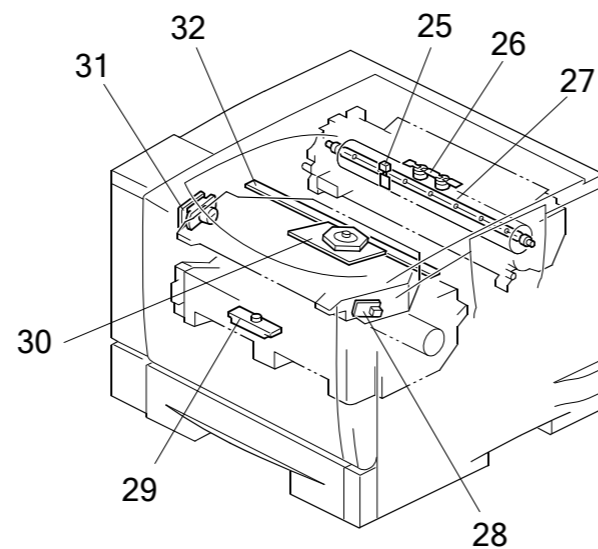
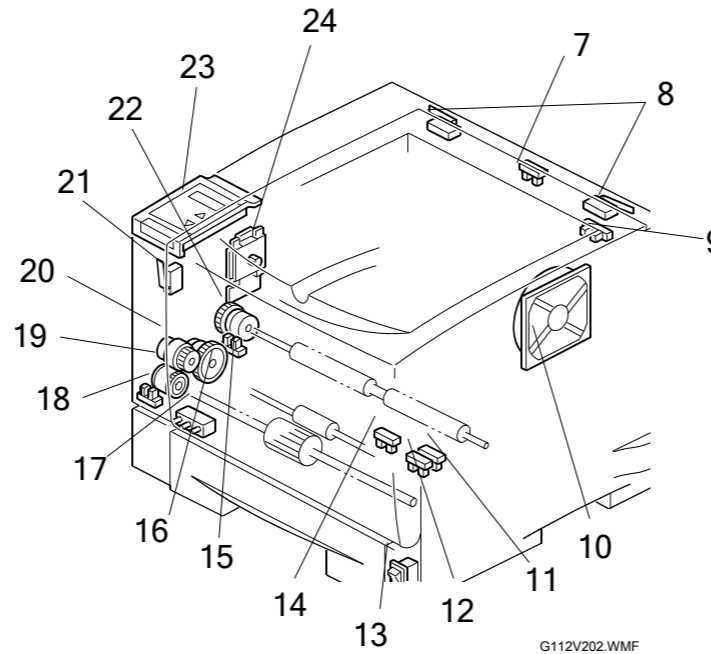
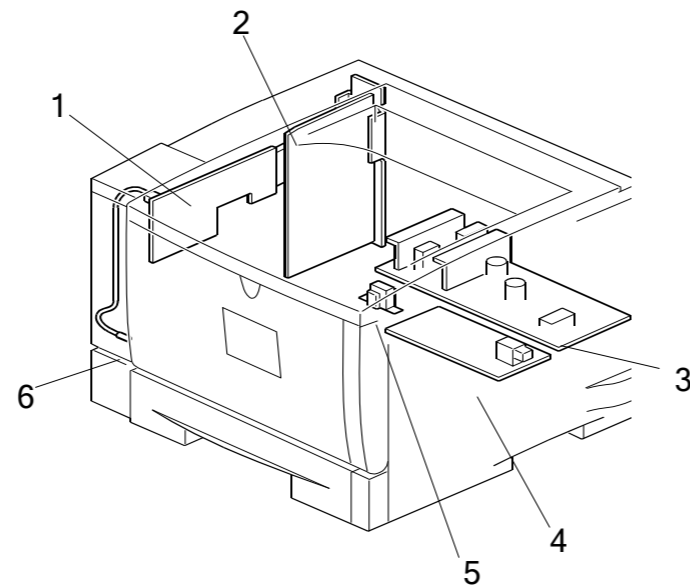
PRINTER (G176/G177) / OPTIONS (G893/G894) POINT TO POINT DIAGRAM



PRINTER (G176/G177) / OPTIONS (G893/G894) ELECTRICAL COMPONENT LAYOUT

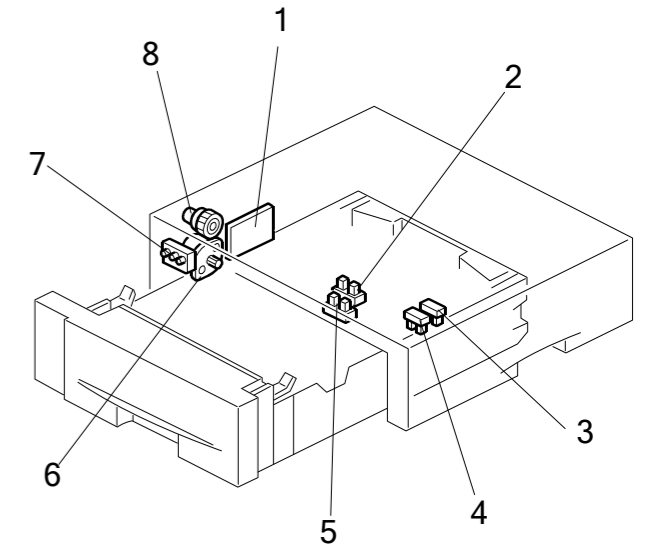
Printer (G176/G177)

Symbol	Index No.	Description	P to P
Motors			
M1	24	Main	C5
M2	30	Polygonal Mirror	A3
M3	10	Exhaust Fan	C6
Magnetic Clutches			
MC1	16	Paper Feed	A2
MC2	20	Relay	A2
MC3	22	Registration	A2
MC4	19	By-pass feed	A1
Switches			
SW1	17	Paper Size	C4
SW2	21	Front Door	C3
SW3	8	Rear Cover	C3
SW4	13	Main	C2, D1
Sensors			
S1	7	Paper Exit	C6
S2	9	Paper Overflow	C6
S3, S4	11, 12	Remaining Paper	C6
S5	14	Paper End	C6
S6	29	Toner End	C4
S7	15	Registration	C6
S8	18	By-pass paper	C4
PCBs			
PCB1	1	Engine	B4
PCB2	2	Printer controller	D4
PCB3	3	PSU (Power Supply Unit)	D2
PCB4	4	High Voltage Supply	C1
PCB5	31	LDD (Laser Diode Driver)	A3
PCB6	23	Operation Panel	A4
Lamps			
L1	27	Fusing	D1, F1
L2	32	Quenching	A4
Others			
TM1	26	Thermostat	D1, F1
TH1	25	Fusing Thermistor	E1
TH2	6	Internal Thermistor	A4
LSD1	28	Laser Synchronization Detector	A3
CC1	5	Choke Coil (230V machine only)	D2



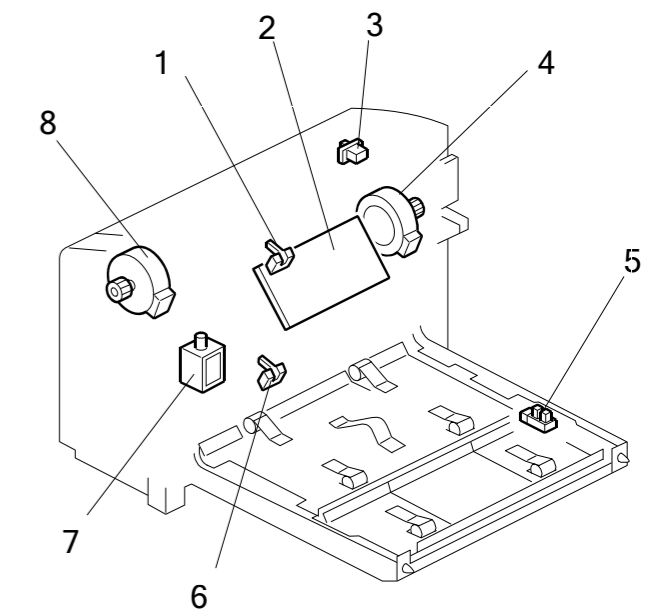
Paper Tray Unit (G894)

Symbol	Index No.	Description	P to P
Motor			
M1	6	Paper feed	C6
Sensors			
S1	5	Paper feed	D6
S2	2	Paper end	D6
S3, S4	3, 4	Remaining paper	D6
Switch			
SW1	7	Paper size	D6
Clutch			
MC1	8	Paper feed	C6
PCB			
PCB1	1	Paper tray board	D6



Duplex Unit (G893)

Symbol	Index No.	Description	P to P
Motors			
M1	8	Inverter	F5
M2	4	Transport	F6
Sensors			
S1	1	Entrance	E5
S2	5	Exit	E6
S3	6	Inverter	E6
Switch			
SW1	3	Cover	E6
Solenoid			
SOL1	7	Inverter gate	F6
PCB			
PCB1	2	Duplex board	E6





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G176/G177
PARTS CATALOG

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G176/G177
PARTS CATALOG

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G176/G177 PARTS CATALOG

003038MIU

Gestetner **LANIER RICOH SAVIN**

LEGEND

PRODUCT CODE	COMPANY			
	GESTETNER	LANIER	RICOH	SAVIN
G176	P7031n	LP131n	SP 4100N	MLP31n
G177	P7035n	LP136n	SP 4110N	MLP36n
G362	Envelope Feeder Type 400			
G893	Duplex Unit AD1000			
G894	Paper Feed Unit TK1030			

DOCUMENTATION HISTORY

REV. NO.	DATE	COMMENTS
*	03/2007	Original Printing

G176/G177

TABLE OF CONTENTS

G176/G177 PARTS LOCATION AND LIST

1. EXTERIOR 1 (G176/G177)	2
2. EXTERIOR 2 (G176/G177)	4
3. LD UNIT (G176/G177).....	6
4. PAPER TRAY (G176/G177).....	8
5. PAPER REGISTRATION 1 (G176/G177)	10
6. PAPER REGISTRATION 2 (G176/G177)	12
7. TRANSFER SECTION (G176/G177)	14
8. FUSING UNIT 1 (G176/G177)	16
9. FUSING UNIT 2 (G176/G177)	18
10. PAPER EXIT (G176/G177)	20
11. DRIVE SECTION (G176/G177)	22
12. ELECTRICAL SECTION 1 (G176/G177)	24
13. ELECTRICAL SECTION 2 (G176/G177)	26
14. MAIN CTRL BOARD (G176/G177)	28
15. ENGINE BOARD (120V)	42
16. ENGINE BOARD (230V)	48
17. DECALS AND DOCUMENTS (G176/G177)	54
18. SPECIAL TOOLS (G176/G177)	56

G176/G177 PARTS INDEX

PARTS INDEX	2
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ENVELOPE FEEDER TYPE 400 G362 PARTS LOCATION AND LIST

1. ENVELOPE FEEDER (G362)	2
2. DECALS AND DOCUMENTS (G362)	4

G362 PM PARTS INDEX

G362 PARTS INDEX.....	2
-----------------------	---

DUPLEX UNIT AD 1000 G893 PARTS LOCATION AND LIST

1. DUPLEX UNIT 1 (G893).....	2
2. DUPLEX UNIT 2 (G893).....	4
3. DUPLEX UNIT 3 (G893).....	6
4. DUPLEX UNIT 4 (G893).....	8

G893 PARTS INDEX.....

PAPER FEED UNIT TK1030 G894 PARTS LOCATION AND LIST

1. PAPER TRAY (G894).....	2
2. PAPER FEED DRIVE (G894).....	4
3. FRAME SECTION (G894).....	6
4. DECALS AND DOCUMENTS (G894)	8

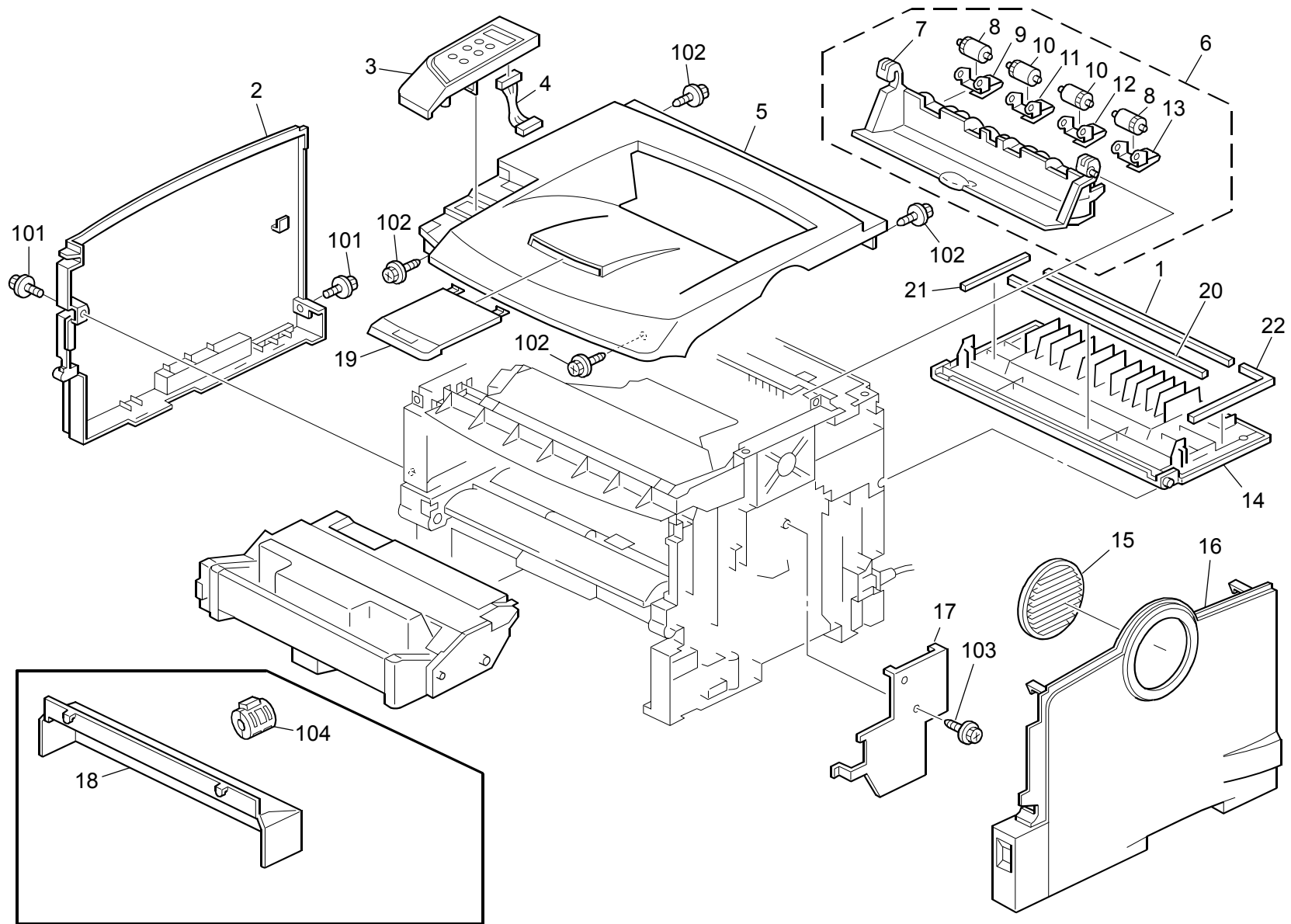
G894 PM PARTS INDEX

G894 PM PARTS INDEX	2
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G176/G177
PARTS LOCATION AND LIST

This section instructs you as to the numbers and names of parts on this machine.

1. EXTERIOR 1 (G176/G177)

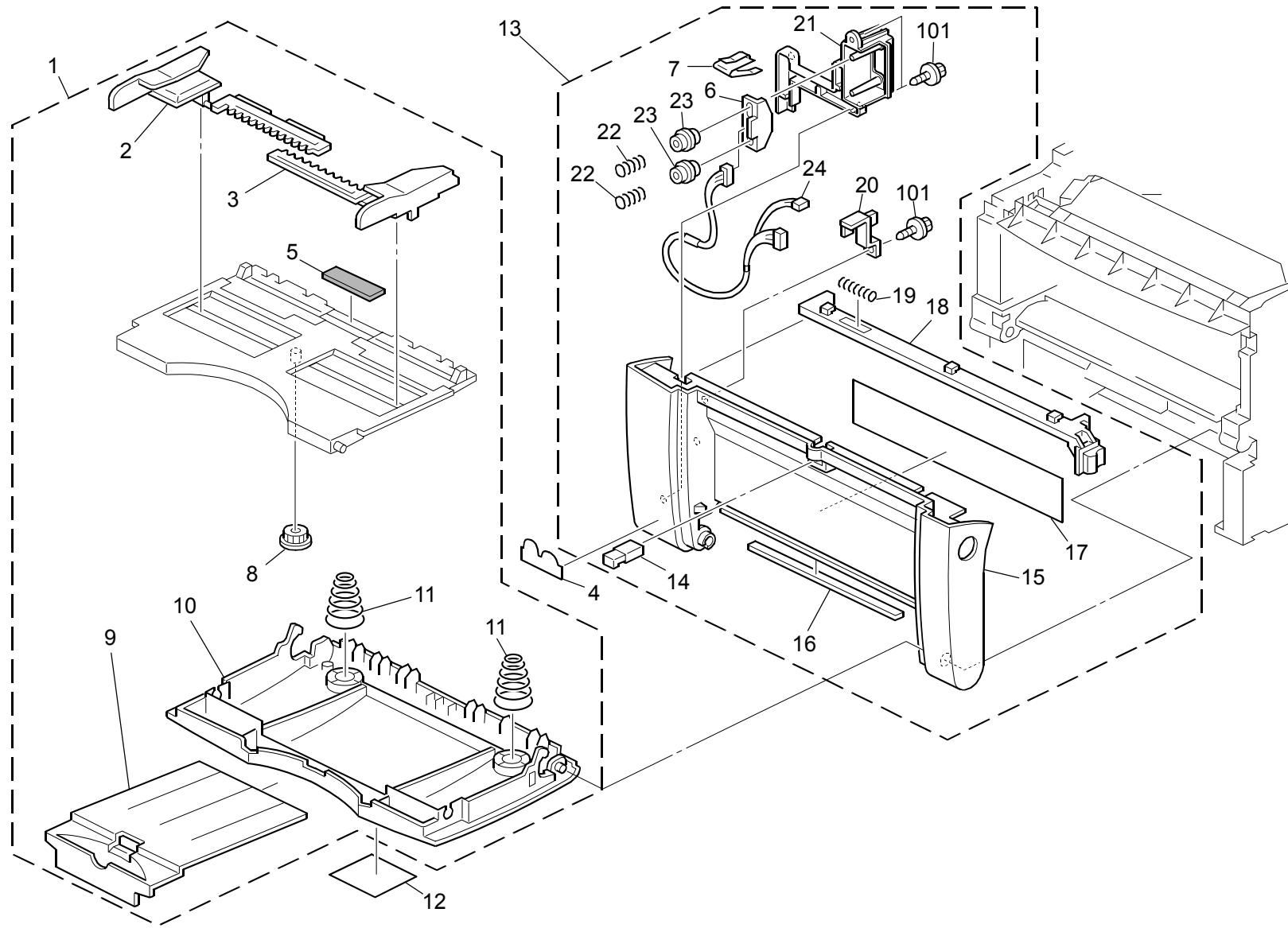


1. EXTERIOR 1 (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G175 1258	Upper Seal - Rear Cover	1
2	G175 1250	Left Cover - NA	1
2	G175 1253	Left Cover - EU	1
3	G175 1400	Operation Panel	1
4	G129 5406	Harness: Operation Panel	1
5	G175 1452	Upper Cover (NA)	1
5	G175 1652	Upper Cover - EU	1
6	G096 1509	Paper Exit Sub-unit Ass'y	1
7	G096 1512	Exit Cover	1
8	G052 4875	Inner Exit Cover Roller	2
9	G052 4871	Left Holder - Exit Driven Roller	1
10	G052 4873	Outer Exit Cover Roller	2
11	G052 4876	Left Spring Plate	1
12	G052 4877	Right Spring Plate	1
13	G052 4872	Right Holder - Exit Driven Roller	1
14	G175 1219	Rear Cover (NA)	1
14	G175 1229	Rear Cover - EU	1
15	G175 1651	Louver	1
16	G175 1450	Right Cover (NA)	1
16	G175 1650	Right Cover - EU	1
17	G096 1257	Warning Cover (Electrical)	1
18	G096 3111	Cassette Cover	1
19	G175 1406	Slide Guide	1
20	G175 1255	Lower Seal - Rear Cover	1
21	G175 1256	Left Seal - Rear Cover	1
22	G175 1257	Right Seal - Rear Cover	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0451 3006N	Tapping Screw - 3x6	
102	0450 4010N	Tapping Screw: M4x10	
103	0450 3008N	Tapping Screw - M3x8	
104	1607 1565	Ferrite Core: ATFC-16813	

2. EXTERIOR 2 (G176/G177)

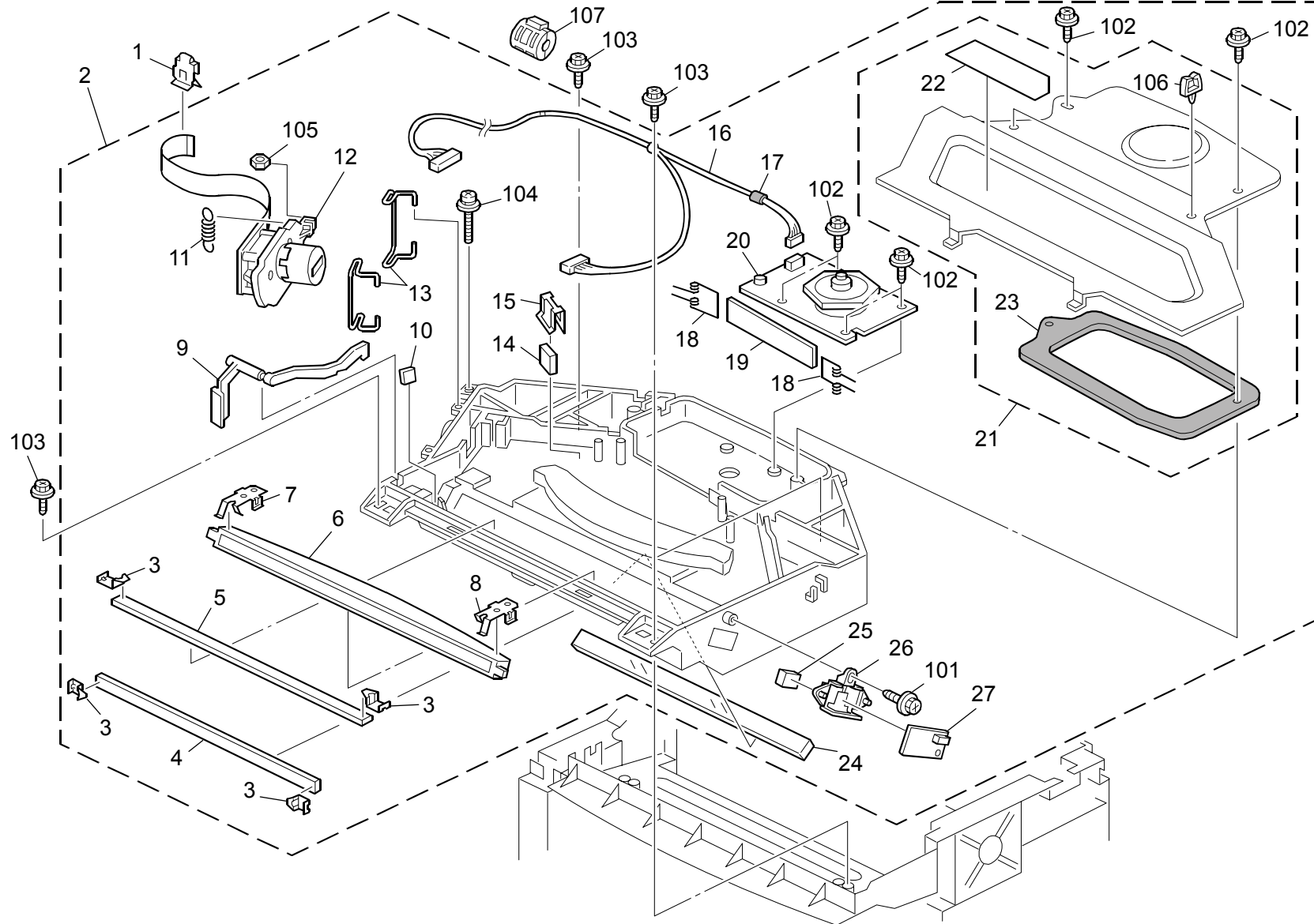


2. EXTERIOR 2 (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G175 3270	Table Unit - Manual Feed	1
2	G175 3277	Side Fence: Manual Feed: Left	1
3	G175 3276	Side Fence: Manual Feed: Right	1
4	GA00 1038	Decal: PS	1
5	5215 2713	Bottom Plate Pad	1
6	G052 5362	Receptacle - 99RH144	1
7	G052 1544	Spring Plate - Receptacle	1
8	G800 3133	Side Fence Gear	1
9	G175 3341	Extension Tray: Manual Feed	1
10	G175 3272	Cover: Manual Feed Table	1
11	G052 3278	Spring - Bypass	2
12	G175 0403	Model Name Plate - RIC	1
13	G175 1280	Door: Ass'y	1
13	G175 1260	Front Door - EU	1
14	AG07 1007	Latch - By Pass Feed Table	1
15	G175 1280	Door: Ass'y (NA)	1
15	G175 1260	Front Door - EU	1
16	G052 3356	Sheet - Soundproof	1
17	G096 1551	Misfeed Removal Decal	1
18	G175 1516	Door Lever	1
19	G052 1518	Spring - Lock Lever	1
20	G096 1517	Shutter Feeler	1
21	G175 1251	Harness Cover	1
22	G052 1541	Spring - Receptacle	2
23	G052 1542	Collar - Receptacle	2
24	G111 3539	Internal Thermistor	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3008N	Tapping Screw - M3x8	

3. LD UNIT (G176/G177)



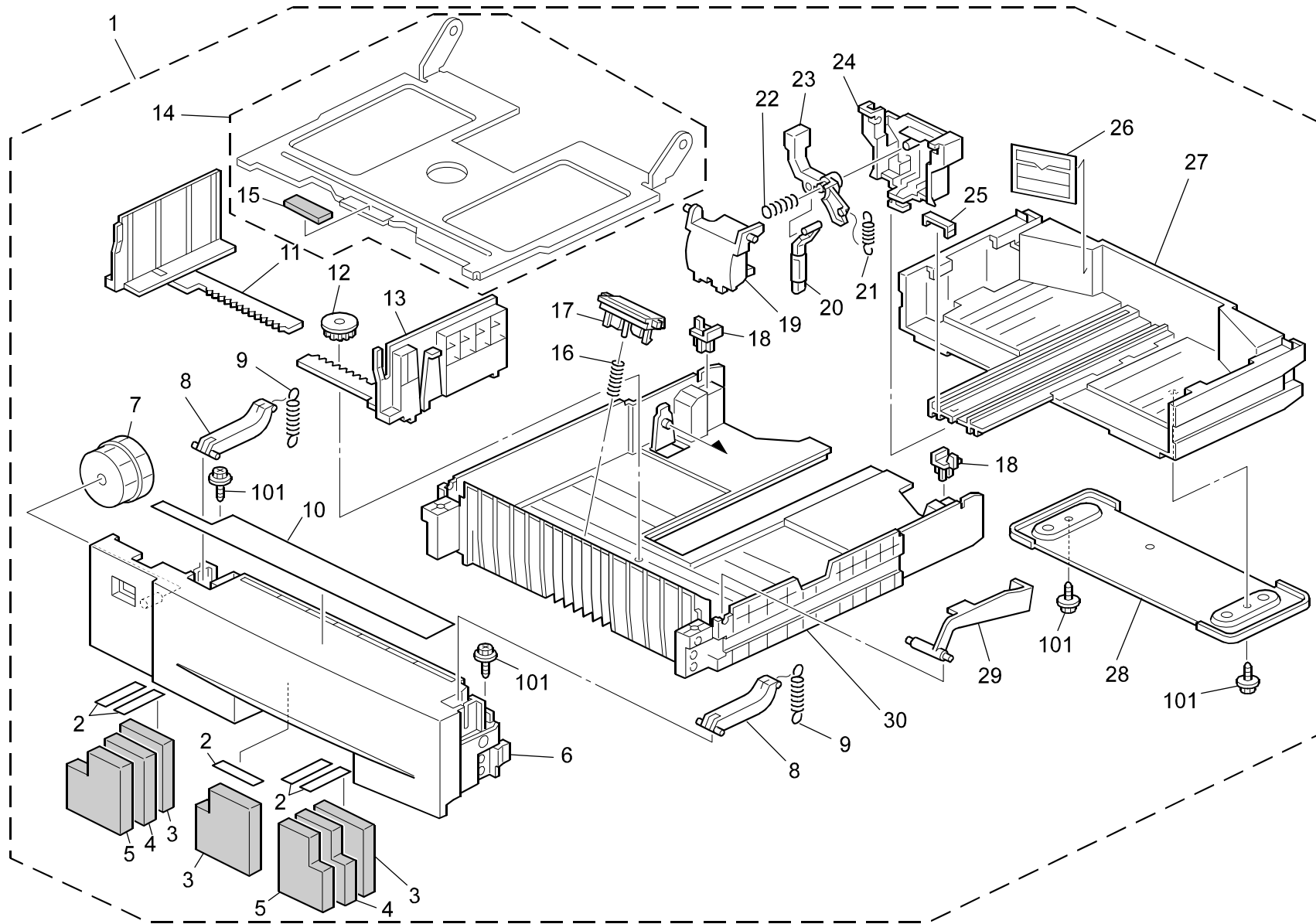
3. LD UNIT (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G052 1212	Clip	1
2	G175 1904	Imaging Unit	1
3	G052 2774	Mirror Clamp	4
4	GC03 0026	Mirror - 1	1
5	GC03 0027	Mirror - 2	1
6	GC02 5010	DTL	1
7	G052 2771	Right DTL Holder	1
8	G052 2772	Left DTL Holder	1
9	G052 2780	Shutter - LD	1
10	GC03 0028	Mirror - Sync Detector	1
11	G052 2764	Spring - LD Unit	1
12	G168 1915	Laser Diode Unit	1
13	G052 2763	LD Holder	2
14	GC02 5011	Cylindrical Lens	1
15	G052 2773	Cylindrical Lens Holder	1
16	G129 5403	Harness: Polygon Motor: Sync Detector	1
17	G088 2775	Shield: Harness	1
18	G052 2777	Spring Holder - Shield Glass	2
19	GC01 5005	Shield Glass - Polygon Motor	1
20	GX06 0029	Polygon Scanner Motor: DC24V 24W	1
21	G088 2785	Cover: Optical Housing: Ass'y	1
22	G111 1910	Caution Decal - Laser	1
23	G088 2789	Shield: Cover: Polygon Scanner	1
24	G129 1902	Shield Glass	1
25	G029 1975	Cylindrical Lens	1
26	G052 2791	Sync Detector Holder	1
27	G052 5060	Synchronization Detector	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3006N	Tapping Screw - M3x6	
102	0450 3008N	Tapping Screw - M3x8	
103	0450 3012N	Tapping Screw: 3x12	
104	0951 3016N	Screw: Polished Round: M3X16	
105	0712 0030N	Hexagonal Nut: M3	
106	1105 0229	Clamp	
107	1607 1565	Ferrite Core: ATFC-16813 (EU)	

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4. PAPER TRAY (G176/G177)

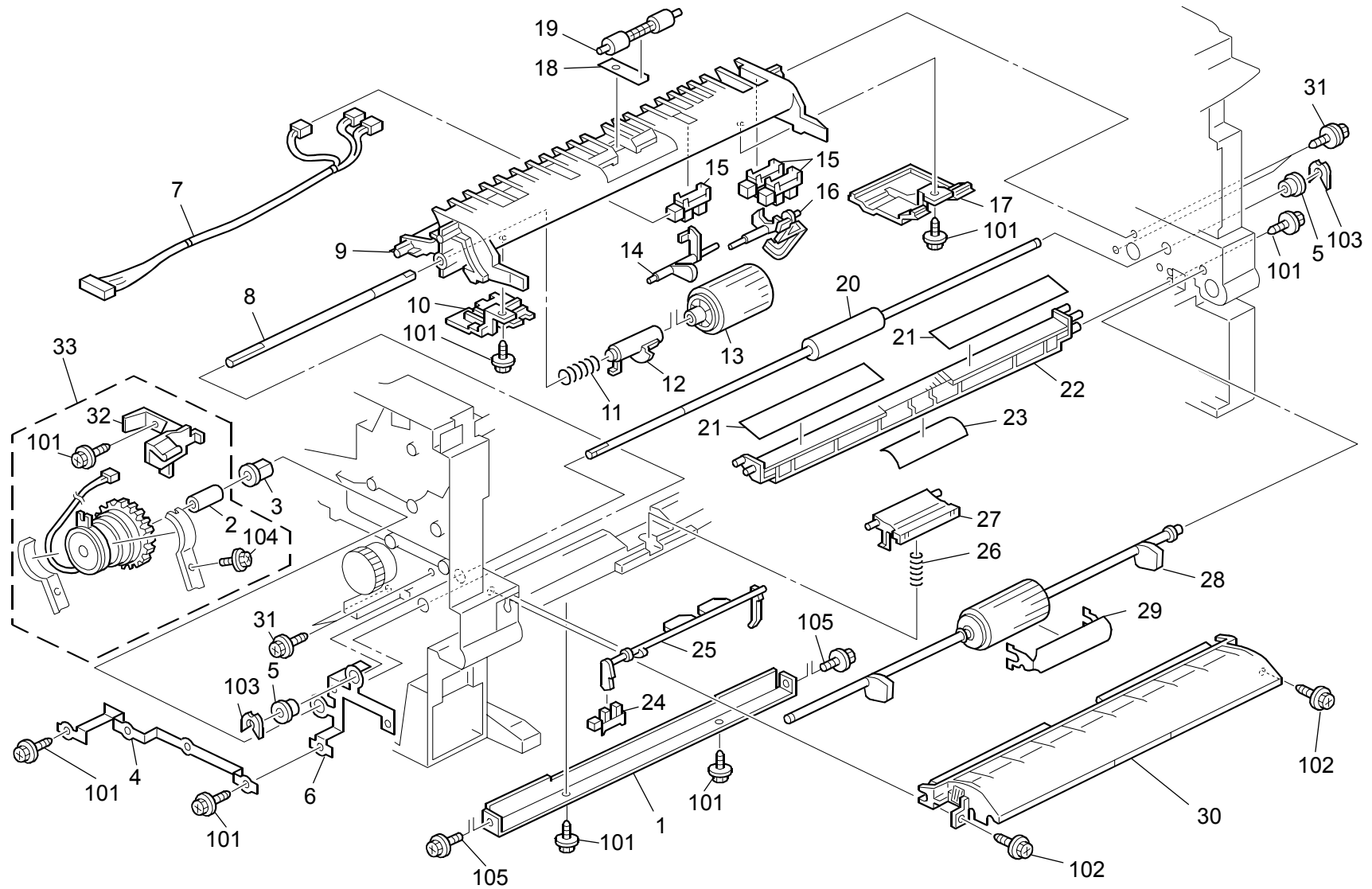


4. PAPER TRAY (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G175 3050	Paper Tray Unit	1
2	G096 3094	Tape - Sheet: Tray	5
3	G360 3091	Sheet - Tray 1	3
4	G360 3092	Sheet - Tray 2	2
5	G360 3093	Sheet - Tray 3	2
6	G096 3052	Paper Tray Cover	1
7	G096 3075	Paper Size Sensor Board	1
8	G096 3071	Paper Tray Arm	2
9	G096 3083	Spring Tension	2
10	G096 3144	Paper Set Direction Label	1
11	G096 3055	Left Side Fence	1
12	A267 2869	Gear - 16Z	1
13	G096 3056	Right Side Fence	1
14	G102 2818	Tray Bottom Plate: Adhesion	1
15	5215 2713	Bottom Plate Pad	1
16	G096 3084	Separation Compression Spring	1
17	G096 3066	Friction Pad Adhesion	1
18	G029 2609	Cassette Protection	2
19	G096 3088	End Fence Pressure	1
20	G096 3087	End Fence Protection	1
21	G096 3090	End Fence Tension Spring 12n	1
22	G096 3089	End Fence Compression Spring 3.5n	1
23	G096 3086	End Fence Lever	1
24	G096 3085	End Fence	1
25	G096 3063	Paper Tray Cap	1
26	G096 3078	Protection Label	1
27	G096 3060	Rear Paper Tray	1
28	G096 3065	Paper Tray Supporting Plate	1
29	G096 3070	Paper Volume Sensor Board	1
30	G096 3051	Paper Tray	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3008N	Tapping Screw - M3x8	

5. PAPER REGISTRATION 1 (G176/G177)

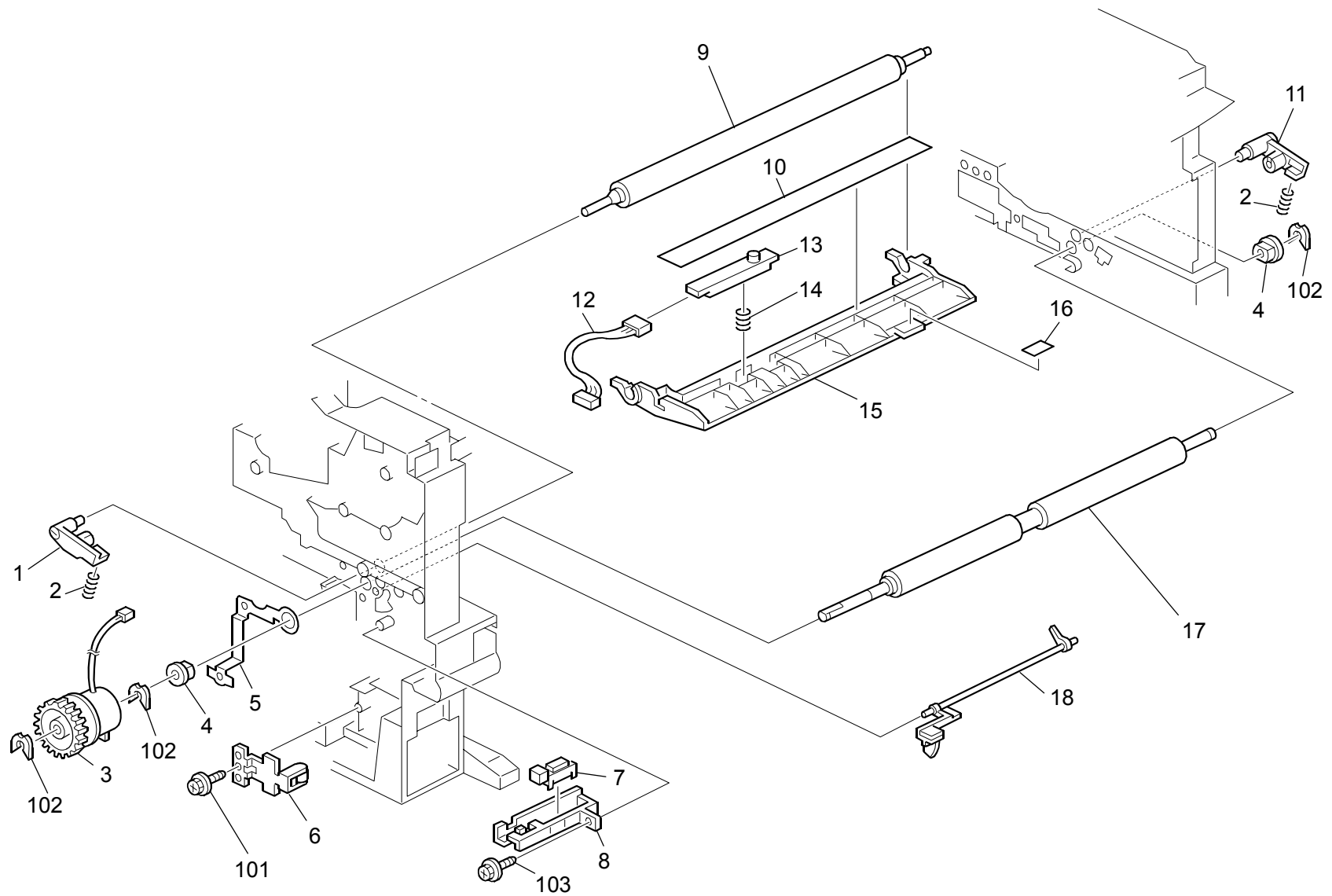


5. PAPER REGISTRATION 1 (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G096 3301	Support Plate Stay : Bypass	1
2	G175 3138	Spacer - Paper Feed	1
3	AA08 2075	Bushing - M6	1
4	G096 3337	Auxiliary Ground Plate	1
5	AA08 2058	Bushing - 6x10x9mm	3
6	G096 3335	Paper Feed Ground Plate	1
7	G129 5400	Harness: Fst: Connecting	1
8	G096 3101	Paper Feed Shaft	1
9	G096 3100	Paper Feed Stay	1
10	G096 3106	Left Stay Cover	1
11	G029 2657	Compression Spring	1
12	G052 3106	Bushing - Paper Feed Roller	1
13	G052 3103	Paper Feed Roller	1
14	G096 3104	Paper End Sensor Feeler	1
15	AW02 0141	Photointerruptor	3
16	G096 3105	Paper Volume Sensor Feeler	1
17	G096 3107	Right Stay Cover	1
18	G052 3304	Spring Plate - Paper Transport	1
19	G052 3303	Paper Transport Roller	1
20	G175 3332	Relay Roller	1
21	G096 3306	Connecting Guide Roller	2
22	G096 3294	Connecting Guide Plate	1
23	G052 3307	Transport Guide Mylar	1
24	AW02 0145	Photointerruptor: Flat	1
25	G175 3286	Manual Feed Feeler	1
26	G096 3292	Spring - Manual Feed	1
27	G175 3290	Friction Pad - Manual Feed	1
28	G129 2552	Paper Feed Roller: Manual Feed	1
29	G175 2767	Feed Roller Cover	1
30	G096 3280	Manual Feed Frame	1
31	G116 4159	Screw: M3x13	4
32	G175 3139	Magnetic Clutch Stopper	1
33	G175 2587	Paper Feed Clutch	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3008N	Tapping Screw - M3x8	
102	0450 3010N	Tapping Screw - M3x10	
103	0805 0089	Retaining Ring - M4	
104	0451 3006N	Tapping Screw - 3x6	
105	0451 3008N	Tapping Screw - M3x8	

6. PAPER REGISTRATION 2 (G176/G177)

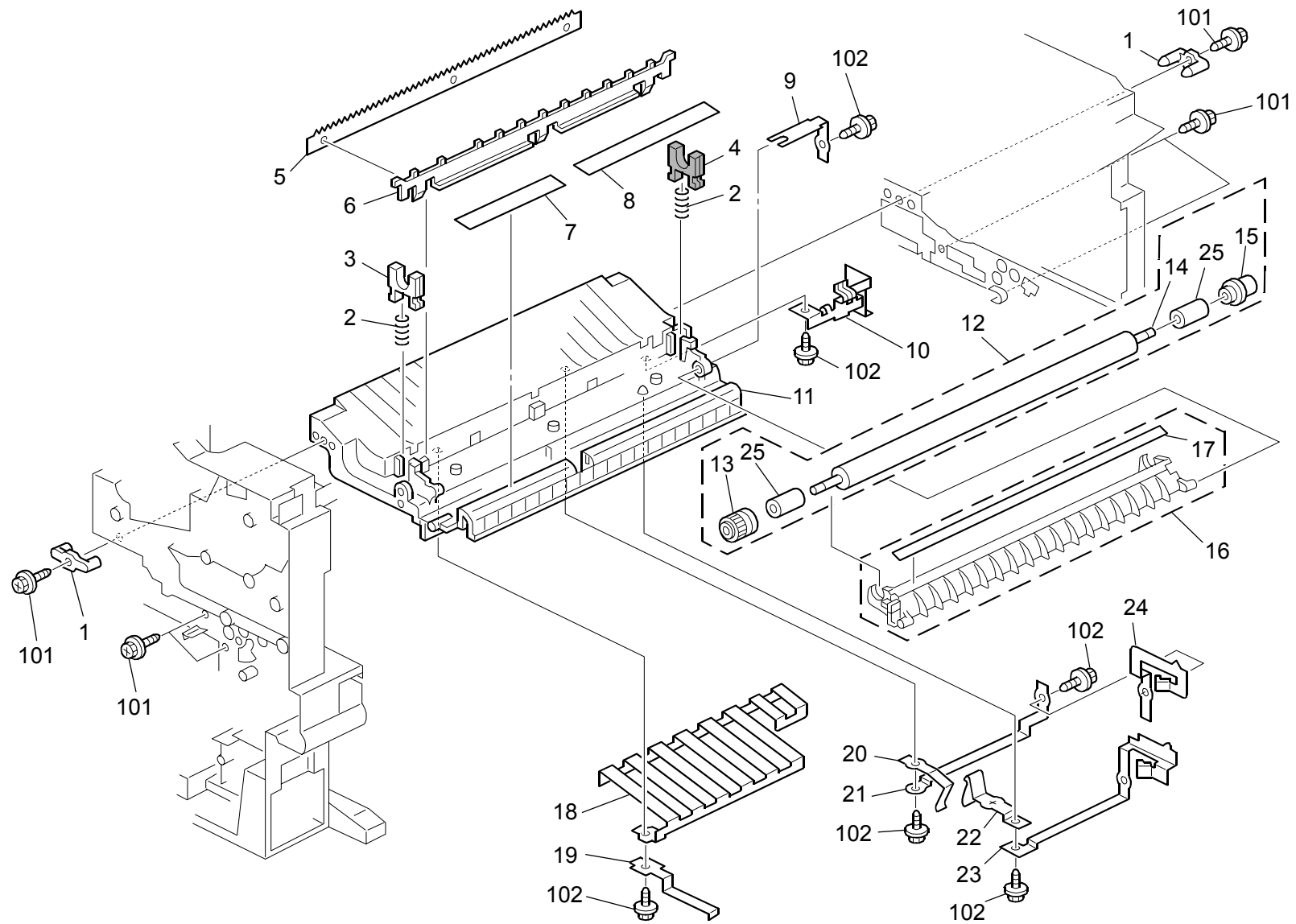


6. PAPER REGISTRATION 2 (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G052 3258	Left Bushing - Registration	1
2	AA06 3539	Spring - Registration Roller	2
3	G175 2585	Magnetic Clutch - Registration	1
4	AA08 2144	Bushing - 8x12x7	2
5	G096 3336	Registration Drive Ground Plate	1
6	G096 1087	Paper Tray Spring Plate Ass'y	1
7	G175 2551	Photosensor	1
8	G175 3268	Registration Sensor Bracket	1
9	G096 3315	Driven Registration Roller Mm14	1
10	G175 3267	Cleaner Film - Registration	1
11	G052 3257	Right Bushing - Registration	1
12	G175 5404	Harness - Toner End Sensor	1
13	G052 3390	Toner End Sensor	1
14	G052 3396	Spring - Toner End Sensor	1
15	G175 3266	Upper Guide Plate - Registration	1
16	G052 3351	Decal - Registration	1
17	G175 3316	Registration Roller - Drive	1
18	G175 3286	Manual Feed Feeler	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3008N	Tapping Screw - M3x8	
102	0805 0088	Retaining Ring - M6	
103	0450 3010N	Tapping Screw - M3x10	

7. TRANSFER SECTION (G176/G177)

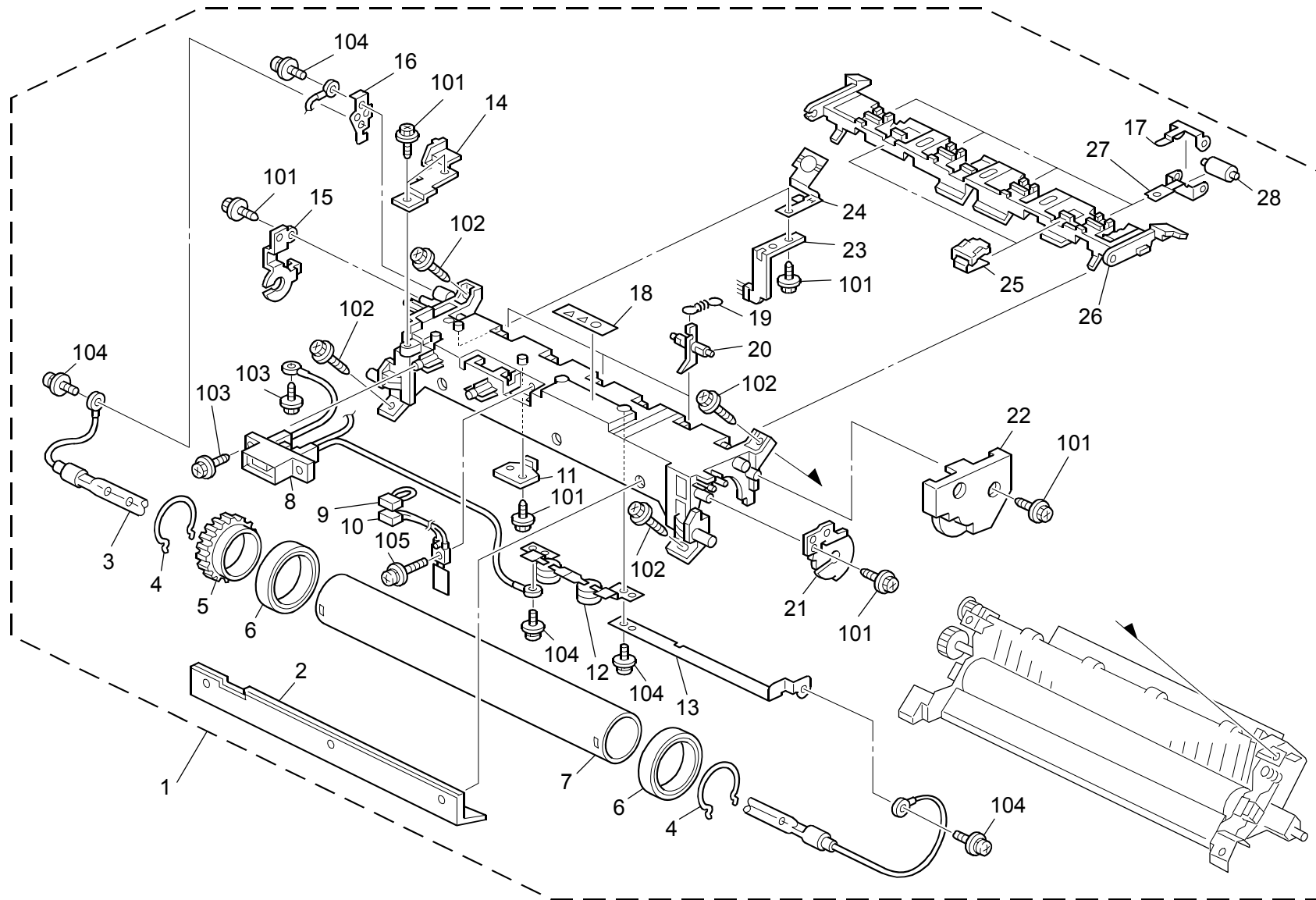


7. TRANSFER SECTION (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G096 1019	Transport Guide Pin	2
2	G052 3627	Spring - Transfer	2
3	G052 3626	Left Bushing - Transfer	1
4	G052 3625	Right Bushing - Transfer	1
5	G096 3621	Separation Electrode Plate	1
6	G096 3622	Electrode Plate Cover	1
7	G096 3345	Registration Guide	1
8	G096 3346	Registration Guide Long	1
9	G052 3623	Transfer Terminal	1
10	G052 3624	Separation Terminal	1
11	G096 1018	Transport Guide	1
12	G129 6260	Transfer Roller Ass'y	1
13	G129 6252	Gear - Transfer Roller	1
14	G129 6257	Transfer Roller	1
15	G129 6251	Positioning Roller - Transfer	1
16	G096 3640	Transfer Guide Plate Ass'y	1
17	G096 3641	Transfer Guide Plate Sheet	1
18	G096 3628	Transport Guide Ground Plate	1
19	G096 3629	Transport Terminal Guide	1
20	G052 1255	Charge Terminal - High Voltage	1
21	G052 1254	Inner Terminal - Charge	1
22	G052 1256	Development Terminal - High Voltage	1
23	G052 1253	Development Terminal	1
24	G052 1251	Charge Terminal	1
25	G129 6255	Bushing	2

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3012N	Tapping Screw: 3x12	
102	0450 3008N	Tapping Screw - M3x8	

8. FUSING UNIT 1 (G176/G177)

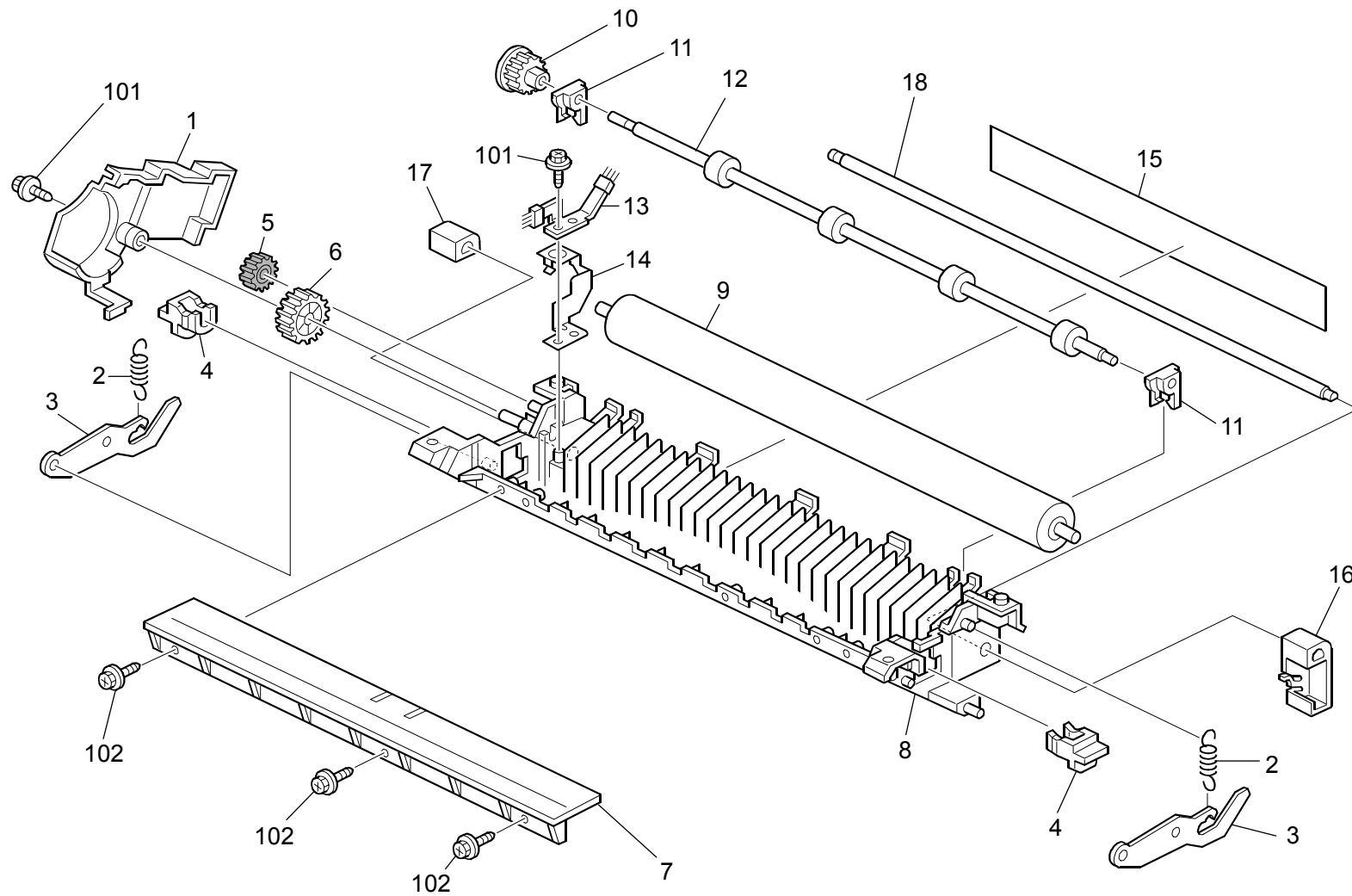


8. FUSING UNIT 1 (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G175 4117	Fusing Unit: NA: Ass'y	1
1	G175 4127	Fusing Unit: EU: Ass'y	1
2	G175 4644	Entrance Guide Plate - Upper	1
3	G175 0179	Heater - 765W 230V	1
3	G175 0180	Heater - 765W 120V	1
4	G052 4700	External Circlip	2
5	G175 4619	Gear - 41Z	1
6	G052 4618	Bearing 30x42x7	2
7	G175 4063	Hot Roller	1
8	G096 5500	Fusing Drawer 100V	1
8	G096 5510	Fusing Drawer 230V	1
9	G175 5520	Harness - Fusing Unit Set 120V	1
9	G175 5521	Harness - Fusing Set 230V	1
10	G096 5501	Fusing Thermistor	1
11	G175 4625	Holder Plate - Fusing Harness	1
12	G096 4611	Thermostat Ass'y	1
13	G175 4602	Electrode Plate - Right	1
14	G096 4695	Upper Harness Plate	1
15	G096 4615	Left Fusing Lamp bracket	1
16	G052 4617	Heater Terminal	1
17	G096 4638	Exit Roller Supporting Plate	4
18	AA00 0301	Decal Warning (High Temperature)	1
19	G052 4622	Spring - Fusing Stripper	2
20	G052 4624	Hot Roller Stripper	3
21	G096 4616	Right Heater Bracket	1
22	G096 4692	Fusing Right Cover	1
23	G175 4642	Discharge Brush - Bearing	1
24	G175 4690	Ground Plate - Fusing	1
25	G052 4647	Spring Plate - Fusing Exit	2
26	G096 4635	Upper Fusing Exit Guide Plate	1
27	G052 4639	Exit Roller Holder	4
28	G800 4854	Exit Roller	4

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3008N	Tapping Screw - M3x8	
102	0450 3012N	Tapping Screw: 3x12	
103	0450 3010N	Tapping Screw - M3x10	
104	0954 3008N	Screw - M3X8	
105	0954 3010N	Screw: Polished Round/Spring: M3x10	

9. FUSING UNIT 2 (G176/G177)

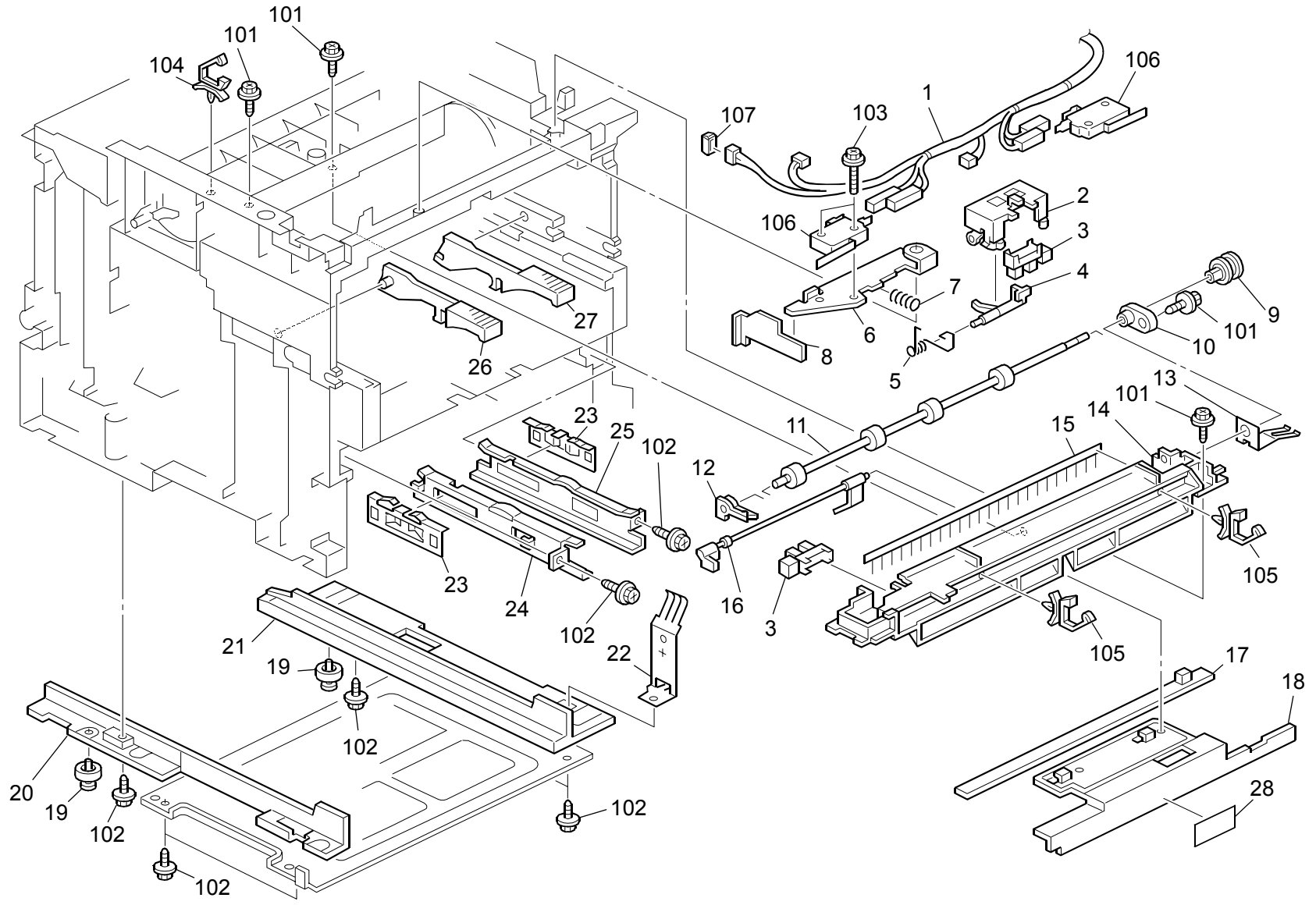


9. FUSING UNIT 2 (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G175 4698	Fusing Left Cover	1
2	G129 4102	Pressure Spring - Fusing	2
3	G175 4662	Pressure Roller Lever	2
4	G052 4665	Bushing - Pressure Roller	2
5	G052 4676	Gear - Fusing Idler	1
6	G052 4677	Gear - Fusing Idler	1
7	G175 4681	Fusing Entrance Guide Plate	1
8	G175 4650	Pressure Frame	1
9	G175 0126	Pressure Roller	1
10	G175 4673	Gear - 15Z	1
11	G800 4851	Bushing	2
12	G096 4674	Fusing Exit Roller	1
13	G052 4692	Discharge Brush - Pressure	1
14	G052 4691	Ground Plate - Fusing Pressure	1
15	G175 4693	Decal - High Temperature	1
16	G175 4183	Right Pressure Lever	1
17	G175 4182	Left Pressure Lever	1
18	G175 4181	Pressure Lever Shaft	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3008N	Tapping Screw - M3x8	
102	0450 3010N	Tapping Screw - M3x10	

10. PAPER EXIT (G176/G177)

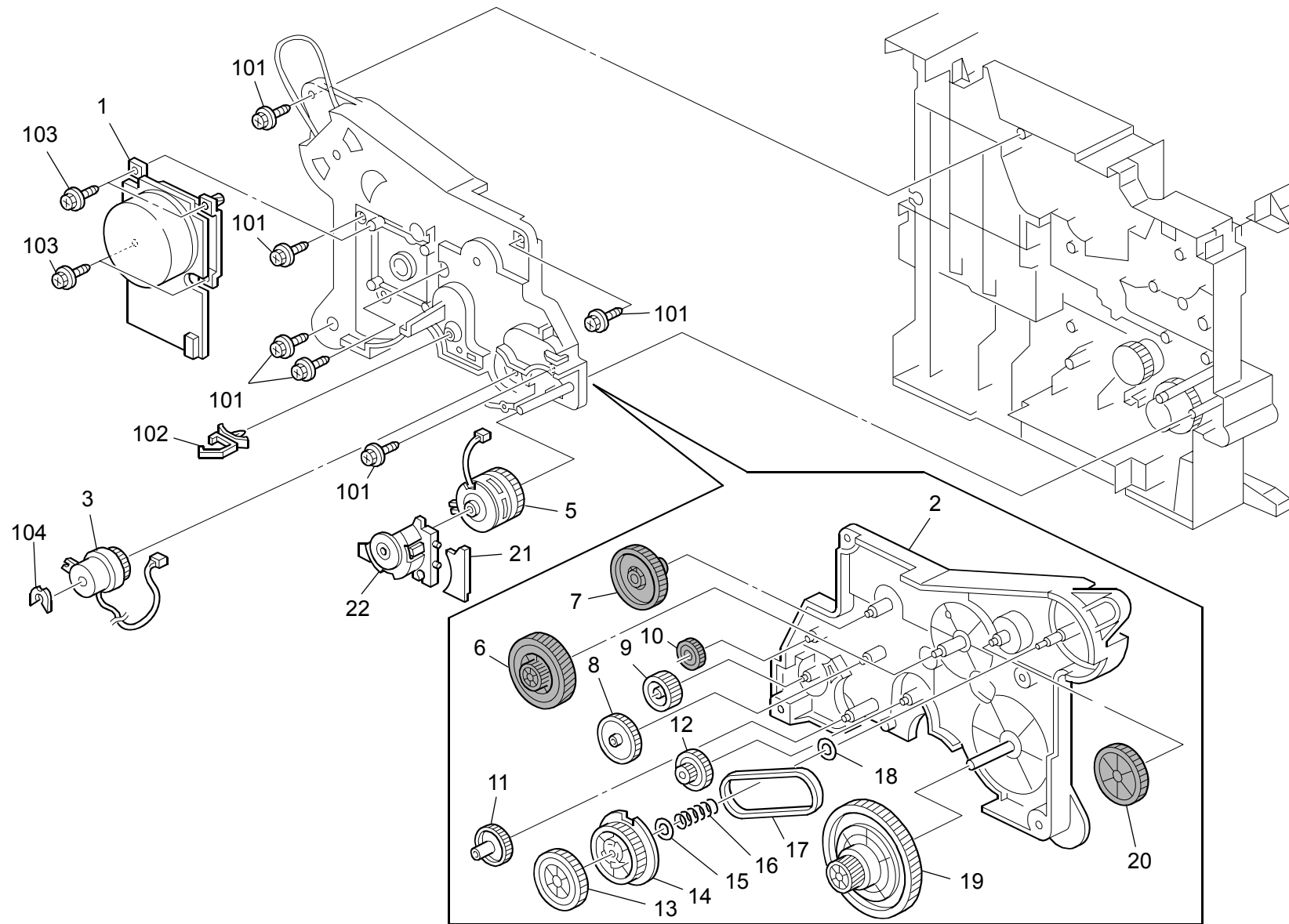


10. PAPER EXIT (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G129 5413	Harness: Exit: Sensor	1
2	G052 1044	Exit Feeler Holder	1
3	GW02 0020	Photointerruptor: LG248N1	2
4	G052 1042	Fusing Exit Feeler	1
5	G052 1046	Spring - Fusing Exit Feeler	1
6	G052 1272	Rear Cover Sw Bracket	1
7	G052 1273	Spring - Micro Switch	1
8	G052 1274	Micro Switch Lever	1
9	G052 4855	Pulley - Paper Exit	1
10	G052 1049	Bushing - Paper Exit	1
11	G096 4850	Exit Roller	1
12	G800 4851	Bushing	1
13	G096 1262	Exit Roller Ground Plate	1
14	G096 1041	Exit Bracket	1
15	G096 4888	Exit Brush Discharge	1
16	G096 1043	Exhaust Sensor Feeler	1
17	G129 3522	Discharge Lamp: Cassis	1
18	G175 1032	Heat Insulating Plate - Front	1
19	GH01 0007	Rubber Foot - FF-006(P4070)N	2
20	G096 1081	Right Paper Tray Rail	1
21	G096 1082	Left Paper Tray Rail	1
22	G096 1085	Base Ground Plate	1
23	G052 1027	Spring Plate - Duplex Rail	2
24	G096 1021	Right Duplex Rail	1
25	G096 1022	Left Duplex Rail	1
26	G052 4696	Right Fusing Lock Lever	1
27	G052 4697	Left Fusing Lock Lever	1
28	G128 1151	Decal: Warning (High Temperature)	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3008N	Tapping Screw - M3x8	
102	0450 3012N	Tapping Screw: 3x12	
103	0451 3014N	Tapping Screw: 3x14	
104	1105 0487	Harness Clamp	
105	1105 0516	Clamp	
106	1204 2521	Micro Switch	
107	1102 4559	Connector - 3P	

11. DRIVE SECTION (G176/G177)

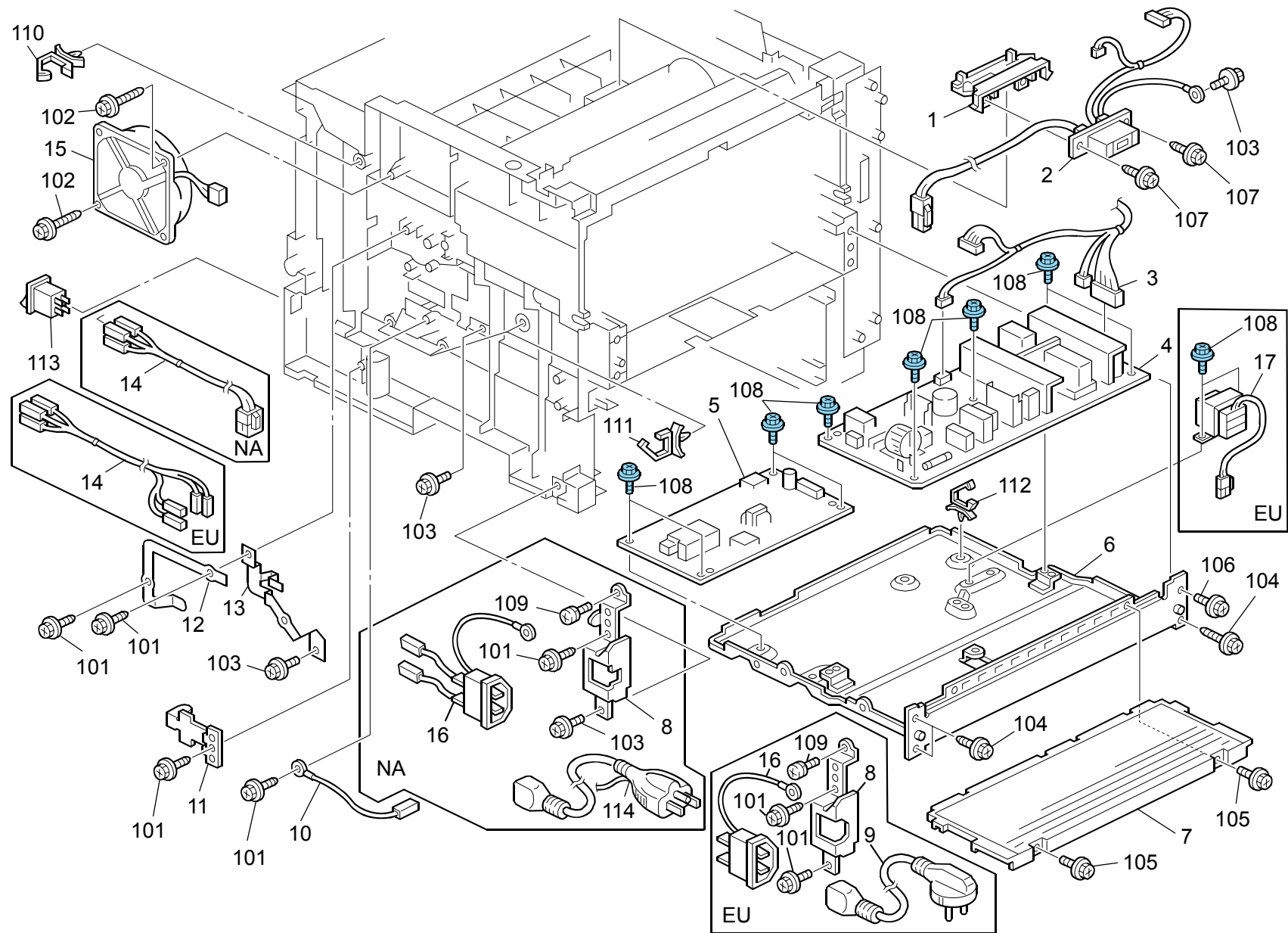


11. DRIVE SECTION (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G175 1050	Brushless Motor - DC 31W	1
2	G052 1102	Drive Unit Bracket	1
3	G175 3209	Magnetic Clutch	1
5	G129 2551	Magnetic Clutch: 1turn: Z41	1
6	G052 1104	Gear - Fusing 1	1
7	G052 1108	Gear - Paper Feed 1	1
8	G052 1109	Gear - Paper Feed 2	1
9	G052 1113	Gear - Paper Feed 6	1
10	G052 1112	Gear - Paper Feed 5	1
11	G052 1111	Gear - Paper Feed 4	1
12	G052 1110	Gear - Paper Feed 3	1
13	G175 1106	Gear - 45Z	1
14	G052 1107	Gear - Pulley - Fusing	1
15	5353 1803	Wave Washer	1
16	G052 1120	Spring - Paper Exit Release	1
17	G052 1121	Drive Belt	1
18	G052 1123	Spacer - Drive Unit	1
19	G128 1104	Gear: OPC	1
20	G052 1105	Gear - Fusing 2	1
21	G175 2555	Harness Holder	1
22	G175 2554	Spring Clutch Bracket	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3010N	Tapping Screw - M3x10	
102	1105 0292	Wire Saddle	
103	0450 4010N	Tapping Screw: M4x10	
104	0805 0089	Retaining Ring - M4	

12. ELECTRICAL SECTION 1 (G176/G177)

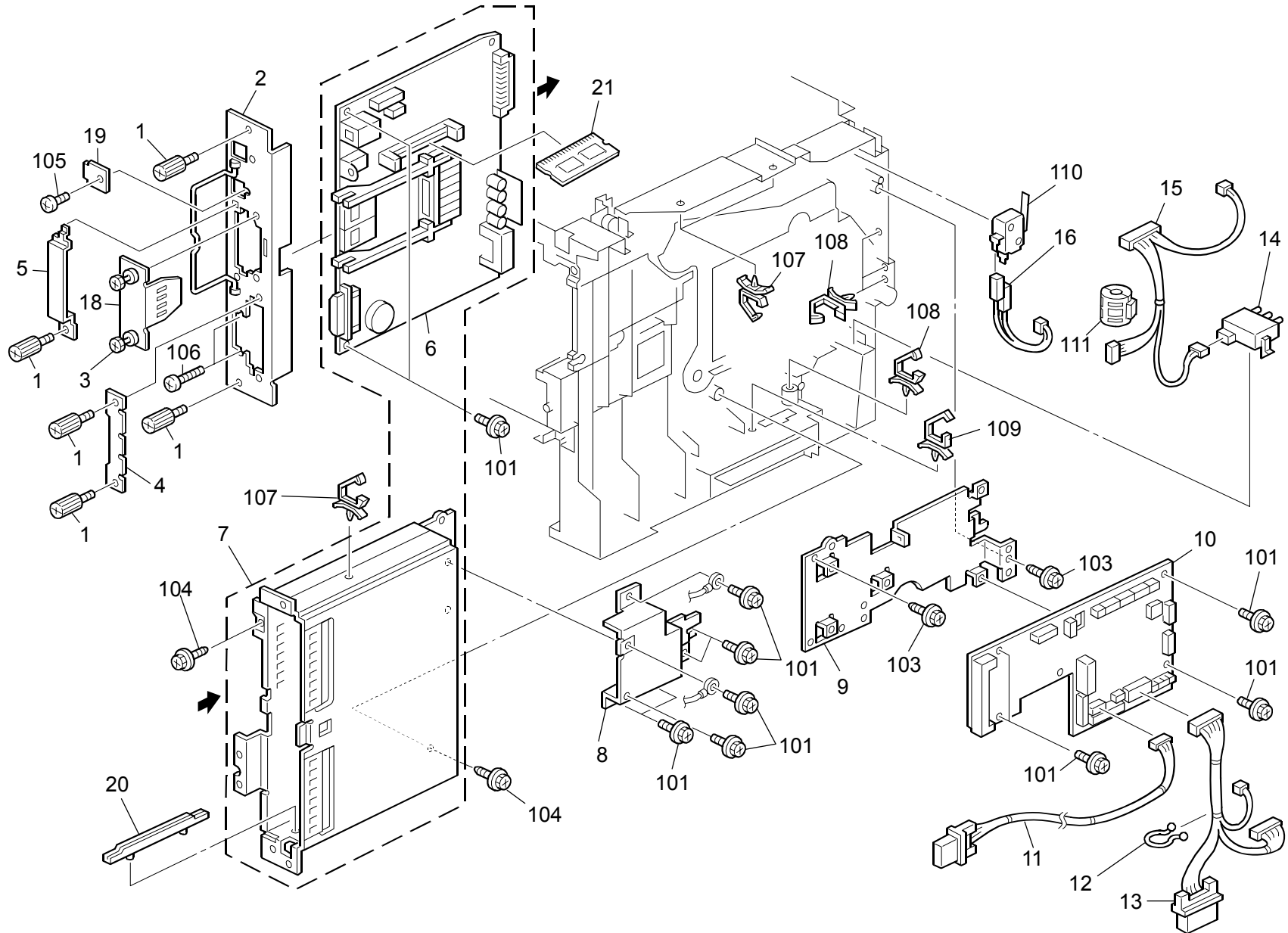


12. ELECTRICAL SECTION 1 (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G175 1056	Drawer Bracket - Fusing	1
2	G175 5416	Harness - Fusing 120V	1
2	G175 5417	Fusing Harness - 230V	1
3	G129 5407	Harness: Power Source	1
4	G175 0019	Power Supply Unit - 120V	1
4	G175 0020	Power Supply Unit - 230V	1
5	G129 5300	Power Pack: BCT: RoHs	1
6	G096 1221	Power Supply Unit Bracket	1
7	G096 1031	Lower Fusing Heat Insulating Plate	1
8	G096 1271	Inlet Bracket	1
9	G102 5502	Power Supply Cord: EU	1
10	G111 5419	Harness - Power Pack	1
11	G096 1087	Paper Tray Spring Plate Ass'y	1
12	G096 3338	Ground Plate - Registration	1
13	G052 1252	Drum Terminal	1
14	G129 5409	Harness: Main Switch: Dom/NA	1
14	G129 5411	Harness - Main Switch: EU	1
15	G129 1051	Fan Motor Mm92: 24V	1
16	G096 5506	Inlet: EU	1
16	G110 5501	Inlet: JPN: Ass'y (NA)	1
17	G129 5205	Choke Coil (EU)	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3008N	Tapping Screw - M3x8	
102	0450 3012N	Tapping Screw: 3x12	
103	0451 3006N	Tapping Screw - 3x6	
104	0450 3008N	Tapping Screw - M3x8	
105	0451 3006N	Tapping Screw - 3x6	
106	0451 4006N	Tapping Screw - 4x6	
107	0450 4010N	Tapping Screw: M4x10	
108	0454 3006Q	Tapping Screw - M3x6	
109	0950 4006N	Screw - M4x6	
110	1105 0487	Harness Clamp	
111	1105 0292	Wire Saddle	
112	1105 0516	Clamp	
113	1204 2628	Switch 250V/10A	
114	1105 0373	Power Supply Code: 125V 15A NA	

13. ELECTRICAL SECTION 2 (G176/G177)



13. ELECTRICAL SECTION 2 (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G104 5141	Knob Screw: M3	4
2	G175 5101	Control Board Panel	1
3	B622 5825	Panel Knob Screw	2
4	G056 6005	HDD Cover	1
5	G168 5118	Card Cover	1
6	G177 5317	PCB: CTL Sincere-PIC: Sub-Ass'y	1
8	G088 1216	Cover: EGB	1
9	G096 1211	EGB Bracket	1
10	G175 5603	Engine Board - LT (G176)	1
10	G175 5605	Engine Board - A/B (G176)	1
10	G175 5602	Engine Board - LT (G177)	1
10	G175 5604	Engine Board - A/B (G177)	1
11	G129 5414	Harness: Duplex: Option	1
11	G129 5414	Harness: Duplex: Option	1
12	R013 1097	Clamp	1
13	G129 5412	Harness: Paper Feed: Option	1
14	G800 3035	Push SW - Paper Size	1
15	G129 5401	Harness: Motor: Sensor	1
16	G111 5410	Harness - Interlock	1
18	B132 5836	Panel - Interface	1
19	G168 5109	LAN Cover	1
20	G111 1055	Supporter	1
21	G330 5750	SDRAM - DIMM- 64MB	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0451 3006N	Tapping Screw - 3x6	
102	0451 3006N	Tapping Screw - 3x6	
103	0450 3008N	Tapping Screw - M3x8	
104	0450 3008N	Tapping Screw - M3x8	
105	0353 0040N	Screw - M3x4	
106	0352 5080N	Screw: M2.5x8	
107	1105 0487	Harness Clamp	
108	1105 0516	Clamp	
109	1105 0292	Wire Saddle	
110	1204 2521	Micro Switch	
111	1607 1565	Ferrite Core: Atfc-16813 (EU)	

14. MAIN CTRL BOARD (G176/G177)

BAT

SYMBOL NO.	INDEX NO.
BAT1	113

BZ

SYMBOL NO.	INDEX NO.
BZ1	154

CAPACITOR

SYMBOL NO.	INDEX NO.
C1	169
C2	166
C3	170
C4	163
C5	163
C6	169
C7	170
C8	163
---	---
C10	172

SYMBOL NO.	INDEX NO.
C11	170
C12	170
C13	164
---	---
C15	169
C16	169
C17	166
C18	252
C19	252
C20	166

SYMBOL NO.	INDEX NO.
C21	175
C22	172
C23	175
C24	167
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---	---
C27	169
C28	170
C29	169
C30	172

SYMBOL NO.	INDEX NO.
C31	162
C32	162
C33	184
C34	170
C35	169
C36	169
C37	170
C38	172
C39	169
C40	169

SYMBOL NO.	INDEX NO.
C41	172
---	---
C43	173
C44	170
C45	172
C46	169
C47	169
C48	180
C49	167
---	---

CAPACITOR

SYMBOL NO.	INDEX NO.
C51	170
C52	170
---	---
C54	169
C55	170
C56	160
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C59	170
---	---

SYMBOL NO.	INDEX NO.
---	---
---	---
C63	170
C64	170
---	---
C66	161
C67	161
C68	172
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SYMBOL NO.	INDEX NO.
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---	---
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---	---
C76	160
C77	169
C78	169
C79	169
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SYMBOL NO.	INDEX NO.
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C87	172
C88	172
C89	253
C90	172

SYMBOL NO.	INDEX NO.
C91	172
C92	158
C93	253
C94	169
C95	170
C96	180
C97	180
C98	170
C99	253
C100	253

SYMBOL NO.	INDEX NO.
C101	253
C102	177
C103	177
C104	172
C105	172
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---	---
C109	159
C110	159

SYMBOL NO.	INDEX NO.
C111	159
C112	159
---	---
C114	169
C115	169
C116	170
C117	158
C118	172
C119	172
C120	172

14. MAIN CTRL BOARD (G176/G177)

CAPACITOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
C121	172	C131	170	C141	183	---	---	---	---	---	---	---	---
C122	160	C132	169	C142	172	C152	163	C162	172	C172	169	C182	169
C123	177	C133	160	C143	172	C153	169	C163	172	C173	169	C183	176
C124	177	C134	169	C144	172	C154	169	C164	253	C174	170	C184	169
C125	177	C135	171	C145	169	C155	172	C165	170	C175	169	C185	169
C126	170	C136	160	C146	167	C156	173	C166	170	---	---	C186	170
C127	169	---	---	C147	167	---	---	C167	170	---	---	---	---
C128	178	C138	171	C148	167	C158	172	C168	170	C178	170	C188	171
---	---	---	---	C149	167	C159	172	C169	169	C179	169	---	---
C130	253	---	---	C150	172	C160	163	C170	181	C180	170	C190	160

CAPACITOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
---	---	C201	173	C211	169	C221	171	C231	170	C241	170	C251	170
---	---	C202	170	C212	174	---	---	---	---	C242	169	---	---
---	---	C203	170	C213	174	---	---	C233	171	C243	170	C253	169
---	---	C204	170	C214	251	C224	160	---	---	C244	169	C254	169
C195	171	C205	251	---	---	C225	160	C235	169	C245	170	---	---
C196	160	C206	169	C216	174	---	---	C236	169	---	---	C256	170
C197	170	C207	169	C217	174	C227	169	C237	169	C247	160	C257	184
C198	170	C208	169	---	---	---	---	C238	170	C248	172	C258	170
C199	170	C209	169	C219	171	C229	170	C239	170	---	---	C259	171
---	---	C210	169	---	---	C230	176	C240	169	C250	170	C260	169

14. MAIN CTRL BOARD (G176/G177)

CAPACITOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
C261	160	---	---	C281	169	---	---	C301	169	C311	172	C321	184
C262	160	C272	169	C282	160	---	---	C302	169	C312	172	---	---
C263	171	C273	167	C283	169	---	---	C303	170	C313	172	C323	172
---	---	C274	170	C284	170	C294	169	C304	180	C314	172	C324	172
---	---	C275	170	C285	170	C295	251	C305	170	---	---	---	---
---	---	C276	169	---	---	C296	173	C306	172	---	---	C326	169
C267	170	C277	171	C287	169	C297	170	C307	169	C317	169	---	---
C268	169	C278	169	C288	170	C298	176	---	---	C318	170	---	---
C269	170	C279	169	C289	169	C299	169	C309	176	C319	172	C329	170
C270	180	C280	170	---	---	C300	170	C310	167	C320	172	---	---

CAPACITOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
C331	168	---	---	---	---	---	---	C371	170	C381	163	C391	177
C332	173	---	---	---	---	C362	163	C372	169	C382	165	---	---
---	---	---	---	C353	170	C363	163	C373	170	C383	165	---	---
---	---	---	---	C354	169	C364	163	C374	169	C384	251	---	---
---	---	---	---	---	---	---	---	---	---	C385	251	C395	169
---	---	---	---	C356	169	---	---	C376	170	C386	251	---	---
---	---	---	---	---	---	---	---	---	---	C387	251	---	---
C338	176	---	---	---	---	---	---	---	---	C388	251	---	---
C339	184	C349	170	C359	163	C369	163	---	---	C389	253	---	---
C340	170	---	---	---	---	C370	163	---	---	C390	177	---	---

14. MAIN CTRL BOARD (G176/G177)

CAPACITOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
---	---	---	---	---	---	C501	254	---	---	C1301	169	C1311	254
C402	169	---	---	---	---	C502	254	---	---	C1302	182	C1312	170
C403	169	---	---	---	---	C503	254	---	---	C1303	179	C1313	170
---	---	C414	169	---	---	C504	254	---	---	---	---	C1314	254
---	---	C415	170	---	---	C505	254	---	---	---	---	C1315	170
---	---	C416	169	---	---	C506	254	---	---	---	---	C1316	254
C407	170	C417	170	---	---	---	---	---	---	---	---	C1317	254
C408	170	C418	169	---	---	---	---	---	---	---	---	C1318	254
---	---	C419	170	---	---	---	---	---	---	---	---	C1319	254
---	---	---	---	C500	254	---	---	C1300	160	C1310	170	C1320	254

CAPACITOR

SYMBOL NO.	INDEX NO.
C1321	254
C1322	254
C1323	254
C1324	254
C1325	170
C1326	254
C1327	254
C1328	254
C1329	254
C1330	254

SYMBOL NO.	INDEX NO.
C1331	254
C1332	254
C1333	170
C1334	254
C1335	254
C1336	254
C1337	254
C1338	170
C1339	254
C1340	254

CONNECTOR

SYMBOL NO.	INDEX NO.
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CN700	103

SYMBOL NO.	INDEX NO.
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CN702	106
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CN704	107
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CN707	108
CN708	108
---	---
---	---

SYMBOL NO.	INDEX NO.
CN711	104
CN712	110
CN713	109
CN714	105
---	---
---	---
CN717	101
CN718	102

DIONE

SYMBOL NO.	INDEX NO.
D1	116
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D4	117
D5	118
D6	118

FIL

SYMBOL NO.	INDEX NO.
FIL1	186
FIL2	186
FIL3	205
FIL4	204
---	---
FIL6	204
FIL7	185
FIL8	187
FIL9	187
---	---

14. MAIN CTRL BOARD (G176/G177)

FIL

SYMBOL NO.	INDEX NO.
FIL11	205
FIL12	205
FIL13	205
FIL14	205
FIL15	205
FIL16	205
FIL17	205

IC

SYMBOL NO.	INDEX NO.
IC1	133
IC2	134
IC3	256
IC4	255
IC5	142
IC6	143
IC7	256
IC8	255
IC9	1
IC10	256

SYMBOL NO.	INDEX NO.
IC11	138
IC12	132
IC13	122
IC14	256
---	---
IC16	111
IC16	145
---	---
---	---
IC19	140
IC20	144

SYMBOL NO.	INDEX NO.
IC21	139
IC22	124
IC23	153
---	---
---	---
---	---
IC28	124
IC29	149
IC30	150

SYMBOL NO.	INDEX NO.
IC31	151
IC32	148
IC33	123
---	---
IC35	126
---	---
IC36	124
IC37	129
---	---
IC39	131
IC40	127

SYMBOL NO.	INDEX NO.
IC41	147
---	---
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---	---
IC45	130
---	---
IC46	152
IC47	130
---	---
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SYMBOL NO.	INDEX NO.
---	---
IC52	139
IC53	125
---	---
---	---
IC56	135
IC57	120
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IC

SYMBOL NO.	INDEX NO.
---	---
---	---
IC63	135
---	---
---	---
IC66	141
IC67	136
IC68	121
IC69	128
IC70	146

SYMBOL NO.	INDEX NO.
IC71	137

JP

SYMBOL NO.	INDEX NO.
JP1	203
JP2	203

L

SYMBOL NO.	INDEX NO.
L1	188
L2	189

LED

SYMBOL NO.	INDEX NO.
LED1	119

OSC

SYMBOL NO.	INDEX NO.
---	---
OSC2	157
OSC3	156
OSC4	155

Q

SYMBOL NO.	INDEX NO.
---	---
---	---
Q3	114
Q4	115
---	---
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Q6	114

14. MAIN CTRL BOARD (G176/G177)

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
R1	229	R11	229	R21	203	---	---	---	---	R51	203	R61	224
R2	222	R12	203	R22	237	---	---	R42	213	R52	213	R62	241
R3	203	R13	233	R23	242	R32	224	R43	216	R53	224	R63	224
R4	203	R14	233	R24	243	R34	224	R44	224	R54	224	R64	224
---	---	R15	233	R25	224	R35	224	R45	230	---	---	R65	224
---	---	R16	233	R26	237	R36	213	---	---	R56	213	---	---
---	---	R17	247	R27	238	R37	213	---	---	---	---	R67	244
R8	229	R18	203	R28	224	R38	213	R48	212	R58	224	R68	244
R9	229	R19	216	R29	224	R39	221	R49	213	R59	212	R69	239
R10	229	R20	224	R30	238	R40	248	R50	232	R60	224	R70	246

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
R71	241	R81	221	---	---	---	---	R111	204	R121	213	---	---
---	---	---	---	R92	213	---	---	R112	223	---	---	---	---
---	---	R83	227	R93	224	---	---	R113	227	R123	213	---	---
---	---	---	---	R94	226	R104	224	R114	227	---	---	---	---
R75	213	R85	220	R95	226	R105	224	R115	227	R125	213	---	---
---	---	R86	227	R96	224	R106	213	R116	227	---	---	---	---
---	---	R87	227	R97	224	R107	213	R117	227	R127	213	---	---
R78	224	---	---	---	---	R108	213	R118	210	---	---	---	---
R79	213	R89	227	---	---	---	---	R119	210	---	---	R139	224
---	---	R90	212	---	---	R110	213	R120	210	R130	213	---	---

14. MAIN CTRL BOARD (G176/G177)

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
R141	213	R151	203	R161	203	---	---	---	---	---	---	R201	211
R142	224	---	---	R162	247	R172	212	---	---	R192	230	---	---
---	---	---	---	R163	227	R173	236	---	---	---	---	R203	203
R144	224	R154	212	R164	213	R174	236	---	---	---	---	R204	221
R145	231	R155	203	R165	224	R175	236	R185	212	---	---	---	---
R146	235	---	---	---	---	R176	236	R186	224	---	---	R206	213
R147	213	---	---	R167	203	R177	212	R187	224	---	---	R207	203
R148	235	---	---	---	---	R178	236	R188	224	R198	213	R208	222
R149	227	R159	213	---	---	R179	247	---	---	R199	213	R209	213
R150	235	R160	227	---	---	---	---	R190	236	R200	211	---	---

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
R211	211	R221	224	R231	203	R241	224	R261	213	R271	213	R281	205
R212	213	R222	213	R232	216	R252	247	R262	227	R272	247	---	---
---	---	---	---	---	---	R253	224	R263	213	R273	224	---	---
R214	213	R224	213	R234	213	R254	224	R264	213	R274	213	---	---
R215	213	---	---	R235	213	R255	224	R265	230	R275	213	---	---
R216	213	R226	224	R236	213	R256	224	R266	230	R276	213	R286	224
R217	224	R227	211	R237	203	R257	210	R267	241	R277	250	R287	224
R218	224	R228	224	R238	224	R258	210	R268	213	R278	213	R288	225
R219	213	R229	227	R239	224	R259	210	---	---	R279	213	---	---
---	---	R230	224	R240	224	R260	213	---	---	---	---	---	---

14. MAIN CTRL BOARD (G176/G177)

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
R291	224	R301	218	---	---	R321	226	R331	224	R341	227	---	---
R292	213	R302	218	R312	213	R322	226	---	---	R342	227	R352	227
---	---	R303	218	---	---	R323	224	---	---	R343	224	---	---
R294	228	R304	227	R314	224	R324	227	R334	224	R344	227	---	---
R295	216	R305	213	R315	227	R325	213	R335	224	R345	213	---	---
R296	216	R306	227	R316	224	---	---	R336	227	R346	213	---	---
R297	216	R307	224	---	---	---	---	---	---	R347	227	---	---
R298	240	---	---	R318	224	---	---	R338	227	---	---	---	---
R299	224	R309	227	R319	227	---	---	---	---	R349	213	---	---
---	---	R310	213	---	---	R330	224	R340	227	---	---	R360	213

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
---	---	R371	226	R381	224	---	---	---	---	---	---	R421	212
R362	227	R372	224	R382	224	---	---	---	---	---	---	---	---
---	---	R373	224	---	---	---	---	---	---	R413	214	R423	211
R364	227	---	---	---	---	R394	227	---	---	---	---	---	---
R365	227	R375	224	R385	227	R395	213	---	---	---	---	---	---
R366	227	R376	224	R386	213	---	---	---	---	R416	214	---	---
R367	213	R377	224	R387	212	R397	210	R407	202	R417	214	R427	212
R368	215	R378	224	R388	213	---	---	R408	202	R418	213	R428	227
R369	215	---	---	R389	213	---	---	R409	201	R419	204	---	---
R370	247	R380	211	---	---	R400	249	R410	212	R420	213	R430	212

14. MAIN CTRL BOARD (G176/G177)

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
---	---	---	---	R451	224	---	---	R471	205	R481	214	R491	207
---	---	R442	214	R452	224	---	---	---	---	---	---	R492	207
R433	227	R443	213	---	---	R463	205	---	---	---	---	R493	207
---	---	---	---	R454	212	R464	205	R474	205	R484	213	R494	207
---	---	---	---	---	---	---	---	R475	213	---	---	---	---
R436	227	---	---	---	---	---	---	R476	224	R486	209	---	---
---	---	---	---	R457	224	R467	205	R477	226	R487	209	R497	208
---	---	---	---	---	---	R468	205	R478	247	---	---	---	---
R439	212	---	---	R459	212	R469	205	---	---	---	---	R499	224
R440	213	R450	227	---	---	R470	205	---	---	R490	208	R500	224

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
R501	224	---	---	R521	212	R531	205	R541	224	R551	212	---	---
R502	213	---	---	---	---	R532	213	R542	213	R552	214	---	---
---	---	---	---	R523	247	R533	230	R543	213	R553	217	R563	231
R504	224	R514	211	---	---	R534	219	R544	213	---	---	R564	224
R505	213	R515	211	R525	213	R535	219	R545	213	R555	212	---	---
---	---	---	---	R526	224	R536	219	R546	230	R556	224	---	---
---	---	---	---	R527	206	R537	219	R547	227	---	---	R567	224
R508	209	---	---	---	---	R538	219	R548	247	R558	245	R568	213
R509	213	---	---	R529	206	R539	219	R549	224	---	---	---	---
R510	212	---	---	---	---	R540	224	R550	234	---	---	---	---

14. MAIN CTRL BOARD (G176/G177)

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
---	---	---	---	---	---	---	---	R611	247	---	---	R1301	205
---	---	---	---	---	---	---	---	R612	247	---	---	R1302	205
R573	213	R583	226	---	---	---	---	---	---	---	---	R1303	205
---	---	R584	226	---	---	R604	214	---	---	---	---	---	---
---	---	R585	226	---	---	---	---	---	---	---	---	---	---
R576	234	R586	247	---	---	R606	213	---	---	---	---	---	---
R577	224	---	---	---	---	R607	247	---	---	---	---	---	---
---	---	R588	247	R598	213	R608	203	---	---	---	---	---	---
R579	213	---	---	R599	213	R609	213	---	---	---	---	---	---
R580	204	---	---	---	---	R610	212	---	---	R1300	205	---	---

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
R1501	219	R1511	219	R1521	219	R1531	219	R1541	207	---	---	RN1	197
R1502	219	R1512	219	R1522	219	R1532	219	R1542	207	---	---	RN2	191
R1503	219	R1513	219	R1523	219	R1533	230	R1543	207	---	---	RN3	200
R1504	219	R1514	219	R1524	219	R1534	230	R1544	207	---	---	RN4	200
R1505	219	R1515	219	R1525	219	R1535	230	---	---	---	---	RN5	195
R1506	219	R1516	219	R1526	219	R1536	230	---	---	---	---	RN6	196
R1507	219	R1517	219	R1527	219	---	---	---	---	---	---	RN7	191
R1508	219	R1518	219	R1528	219	---	---	---	---	---	---	RN8	196
R1509	219	R1519	219	R1529	219	---	---	---	---	R1608	226	RN9	192
R1510	219	R1520	219	R1530	219	R1540	207	---	---	R1609	226	RN10	191

RN

14. MAIN CTRL BOARD (G176/G177)

RN

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
RN11	192	RN21	194	RN31	190	RN41	198	RN51	191	---	---	RN71	193
RN12	194	RN22	194	RN32	190	RN42	196	RN52	191	RN62	191	RN72	193
RN13	196	RN23	190	RN33	192	RN43	196	RN53	191	RN63	191	---	---
RN14	194	RN24	192	---	---	RN44	194	RN54	195	RN64	196	---	---
RN15	196	RN25	199	---	---	RN45	197	RN55	197	RN65	192	---	---
RN16	196	RN26	196	RN36	195	RN46	197	RN56	196	RN66	192	RN76	197
RN17	194	RN27	191	RN37	191	RN47	191	RN57	196	RN67	191	RN77	197
RN18	190	RN28	196	---	---	RN48	191	---	---	RN68	194	RN78	197
RN19	190	RN29	196	RN39	196	RN49	197	RN59	191	RN69	193	RN79	197
RN20	190	---	---	RN40	198	RN50	191	RN60	191	RN70	193		

SWITCH

SYMBOL NO.	INDEX NO.
SW2	112

14. MAIN CTRL BOARD (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
*	G177 5317	PCB: CTL Sincere-PIC: Sub-Ass'y	1
1	B229 7180	ASIC: Charango	1
2	G089 5902	Hybrid IC: D3144	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	1102 4203	CT Header - 4P	
102	1102 7615	Connector - B8B-XH-A	
103	1102 7625	Connector - TX24-80R-LT-N1	
104	1102 8329	Connector - USB - UBB-4R-D14C	
105	1102 8356	Connector - FX2MAB-44P	
106	1102 8832	Connector - DM-3D4-B3210	
107	1102 9079	Connector - RHM-88PL-SDK11-1	
108	1102 9336	Connector: FPS009-2300-0	
109	1102 9650	Connector - DHA-RAA36-R21VN	
110	1102 9890	Connector: 5-1605706-2	
111	1104 0821	IC Socket: 16008-B0A0020N	
112	1204 2756	DIP Switch: NDI-04H-V	
113	1206 0112	Primary Lithium Cell: CR1632/1F2	
114	1401 1228	Fet: SI3433DV-E3	
115	1401 1296	Fet: TPC8115	
116	1402 1664	Diode - HSU83	
117	1402 1909	Diode: SDB310D	
118	1402 1911	Diode - SDS511	
119	1403 1131	LED: SML-311UT	
120	1407 4919	IC - 74VHCT244 TSSOP	
121	1407 5140	IC: TC74VHCT14AF	
122	1407 5300	CMOS Logic - 74LVC16244A TSSOP	
123	1407 5344	IC - SN74LV02APW	
124	1407 5351	IC - SN74LV14APW	
125	1407 5369	IC - SN74AHCT32PW	
126	1407 5469	IC - SN74LV07APW	
127	1407 5482	IC - SN74LVC07APW	
128	1407 5508	IC - SN74LV125APW	
129	1407 5511	IC: SN74LVC14APW	
130	1407 5520	CMOS Logic: SN74LVC125APW	
131	1407 5523	ROM - I2C SOP 3V	
132	1407 5604	CMOS Logic: SN74LVC16245ADGG	
133	1407 5868	Ethernet Cont LSI - DP83847ALQA56A	
134	1407 5960	IC - SN74LVCZ161284ADGG	
135	1407 6100	IC: SN74LVC1G04DCK	

Index No.	Part No.	Description	Q'ty Per Assembly
136	1407 6123	IC SN74LVC2G125DCU	
137	1407 6132	IC: SN74LVC1G08DCK	
138	1407 6145	IC: SN74LVC373APW	
139	1407 6187	CMOS Logic - SN74LVC1G07DCK	
140	1407 6203	CMOS Logic - SN74LVC3G07DCT	
141	1407 6205	CMOS Logic - SN74LVC1G06DCK	
142	1407 6265	Real Time Clock: R2025S	
143	1407 6305	CPU - RM5231A-400L	
144	1407 6400	Clock Generator - lcs960013bff	
145	1407 6465	Ram: Fm25l256-pg (rev.ag)	
146	1407 6468	CMOS Logic: SN74AHCT1G126DCK	
147	1407 6562	IC - SN74LVC1G126DCK	
148	1408 1778	IC: R3112Q101A	
149	1408 1815	IC - R3112Q151A	
150	1408 1826	IC - R3112Q421A	
151	1408 2053	IC: R3112Q291A-FA	
152	1408 2096	IC - BD9103FVM	
153	1408 2213	DC/DC Converter - H8d3214	
154	1502 0063	Buzzer: PKM22EPPH4002-B0	
155	1503 0842	Oscillator - 14.31818MHZ	
156	1503 1138	Crystal Oscillator - 48mhz	
157	1503 1309	Crystal Oscillator - 25mhz	
158	1604 4728	Capacitor - 100 μ F \pm 20% 16V	
159	1604 5135	Capacitor - 1000 μ F \pm 20% 10V	
160	1605 1124	Capacitor - 4.7 μ F+80 -20% 10V	
161	1605 1194	Capacitor: 3pf: \pm 0.25pF: 50V	
162	1605 1199	Capacitor - 8PF \pm 0.5pF 50V	
163	1605 1200	Capacitor - 10PF \pm 0.5pF 50V	
164	1605 1204	Capacitor-pF50v	
165	1605 1205	Capacitor - 33pF \pm 5% 50V	
166	1605 1208	Capacitor: 100pF: \pm 5%: 50V	
167	1605 1211	Capacitor - 220pF \pm 10% 50V	
168	1605 1212	Capacitor - 470pF \pm 10% 50V	
169	1605 1214	Capacitor - 1000pF \pm 10% 50V	
170	1605 1221	Capacitor - 0.1 UF+80-20%16V	

Index No.	Part No.	Description	Q'ty Per Assembly
171	1605 1240	Capacitor - 0.01 μ F \pm 10% 25V	
172	1605 1289	Capacitor - 0.1 μ F \pm 10% 10V	
173	1605 1295	Capacitor: 10uf: +80-20%: 10V	
174	1605 1296	Capacitor - 330pF \pm 10% 50V	
175	1605 1303	Capacitor - 0.01 μ F+80-20% 50V	
176	1605 1305	Capacitor - 1 μ F+80-20% 6.3V	
177	1605 1306	Capacitor - 1 μ F \pm 10% 10V	
178	1605 1307	Capacitor - 2.2 μ F+80-20% 11V	
179	1605 1344	Capacitor: 33pF: \pm 5%: 50V	
180	1605 1391	Capacitor - 22UF: \pm 20%: 6.3V	
181	1605 1406	Capacitor - 10 μ F \pm 10% 6.3V	
182	1605 1447	Capacitor: 470pF: \pm 5%: 50V	
183	1605 1474	Capacitor - 47 μ F \pm 20% 6.3V	
184	1605 1597	Capacitor: 2.2uf: +80-20%: 50V	
185	1607 0978	Inductor - BLM21P300SPB	
186	1607 1051	Filter -FBMJ2125HS420	
187	1607 1061	Filter - BLM11P300SPB	
188	1607 1362	Coil - ACM3225-800-2P	
189	1607 1477	Inductor - RLF7030-4R7M3R4	
190	1609 0005	Resistor: 33 Ω : \pm 5%: 1/16W	
191	1609 0006	Resistor: 10k Ω : \pm 5%: 1/16W	
192	1609 0011	Resistor: 22 Ω : \pm 5%: 1/16W	
193	1609 0016	Resistor: 56 Ω : \pm 5%: 1/16W	
194	1609 0026	Resistor - 47 Ω \pm 5% 1/16W	
195	1609 0096	Resistor Array: 10K Ω : \pm 5%: 1/16W: 4number	
196	1609 0098	Resistor Array: 33 Ω : \pm 5%: 1/16W: 4number	
197	1609 0101	Resistor Array: 47 Ω : \pm 5%: 1/16W: 4number	
198	1609 0110	Resistor Array: 10 Ω : \pm 5%: 1/16W: 4number	
199	1609 0111	Resistor Array: 1K Ω : \pm 5%: 1/16W: 4number	
200	1609 0114	Resistor Array: 68 Ω : \pm 5%: 1/16W: 4number	
201	1610 1377	Resistor - 0.1 Ω \pm 2% 1/2W	
202	1610 1871	Resistor - 0.22 Ω \pm 1%	
203	1632 0000	Resistor - 0 Ω 1/8W	
204	1633 0000	Resistor - 0 Ω 1/10W	
205	1634 0000	Resistor - 0 Ω 1/16W	

Index No.	Part No.	Description	Q'ty Per Assembly
206	1650 4102	Resistor - 1K Ω \pm 5% 1/10W	
207	1650 4220	Chip Resistor - 22 Ω \pm 5% 1/10W	
208	1650 4330	Chip Resistor - 33 Ω \pm 5% 1/10W	
209	1650 4470	Resistor - 47 Ω \pm 5%1/10W	
210	1650 5100	Chip Resistor - 10 Ω \pm 5%1/16W	
211	1650 5101	Chip Resistor - 100 Ω \pm 5%1/16W	
212	1650 5102	Chip Resistor - 1k Ω \pm 5%1/16W	
213	1650 5103	Chip Resistor - 10k Ω \pm 5%1/16W	
214	1650 5104	Chip Resistor - 100k Ω \pm 5%1/16W	
215	1650 5109	Chip Resistor 1 Ω \pm 5% 1/16W	
216	1650 5122	Chip Resistor - 1.2k Ω \pm 5%1/16W	
217	1650 5182	Chip Resistor - 1.8k Ω \pm 5%1/16W	
218	1650 5203	Resistor - 20K Ω \pm 5% 1/16W	
219	1650 5220	Resistor - 22 Ω \pm 5% 1/16W	
220	1650 5221	Chip Resistor - 220 Ω \pm 5%1/16W	
221	1650 5222	Resistor - 2.2K Ω \pm 5% 1/16W	
222	1650 5271	Chip Resistor 270 Ω \pm 5% 1/16W	
223	1650 5272	Chip Resistor: 2.7k Ω : \pm 5%: 1/16W	
224	1650 5330	Chip Resistor - 33 Ω \pm 5%1/16W	
225	1650 5332	Resistor - 3.3K Ω \pm 5% 1/16W	
226	1650 5470	Chip Resistor 47 Ω \pm 5% 1/16W	
227	1650 5472	Chip Resistor: 4.7k Ω : \pm 5%: 1/16W	
228	1650 5473	Chip Resistor - 47k Ω \pm 5% 1/16W	
229	1650 5512	Chip Resistor 5.1k Ω \pm 5% 1/16W	
230	1650 5560	Chip Resistor 56 Ω \pm 5% 1/16W	
231	1650 5562	Chip Resistor: 5.6k Ω : \pm 5%: 1/16W	
232	1650 5621	Chip Resistor 620 Ω \pm 5% 1/16W	
233	1650 5680	Resistor - 68 Ω \pm 5% 1/16W	
234	1650 5683	Chip Resistor 68k Ω \pm 5% 1/16W	
235	1650 5820	Chip Resistor: 82 Ω : \pm 5%: 1/16W	
236	1650 5822	Chip Resistor: 8.2k Ω : \pm 5%: 1/16W	
237	1653 4999	Resistor - 49.9 Ω \pm 1% 1/8W	
238	1653 5499	Resistor - 54.9 Ω \pm 1% 1/8W	
239	1654 1004	Chip Resistor - 1m Ω \pm 1% 1/10W	
240	1654 1102	Resistor - 11K Ω \pm 1%1/10W	

Index No.	Part No.	Description	Q'ty Per Assembly
241	1654 1501	Resistor - 1.5K Ω \pm 1% 1/10W 1608	
242	1654 1502	Resistor - 15K Ω \pm 1% 1/10W	
243	1654 3002	Resistor - 30K Ω \pm 1%1/10W	
244	1654 3909	Resistor - 39 Ω \pm 1%1/10W	
245	1654 5101	Resistor - 5.1K Ω \pm 1% 1/10W	
246	1654 6800	Resistor - 680 Ω \pm 1% 1/10W	
247	1655 0000	Chip Resistor - 0 Ω \pm 0%1/16W	
248	1655 1002	Chip Resistor - 10k Ω \pm 1%1/16W	
249	1655 1502	Resistor - 15K Ω \pm 1% 1/16W	
250	1655 1651	Resistor: 1.65k Ω : \pm 1%: 1/16w: 1005	
251	1660 2471	Capacitor - 470pF - \pm 5% - 50V	
252	1660 4472	Capacitor - 4700pF \pm 10% 50V	
253	1660 6103	Capacitor - 10000pF - +80%-20%50V	
254	1660 8104	Capacitor - 0.1 μ F+80-20% 25V	
255	1906 0105	Flash Memory: S29GL128N10TFI020	
256	1907 0013	SDRAM: 256m: 4mx16x4: 133mhz: G1	

15. ENGINE BOARD (120V)

CAPACITOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
C1	145	C11	199	C21	192	C31	195	C41	155	C51	150	---	---
---	---	C12	149	C22	192	C32	195	C42	155	C52	150	C62	154
C3	146	---	---	C23	195	C33	195	C43	155	C53	150	C63	199
C4	146	C14	188	C24	153	C34	153	C44	155	C54	150	C64	199
---	---	C15	188	C25	153	C35	195	C45	155	C55	199	C65	199
C6	152	C16	189	C26	190	C36	155	C46	155	C56	149	---	---
C7	156	C17	190	C27	194	C37	155	C47	155	C57	195	C67	199
C8	156	C18	190	C28	153	C38	155	C48	155	C58	199	C68	199
C9	156	C19	190	---	---	---	---	C49	155	C59	199	---	---
C10	156	C20	151	---	---	C40	155	C50	198	---	---	C70	199

CAPACITOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
---	---	C81	199	C91	195	---	---	---	---	C121	199	C131	149
C72	199	C82	199	C92	199	---	---	---	---	C122	199	---	---
C73	154	C83	154	---	---	---	---	C113	195	---	---	C133	149
C74	154	C84	199	C94	199	---	---	C114	196	---	---	---	---
C75	199	C85	154	C95	199	C105	155	C115	196	C125	146	C135	154
C76	154	C86	195	C96	199	C106	154	C116	195	---	---	C136	191
C77	199	C87	195	C97	199	---	---	C117	199	---	---	C137	197
C78	199	C88	195	C98	154	C108	199	C118	195	C128	149	C138	153
C79	199	C89	199	---	---	C109	155	C119	199	---	---	C139	154
C80	199	C90	199	C100	155	C110	195	---	---	---	---	C140	147

15. ENGINE BOARD (120V)

CAPACITOR

SYMBOL NO.	INDEX NO.
C141	195
C142	199
---	---
---	---
C145	153
---	---
C147	153
---	---
C149	199
C150	195

SYMBOL NO.	INDEX NO.
C151	199
C152	195
C153	149
C154	195
C155	199
---	---
C156	199
C157	198
C158	193
---	---
---	---

SYMBOL NO.	INDEX NO.
C161	155
C162	155
C163	195
---	---
C165	191
---	---
C166	191
C167	191
C168	190
C169	190
---	---

SYMBOL NO.	INDEX NO.
C171	150
C172	148

CONNECTOR

SYMBOL NO.	INDEX NO.
CN1	111
CN2	119
CN3	115
CN4	114
CN5	110
---	---
CN6	120
CN7	106
CN8	107
CN9	109
CN10	101

SYMBOL NO.	INDEX NO.
CN11	102
CN12	103
CN13	104
CN14	101
CN15	118
---	---
CN16	116
CN17	117
CN18	102
---	---
CN20	113

SYMBOL NO.	INDEX NO.
CN21	105
CN22	112

DIONE

SYMBOL NO.	INDEX NO.
---	---
D2	130
D3	130
D4	129

FIL

SYMBOL NO.	INDEX NO.
---	---
---	---
---	---
---	---
---	---
---	---
FIL6	161
FIL7	158
FIL8	160
FIL9	160
---	---

SYMBOL NO.	INDEX NO.
---	---
FIL12	160
---	---
---	---
---	---
---	---
FIL16	157

FUSE

SYMBOL NO.	INDEX NO.
FU1	122

IC

SYMBOL NO.	INDEX NO.
IC1	132
IC2	1
IC3	2
IC4	200
IC5	121
IC5	135
---	---
---	---
IC8	132
IC9	138
IC10	134

JP

SYMBOL NO.	INDEX NO.
---	---
---	---
---	---
---	---
---	---
---	---
---	---
JP27	165
---	---
JP29	165
---	---

SYMBOL NO.	INDEX NO.
JP31	165
---	---
---	---
JP34	165
---	---
---	---
JP36	165
---	---
---	---
JP39	165
---	---

15. ENGINE BOARD (120V)

JP

SYMBOL NO.	INDEX NO.
---	---
---	---
---	---
JP44	165

L

SYMBOL NO.	INDEX NO.
L1	159

OSC

SYMBOL NO.	INDEX NO.
OSC1	139

Q

SYMBOL NO.	INDEX NO.
Q1	133
---	---
---	---
Q4	128
---	---
Q6	126
Q7	126
Q8	125
Q9	127
Q10	125

SYMBOL NO.	INDEX NO.
Q11	125
Q12	125
Q13	125
---	---
Q15	124

RESISTOR

SYMBOL NO.	INDEX NO.
R1	164
R2	164
R3	167
R4	167
R5	167
R6	167
R7	167
R8	167
R9	167
R10	167

SYMBOL NO.	INDEX NO.
R11	167
R12	167
R13	167
R14	168
---	---
R16	168
R17	168
R18	168
R19	168
R20	168

RESISTOR

SYMBOL NO.	INDEX NO.
R21	174
R22	168
R23	168
R24	168
R25	168
R26	168
R27	168
R28	168
R29	168
R30	168

SYMBOL NO.	INDEX NO.
R31	168
R32	168
R33	168
R34	168
R35	168
R36	168
---	---
---	---
---	---
---	---
---	---

SYMBOL NO.	INDEX NO.
---	---
---	---
R43	169
---	---
---	---
---	---
---	---
R49	169
R50	169

SYMBOL NO.	INDEX NO.
R51	185
R52	169
R53	169
R54	169
R55	169
---	---
---	---
---	---
---	---
---	---

SYMBOL NO.	INDEX NO.
R61	171
R62	172
R63	172
R64	172
R65	173
R66	173
R67	173
R68	173
R69	173
R70	173

SYMBOL NO.	INDEX NO.
R71	168
R72	175
R73	168
R74	167
R75	167
R76	167
---	---
---	---
---	---
R79	177
---	---

SYMBOL NO.	INDEX NO.
R81	179
R82	179
R83	179
R84	179
---	---
---	---
R87	179
R88	179
R89	179
R90	168

15. ENGINE BOARD (120V)

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
R91	184	R101	173	R111	163	R121	176	---	---	R141	169	R151	176
R92	184	R102	171	R112	162	R122	176	---	---	---	---	---	---
---	---	R103	168	---	---	---	---	---	---	R143	168	---	---
---	---	R104	169	R114	166	---	---	R134	167	---	---	---	---
R95	183	---	---	R115	166	R125	165	---	---	R145	168	---	---
---	---	---	---	R116	166	---	---	R136	173	---	---	---	---
R97	178	R107	167	R117	166	R127	181	R137	169	R147	168	---	---
R98	186	R108	168	R118	176	---	---	R138	169	R148	180	R158	168
R99	187	R109	169	R119	176	R129	181	---	---	---	---	R159	173
R100	187	R110	169	R120	176	R130	170	---	---	---	---	R160	172

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
R161	183	---	---	R181	167	REG1	137	RN1	140	RN11	141	RN21	143
R162	183	---	---	R182	176	REG2	136	RN2	140	---	---	RN22	143
R163	169	R173	168	R183	167	---	---	RN3	140	---	---	RN23	143
---	---	R174	168	R184	167	---	---	RN4	140	---	---	RN24	144
R165	169	---	---	R185	176	---	---	---	---	RN15	142	RN25	144
R166	170	---	---	R186	176	---	---	RN6	140	RN16	142	RN26	144
R167	182	---	---	---	---	---	---	RN7	140	RN17	142	RN27	144
R168	168	R178	176	---	---	---	---	RN8	140	RN18	142	RN28	144
R169	168	R179	176	---	---	---	---	RN9	141	RN19	142	RN29	144
R170	168	R180	167	---	---	---	---	RN10	141	RN20	142	RN30	144

15. ENGINE BOARD (120V)

RN

SYMBOL NO.	INDEX NO.
RN31	144
RN32	144
RN33	144

SWITCH

SYMBOL NO.	INDEX NO.
SW1	123

TB

SYMBOL NO.	INDEX NO.
TB1	108

ZD

SYMBOL NO.	INDEX NO.
ZD1	131

15. ENGINE BOARD (120V)

Index No.	Part No.	Description	Q'ty Per Assembly
*	G175 5603	Engine Board - LT (G176)	1
*	G175 5602	Engine Board - LT (G177)	1
1	G088 5353	IC: RL5C580	1
2	GY20 0012	IC: E-MAC2	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	1102 4201	Connector - 2P	
102	1102 4202	Connector - 3P	
103	1102 4203	CT Header - 4P	
104	1102 4205	CT Header - 6P	
105	1102 4207	Connector - 8P	
106	1102 4631	CT Connector - 2p	
107	1102 4643	CT Connector - 2p	
108	1102 5943	Connector - 2P	
109	1102 6295	Connector - 2P	
110	1102 6306	Connector - 13P	
111	1102 6592	Connector - 8P	
112	1102 7626	Connector - TX25-80P-LT-N1	
113	1103 3849	Connector: 52610-1015	
114	1103 3983	Connector	
115	1103 3987	Connector	
116	1103 3988	Connector	
117	1103 3989	Connector	
118	1103 3990	Connector	
119	1103 3999	Connector	
120	1103 4002	Connector	
121	1104 0764	IC Socket - 8 PIN	
122	1109 0039	Circuit Protector - ICP-S2.3	
123	1204 1541	Dip Switch	
124	1400 0571	Transistor - 2SA1577	
125	1400 0688	Transistor -DTC143ZUA	
126	1400 0767	Transistor: DTA114EUA	
127	1400 0801	Transistor - DTC113ZUA	
128	1401 0972	Transistor-2SB1260	
129	1402 0545	Diode - 1SS244	
130	1402 1336	Diode - 1SS355	
131	1402 1511	Zener diode - Mtzj13b	
132	1407 2187	TTLIC - SN74LS07NS	
133	1407 2219	IC - TD62003AP	
134	1407 5161	CPU- HD64F2633WF25	

Index No.	Part No.	Description	Q'ty Per Assembly
135	1407 5271	EEPROM - M24C02-BN6	
136	1408 1770	Series Regulator - R5323N013A	
137	1408 1834	IC - R5510H011N	
138	1408 1911	Comparator - LM2903PW	
139	1503 0697	Crystal Oscillator MA-406 20Mhz	
140	1601 7752	Resistor Array - 10K Ω \pm 5%	
141	1601 7791	Resistor Array - 1K Ω \pm 5%	
142	1601 7866	Resistor Array - 150 Ω \pm 5%	
143	1601 7871	Resistor - 68 Ω \pm 5% 1/16W	
144	1601 7898	Resistor Array	
145	1604 4730	Capacitor - 47 μ F \pm 20% 50V	
146	1604 4733	Capacitor - 100 μ F \pm 20% 10V	
147	1604 4955	Capacitor - 10 μ F \pm 20% 16V	
148	1604 5065	Capacitor 10uf: \pm 20%: 50V	
149	1605 0976	Capacitor - 1 μ F+80% -20% 10V	
150	1605 1148	Capacitor - 0.1 μ F+80-20% 50V	
151	1605 1163	Ceramic Capacitor - 560pF: \pm 5%: 50V	
152	1605 1190	Resistor - 0.022 μ F \pm 10% 50V	
153	1605 1214	Capacitor - 1000pF \pm 10% 50V	
154	1605 1221	Capacitor - 0.1 UF+80-20%16V	
155	1605 1303	Capacitor - 0.01 μ F+80-20% 50V	
156	1605 1353	Capacitor - 0.1 μ F \pm 10% 25V	
157	1607 0810	Filter - BK2125HS121	
158	1607 1076	Filter - MMZ1608Y152B	
159	1607 1196	Inductor -220uh \pm 20% 0.33A	
160	1607 1241	Filter - MMZ1608R102C	
161	1607 1489	Filter - MMZ1608B301C	
162	1610 1409	Chip Resistor - 6.8 Ω \pm 5%	
163	1610 1732	Resistor: 270 Ω : \pm 5%: 1w: 6332	
164	1611 8472	Resistor - 4.7K Ω	
165	1634 0000	Resistor - 0 Ω 1/16W	
166	1650 4100	Resistor - 10 Ω \pm 5% 1/10W	
167	1650 4101	Resistor - 100 Ω \pm 5%1/10W	
168	1650 4102	Resistor - 1K Ω \pm 5% 1/10W	
169	1650 4103	Resistor - 10K Ω \pm 5% 1/10W	

Index No.	Part No.	Description	Q'ty Per Assembly
170	1650 4122	Resistor - 1.2K Ω \pm 5% 1/10W	
171	1650 4153	Resistor - 15K Ω \pm 5% 1/10W	
172	1650 4201	Resistor - 200 Ω \pm 5%1/10W	
173	1650 4222	Resistor - 2.2K Ω \pm 5%1/10W	
174	1650 4300	Resistor - 30 Ω \pm 5%1/10W	
175	1650 4302	Resistor - 3K Ω \pm 5%1/10W	
176	1650 4330	Chip Resistor - 33 Ω \pm 5% 1/10W	
177	1650 4431	Resistor - 430 Ω \pm 5% 1/10W	
178	1650 4471	Resistor - 470 Ω \pm 5%1/10W	
179	1650 4472	Resistor - 4.7K Ω \pm 5% 1/10W	
180	1650 4473	Resistor - 47K Ω \pm 5%1/10W	
181	1650 4563	Resistor - 56K Ω \pm 5%1/10W	
182	1650 4622	Resistor: 6.2k Ω : \pm 5%: 1/10W	
183	1650 4680	Resistor - 68 Ω \pm 5%1/10W	
184	1650 4681	Resistor - 680 Ω \pm 5% 1/10W	
185	1654 1002	Resistor - 10K Ω \pm 5%1/10W	
186	1654 4301	Resistor - 4.3K Ω \pm 1%1/10W	
187	1654 6801	Resistor - 6.8K Ω \pm 1% 1/10W	
188	1660 0100	Capacitor - 10PF \pm 0.5pF 50V	
189	1660 2101	Capacitor - 100pF - \pm 10% - 50V	
190	1660 2220	Capacitor - 22pF \pm 20% 35V	
191	1660 2221	Capacitor - 220pF +80-20% 50V	
192	1660 2330	Capacitor - 33pF - \pm 5% - 50V	
193	1660 2391	Capacitor - 390pF \pm 5% 50V	
194	1660 2471	Capacitor - 470pF - \pm 5% - 50V	
195	1660 4102	Capacitor - 1000pF \pm 10% 50V	
196	1660 4103	Capacitor - 10000pF - \pm 10% - 50V	
197	1660 4222	Capacitor - 2200pF - \pm 10% - 50V	
198	1660 4332	Capacitor - 3300pF - \pm 10% - 50V	
199	1660 8104	Capacitor - 0.1 μ F+80-20% 25V	
200	1902 0056	Ram - 256k X870ns G14	

16. ENGINE BOARD (230V)

CAPACITOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
C1	145	C11	199	C21	192	C31	195	C41	155	C51	150	---	---
---	---	C12	149	C22	192	C32	195	C42	155	C52	150	C62	154
C3	146	---	---	C23	195	C33	195	C43	155	C53	150	C63	199
C4	146	C14	188	C24	153	C34	153	C44	155	C54	150	C64	199
---	---	C15	188	C25	153	C35	195	C45	155	C55	199	C65	199
C6	152	C16	189	C26	190	C36	155	C46	155	C56	149	---	---
C7	156	C17	190	C27	194	C37	155	C47	155	C57	195	C67	199
C8	156	C18	190	C28	153	C38	155	C48	155	C58	199	C68	199
C9	156	C19	190	---	---	---	---	C49	155	C59	199	---	---
C10	156	C20	151	---	---	C40	155	C50	198	---	---	C70	199

CAPACITOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
---	---	C81	199	C91	195	---	---	---	---	C121	199	C131	149
C72	199	C82	199	C92	199	---	---	---	---	C122	199	---	---
C73	154	C83	154	---	---	---	---	C113	195	---	---	C133	149
C74	154	C84	199	C94	199	---	---	C114	196	---	---	---	---
C75	199	C85	154	C95	199	C105	155	C115	196	C125	146	C135	154
C76	154	C86	195	C96	199	C106	154	C116	195	---	---	C136	191
C77	199	C87	195	C97	199	---	---	C117	199	---	---	C137	197
C78	199	C88	195	C98	154	C108	199	C118	195	C128	149	C138	153
C79	199	C89	199	---	---	C109	155	C119	199	---	---	C139	154
C80	199	C90	199	C100	155	C110	195	---	---	---	---	C140	147

16. ENGINE BOARD (230V)

CAPACITOR

SYMBOL NO.	INDEX NO.
C141	195
C142	199
---	---
---	---
C145	153
---	---
C147	153
---	---
C149	199
C150	195

SYMBOL NO.	INDEX NO.
C151	199
C152	195
C153	149
C154	195
C155	199
---	---
C156	199
C157	198
C158	193
---	---
---	---

SYMBOL NO.	INDEX NO.
C161	155
C162	155
C163	195
---	---
C165	191
---	---
C166	191
C167	191
C168	190
C169	190
---	---

SYMBOL NO.	INDEX NO.
C171	150
C172	148

CONNECTOR

SYMBOL NO.	INDEX NO.
CN1	111
CN2	119
CN3	115
CN4	114
CN5	110
---	---
CN6	120
CN7	106
CN8	107
CN9	109
CN10	101

SYMBOL NO.	INDEX NO.
CN11	102
CN12	103
CN13	104
CN14	101
CN15	118
---	---
CN16	116
CN17	117
CN18	102
---	---
CN20	113

SYMBOL NO.	INDEX NO.
CN21	105
CN22	112

DIONE

SYMBOL NO.	INDEX NO.
---	---
D2	130
D3	130
D4	129

FIL

SYMBOL NO.	INDEX NO.
---	---
---	---
---	---
---	---
---	---
---	---
FIL6	161
FIL7	158
FIL8	160
FIL9	160
---	---

SYMBOL NO.	INDEX NO.
---	---
FIL12	160
---	---
---	---
---	---
FIL16	157

FUSE

SYMBOL NO.	INDEX NO.
FU1	122

IC

SYMBOL NO.	INDEX NO.
IC1	132
IC2	1
IC3	2
IC4	200
IC5	121
IC5	135
---	---
---	---
IC8	132
IC9	138
IC10	134

JP

SYMBOL NO.	INDEX NO.
---	---
---	---
---	---
---	---
---	---
---	---
---	---
JP27	165
---	---
JP29	165
---	---

SYMBOL NO.	INDEX NO.
JP31	165
---	---
---	---
JP34	165
---	---
---	---
JP36	165
---	---
---	---
JP39	165
---	---

16. ENGINE BOARD (230V)

JP

SYMBOL NO.	INDEX NO.
---	---
---	---
---	---
JP44	165

L

SYMBOL NO.	INDEX NO.
L1	159

OSC

SYMBOL NO.	INDEX NO.
OSC1	139

Q

SYMBOL NO.	INDEX NO.
Q1	133
---	---
---	---
Q4	128
---	---
Q6	126
Q7	126
Q8	125
Q9	127
Q10	125

RESISTOR

SYMBOL NO.	INDEX NO.
Q11	125
Q12	125
Q13	125
---	---
Q15	124

SYMBOL NO.	INDEX NO.
R1	164
R2	164
R3	167
R4	167
R5	167
R6	167
R7	167
R8	167
R9	167
R10	167

SYMBOL NO.	INDEX NO.
R11	167
R12	167
R13	167
R14	168
---	---
R16	168
R17	168
R18	168
R19	168
R20	168

RESISTOR

SYMBOL NO.	INDEX NO.
R21	174
R22	168
R23	168
R24	168
R25	168
R26	168
R27	168
R28	168
R29	168
R30	168

SYMBOL NO.	INDEX NO.
R31	168
R32	168
R33	168
R34	168
R35	168
R36	168
---	---
---	---
---	---
---	---
---	---

SYMBOL NO.	INDEX NO.
---	---
---	---
R43	169
---	---
---	---
---	---
---	---
---	---
R49	169
R50	169

SYMBOL NO.	INDEX NO.
R51	185
R52	169
R53	169
R54	169
R55	169
---	---
---	---
---	---
---	---
---	---

SYMBOL NO.	INDEX NO.
R61	171
R62	172
R63	172
R64	172
R65	173
R66	173
R67	173
R68	173
R69	173
R70	173

SYMBOL NO.	INDEX NO.
R71	168
R72	175
R73	168
R74	167
R75	167
R76	167
---	---
---	---
---	---
R79	177
---	---

SYMBOL NO.	INDEX NO.
R81	179
R82	179
R83	179
R84	179
---	---
---	---
R87	179
R88	179
R89	179
R90	168

16. ENGINE BOARD (230V)

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
R91	184	R101	173	R111	163	R121	176	---	---	R141	169	R151	176
R92	184	R102	171	R112	162	R122	176	---	---	---	---	---	---
---	---	R103	168	---	---	---	---	---	---	R143	168	---	---
---	---	R104	169	R114	166	---	---	R134	167	---	---	---	---
R95	183	---	---	R115	166	R125	165	---	---	R145	168	---	---
---	---	---	---	R116	166	---	---	R136	173	---	---	---	---
R97	178	R107	167	R117	166	R127	181	R137	169	R147	168	---	---
R98	186	R108	168	R118	176	---	---	R138	169	R148	180	R158	168
R99	187	R109	169	R119	176	R129	181	---	---	---	---	R159	173
R100	187	R110	169	R120	176	R130	170	---	---	---	---	R160	172

RESISTOR

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
R161	183	---	---	R181	167	---	---	RN1	140	RN11	141	RN21	143
R162	183	---	---	R182	176	---	---	RN2	140	---	---	RN22	143
R163	169	R173	168	R183	167	---	---	RN3	140	---	---	RN23	143
---	---	R174	168	R184	167	---	---	RN4	140	---	---	RN24	144
R165	169	---	---	R185	176	---	---	---	---	RN15	142	RN25	144
R166	170	---	---	R186	176	---	---	RN6	140	RN16	142	RN26	144
R167	182	---	---	---	---	---	---	RN7	140	RN17	142	RN27	144
R168	168	R178	176	---	---	---	---	RN8	140	RN18	142	RN28	144
R169	168	R179	176	---	---	---	---	RN9	141	RN19	142	RN29	144
R170	168	R180	167	---	---	---	---	RN10	141	RN20	142	RN30	144

REG

SYMBOL NO.	INDEX NO.
REG1	137
REG2	136

RN

SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.	SYMBOL NO.	INDEX NO.
RN1	140	RN11	141	RN21	143	RN30	144
RN2	140	---	---	RN22	143		
RN3	140	---	---	RN23	143		
RN4	140	---	---	RN24	144		
---	---	RN15	142	RN25	144		
RN6	140	RN16	142	RN26	144		
RN7	140	RN17	142	RN27	144		
RN8	140	RN18	142	RN28	144		
RN9	141	RN19	142	RN29	144		
RN10	141	RN20	142	RN30	144		

16. ENGINE BOARD (230V)

RN

SYMBOL NO.	INDEX NO.
RN31	144
RN32	144
RN33	144

SWITCH

SYMBOL NO.	INDEX NO.
SW1	123

TB

SYMBOL NO.	INDEX NO.
TB1	108

ZD

SYMBOL NO.	INDEX NO.
ZD1	131

16. ENGINE BOARD (230V)

Index No.	Part No.	Description	Q'ty Per Assembly
*	G175 5605	Engine Board - A/B (G176)	1
*	G175 5604	Engine Board - A/B (G177)	1
1	G088 5353	IC: RL5C580	1
2	GY20 0012	IC: E-MAC2	1

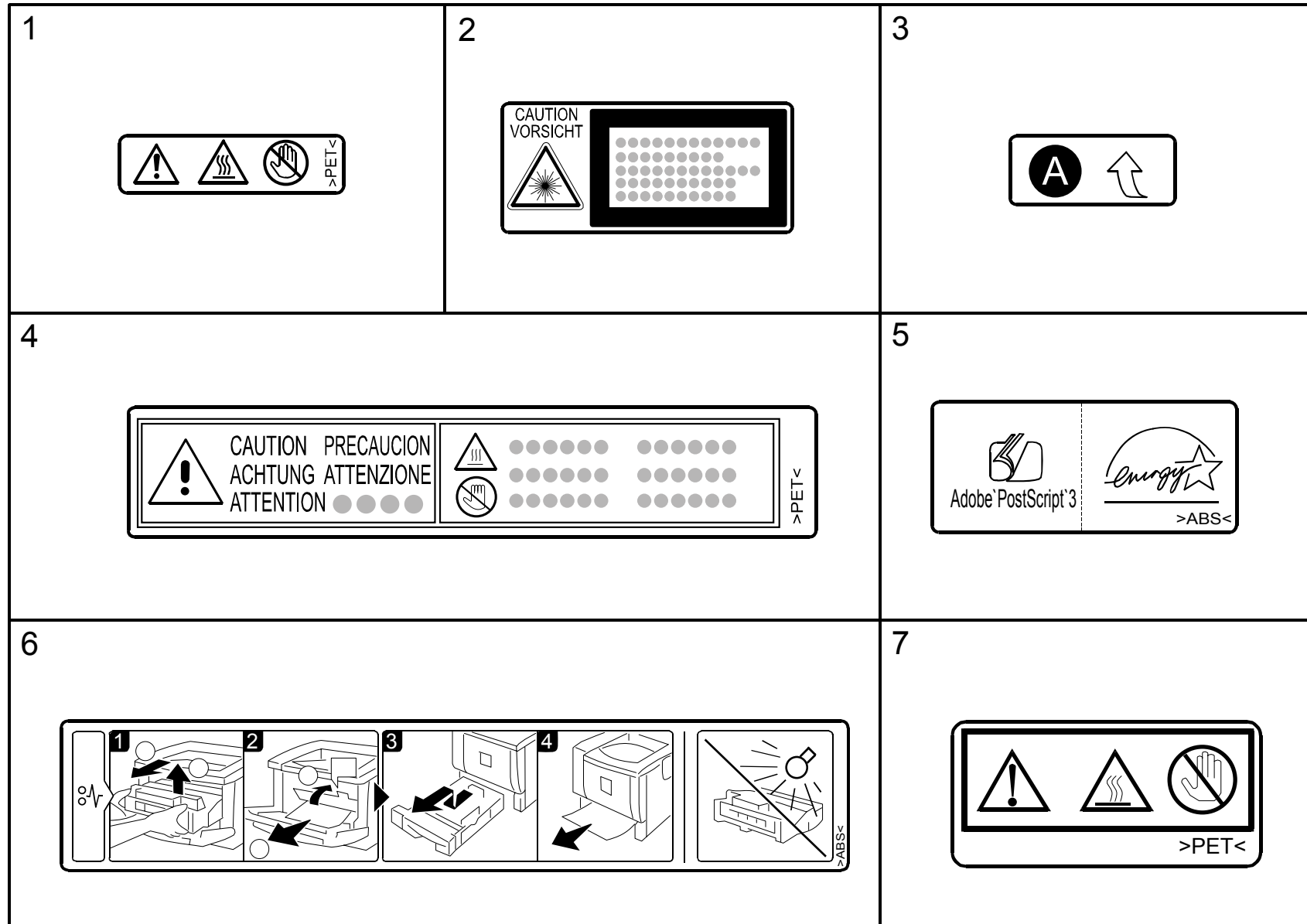
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Index No.	Part No.	Description	Q'ty Per Assembly
101	1102 4201	Connector - 2P	
102	1102 4202	Connector - 3P	
103	1102 4203	CT Header - 4P	
104	1102 4205	CT Header - 6P	
105	1102 4207	Connector - 8P	
106	1102 4631	CT Connector - 2p	
107	1102 4643	CT Connector - 2p	
108	1102 5943	Connector - 2P	
109	1102 6295	Connector - 2P	
110	1102 6306	Connector - 13P	
111	1102 6592	Connector - 8P	
112	1102 7626	Connector - TX25-80P-LT-N1	
113	1103 3849	Connector: 52610-1015	
114	1103 3983	Connector	
115	1103 3987	Connector	
116	1103 3988	Connector	
117	1103 3989	Connector	
118	1103 3990	Connector	
119	1103 3999	Connector	
120	1103 4002	Connector	
121	1104 0764	IC Socket - 8 PIN	
122	1109 0039	Circuit Protector - ICP-S2.3	
123	1204 1541	Dip Switch	
124	1400 0571	Transistor - 2SA1577	
125	1400 0688	Transistor -DTC143ZUA	
126	1400 0767	Transistor: DTA114EUA	
127	1400 0801	Transistor - DTC113ZUA	
128	1401 0972	Transistor-2SB1260	
129	1402 0545	Diode - 1SS244	
130	1402 1336	Diode - 1SS355	
131	1402 1511	Zener diode - MTZJ13B	
132	1407 2187	TTLIC - SN74LS07NS	
133	1407 2219	IC - TD62003AP	
134	1407 5161	CPU- HD64F2633WF25	
135	1407 5271	EEPROM - M24C02-BN6	

Index No.	Part No.	Description	Q'ty Per Assembly
136	1408 1770	Series Regulator - R5323N013A	
137	1408 1834	IC - R5510H011N	
138	1408 1911	Comparator - LM2903PW	
139	1503 0697	Crystal Oscillator MA-406 20Mhz	
140	1601 7752	Resistor Array - 10K Ω \pm 5%	
141	1601 7791	Resistor Array - 1K Ω \pm 5%	
142	1601 7866	Resistor Array - 150 Ω \pm 5%	
143	1601 7871	Resistor - 68 Ω \pm 5% 1/16W	
144	1601 7898	Resistor Array	
145	1604 4730	Capacitor - 47 μ F \pm 20% 50V	
146	1604 4733	Capacitor - 100 μ F \pm 20% 10V	
147	1604 4955	Capacitor - 10 μ F \pm 20% 16V	
148	1604 5065	Capacitor 10uf: \pm 20%: 50V	
149	1605 0976	Capacitor - 1 μ F+80% -20% 10V	
150	1605 1148	Capacitor - 0.1 μ F+80-20% 50V	
151	1605 1163	Ceramic Capacitor - 560pF: \pm 5%: 50V	
152	1605 1190	Resistor - 0.022 μ F \pm 10% 50V	
153	1605 1214	Capacitor - 1000pF \pm 10% 50V	
154	1605 1221	Capacitor - 0.1 UF+80-20%16V	
155	1605 1303	Capacitor - 0.01 μ F+80-20% 50V	
156	1605 1353	Capacitor - 0.1 μ F \pm 10% 25V	
157	1607 0810	Filter - BK2125HS121	
158	1607 1076	Filter - MMZ1608Y152B	
159	1607 1196	Inductor -220uh \pm 20% 0.33A	
160	1607 1241	Filter - MMZ1608R102C	
161	1607 1489	Filter - MMZ1608B301C	
162	1610 1409	Chip Resistor - 6.8 Ω \pm 5%	
163	1610 1732	Resistor: 270 Ω : \pm 5%: 1W: 6332	
164	1611 8472	Resistor - 4.7K Ω	
165	1634 0000	Resistor - 0 Ω 1/16W	
166	1650 4100	Resistor - 10 Ω \pm 5% 1/10W	
167	1650 4101	Resistor - 100 Ω \pm 5%1/10W	
168	1650 4102	Resistor - 1K Ω \pm 5% 1/10W	
169	1650 4103	Resistor - 10K Ω \pm 5% 1/10W	
170	1650 4122	Resistor - 1.2K Ω \pm 5% 1/10W	

Index No.	Part No.	Description	Q'ty Per Assembly
171	1650 4153	Resistor - 15K Ω \pm 5% 1/10W	
172	1650 4201	Resistor - 200 Ω \pm 5%1/10W	
173	1650 4222	Resistor - 2.2K Ω \pm 5%1/10W	
174	1650 4300	Resistor - 30 Ω \pm 5%1/10W	
175	1650 4302	Resistor - 3K Ω \pm 5%1/10W	
176	1650 4330	Chip Resistor - 33 Ω \pm 5% 1/10W	
177	1650 4431	Resistor - 430 Ω \pm 5% 1/10W	
178	1650 4471	Resistor - 470 Ω \pm 5%1/10W	
179	1650 4472	Resistor - 4.7K Ω \pm 5% 1/10W	
180	1650 4473	Resistor - 47K Ω \pm 5%1/10W	
181	1650 4563	Resistor - 56K Ω \pm 5%1/10W	
182	1650 4622	Resistor: 6.2k Ω : \pm 5%: 1/10W	
183	1650 4680	Resistor - 68 Ω \pm 5%1/10W	
184	1650 4681	Resistor - 680 Ω \pm 5% 1/10W	
185	1654 1002	Resistor - 10K Ω \pm 5%1/10W	
186	1654 4301	Resistor - 4.3K Ω \pm 1%1/10W	
187	1654 6801	Resistor - 6.8K Ω \pm 1% 1/10W	
188	1660 0100	Capacitor - 10PF \pm 0.5pF 50V	
189	1660 2101	Capacitor - 100pF - \pm 10% - 50V	
190	1660 2220	Capacitor - 22pF \pm 20% 35V	
191	1660 2221	Capacitor - 220pF +80-20% 50V	
192	1660 2330	Capacitor - 33pF - \pm 5% - 50V	
193	1660 2391	Capacitor - 390pF \pm 5% 50V	
194	1660 2471	Capacitor - 470pF - \pm 5% - 50V	
195	1660 4102	Capacitor - 1000pF \pm 10% 50V	
196	1660 4103	Capacitor - 10000pF - \pm 10% - 50V	
197	1660 4222	Capacitor - 2200pF - \pm 10% - 50V	
198	1660 4332	Capacitor - 3300pF - \pm 10% - 50V	
199	1660 8104	Capacitor - 0.1 μ F+80-20% 25V	
200	1902 0056	RAM - 256k X870NS G14	

17. DECALS AND DOCUMENTS (G176/G177)

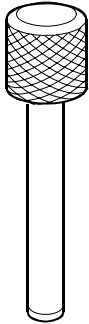
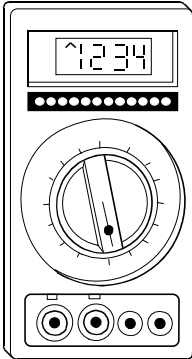
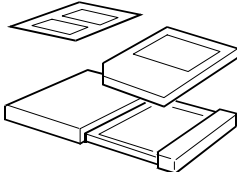
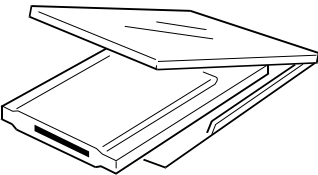
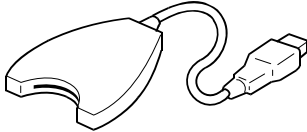


17. DECALS AND DOCUMENTS (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	AA00 0301	Decal Warning (High Temperature)	1
2	G052 3351	Decal - Registration	1
3	G096 1551	Misfeed Removal Decal	1
4	G111 1910	Caution Decal - Laser	1
5	G128 1151	Decal: Warning (high Temperature)	1
6	G175 4693	Decal - High Temperature	1
7	GA00 1038	Decal: PS	1

Index No.	Part No.	Description	Q'ty Per Assembly

18. SPECIAL TOOLS (G176/G177)

<p>1</p> 	<p>2</p> 	<p>3</p> 
<p>4</p> 	<p>5</p> 	

18. SPECIAL TOOLS (G176/G177)

Index No.	Part No.	Description	Q'ty Per Assembly
1	A006 9104	Adjusting Scanner Pin (4pcs/set)	1
2	VSSM 9000	Digital Multimeter - FLUKE 187	1
3	B645 5010	SD-Card: Ass'y	1
4	B645 6700	SD-Card: Adapter: BN-SDAA2	1
5	B645 6800	SD-Card: USB: Writer: BN-SDCE2	1

Index No.	Part No.	Description	Q'ty Per Assembly

G176/G177
PARTS INDEX

This section instructs you as to the numbers and names of parts on this machine.

Parts Index

Part No.	Description	Page and Index No.
G177 5317	PCB: CTL Sincere-PIC: Sub-Ass'y	27 - 6
G177 5317	PCB: CTL Sincere-PIC: Sub-Ass'y	39 - *

Part No.	Description	Page and Index No.
A006 9104	Adjusting Scanner Pin (4pcs/set)	57 - 1
A267 2869	Gear - 16Z	9 - 12
B132 5836	Panel - Interface	27 - 18
B229 7180	ASIC: Charango	39 - 1
B622 5825	Panel Knob Screw	27 - 3
B645 5010	SD-Card: Ass'y	57 - 3
B645 6700	SD-Card: Adapter: BN-SDAA2	57 - 4
B645 6800	SD-Card: USB: Writer: BN-SDCE2	57 - 5
G029 1975	Cylindrical Lens	7 - 25
G029 2609	Cassette Protection	9 - 18
G029 2657	Compression Spring	11 - 11
G052 1027	Spring Plate - Duplex Rail	21 - 23
G052 1042	Fusing Exit Feeler	21 - 4
G052 1044	Exit Feeler Holder	21 - 2
G052 1046	Spring - Fusing Exit Feeler	21 - 5
G052 1049	Bushing - Paper Exit	21 - 10
G052 1102	Drive Unit Bracket	23 - 2
G052 1104	Gear - Fusing 1	23 - 6
G052 1105	Gear - Fusing 2	23 - 20
G052 1107	Gear - Pulley - Fusing	23 - 14
G052 1108	Gear - Paper Feed 1	23 - 7
G052 1109	Gear - Paper Feed 2	23 - 8
G052 1110	Gear - Paper Feed 3	23 - 12
G052 1111	Gear - Paper Feed 4	23 - 11
G052 1112	Gear - Paper Feed 5	23 - 10
G052 1113	Gear - Paper Feed 6	23 - 9
G052 1120	Spring - Paper Exit Release	23 - 16
G052 1121	Drive Belt	23 - 17
G052 1123	Spacer - Drive Unit	23 - 18
G052 1212	Clip	7 - 1
G052 1251	Charge Terminal	15 - 24
G052 1252	Drum Terminal	25 - 13
G052 1253	Development Terminal	15 - 23
G052 1254	Inner Terminal - Charge	15 - 21
G052 1255	Charge Terminal - High Voltage	15 - 20

Part No.	Description	Page and Index No.
G052 1256	Development Terminal - High Voltage	15 - 22
G052 1272	Rear Cover Sw Bracket	21 - 6
G052 1273	Spring - Micro Switch	21 - 7
G052 1274	Micro Switch Lever	21 - 8
G052 1518	Spring - Lock Lever	5 - 19
G052 1541	Spring - Receptacle	5 - 22
G052 1542	Collar - Receptacle	5 - 23
G052 1544	Spring Plate - Receptacle	5 - 7
G052 2763	LD Holder	7 - 13
G052 2764	Spring - LD Unit	7 - 11
G052 2771	Right DTL Holder	7 - 7
G052 2772	Left DTL Holder	7 - 8
G052 2773	Cylindrical Lens Holder	7 - 15
G052 2774	Mirror Clamp	7 - 3
G052 2777	Spring Holder - Shield Glass	7 - 18
G052 2780	Shutter - LD	7 - 9
G052 2791	Sync Detector Holder	7 - 26
G052 3103	Paper Feed Roller	11 - 13
G052 3106	Bushing - Paper Feed Roller	11 - 12
G052 3257	Right Bushing - Registration	13 - 11
G052 3258	Left Bushing - Registration	13 - 1
G052 3278	Spring - Bypass	5 - 11
G052 3303	Paper Transport Roller	11 - 19
G052 3304	Spring Plate - Paper Transport	11 - 18
G052 3307	Transport Guide Mylar	11 - 23
G052 3351	Decal - Registration	55 - 2
G052 3351	Decal - Registration	13 - 16
G052 3356	Sheet - Soundproof	5 - 16
G052 3390	Toner End Sensor	13 - 13
G052 3396	Spring - Toner End Sensor	13 - 14
G052 3623	Transfer Terminal	15 - 9
G052 3624	Separation Terminal	15 - 10
G052 3625	Right Bushing - Transfer	15 - 4
G052 3626	Left Bushing - Transfer	15 - 3
G052 3627	Spring - Transfer	15 - 2

Part No.	Description	Page and Index No.
G052 4617	Heater Terminal	17 - 16
G052 4618	Bearing 30x42x7	17 - 6
G052 4622	Spring - Fusing Stripper	17 - 19
G052 4624	Hot Roller Stripper	17 - 20
G052 4639	Exit Roller Holder	17 - 27
G052 4647	Spring Plate - Fusing Exit	17 - 25
G052 4665	Bushing - Pressure Roller	19 - 4
G052 4676	Gear - Fusing Idler	19 - 5
G052 4677	Gear - Fusing Idler	19 - 6
G052 4691	Ground Plate - Fusing Pressure	19 - 14
G052 4692	Discharge Brush - Pressure	19 - 13
G052 4696	Right Fusing Lock Lever	21 - 26
G052 4697	Left Fusing Lock Lever	21 - 27
G052 4700	External Circlip	17 - 4
G052 4855	Pulley - Paper Exit	21 - 9
G052 4871	Left Holder - Exit Driven Roller	3 - 9
G052 4872	Right Holder - Exit Driven Roller	3 - 13
G052 4873	Outer Exit Cover Roller	3 - 10
G052 4875	Inner Exit Cover Roller	3 - 8
G052 4876	Left Spring Plate	3 - 11
G052 4877	Right Spring Plate	3 - 12
G052 5060	Synchronization Detector	7 - 27
G052 5362	Receptacle - 99RH144	5 - 6
G056 6005	HDD Cover	27 - 4
G088 1216	Cover: EGB	27 - 8
G088 2775	Shield: Harness	7 - 17
G088 2785	Cover: Optical Housing: Ass'y	7 - 21
G088 2789	Shield: Cover: Polygon Scanner	7 - 23
G088 5353	IC: RL5C580	47 - 1
G088 5353	IC: RL5C580	53 - 1
G089 5902	Hybrid IC: D3144	39 - 2
G096 1018	Transport Guide	15 - 11
G096 1019	Transport Guide Pin	15 - 1
G096 1021	Right Duplex Rail	21 - 24
G096 1022	Left Duplex Rail	21 - 25

Part No.	Description	Page and Index No.
G096 1031	Lower Fusing Heat Insulating Plate	25 - 7
G096 1041	Exit Bracket	21 - 14
G096 1043	Exhaust Sensor Feeler	21 - 16
G096 1081	Right Paper Tray Rail	21 - 20
G096 1082	Left Paper Tray Rail	21 - 21
G096 1085	Base Ground Plate	21 - 22
G096 1087	Paper Tray Spring Plate Ass'y	25 - 11
G096 1087	Paper Tray Spring Plate Ass'y	13 - 6
G096 1211	EGB Bracket	27 - 9
G096 1221	Power Supply Unit Bracket	25 - 6
G096 1257	Warning Cover (Electrical)	3 - 17
G096 1262	Exit Roller Ground Plate	21 - 13
G096 1271	Inlet Bracket	25 - 8
G096 1509	Paper Exit Sub-unit Ass'y	3 - 6
G096 1512	Exit Cover	3 - 7
G096 1517	Shutter Feeler	5 - 20
G096 1551	Misfeed Removal Decal	55 - 3
G096 1551	Misfeed Removal Decal	5 - 17
G096 3051	Paper Tray	9 - 30
G096 3052	Paper Tray Cover	9 - 6
G096 3055	Left Side Fence	9 - 11
G096 3056	Right Side Fence	9 - 13
G096 3060	Rear Paper Tray	9 - 27
G096 3063	Paper Tray Cap	9 - 25
G096 3065	Paper Tray Supporting Plate	9 - 28
G096 3066	Friction Pad Adhesion	9 - 17
G096 3070	Paper Volume Sensor Board	9 - 29
G096 3071	Paper Tray Arm	9 - 8
G096 3075	Paper Size Sensor Board	9 - 7
G096 3078	Protection Label	9 - 26
G096 3083	Spring Tension	9 - 9
G096 3084	Separation Compression Spring	9 - 16
G096 3085	End Fence	9 - 24
G096 3086	End Fence Lever	9 - 23
G096 3087	End Fence Protection	9 - 20

Part No.	Description	Page and Index No.
G096 3088	End Fence Pressure	9 - 19
G096 3089	End Fence Compression Spring 3.5n	9 - 22
G096 3090	End Fence Tension Spring 12n	9 - 21
G096 3094	Tape - Sheet: Tray	9 - 2
G096 3100	Paper Feed Stay	11 - 9
G096 3101	Paper Feed Shaft	11 - 8
G096 3104	Paper End Sensor Feeler	11 - 14
G096 3105	Paper Volume Sensor Feeler	11 - 16
G096 3106	Left Stay Cover	11 - 10
G096 3107	Right Stay Cover	11 - 17
G096 3111	Cassette Cover	3 - 18
G096 3144	Paper Set Direction Label	9 - 10
G096 3280	Manual Feed Frame	11 - 30
G096 3292	Spring - Manual Feed	11 - 26
G096 3294	Connecting Guide Plate	11 - 22
G096 3301	Support Plate Stay: Bypass	11 - 1
G096 3306	Connecting Guide Roller	11 - 21
G096 3315	Driven Registration Roller Mm14	13 - 9
G096 3335	Paper Feed Ground Plate	11 - 6
G096 3336	Registration Drive Ground Plate	13 - 5
G096 3337	Auxiliary Ground Plate	11 - 4
G096 3338	Ground Plate - Registration	25 - 12
G096 3345	Registration Guide	15 - 7
G096 3346	Registration Guide Long	15 - 8
G096 3621	Separation Electrode Plate	15 - 5
G096 3622	Electrode Plate Cover	15 - 6
G096 3628	Transport Guide Ground Plate	15 - 18
G096 3629	Transport Terminal Guide	15 - 19
G096 3640	Transfer Guide Plate Ass'y	15 - 16
G096 3641	Transfer Guide Plate Sheet	15 - 17
G096 4611	Thermostat Ass'y	17 - 12
G096 4615	Left Fusing Lamp bracket	17 - 15
G096 4616	Right Heater Bracket	17 - 21
G096 4635	Upper Fusing Exit Guide Plate	17 - 26
G096 4638	Exit Roller Supporting Plate	17 - 17

Part No.	Description	Page and Index No.
G096 4674	Fusing Exit Roller	19 - 12
G096 4692	Fusing Right Cover	17 - 22
G096 4695	Upper Harness Plate	17 - 14
G096 4850	Exit Roller	21 - 11
G096 4888	Exit Brush Discharge	21 - 15
G096 5500	Fusing Drawer 100V	17 - 8
G096 5501	Fusing Thermistor	17 - 10
G096 5506	Inlet: EU	25 - 16
G096 5510	Fusing Drawer 230V	17 - 8
G102 2818	Tray Bottom Plate: Adhesion	9 - 14
G102 5502	Power Supply Cord: EU	25 - 9
G104 5141	Knob Screw: M3	27 - 1
G110 5501	Inlet: JPN: Ass'y (NA)	25 - 16
G111 1055	Supporter	27 - 20
G111 1910	Caution Decal - Laser	7 - 22
G111 1910	Caution Decal - Laser	55 - 4
G111 3539	Internal Thermistor	5 - 24
G111 5410	Harness - Interlock	27 - 16
G111 5419	Harness - Power Pack	25 - 10
G116 4159	Screw: M3x13	11 - 31
G128 1104	Gear: OPC	23 - 19
G128 1151	Decal: Warning (High Temperature)	21 - 28
G128 1151	Decal: Warning (high Temperature)	55 - 5
G129 1051	Fan Motor Mm92: 24V	25 - 15
G129 1902	Shield Glass	7 - 24
G129 2551	Magnetic Clutch: 1turn: Z41	23 - 5
G129 2552	Paper Feed Roller: Manual Feed	11 - 28
G129 3522	Discharge Lamp: Cassis	21 - 17
G129 4102	Pressure Spring - Fusing	19 - 2
G129 5205	Choke Coil (EU)	25 - 17
G129 5300	Power Pack: BCT: RoHs	25 - 5
G129 5400	Harness: Fst: Connecting	11 - 7
G129 5401	Harness: Motor: Sensor	27 - 15
G129 5403	Harness: Polygon Motor: Sync Detector	7 - 16
G129 5406	Harness: Operation Panel	3 - 4

Part No.	Description	Page and Index No.
G129 5407	Harness: Power Source	25 - 3
G129 5409	Harness: Main Switch: Dom/NA	25 - 14
G129 5411	Harness - Main Switch : EU	25 - 14
G129 5412	Harness: Paper Feed: Option	27 - 13
G129 5413	Harness: Exit: Sensor	21 - 1
G129 5414	Harness: Duplex: Option	27 - 11
G129 5414	Harness: Duplex: Option	27 - 11
G129 6251	Positioning Roller - Transfer	15 - 15
G129 6252	Gear - Transfer Roller	15 - 13
G129 6255	Bushing	15 - 25
G129 6257	Transfer Roller	15 - 14
G129 6260	Transfer Roller Ass'y	15 - 12
G168 1915	Laser Diode Unit	7 - 12
G168 5109	Lan Cover	27 - 19
G168 5118	Card Cover	27 - 5
G175 0019	Power Supply Unit - 120V	25 - 4
G175 0020	Power Supply Unit - 230V	25 - 4
G175 0126	Pressure Roller	19 - 9
G175 0179	Heater - 765W 230V	17 - 3
G175 0180	Heater - 765W 120V	17 - 3
G175 0403	Model Name Plate - RIC	5 - 12
G175 1032	Heat Insulating Plate - Front	21 - 18
G175 1050	Brushless Motor - DC 31W	23 - 1
G175 1056	Drawer Bracket - Fusing	25 - 1
G175 1106	Gear - 45Z	23 - 13
G175 1219	Rear Cover (NA)	3 - 14
G175 1229	Rear Cover - EU	3 - 14
G175 1250	Left Cover - NA	3 - 2
G175 1251	Harness Cover	5 - 21
G175 1253	Left Cover - EU	3 - 2
G175 1255	Lower Seal - Rear Cover	3 - 20
G175 1256	Left Seal - Rear Cover	3 - 21
G175 1257	Right Seal - Rear Cover	3 - 22
G175 1258	Upper Seal - Rear Cover	3 - 1
G175 1260	Front Door - EU	5 - 13

Part No.	Description	Page and Index No.
G175 1260	Front Door - EU	5 - 15
G175 1280	Door: Ass'y (NA)	5 - 15
G175 1280	Door: Ass'y	5 - 13
G175 1400	Operation Panel	3 - 3
G175 1406	Slide Guide	3 - 19
G175 1450	Right Cover (NA)	3 - 16
G175 1452	Upper Cover (NA)	3 - 5
G175 1516	Door Lever	5 - 18
G175 1650	Right Cover - EU	3 - 16
G175 1651	Louver	3 - 15
G175 1652	Upper Cover - EU	3 - 5
G175 1904	Imaging Unit	7 - 2
G175 2551	Photosensor	13 - 7
G175 2554	Spring Clutch Bracket	23 - 22
G175 2555	Harness Holder	23 - 21
G175 2585	Magnetic Clutch - Registration	13 - 3
G175 2587	Paper Feed Clutch	11 - 33
G175 2767	Feed Roller Cover	11 - 29
G175 3050	Paper Tray Unit	9 - 1
G175 3138	Spacer - Paper Feed	11 - 2
G175 3139	Magnetic Clutch Stopper	11 - 32
G175 3209	Magnetic Clutch	23 - 3
G175 3266	Upper Guide Plate - Registration	13 - 15
G175 3267	Cleaner Film - Registration	13 - 10
G175 3268	Registration Sensor Bracket	13 - 8
G175 3270	Table Unit - Manual Feed	5 - 1
G175 3272	Cover: Manual Feed Table	5 - 10
G175 3276	Side Fence: Manual Feed: Right	5 - 3
G175 3277	Side Fence: Manual Feed: Left	5 - 2
G175 3286	Manual Feed Feeler	11 - 25
G175 3286	Manual Feed Feeler	13 - 18
G175 3290	Friction Pad - Manual Feed	11 - 27
G175 3316	Registration Roller - Drive	13 - 17
G175 3332	Relay Roller	11 - 20
G175 3341	Extension Tray: Manual Feed	5 - 9

Part No.	Description	Page and Index No.
G175 4063	Hot Roller	17 - 7
G175 4117	Fusing Unit: NA: Ass'y	17 - 1
G175 4127	Fusing Unit: EU: Ass'y	17 - 1
G175 4181	Pressure Lever Shaft	19 - 18
G175 4182	Left Pressure Lever	19 - 17
G175 4183	Right Pressure Lever	19 - 16
G175 4602	Electrode Plate - Right	17 - 13
G175 4619	Gear - 41Z	17 - 5
G175 4625	Holder Plate - Fusing Harness	17 - 11
G175 4642	Discharge Brush - Bearing	17 - 23
G175 4644	Entrance Guide Plate - Upper	17 - 2
G175 4650	Pressure Frame	19 - 8
G175 4662	Pressure Roller Lever	19 - 3
G175 4673	Gear - 15Z	19 - 10
G175 4681	Fusing Entrance Guide Plate	19 - 7
G175 4690	Ground Plate - Fusing	17 - 24
G175 4693	Decal - High Temperature	55 - 6
G175 4693	Decal - High Temperature	19 - 15
G175 4698	Fusing Left Cover	19 - 1
G175 5101	Control Board Panel	27 - 2
G175 5404	Harness - Toner End Sensor	13 - 12
G175 5416	Harness - Fusing 120V	25 - 2
G175 5417	Fusing Harness - 230V	25 - 2
G175 5520	Harness - Fusing Unit Set 120V	17 - 9
G175 5521	Harness - Fusing Set 230V	17 - 9
G175 5602	Engine Board - LT (G177)	47 - *
G175 5602	Engine Board - LT (G177)	27 - 10
G175 5603	Engine Board - LT (G176)	27 - 10
G175 5603	Engine Board - LT (G176)	47 - *
G175 5604	Engine Board - A/B (G177)	53 - *
G175 5604	Engine Board - A/B (G177)	27 - 10
G175 5605	Engine Board - A/B (G176)	53 - *
G175 5605	Engine Board - A/B (G176)	27 - 10
G330 5750	SDRAM-DIMM- 64MB	27 - 21
G360 3091	Sheet - Tray 1	9 - 3

Part No.	Description	Page and Index No.
G360 3092	Sheet - Tray 2	9 - 4
G360 3093	Sheet - Tray 3	9 - 5
G800 3035	Push SW - Paper Size	27 - 14
G800 3133	Side Fence Gear	5 - 8
G800 4851	Bushing	19 - 11
G800 4851	Bushing	21 - 12
G800 4854	Exit Roller	17 - 28

Part No.	Description	Page and Index No.
R013 1097	Clamp	27 - 12

Part No.	Description	Page and Index No.
AA00 0301	Decal Warning (High Temperature)	55 - 1
AA00 0301	Decal Warning (High Temperature)	17 - 18
AA06 3539	Spring - Registration Roller	13 - 2
AA08 2058	Bushing - 6x10x9mm	11 - 5
AA08 2075	Bushing - M6	11 - 3
AA08 2144	Bushing - 8x12x7	13 - 4
AG07 1007	Latch - By Pass Feed Table	5 - 14
AW02 0141	Photointerruptor	11 - 15
AW02 0145	Photointerruptor: Flat	11 - 24
GA00 1038	Decal: PS	55 - 7
GA00 1038	Decal: PS	5 - 4
GC01 5005	Shield Glass - Polygon Motor	7 - 19
GC02 5010	DTL	7 - 6
GC02 5011	Cylindrical Lens	7 - 14
GC03 0026	Mirror - 1	7 - 4
GC03 0027	Mirror - 2	7 - 5
GC03 0028	Mirror - Sync Detector	7 - 10
GH01 0007	Rubber Foot - FF-006(P4070)N	21 - 19
GW02 0020	Photointerruptor: LG248NI1	21 - 3
GX06 0029	Polygon Scanner Motor: DC24V 24W	7 - 20
GY20 0012	IC: E-MAC2	47 - 2
GY20 0012	IC: E-MAC2	53 - 2

Part No.	Description	Page and Index No.
VSSM 9000	Digital Multimeter - FLUKE 187	57 - 2

Part No.	Description	Page and Index No.
0352 5080N	Screw: M2.5x8	27 - 106
0353 0040N	Screw - M3x4	27 - 105
0450 3006N	Tapping Screw - M3x6	7 - 101
0450 3008N	Tapping Screw - M3x8	13 - 101
0450 3008N	Tapping Screw - M3x8	17 - 101
0450 3008N	Tapping Screw - M3x8	25 - 104
0450 3008N	Tapping Screw - M3x8	25 - 101
0450 3008N	Tapping Screw - M3x8	11 - 101
0450 3008N	Tapping Screw - M3x8	9 - 101
0450 3008N	Tapping Screw - M3x8	19 - 101
0450 3008N	Tapping Screw - M3x8	15 - 102
0450 3008N	Tapping Screw - M3x8	27 - 104
0450 3008N	Tapping Screw - M3x8	7 - 102
0450 3008N	Tapping Screw - M3x8	5 - 101
0450 3008N	Tapping Screw - M3x8	27 - 103
0450 3008N	Tapping Screw - M3x8	3 - 103
0450 3008N	Tapping Screw - M3x8	21 - 101
0450 3010N	Tapping Screw - M3x10	19 - 102
0450 3010N	Tapping Screw - M3x10	17 - 103
0450 3010N	Tapping Screw - M3x10	13 - 103
0450 3010N	Tapping Screw - M3x10	23 - 101
0450 3010N	Tapping Screw - M3x10	11 - 102
0450 3012N	Tapping Screw: 3x12	15 - 101
0450 3012N	Tapping Screw: 3x12	25 - 102
0450 3012N	Tapping Screw: 3x12	17 - 102
0450 3012N	Tapping Screw: 3x12	7 - 103
0450 3012N	Tapping Screw: 3x12	21 - 102
0450 4010N	Tapping Screw: M4x10	23 - 103
0450 4010N	Tapping Screw: M4x10	25 - 107
0450 4010N	Tapping Screw: M4x10	3 - 102
0451 3006N	Tapping Screw - 3x6	25 - 103
0451 3006N	Tapping Screw - 3x6	25 - 105
0451 3006N	Tapping Screw - 3x6	3 - 101
0451 3006N	Tapping Screw - 3x6	27 - 101
0451 3006N	Tapping Screw - 3x6	27 - 102

Part No.	Description	Page and Index No.
0451 3006N	Tapping Screw - 3x6	11 - 104
0451 3008N	Tapping Screw - M3x8	11 - 105
0451 3014N	Tapping Screw: 3x14	21 - 103
0451 4006N	Tapping Screw - 4x6	25 - 106
0454 3006Q	Tapping Screw - M3x6	25 - 108
0712 0030N	Hexagonal Nut: M3	7 - 105
0805 0088	Retaining Ring - M6	13 - 102
0805 0089	Retaining Ring - M4	23 - 104
0805 0089	Retaining Ring - M4	11 - 103
0950 4006N	Screw - M4x6	25 - 109
0951 3016N	Screw: Polished Round: M3X16	7 - 104
0954 3008N	Screw - M3X8	17 - 104
0954 3010N	Screw: Polished Round/Spring: M3x10	17 - 105
1102 4201	Connector - 2P	53 - 101
1102 4201	Connector - 2P	47 - 101
1102 4202	Connector - 3P	47 - 102
1102 4202	Connector - 3P	53 - 102
1102 4203	CT Header - 4P	47 - 103
1102 4203	CT Header - 4P	39 - 101
1102 4203	CT Header - 4P	53 - 103
1102 4205	CT Header - 6P	53 - 104
1102 4205	CT Header - 6P	47 - 104
1102 4207	Connector - 8P	53 - 105
1102 4207	Connector - 8P	47 - 105
1102 4559	Connector - 3P	21 - 107
1102 4631	CT Connector - 2p	47 - 106
1102 4631	CT Connector - 2p	53 - 106
1102 4643	CT Connector - 2p	47 - 107
1102 4643	CT Connector - 2p	53 - 107
1102 5943	Connector - 2P	47 - 108
1102 5943	Connector - 2P	53 - 108
1102 6295	Connector - 2P	53 - 109
1102 6295	Connector - 2P	47 - 109
1102 6306	Connector - 13P	53 - 110
1102 6306	Connector - 13P	47 - 110

Part No.	Description	Page and Index No.
1102 6592	Connector - 8P	53 - 111
1102 6592	Connector - 8P	47 - 111
1102 7615	Connector - B8B-XH-A	39 - 102
1102 7625	Connector - TX24-80R-LT-N1	39 - 103
1102 7626	Connector - TX25-80P-LT-N1	53 - 112
1102 7626	Connector - TX25-80P-LT-N1	47 - 112
1102 8329	Connector - USB - UBB-4R-D14C	39 - 104
1102 8356	Connector - FX2MAB-44P	39 - 105
1102 8832	Connector - DM-3D4-B3210	39 - 106
1102 9079	Connector - RHM-88PL-SDK11-1	39 - 107
1102 9336	Connector: FPS009-2300-0	39 - 108
1102 9650	Connector - DHA-RAA36-R21VN	39 - 109
1102 9890	Connector: 5-1605706-2	39 - 110
1103 3849	Connector: 52610-1015	53 - 113
1103 3849	Connector: 52610-1015	47 - 113
1103 3983	Connector	47 - 114
1103 3983	Connector	53 - 114
1103 3987	Connector	47 - 115
1103 3987	Connector	53 - 115
1103 3988	Connector	47 - 116
1103 3988	Connector	53 - 116
1103 3989	Connector	47 - 117
1103 3989	Connector	53 - 117
1103 3990	Connector	47 - 118
1103 3990	Connector	53 - 118
1103 3999	Connector	53 - 119
1103 3999	Connector	47 - 119
1103 4002	Connector	47 - 120
1103 4002	Connector	53 - 120
1104 0764	IC Socket - 8 PIN	53 - 121
1104 0764	IC Socket - 8 PIN	47 - 121
1104 0821	IC Socket: 16008-B0A0020N	39 - 111
1105 0229	Clamp	7 - 106
1105 0292	Wire Saddle	23 - 102
1105 0292	Wire Saddle	25 - 111

Part No.	Description	Page and Index No.
1105 0292	Wire Saddle	27 - 109
1105 0373	Power Supply Code: 125V 15A NA	25 - 114
1105 0487	Harness Clamp	27 - 107
1105 0487	Harness Clamp	21 - 104
1105 0487	Harness Clamp	25 - 110
1105 0516	Clamp	27 - 108
1105 0516	Clamp	25 - 112
1105 0516	Clamp	21 - 105
1109 0039	Circuit Protector - ICP-S2.3	47 - 122
1109 0039	Circuit Protector - ICP-S2.3	53 - 122
1204 1541	Dip Switch	53 - 123
1204 1541	Dip Switch	47 - 123
1204 2521	Micro Switch	21 - 106
1204 2521	Micro Switch	27 - 110
1204 2628	Switch 250V/10A	25 - 113
1204 2756	DIP Switch: NDI-04H-V	39 - 112
1206 0112	Primary Lithium Cell: CR1632/1F2	39 - 113
1400 0571	Transistor - 2SA1577	47 - 124
1400 0571	Transistor - 2SA1577	53 - 124
1400 0688	Transistor -DTC143ZUA	53 - 125
1400 0688	Transistor -DTC143ZUA	47 - 125
1400 0767	Transistor: DTA114EUA	47 - 126
1400 0767	Transistor: DTA114EUA	53 - 126
1400 0801	Transistor - DTC113ZUA	53 - 127
1400 0801	Transistor - DTC113ZUA	47 - 127
1401 0972	Transistor-2SB1260	53 - 128
1401 0972	Transistor-2SB1260	47 - 128
1401 1228	Fet: SI3433DV-E3	39 - 114
1401 1296	Fet: TPC8115	39 - 115
1402 0545	Diode - 1SS244	53 - 129
1402 0545	Diode - 1SS244	47 - 129
1402 1336	Diode - 1SS355	53 - 130
1402 1336	Diode - 1SS355	47 - 130
1402 1511	Zener diode - Mtzj13b	47 - 131
1402 1511	Zener diode - MTZJ13B	53 - 131

Part No.	Description	Page and Index No.
1402 1664	Diode - HSU83	39 - 116
1402 1909	Diode: SDB310D	39 - 117
1402 1911	Diode - SDS511	39 - 118
1403 1131	LED: SML-311UT	39 - 119
1407 2187	TTLIC - SN74LS07NS	47 - 132
1407 2187	TTLIC - SN74LS07NS	53 - 132
1407 2219	IC - TD62003AP	53 - 133
1407 2219	IC - TD62003AP	47 - 133
1407 4919	IC - 74VHCT244 TSSOP	39 - 120
1407 5140	IC: TC74VHCT14AF	39 - 121
1407 5161	CPU- HD64F2633WF25	53 - 134
1407 5161	CPU- HD64F2633WF25	47 - 134
1407 5271	EEPROM - M24C02-BN6	53 - 135
1407 5271	EEPROM - M24C02-BN6	47 - 135
1407 5300	CMOS Logic - 74LVC16244A TSSOP	39 - 122
1407 5344	IC - SN74LV02APW	39 - 123
1407 5351	IC - SN74LV14APW	39 - 124
1407 5369	IC - SN74AHCT32PW	39 - 125
1407 5469	IC - SN74LV07APW	39 - 126
1407 5482	IC - SN74LVC07APW	39 - 127
1407 5508	IC - SN74LV125APW	39 - 128
1407 5511	IC: SN74LVC14APW	39 - 129
1407 5520	CMOS Logic: SN74LVC125APW	39 - 130
1407 5523	ROM - I2C SOP 3V	39 - 131
1407 5604	CMOS Logic: SN74LVC16245ADGG	39 - 132
1407 5868	Ethernet Cont LSI - DP83847ALQA56A	39 - 133
1407 5960	IC - SN74LVCZ161284ADGG	39 - 134
1407 6100	IC: SN74LVC1G04DCK	39 - 135
1407 6123	IC SN74LVC2G125DCU	39 - 136
1407 6132	IC: SN74LVC1G08DCK	39 - 137
1407 6145	IC: SN74LVC373APW	39 - 138
1407 6187	CMOS Logic - SN74LVC1G07DCK	39 - 139
1407 6203	CMOS Logic - SN74LVC3G07DCT	39 - 140
1407 6205	CMOS Logic - SN74LVC1G06DCK	39 - 141
1407 6265	Real Time Clock: R2025S	39 - 142

Part No.	Description	Page and Index No.
1407 6305	CPU - RM5231A-400L	39 - 143
1407 6400	Clock Generator - lcs960013bflf	39 - 144
1407 6465	Ram: Fm251256-pg (rev.ag)	39 - 145
1407 6468	CMOS Logic: SN74AHCT1G126DCK	39 - 146
1407 6562	IC - SN74LVC1G126DCK	39 - 147
1408 1770	Series Regulator - R5323N013A	53 - 136
1408 1770	Series Regulator - R5323N013A	47 - 136
1408 1778	IC: R3112Q101A	39 - 148
1408 1815	IC - R3112Q151A	39 - 149
1408 1826	IC - R3112Q421A	39 - 150
1408 1834	IC - R5510H011N	53 - 137
1408 1834	IC - R5510H011N	47 - 137
1408 1911	Comparator - LM2903PW	47 - 138
1408 1911	Comparator - LM2903PW	53 - 138
1408 2053	IC: R3112Q291A-FA	39 - 151
1408 2096	IC - BD9103FVM	39 - 152
1408 2213	DC/DC Converter - H8d3214	39 - 153
1502 0063	Buzzer: PKM22EPPH4002-B0	39 - 154
1503 0697	Crystal Oscillator MA-406 20 MHz	47 - 139
1503 0697	Crystal Oscillator MA-406 20 MHz	53 - 139
1503 0842	Oscillator - 14.31818MHZ	39 - 155
1503 1138	Crystal Oscillator - 48 MHz	39 - 156
1503 1309	Crystal Oscillator - 25 MHz	39 - 157
1601 7752	Resistor Array - 10K Ω \pm 5%	47 - 140
1601 7752	Resistor Array - 10K Ω \pm 5%	53 - 140
1601 7791	Resistor Array - 1K Ω \pm 5%	53 - 141
1601 7791	Resistor Array - 1K Ω \pm 5%	47 - 141
1601 7866	Resistor Array - 150 Ω \pm 5%	47 - 142
1601 7866	Resistor Array - 150 Ω \pm 5%	53 - 142
1601 7871	Resistor - 68 Ω \pm 5% 1/16W	47 - 143
1601 7871	Resistor - 68 Ω \pm 5% 1/16W	53 - 143
1601 7898	Resistor Array	47 - 144
1601 7898	Resistor Array	53 - 144
1604 4728	Capacitor - 100 μ F \pm 20% 16V	39 - 158
1604 4730	Capacitor - 47 μ F \pm 20% 50V	47 - 145

Part No.	Description	Page and Index No.
1604 4730	Capacitor - 47 μ F \pm 20% 50V	53 - 145
1604 4733	Capacitor - 100 μ F \pm 20% 10V	53 - 146
1604 4733	Capacitor - 100 μ F \pm 20% 10V	47 - 146
1604 4955	Capacitor - 10 μ F \pm 20% 16V	53 - 147
1604 4955	Capacitor - 10 μ F \pm 20% 16V	47 - 147
1604 5065	Capacitor 10 μ F: \pm 20%: 50V	53 - 148
1604 5065	Capacitor 10 μ F: \pm 20%: 50V	47 - 148
1604 5135	Capacitor - 1000 μ F \pm 20% 10V	39 - 159
1605 0976	Capacitor - 1 μ F +80% -20% 10V	53 - 149
1605 0976	Capacitor - 1 μ F +80% -20% 10V	47 - 149
1605 1124	Capacitor - 4.7 μ F +80 -20% 10V	39 - 160
1605 1148	Capacitor - 0.1 μ F +80-20% 50V	53 - 150
1605 1148	Capacitor - 0.1 μ F +80-20% 50V	47 - 150
1605 1163	Ceramic Capacitor - 560pf: \pm 5%: 50V	53 - 151
1605 1163	Ceramic Capacitor - 560pf: \pm 5%: 50V	47 - 151
1605 1190	Resistor - 0.022 μ F \pm 10% 50V	47 - 152
1605 1190	Resistor - 0.022 μ F \pm 10% 50V	53 - 152
1605 1194	Capacitor: 3pf: \pm 0.25pf: 50V	39 - 161
1605 1199	Capacitor - 8PF \pm 0.5pF 50V	39 - 162
1605 1200	Capacitor - 10PF \pm 0.5pF 50V	39 - 163
1605 1204	Capacitor-pf50v	39 - 164
1605 1205	Capacitor - 33pF \pm 5% 50V	39 - 165
1605 1208	Capacitor: 100pf: \pm 5%: 50V	39 - 166
1605 1211	Capacitor - 220pF \pm 10% 50V	39 - 167
1605 1212	Capacitor - 470pF \pm 10% 50V	39 - 168
1605 1214	Capacitor - 1000pF \pm 10% 50V	47 - 153
1605 1214	Capacitor - 1000pF \pm 10% 50V	53 - 153
1605 1214	Capacitor - 1000pF \pm 10% 50V	39 - 169
1605 1221	Capacitor - 0.1 μ F+80-20%16V	47 - 154
1605 1221	Capacitor - 0.1 μ F+80-20%16V	53 - 154
1605 1221	Capacitor - 0.1 μ F+80-20%16V	39 - 170
1605 1240	Capacitor - 0.01 μ F \pm 10% 25V	39 - 171
1605 1289	Capacitor - 0.1 μ F \pm 10% 10V	39 - 172
1605 1295	Capacitor: 10 μ F: +80-20%: 10V	39 - 173
1605 1296	Capacitor - 330pF \pm 10% 50V	39 - 174

Part No.	Description	Page and Index No.
1605 1303	Capacitor - 0.01 μ F +80-20% 50V	39 - 175
1605 1303	Capacitor - 0.01 μ F +80-20% 50V	47 - 155
1605 1303	Capacitor - 0.01 μ F +80-20% 50V	53 - 155
1605 1305	Capacitor - 1 μ F +80-20% 6.3V	39 - 176
1605 1306	Capacitor - 1 μ F \pm 10% 10V	39 - 177
1605 1307	Capacitor - 2.2 μ F +80-20% 11V	39 - 178
1605 1344	Capacitor: 33PF: \pm 5%: 50V	39 - 179
1605 1353	Capacitor - 0.1 μ F \pm 10% 25V	47 - 156
1605 1353	Capacitor - 0.1 μ F \pm 10% 25V	53 - 156
1605 1391	Capacitor - 22 μ F: \pm 20%: 6.3V	39 - 180
1605 1406	Capacitor - 10 μ F \pm 10% 6.3V	39 - 181
1605 1447	Capacitor: 470PF: \pm 5%: 50V	39 - 182
1605 1474	Capacitor - 47 μ F \pm 20% 6.3V	39 - 183
1605 1597	Capacitor: 2.2 μ F: +80-20%: 50V	39 - 184
1607 0810	Filter - BK2125HS121	47 - 157
1607 0810	Filter - BK2125HS121	53 - 157
1607 0978	Inductor - BLM21P300SPB	39 - 185
1607 1051	Filter -FBMJ2125HS420	39 - 186
1607 1061	Filter - BLM11P300SPB	39 - 187
1607 1076	Filter - MMZ1608Y152B	53 - 158
1607 1076	Filter - MMZ1608Y152B	47 - 158
1607 1196	Inductor -220uh \pm 20% 0.33A	53 - 159
1607 1196	Inductor -220uh \pm 20% 0.33A	47 - 159
1607 1241	Filter - MMZ1608R102C	53 - 160
1607 1241	Filter - MMZ1608R102C	47 - 160
1607 1362	Coil - ACM3225-800-2P	39 - 188
1607 1477	Inductor - RLF7030-4R7M3R4	39 - 189
1607 1489	Filter - MMZ1608B301C	47 - 161
1607 1489	Filter - MMZ1608B301C	53 - 161
1607 1565	Ferrite Core: Atfc-16813 (EU)	27 - 111
1607 1565	Ferrite Core: ATFC-16813 (EU)	7 - 107
1607 1565	Ferrite Core: ATFC-16813	3 - 104
1609 0005	Resistor: 33 Ω : \pm 5%: 1/16W	39 - 190
1609 0006	Resistor: 10k Ω : \pm 5%: 1/16W	39 - 191
1609 0011	Resistor: 22 Ω : \pm 5%: 1/16W	39 - 192

Part No.	Description	Page and Index No.
1609 0016	Resistor: 56 Ω: ±5%: 1/16W	39 - 193
1609 0026	Resistor - 47Ω ±5% 1/16W	39 - 194
1609 0096	Resistor Array: 10KΩ: ±5%: 1/16W: 4number	39 - 195
1609 0098	Resistor Array: 33Ω: ±5%: 1/16W: 4number	39 - 196
1609 0101	Resistor Array: 47Ω: ±5%: 1/16W: 4number	39 - 197
1609 0110	Resistor Array: 10 Ω: ±5%: 1/16W: 4number	39 - 198
1609 0111	Resistor Array: 1KΩ: ±5%: 1/16W: 4number	39 - 199
1609 0114	Resistor Array: 68Ω: ±5%: 1/16W: 4number	39 - 200
1610 1377	Resistor - 0.1 Ω ±2% 1/2W	39 - 201
1610 1409	Chip Resistor - 6.8Ω ±5%	47 - 162
1610 1409	Chip Resistor - 6.8Ω ±5%	53 - 162
1610 1732	Resistor: 270 Ω: ±5%: 1W: 6332	53 - 163
1610 1732	Resistor: 270 Ω: ±5%: 1w: 6332	47 - 163
1610 1871	Resistor - 0.22 Ω ±1%	39 - 202
1611 8472	Resistor - 4.7K Ω	53 - 164
1611 8472	Resistor - 4.7K Ω	47 - 164
1632 0000	Resistor - 0 Ω 1/8W	39 - 203
1633 0000	Resistor - 0 Ω 1/10W	39 - 204
1634 0000	Resistor - 0 Ω 1/16W	39 - 205
1634 0000	Resistor - 0 Ω 1/16W	53 - 165
1634 0000	Resistor - 0 Ω 1/16W	47 - 165
1650 4100	Resistor - 10Ω ±5% 1/10W	53 - 166
1650 4100	Resistor - 10Ω ±5% 1/10W	47 - 166
1650 4101	Resistor - 100Ω±5%1/10W	53 - 167
1650 4101	Resistor - 100Ω±5%1/10W	47 - 167
1650 4102	Resistor - 1KΩ ±5% 1/10W	39 - 206
1650 4102	Resistor - 1KΩ ±5% 1/10W	47 - 168
1650 4102	Resistor - 1KΩ ±5% 1/10W	53 - 168
1650 4103	Resistor - 10KΩ ±5% 1/10W	47 - 169
1650 4103	Resistor - 10KΩ ±5% 1/10W	53 - 169
1650 4122	Resistor - 1.2KΩ ±5% 1/10W	53 - 170
1650 4122	Resistor - 1.2KΩ ±5% 1/10W	47 - 170
1650 4153	Resistor - 15K Ω ±5% 1/10W	53 - 171
1650 4153	Resistor - 15K Ω ±5% 1/10W	47 - 171
1650 4201	Resistor - 200Ω±5%1/10W	53 - 172

Part No.	Description	Page and Index No.
1650 4201	Resistor - 200Ω±5%1/10W	47 - 172
1650 4220	Chip Resistor - 22Ω ±5% 1/10W	39 - 207
1650 4222	Resistor - 2.2KΩ±5%1/10W	53 - 173
1650 4222	Resistor - 2.2KΩ±5%1/10W	47 - 173
1650 4300	Resistor - 30Ω±5%1/10W	53 - 174
1650 4300	Resistor - 30Ω±5%1/10W	47 - 174
1650 4302	Resistor - 3KΩ±5%1/10W	53 - 175
1650 4302	Resistor - 3KΩ±5%1/10W	47 - 175
1650 4330	Chip Resistor - 33Ω ±5% 1/10W	39 - 208
1650 4330	Chip Resistor - 33Ω ±5% 1/10W	53 - 176
1650 4330	Chip Resistor - 33Ω ±5% 1/10W	47 - 176
1650 4431	Resistor - 430Ω±5% 1/10W	53 - 177
1650 4431	Resistor - 430Ω±5% 1/10W	47 - 177
1650 4470	Resistor - 47Ω±5%1/10W	39 - 209
1650 4471	Resistor - 470Ω±5%1/10W	47 - 178
1650 4471	Resistor - 470Ω±5%1/10W	53 - 178
1650 4472	Resistor - 4.7KΩ ±5% 1/10W	47 - 179
1650 4472	Resistor - 4.7KΩ ±5% 1/10W	53 - 179
1650 4473	Resistor - 47KΩ±5%1/10W	47 - 180
1650 4473	Resistor - 47KΩ±5%1/10W	53 - 180
1650 4563	Resistor - 56KΩ±5%1/10W	47 - 181
1650 4563	Resistor - 56KΩ±5%1/10W	53 - 181
1650 4622	Resistor: 6.2kΩ: ±5%: 1/10W	47 - 182
1650 4622	Resistor: 6.2kΩ: ±5%: 1/10W	53 - 182
1650 4680	Resistor - 68Ω±5%1/10W	47 - 183
1650 4680	Resistor - 68Ω±5%1/10W	53 - 183
1650 4681	Resistor - 680Ω ±5% 1/10W	47 - 184
1650 4681	Resistor - 680Ω ±5% 1/10W	53 - 184
1650 5100	Chip Resistor - 10 Ω±5%1/16W	39 - 210
1650 5101	Chip Resistor - 100 Ω±5%1/16W	39 - 211
1650 5102	Chip Resistor - 1kΩ±5%1/16W	39 - 212
1650 5103	Chip Resistor - 10kΩ±5%1/16W	39 - 213
1650 5104	Chip Resistor - 100kΩ±5%1/16W	39 - 214
1650 5109	Chip Resistor 1Ω ±5% 1/16W	39 - 215
1650 5122	Chip Resistor - 1.2kΩ±5%1/16W	39 - 216

Part No.	Description	Page and Index No.
1650 5182	Chip Resistor - 1.8kΩ±5% 1/16W	39 - 217
1650 5203	Resistor - 20KΩ ±5% 1/16W	39 - 218
1650 5220	Resistor - 22Ω ±5% 1/16W	39 - 219
1650 5221	Chip Resistor - 220Ω±5% 1/16W	39 - 220
1650 5222	Resistor - 2.2KΩ ±5% 1/16W	39 - 221
1650 5271	Chip Resistor 270Ω ±5% 1/16W	39 - 222
1650 5272	Chip Resistor: 2.7kΩ: ±5%: 1/16W	39 - 223
1650 5330	Chip Resistor - 33Ω±5% 1/16W	39 - 224
1650 5332	Resistor - 3.3KΩ ±5% 1/16W	39 - 225
1650 5470	Chip Resistor 47Ω ±5% 1/16W	39 - 226
1650 5472	Chip Resistor: 4.7kΩ: ±5%: 1/16W	39 - 227
1650 5473	Chip Resistor - 47kΩ ±5% 1/16W	39 - 228
1650 5512	Chip Resistor 5.1kΩ ±5% 1/16W	39 - 229
1650 5560	Chip Resistor 56Ω ±5% 1/16W	39 - 230
1650 5562	Chip Resistor: 5.6kΩ: ±5%: 1/16W	39 - 231
1650 5621	Chip Resistor 620Ω ±5% 1/16W	39 - 232
1650 5680	Resistor - 68Ω ±5% 1/16W	39 - 233
1650 5683	Chip Resistor 68kΩ ±5% 1/16W	39 - 234
1650 5820	Chip Resistor: 82Ω: ±5%: 1/16W	39 - 235
1650 5822	Chip Resistor: 8.2kΩ: ±5%: 1/16W	39 - 236
1653 4999	Resistor - 49.9Ω ±1% 1/8W	39 - 237
1653 5499	Resistor - 54.9Ω ±1% 1/8W	39 - 238
1654 1002	Resistor - 10KΩ±5% 1/10W	53 - 185
1654 1002	Resistor - 10KΩ±5% 1/10W	47 - 185
1654 1004	Chip Resistor - 1mΩ ±1% 1/10W	39 - 239
1654 1102	Resistor - 11KΩ±1% 1/10W	39 - 240
1654 1501	Resistor - 1.5K Ω ±1% 1/10W 1608	39 - 241
1654 1502	Resistor - 15KΩ±1% 1/10W	39 - 242
1654 3002	Resistor - 30KΩ±1% 1/10W	39 - 243
1654 3909	Resistor - 39Ω±1% 1/10W	39 - 244
1654 4301	Resistor - 4.3KΩ±1% 1/10W	53 - 186
1654 4301	Resistor - 4.3KΩ±1% 1/10W	47 - 186
1654 5101	Resistor - 5.1KΩ±1% 1/10W	39 - 245
1654 6800	Resistor - 680 Ω ±1% 1/10W	39 - 246
1654 6801	Resistor - 6.8KΩ±1% 1/10W	53 - 187

Part No.	Description	Page and Index No.
1654 6801	Resistor - 6.8KΩ±1% 1/10W	47 - 187
1655 0000	Chip Resistor - 0Ω±0% 1/16W	39 - 247
1655 1002	Chip Resistor - 10kΩ±1% 1/16W	39 - 248
1655 1502	Resistor - 15KΩ ±1% 1/16W	39 - 249
1655 1651	Resistor: 1.65k Ω: ±1%: 1/16w: 1005	39 - 250
1660 0100	Capacitor - 10PF ±0.5pF 50V	53 - 188
1660 0100	Capacitor - 10PF ±0.5pF 50V	47 - 188
1660 2101	Capacitor - 100pF - ±10% - 50V	47 - 189
1660 2101	Capacitor - 100pF - ±10% - 50V	53 - 189
1660 2220	Capacitor - 22pF ±20% 35V	47 - 190
1660 2220	Capacitor - 22pF ±20% 35V	53 - 190
1660 2221	Capacitor - 220pF +80-20% 50V	53 - 191
1660 2221	Capacitor - 220pF +80-20% 50V	47 - 191
1660 2330	Capacitor - 33pF - ±5% - 50V	47 - 192
1660 2330	Capacitor - 33pF - ±5% - 50V	53 - 192
1660 2391	Capacitor - 390pF ±5% 50V	53 - 193
1660 2391	Capacitor - 390pF ±5% 50V	47 - 193
1660 2471	Capacitor - 470pF - ±5% - 50V	53 - 194
1660 2471	Capacitor - 470pF - ±5% - 50V	47 - 194
1660 2471	Capacitor - 470pF - ±5% - 50V	39 - 251
1660 4102	Capacitor - 1000pF ±10% 50V	47 - 195
1660 4102	Capacitor - 1000pF ±10% 50V	53 - 195
1660 4103	Capacitor - 10000pF - ±10% - 50V	47 - 196
1660 4103	Capacitor - 10000pF - ±10% - 50V	53 - 196
1660 4222	Capacitor - 2200pF - ±10% - 50V	53 - 197
1660 4222	Capacitor - 2200pF - ±10% - 50V	47 - 197
1660 4332	Capacitor - 3300pF - ±10% - 50V	53 - 198
1660 4332	Capacitor - 3300pF - ±10% - 50V	47 - 198
1660 4472	Capacitor - 4700PF±10% 50V	39 - 252
1660 6103	Capacitor - 10000pF - +80%-20%50V	39 - 253
1660 8104	Capacitor - 0.1μF +80-20% 25V	39 - 254
1660 8104	Capacitor - 0.1μF +80-20% 25V	53 - 199
1660 8104	Capacitor - 0.1μF +80-20% 25V	47 - 199
1902 0056	RAM - 256k X870NS G14	53 - 200
1902 0056	RAM - 256k X870ns G14	47 - 200

Part No.	Description	Page and Index No.
1906 0105	Flash Memory: S29GL128N10TFI020	39 - 255
1907 0013	SDRAM: 256m: 4mx16x4: 133 MHz: G1	39 - 256

Part No.	Description	Page and Index No.
5215 2713	Bottom Plate Pad	5 - 5
5215 2713	Bottom Plate Pad	9 - 15
5353 1803	Wave Washer	23 - 15

Envelope Feeder Type 400 (G362)

Envelope Feeder Type 400 (G362)

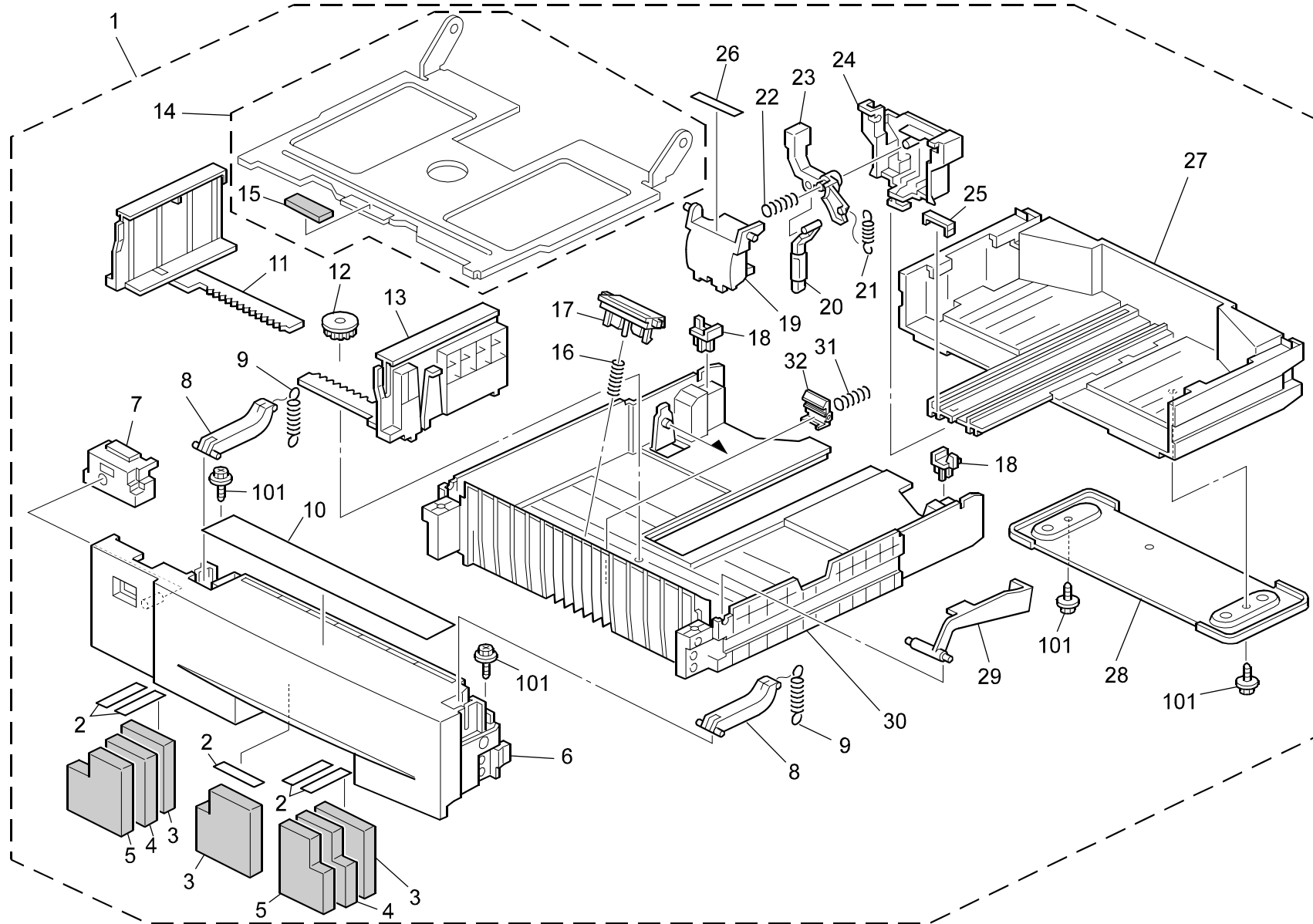
PARTS CATALOG

This catalog gives the numbers and names of parts on this machine.

1.ENVELOPE FEEDER (G362)	2
2.DECALS AND DOCUMENTS (G362)	4
PARTS INDEX.....	7

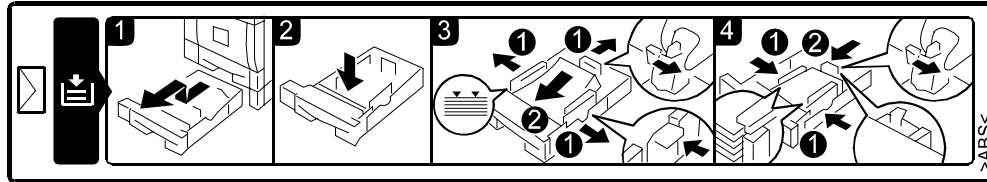
August ,31 ' 2006

1.ENVELOPE FEEDER (G362)

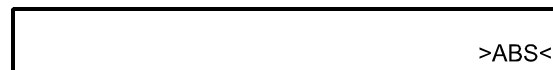


2.DECALS AND DOCUMENTS (G362)

1



2



2.DECALS AND DOCUMENTS (G362)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G362 3144	Paper Set Direction Label	1
2	G362 3088	Scale Label - End Fence	1

Index No.	Part No.	Description	Q'ty Per Assembly
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Parts Index

PM Parts Index

Section Name	Part No.	Description in Service Manual	Description in Parts Catalog	Q'ty Per Assembly	Page and Index No.
ENVELOPE FEEDER (G362)	G096 3066	Friction Pad	Friction Pad Adhesion	1	3- 17

Parts Index

Part No.	Description	Page and Index No.
G362 3043	Tray Bottom Plate (RoHs)	3 - 14
G362 3050	Paper Tray Ass'y	3 - 1
G362 3053	X/O MB1	3 - 14
G362 3059	Paper Tray Stopper Pawl	3 - 32
G362 3061	Left Side Fence	3 - 11
G362 3062	Right Side Fence	3 - 13
G362 3066	Cassette Protection	3 - 18
G362 3069	Separation Compression Spring	3 - 16
G362 3082	Paper Size Sensor Board	3 - 7
G362 3083	Tension Spring Base	3 - 9
G362 3088	Scale Label - End Fence	3 - 26
G362 3088	Scale Label - End Fence	5 - 2
G362 3144	Paper Set Direction Label	3 - 10
G362 3144	Paper Set Direction Label	5 - 1

Part No.	Description	Page and Index No.
A267 2869	Gear - 16Z	3 - 12
G029 2608	X/O MB1	3 - 15
G096 3051	Paper Tray	3 - 30
G096 3052	Paper Tray Cover	3 - 6
G096 3060	Rear Paper Tray	3 - 27
G096 3063	Paper Tray Cap	3 - 25
G096 3065	Paper Tray Supporting Plate	3 - 28
G096 3066	Friction Pad Adhesion	3 - 17
G096 3070	Paper Volume Sensor Board	3 - 29
G096 3071	Paper Tray Arm	3 - 8
G096 3085	End Fence	3 - 24
G096 3086	End Fence Lever	3 - 23
G096 3087	End Fence Protection	3 - 20
G096 3088	End Fence Pressure	3 - 19
G096 3089	End Fence Compression Spring 3.5n	3 - 22
G096 3090	End Fence Tension Spring 12n	3 - 21
G096 3091	Sheet - Tray 1	3 - 3
G096 3092	Sheet - Tray 2	3 - 4
G096 3093	Sheet - Tray 3	3 - 5
G096 3094	Tape - Sheet : Tray	3 - 2
G360 3091		3 - 3
G360 3092		3 - 4
G360 3093		3 - 5
G556 3078	Release Spring	3 - 31

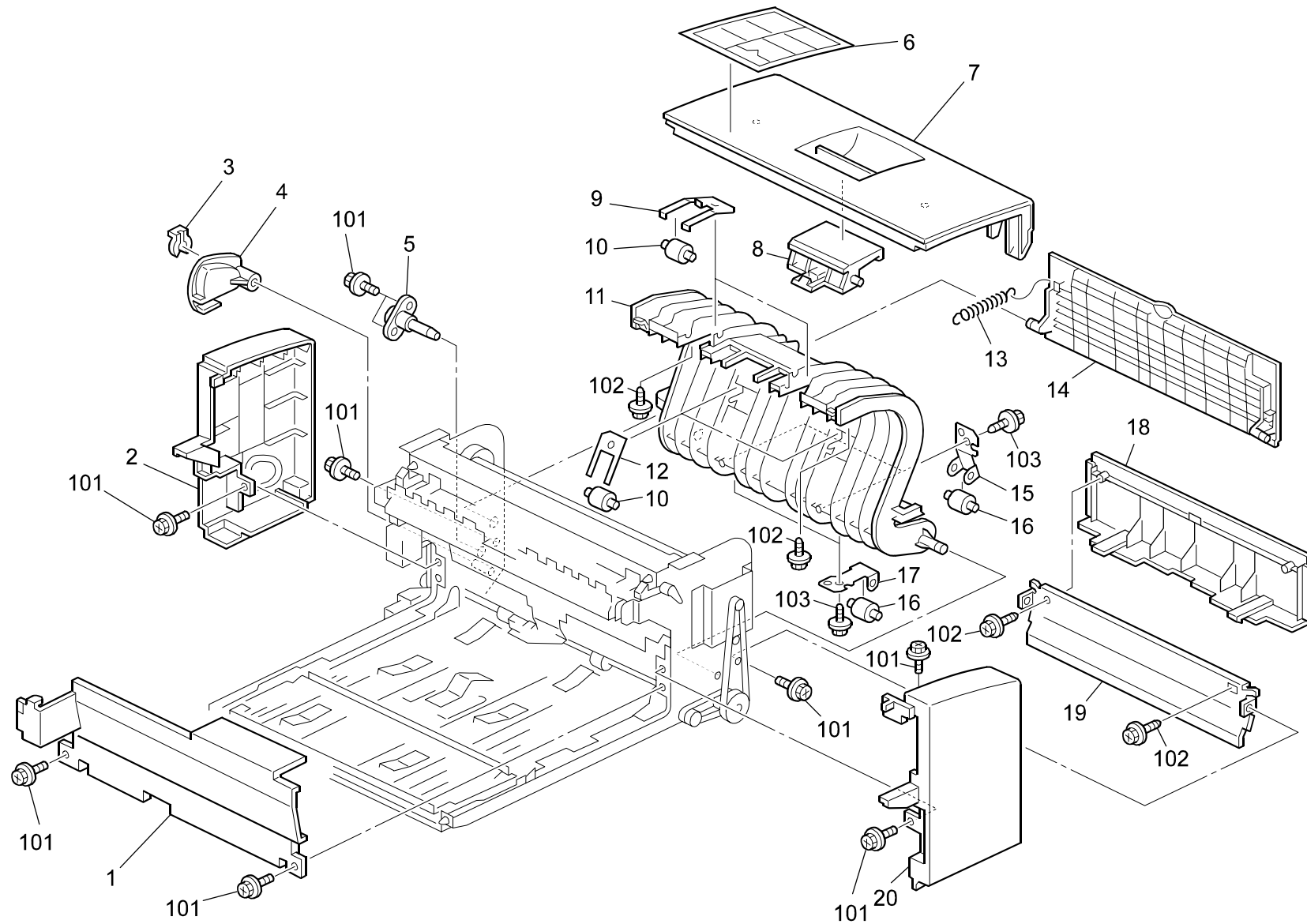
Part No.	Description	Page and Index No.
0450 3008N	Tapping Screw - M3x8	3 -101

Part No.	Description	Page and Index No.
5215 2713	Bottom Plate pad (RoHs)	3 - 15

**DUPLEX UNIT AD1000 (G893)
PARTS LOCATION AND LIST**

This section instructs you as to the numbers and names of parts on this machine.

1.DUPLEX UNIT 1 (G893)

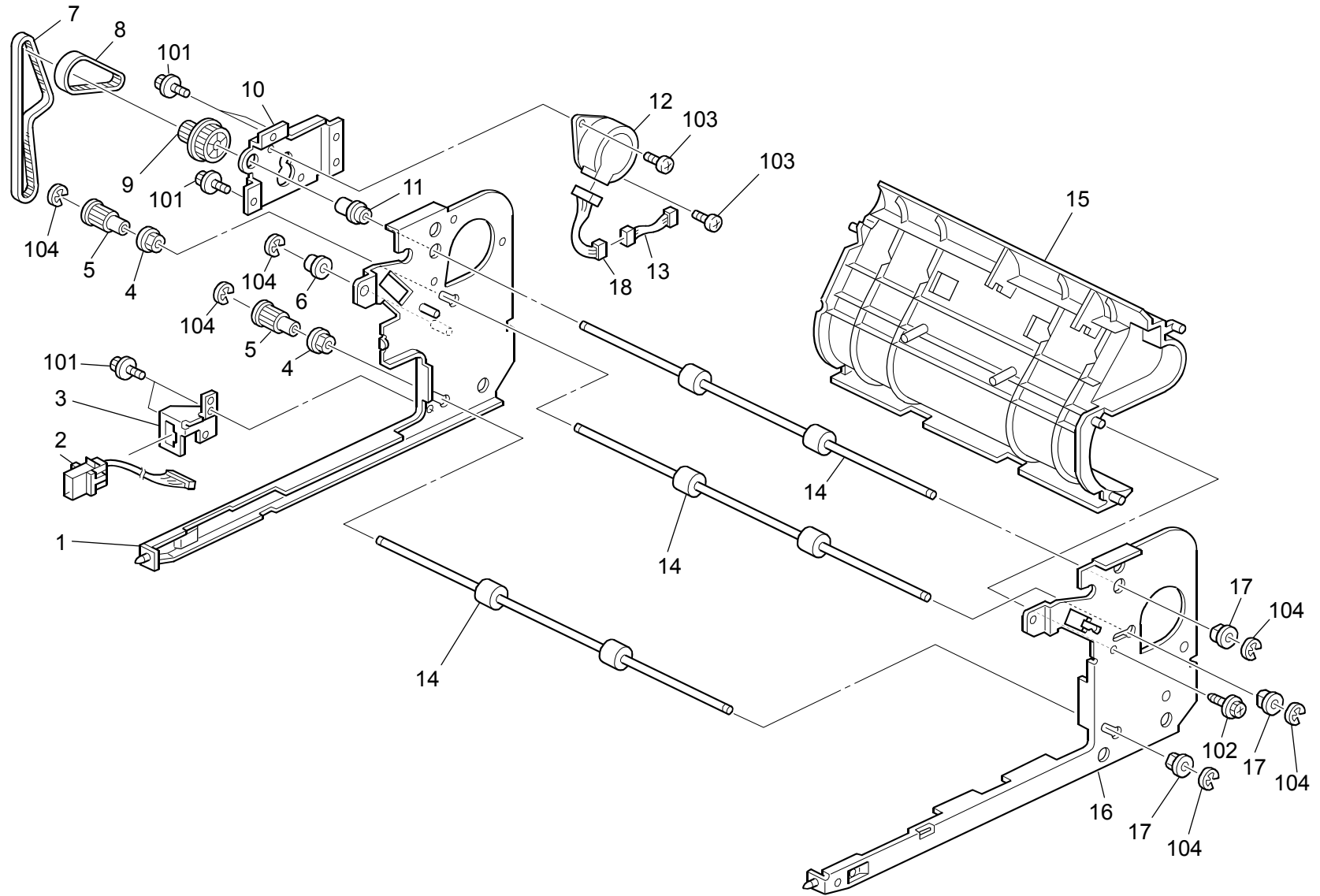


1. DUPLEX UNIT 1 (G893)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G361 1200	Base Cover	1
2	G361 1270	Left Cover	1
3	5447 2681	Snap Ring	1
4	G361 1190	Release Grip	1
5	G552 7364	Shaft	1
6	G361 2563	Decal Misfeed Removal	1
7	G361 2560	Open And Close Upper Cover	1
8	G361 2565	Open & Close Lever	1
9	G361 2555	Vertical Transport Spring Plate	2
10	G552 7360	Driven Roller	4
11	G361 2540	Left Open And Close Guide	1
12	G552 7366	Spring Plate - Vertical Transport	2
13	G552 7392	Cover Spring	1
14	G361 1280	Open & Close Switchback Cover	1
15	G552 7292	Spring Plate - Lower Vertical Trans	2
16	G552 7354	Driven Roller	4
17	G552 7293	Spring Plate - Driven	2
18	G361 1260	Rear Cover	1
19	G361 2740	Feed Paper Again Guide Plate	1
20	G361 1250	Right Cove	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0454 3006Q	Tapping Screw - M3x6	
102	0450 3008N	Tapping Screw - M3x8	
103	0450 3006N	Tapping Screw - M3x6	

2. DUPLEX UNIT 2 (G893)



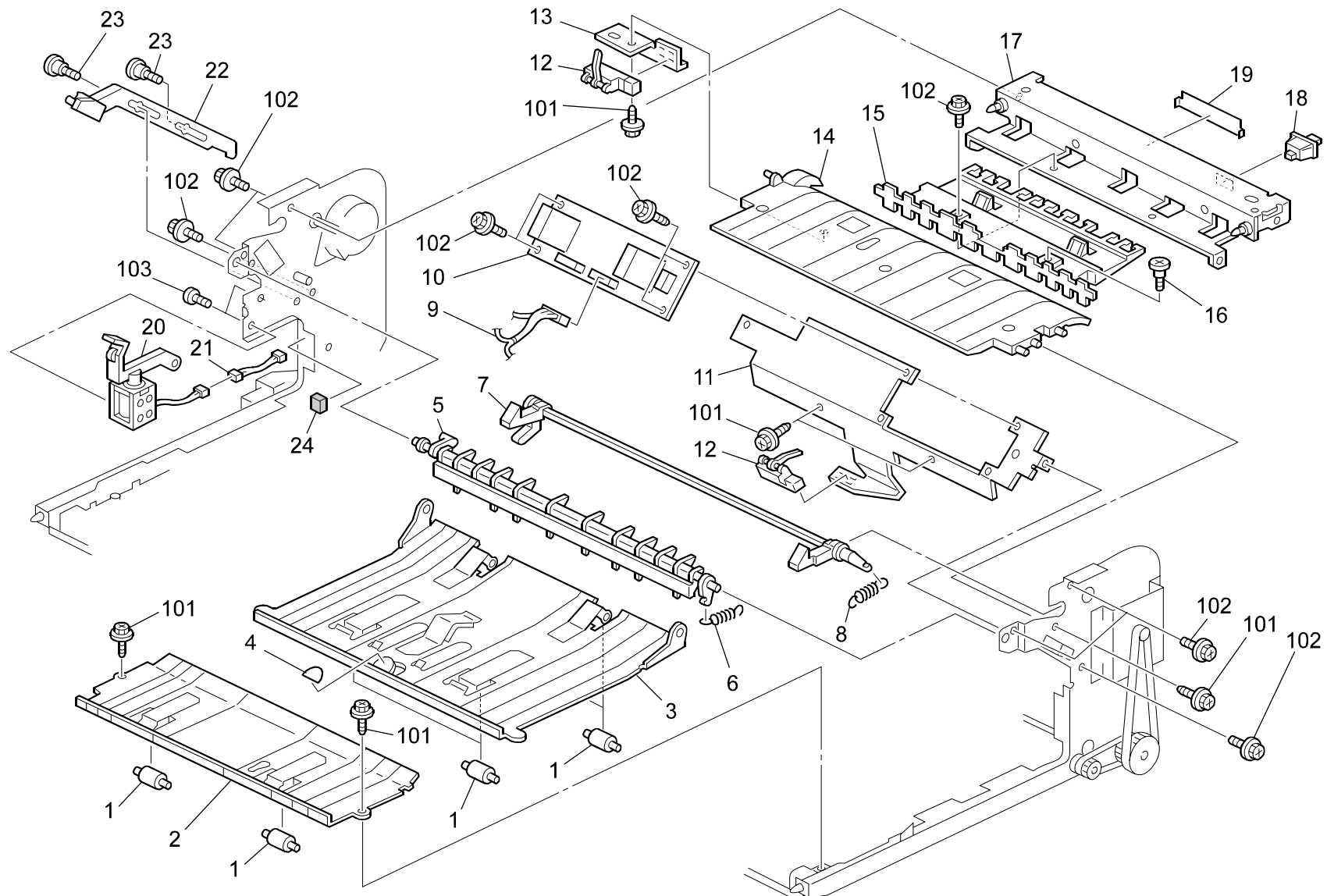
2.DUPLEX UNIT 2 (G893)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G361 1110	Rear Side Plate Ass'y	1
2	G361 5300	Harness - I/F	1
3	G361 1150	Connector Bracket	1
4	A259 6754	Bushing - 6 6mm	2
5	G552 7011	Pulley - 16Z	2
6	G552 7015	Idle Roller	1
7	G361 2600	Timing Belt 40s3m363cl	1
8	G361 2650	Timing Belt 40s2m140	1
9	G361 2580	Transport Upper Pulley	1
10	G361 2590	Vertical Transport Bracket Motor	1
11	G552 7033	Bushing - 6mm	1
12	G360 5700	Stepper Motor: DC 24v 19.2w	1
13	G361 5340	Harness - Motor	1
14	G361 2571	Transport Roller	3
15	G361 2520	Lower Transport Right Guide Plate	1
16	G361 1100	Front Side Plate Ass'y	1
17	AA08 2118	Bushing - M6	3
18	G361 5340	Harness - Motor	1

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Index No.	Part No.	Description	Q'ty Per Assembly
101	0454 3006Q	Tapping Screw - M3x6	
102	0450 3008N	Tapping Screw - M3x8	
103	0453 3005N	Binding Self Tapping Screw:3x5	
104	0720 0040E	Retaining Ring - M4	

3.DUPLEX UNIT 3 (G893)

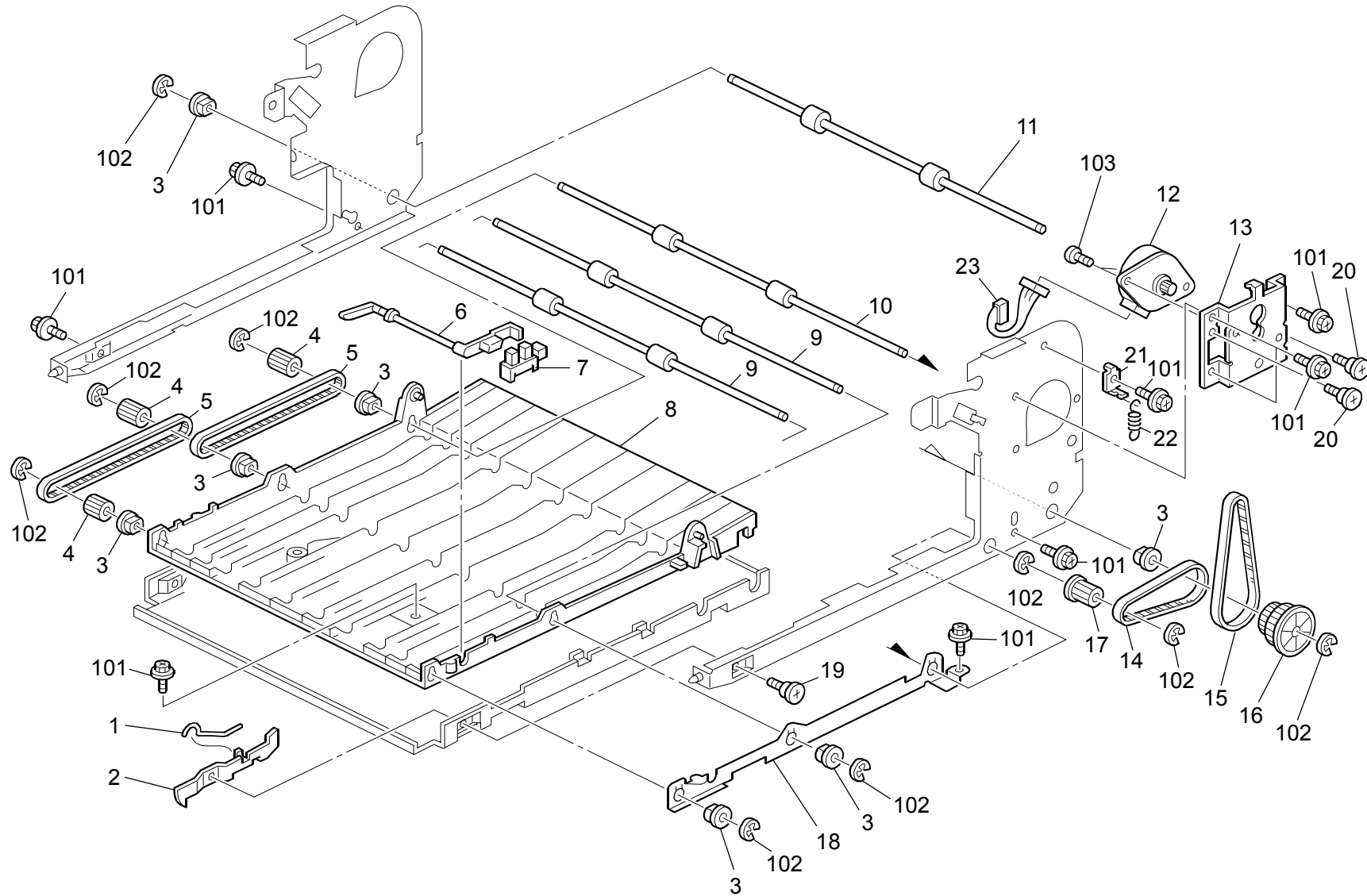


3.DUPLEX UNIT 3 (G893)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G552 7285	Driven Roller	1
2	G361 2850	Open And Close: Right Guide	1
3	G361 2840	Left Open And Close Guide Plate	1
4	G361 2835	Decal: Guide Plate: Z	1
5	G361 1170	Entrance Gate Pawl	1
6	G552 7362	Fork Gate Spring	1
7	G361 1140	Release Pawl Ass'y	1
8	G552 7361	Lever Spring	1
9	G361 5310	Harness - Sensor	1
10	G893 5100	Duplex Board	1
11	G361 2610	Lower Sensor Bracket	1
12	G361 5570	Photointerruptor - Duplex	2
13	G552 7039	Upper Sensor Bracket	1
14	G361 2530	Upper Transport Right Guide Plate	1
15	G361 1180	Upper Duplex Guide Plate	1
16	AA14 3820	Stepped Screw	1
17	G361 1120	Upper Stay Ass'y	1
18	G020 5626	Push Switch	1
19	G552 7316	Lever Guide	1
20	G361 5560	DC Solenoid Ass'y	1
21	G361 5330	Harness - Solenoid	1
22	G361 1160	Link	1
23	AA14 3821	Stepped screw - M3	2
24	G361 1107	Gasket: Stgn 13-10:15mm	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3008N	Tapping Screw - M3x8	
102	0454 3006Q	Tapping Screw - M3x6	
103	0313 0040N	Screw:M3X4	

4.DUPLEX UNIT 4 (G893)

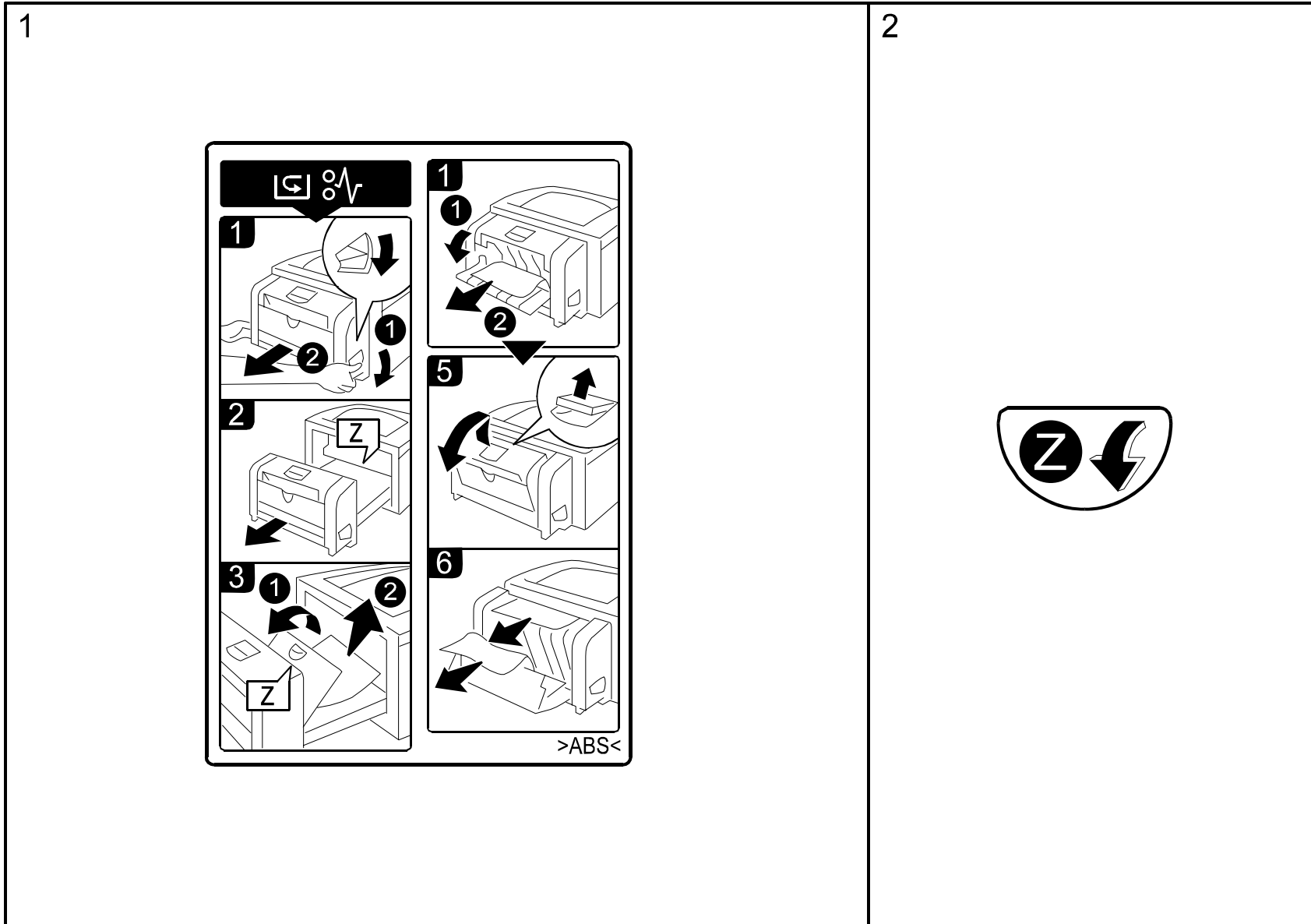


4.DUPLEX UNIT 4 (G893)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G552 7228	Lever Spring	1
2	G552 7399	Rear Lever	1
3	AA08 2118	Bushing - M6	6
4	G552 7217	Pulley - 18Z	3
5	G361 2800	Timing Belt 40s2n286	2
6	G361 2810	Sensor Feeler	1
7	AW02 0156	Photointerruptor:Ee-sx4235a-p2	1
8	G361 2830	Lower Transport Guide Plate	1
9	G361 2791	Horizontal Transport Roller	2
10	G361 2781	Horizontal Drive transport Roller	1
11	G361 2711	Feed Paper Again Transport Roller	1
12	G360 5700	Stepper Motor:Dc24v 19.2w	1
13	G361 2761	Feed Paper Again Motor Bracket	1
14	G361 2750	Timing Belt 40s3m195	1
15	G361 2770	Timing Belt 40s2m300	1
16	G361 2730	Pulley - 28/55Z	1
17	G361 2720	Pulley - 18Z	1
18	G361 2820	Transport Horizontal Ground Plate	1
19	AA14 3544	Screw - M3	1
20	AA14 3822	Stepped screw - M3.5	2
21	G361 2765	Bracket: Spring: Feed Paper Again	1
22	B104 2672	Spring: Separate: Pressure	1
23	G361 5340	Harness - Motor	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0454 3006Q	Tapping Screw - M3x6	
102	0720 0040E	Retaining Ring - M4	
103	0453 3005N	Binding Self Tapping Screw:3x5	

5.DECALS AND DOCUMENTS (G893)



5.DECALS AND DOCUMENTS (G893)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G361 2563	Decal Misfeed Removal	1
2	G361 2835	Decal: Guide Plate: Z	1

Index No.	Part No.	Description	Q'ty Per Assembly
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**DUPLEX UNIT AD1000 (G893)
PARTS INDEX**

This section instructs you as to the numbers and names of parts on this machine.

Parts Index

Part No.	Description	Page and Index No.
G893 5100	Duplex Board	7 - 10

Part No.	Description	Page and Index No.
A259 6754	Bushing - 6 6mm	5 - 4
B104 2672	Spring: Separate: Pressure	9 - 22
G020 5626	Push Switch	7 - 18
G360 5700	Stepper Motor: DC 24v 19.2w	9 - 12
G360 5700	Stepper Motor: DC 24v 19.2w	5 - 12
G361 1100	Front Side Plate Ass'y	5 - 16
G361 1107	Gasket: Stgn 13-10:15mm	7 - 24
G361 1110	Rear Side Plate Ass'y	5 - 1
G361 1120	Upper Stay Ass'y	7 - 17
G361 1140	Release Pawl Ass'y	7 - 7
G361 1150	Connector Bracket	5 - 3
G361 1160	Link	7 - 22
G361 1170	Entrance Gate Pawl	7 - 5
G361 1180	Upper Duplex Guide Plate	7 - 15
G361 1190	Release Grip	3 - 4
G361 1200	Base Cover	3 - 1
G361 1250	Right Cover	3 - 20
G361 1260	Rear Cover	3 - 18
G361 1270	Left Cover	3 - 2
G361 1280	Open And Close Switchback Cover	3 - 14
G361 2520	Lower Transport Right Guide Plate	5 - 15
G361 2530	Upper Transport Right Guide Plate	7 - 14
G361 2540	Left Open & Close Guide	3 - 11
G361 2555	Vertical Transport Spring Plate	3 - 9
G361 2560	Open And Close Upper Cover	3 - 7
G361 2563	Decal Misfeed Removal	11 - 1
G361 2563	Decal Misfeed Removal	3 - 6
G361 2565	Open & Close Lever	3 - 8
G361 2571	Transport Roller	5 - 14
G361 2580	Transport Upper Pulley	5 - 9
G361 2590	Vertical Transport Bracket Motor	5 - 10
G361 2600	Timing Belt 40s3m363cl	5 - 7
G361 2610	Lower Sensor Bracket	7 - 11
G361 2650	Timing Belt 40s2m140	5 - 8
G361 2711	Feed Paper Again Transport Roller	9 - 11

Part No.	Description	Page and Index No.
G361 2720	Pulley - 18Z	9 - 17
G361 2730	Pulley - 28/55Z	9 - 16
G361 2740	Feed Paper Again Guide Plate	3 - 19
G361 2750	Timing Belt 40s3m195	9 - 14
G361 2761	Feed Paper Again Motor Bracket	9 - 13
G361 2765	Bracket: Spring: Feed Paper Again	9 - 21
G361 2770	Timing Belt 40s2m300	9 - 15
G361 2781	Horizontal Drive transport Roller	9 - 10
G361 2791	Horizontal Transport Roller	9 - 9
G361 2800	Timing Belt 40s2n286	9 - 5
G361 2810	Sensor Feeler	9 - 6
G361 2820	Transport Horizontal Ground Plate	9 - 18
G361 2830	Lower Transport Guide Plate	9 - 8
G361 2835	Decal: Guide Plate: Z	11 - 2
G361 2835	Decal: Guide Plate: Z	7 - 4
G361 2840	Left Open And Close Guide Plate	7 - 3
G361 2850	Open And Close: Right Guide	7 - 2
G361 5300	Harness - I/F	5 - 2
G361 5310	Harness - Sensor	7 - 9
G361 5330	Harness - Solenoid	7 - 21
G361 5340	Harness - Motor	9 - 23
G361 5340	Harness - Motor	5 - 13
G361 5340	Harness - Motor	5 - 18
G361 5560	DC Solenoid Ass'y	7 - 20
G361 5570	Photointerruptor - Duplex	7 - 12
G552 7011	Pulley - 16Z	5 - 5
G552 7015	Idle Roller	5 - 6
G552 7033	Bushing - 6mm	5 - 11
G552 7039	Upper Sensor Bracket	7 - 13
G552 7217	Pulley - 18Z	9 - 4
G552 7228	Lever Spring	9 - 1
G552 7285	Driven Roller	7 - 1
G552 7292	Spring Plate - Lower Vertical Trans	3 - 15
G552 7293	Spring Plate - Driven	3 - 17
G552 7316	Lever Guide	7 - 19

Part No.	Description	Page and Index No.
G552 7354	Driven Roller	3 - 16
G552 7360	Driven Roller	3 - 10
G552 7361	Lever Spring	7 - 8
G552 7362	Fork Gate Spring	7 - 6
G552 7364	Shaft	3 - 5
G552 7366	Spring Plate - Vertical Transport	3 - 12
G552 7392	Cover Spring	3 - 13
G552 7399	Rear Lever	9 - 2

Part No.	Description	Page and Index No.
AA08 2118	Bushing - M6	5 - 17
AA08 2118	Bushing - M6	9 - 3
AA14 3544	Screw - M3	9 - 19
AA14 3820	Stepped Screw	7 - 16
AA14 3821	Stepped screw - M3	7 - 23
AA14 3822	Stepped screw - M3.5	9 - 20
AW02 0156	Photointerruptor: Ee-sx4235a-p2	9 - 7

Part No.	Description	Page and Index No.
0313 0040N	Screw:M3X4	7 - 103
0450 3006N	Tapping Screw - M3x6	3 - 103
0450 3008N	Tapping Screw - M3x8	3 - 102
0450 3008N	Tapping Screw - M3x8	5 - 102
0450 3008N	Tapping Screw - M3x8	7 - 101
0453 3005N	Binding Self Tapping Screw:3x5	5 - 103
0453 3005N	Binding Self Tapping Screw:3x5	9 - 103
0454 3006Q	Tapping Screw - M3x6	9 - 101
0454 3006Q	Tapping Screw - M3x6	3 - 101
0454 3006Q	Tapping Screw - M3x6	7 - 102
0454 3006Q	Tapping Screw - M3x6	5 - 101
0720 0040E	Retaining Ring - M4	9 - 102
0720 0040E	Retaining Ring - M4	5 - 104

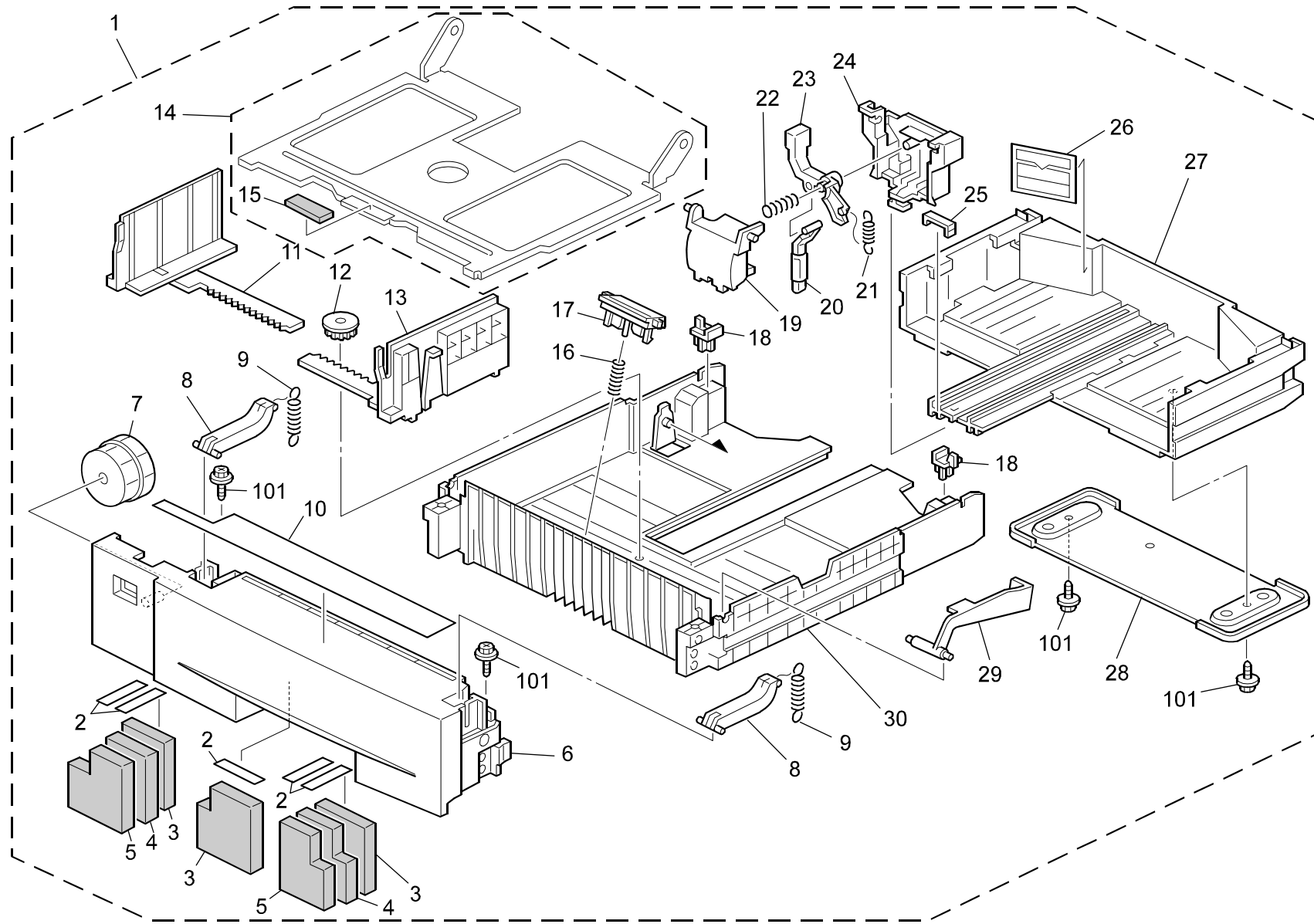
Part No.	Description	Page and Index No.
5447 2681	Snap Ring	3 - 3

Part No.	Description	Page and Index No.

PAPER FEED UNIT TK1030 (G894) PARTS LOCATION AND LIST

This section instructs you to the numbers and names of parts on this machine.

1. PAPER TRAY (G894)

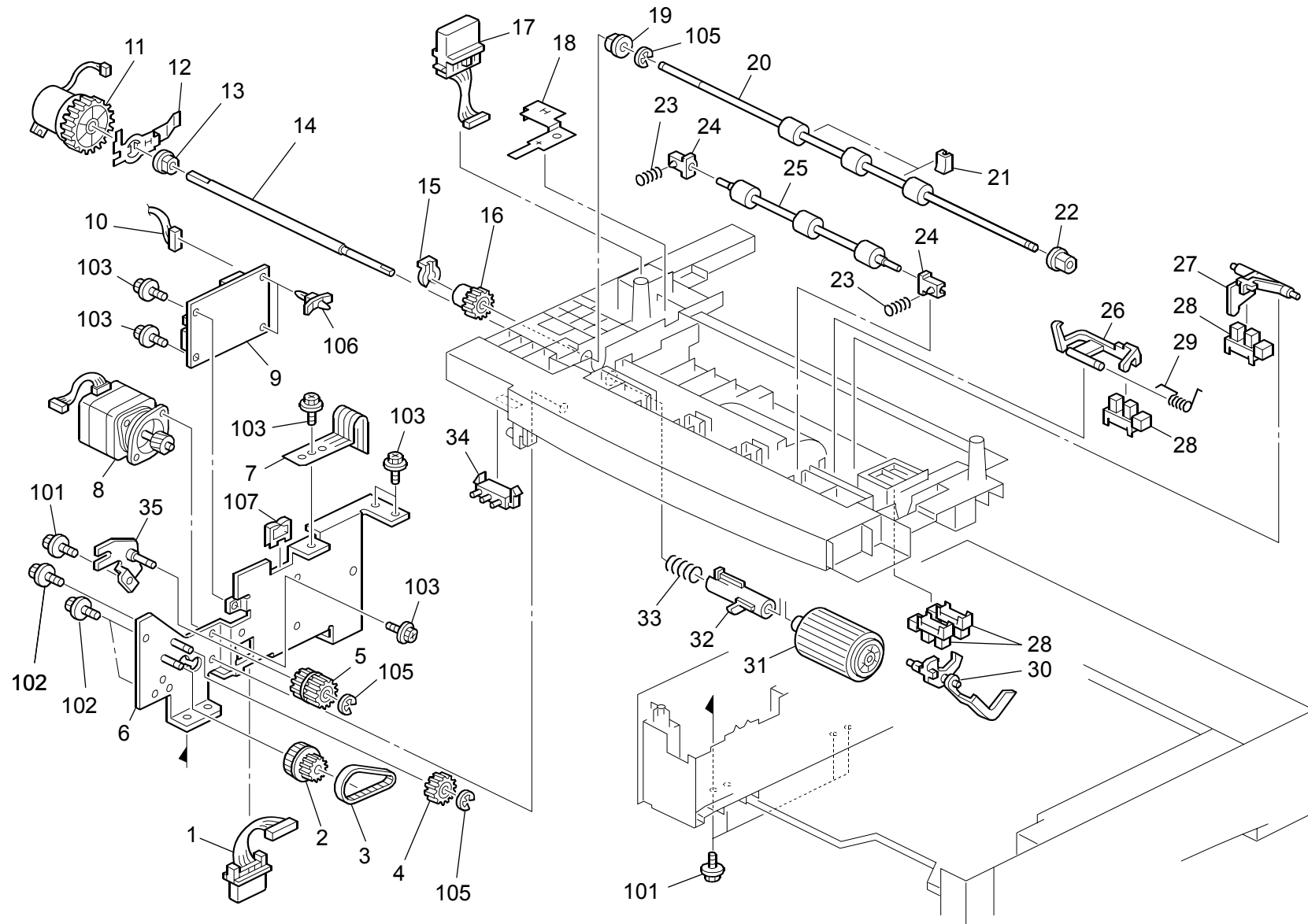


1. PAPER TRAY (G894)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G096 3050	Paper Tray Ass'y	1
2	G096 3094	Tape - Sheet: Tray	5
3	G360 3091	Sheet - Tray 1	3
4	G360 3092	Sheet - Tray 2	2
5	G360 3093	Sheet - Tray 3	2
6	G096 3052	Paper Tray Cover	1
7	G096 3075	Paper Size Sensor Board	1
8	G096 3071	Paper Tray Arm	2
9	G096 3083	Spring Tension	2
10	G096 3144	Paper Set Direction Label	1
11	G096 3055	Left Side Fence	1
12	A267 2869	Gear - 16Z	1
13	G096 3056	Right Side Fence	1
14	G102 2818	Tray Bottom Plate Adhesion (RoHs)	1
15	5215 2713	Bottom Plate pad (RoHs)	1
16	G096 3084	Separation Compression Spring	1
17	G096 3066	Friction Pad Adhesion	1
18	G029 2609	Cassette Protection	2
19	G096 3088	End Fence Pressure	1
20	G096 3087	End Fence Protection	1
21	G096 3090	End Fence Tension Spring 12n	1
22	G096 3089	End Fence Compression Spring 3.5n	1
23	G096 3086	End Fence Lever	1
24	G096 3085	End Fence	1
25	G096 3063	Paper Tray Cap	1
26	G096 3078	Protection Label	1
27	G096 3060	Rear Paper Tray	1
28	G096 3065	Paper Tray Supporting Plate	1
29	G096 3070	Paper Volume Sensor Board	1
30	G096 3051	Paper Tray	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3008N	Tapping Screw - M3x8	

2. PAPER FEED DRIVE (G894)

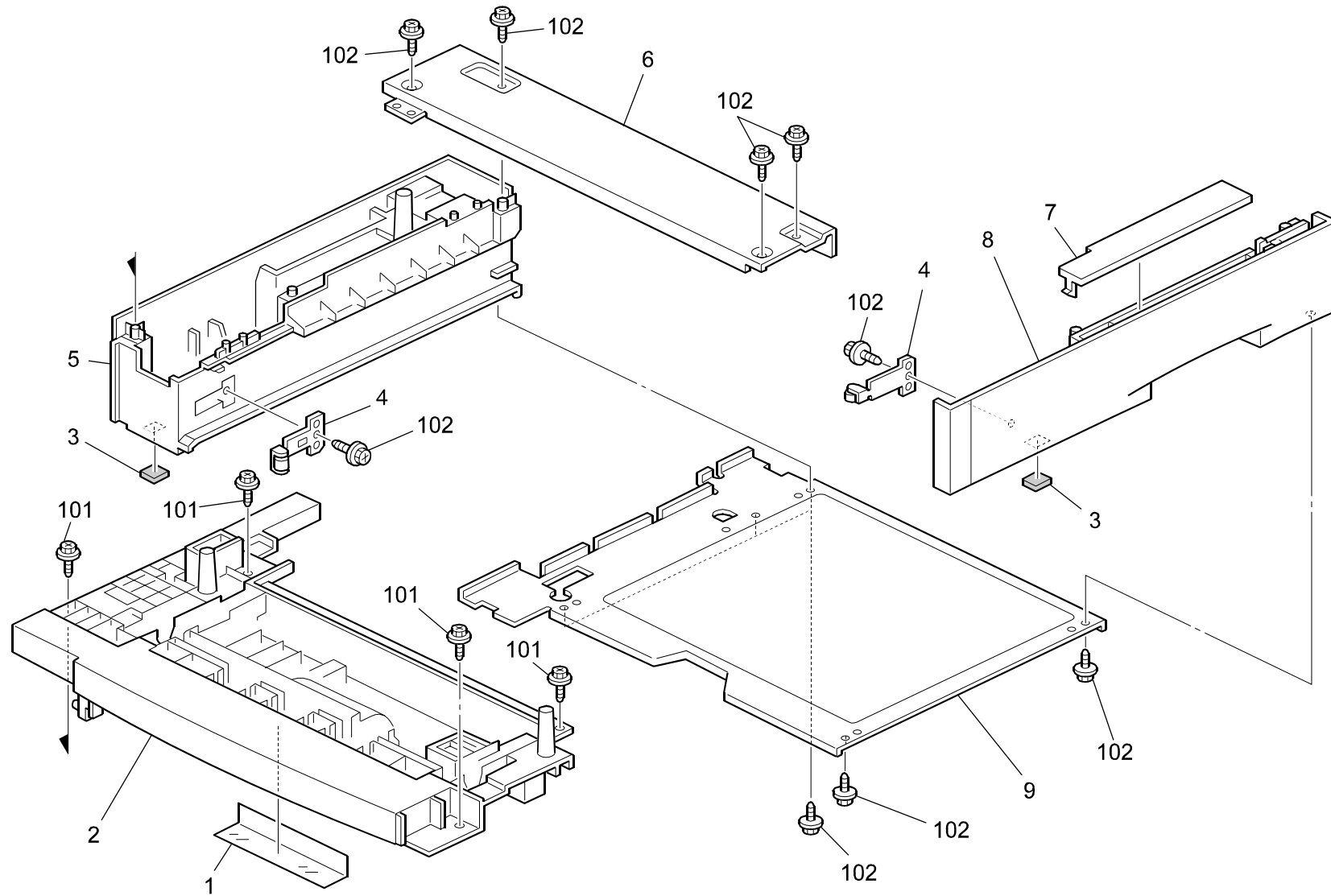


2. PAPER FEED DRIVE (G894)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G360 5320	Harness - I/F 2	1
2	G894 2562	Gear/pulley - 18Z/36T	1
3	G894 2552	Timing Belt - 40S2M114	1
4	G894 2560	Idle Gear - 30z	1
5	G894 2561	Idle Gear - 20z/212z	1
6	G894 2553	Motor Bracket	1
7	G360 3128	Upper Ground Plate	1
8	G894 2600	Stepper Motor - DC 2.3W	1
9	G894 5100	PCB: Bank: EXP: Ass'y	1
10	G360 5310	Harness - Sensor	1
11	G392 3250	Magnetic Clutch: Paper Feed	1
12	G894 2564	Grounding Plate	1
13	5053 0223	Bushing - 8mm	1
14	G894 2551	Paper Feed Shaft	1
15	5447 2681	Snap Ring	1
16	G555 3248	Gear - 20Z	1
17	G894 5300	Interface Harness 1	1
18	G360 3125	Bottom Plate Tray Spring Plate	1
19	5053 0447	Bushing - 6mm	1
20	G894 2563	Transport Drive Roller	1
21	G360 3145	Middle Roller Bushing	2
22	AA08 0252	Bushing - M4	1
23	G360 3142	Compression Spring	2
24	G555 3117	Roller Holder	2
25	G392 3116	Roller: Middle: Driven (RoHs)	1
26	G360 3119	Transport Sensor Feeler	1
27	G360 3120	Paper End Sensor Feeler	1
28	AW02 0156	Photointerruptor:EE-SX4235A-P2	4
29	G555 3127	Feeler Spring	1
30	G360 3118	Paper Volume Sensor Feeler	1
31	G052 3103	Paper Feed Roller	1
32	G555 3113	Paper Feed Shaft Holder	1
33	G392 2657	Compression Spring: paper Feed (RoHs)	1
34	G360 5550	Paper Size Push Switch Sensor	1
35	G894 2557	Idler Bracket	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0451 3006N	Tapping Screw - 3x6	
102	0450 3008N	Tapping Screw - M3x8	
103	0451 3006N	Tapping Screw - M3x6	
104	0453 3005N	Binding Self Tapping Screw - 3x5	
105	0720 0040E	Retaining Ring - M4	
106	1105 0192	Locking Support	
107	1105 0522	Edge Saddle - Les0510	

3. FRAME SECTION (G894)

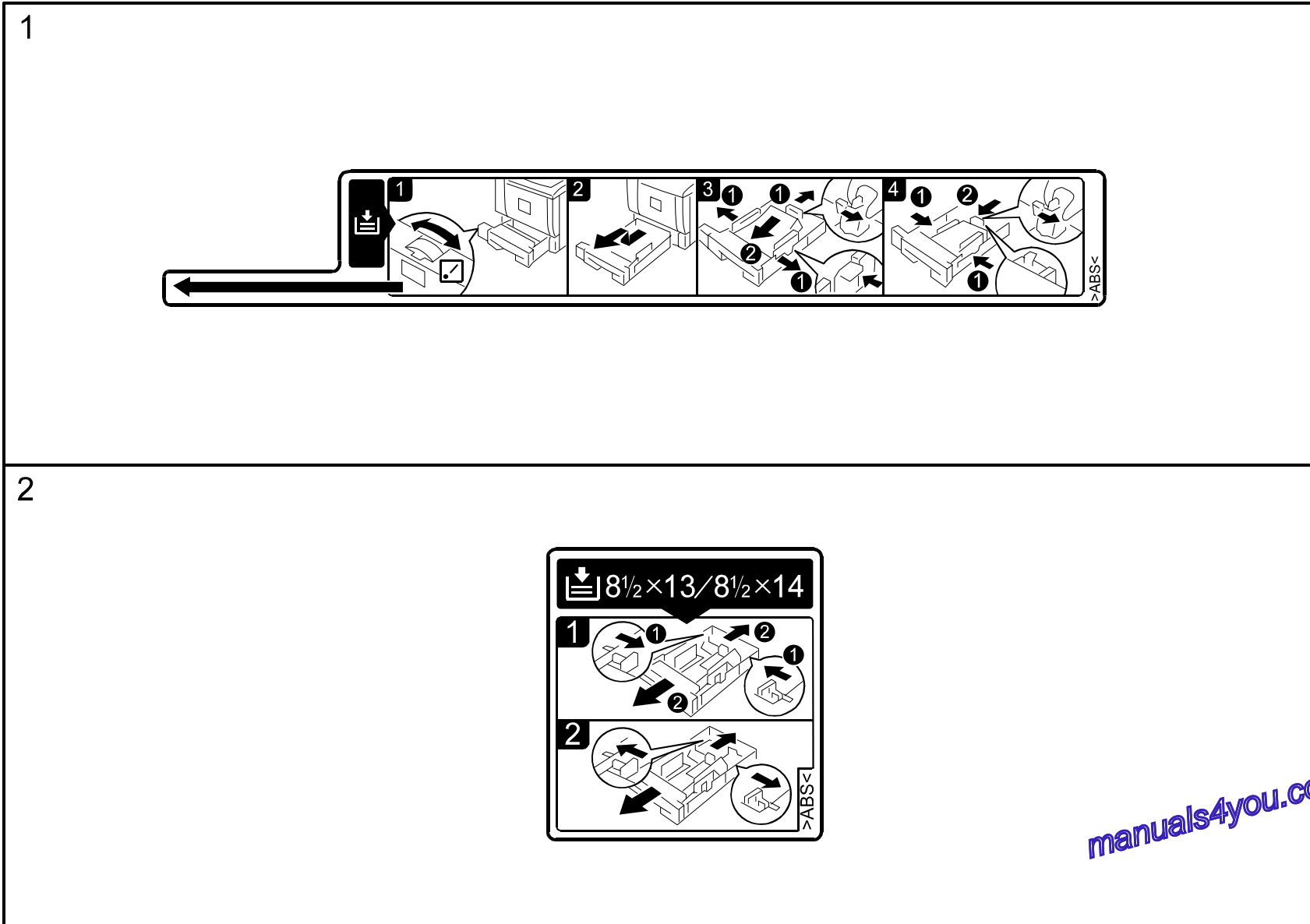


3. FRAME SECTION (G894)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G360 3131	Vertical Transport Guide	1
2	G894 2550	Housing - Paper Feed Unit	1
3	G555 1057	Rubber Foot	2
4	G392 1086	Spring Plate:Paper Tray:Ass'y	2
5	G894 1051	Left Frame	1
6	G360 1071	Upper Frame	1
7	G360 1065	Upper Cover	1
8	G360 1061	Right Frame	1
9	G360 1082	Lower Frame	1

Index No.	Part No.	Description	Q'ty Per Assembly
101	0450 3010N	Tapping Screw - M3x10	
102	0450 3008N	Tapping Screw - M3x8	

4. DECALS AND DOCUMENTS (G894)



4. DECALS AND DOCUMENTS (G894)

Index No.	Part No.	Description	Q'ty Per Assembly
1	G096 3144	Paper Set Direction Label	1
2	G096 3078	Protection Label	1

Index No.	Part No.	Description	Q'ty Per Assembly
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PAPER FEED UNIT TK1030 (G894)

PARTS INDEX

This section instructs you as to the numbers and names of parts on this machine.

Parts Index

Part No.	Description	Page and Index No.
G893 2550	Housing - Paper Feed Unit	7 - 2
G894 2551	Paper Feed Shaft	5 - 14
G894 2552	Timing Belt - 40S2M114	5 - 3
G894 2553	Motor Bracket	5 - 6
G894 2560	Idle Gear - 30z	5 - 4
G894 2561	Idle Gear - 20z/212z	5 - 5
G894 2562	Gear/pulley - 18Z/36T	5 - 2
G894 2600	Stepper Motor - DC 2.3w	5 - 8
G894 5100	PCB: Bank: EXP: Ass'y	5 - 9
G894 5300	Interface Harness 1	5 - 17

Part No.	Description	Page and Index No.
A267 2869	Gear - 16Z	3 - 12
G029 2609	Cassette Protection	3 - 18
G052 3103	Paper Feed Roller	5 - 31
G096 3050	Paper Tray Ass'y	3 - 1
G096 3051	Paper Tray	3 - 30
G096 3052	Paper Tray Cover	3 - 6
G096 3055	Left Side Fence	3 - 11
G096 3056	Right Side Fence	3 - 13
G096 3060	Rear Paper Tray	3 - 27
G096 3063	Paper Tray Cap	3 - 25
G096 3065	Paper Tray Supporting Plate	3 - 28
G096 3066	Friction Pad Adhesion	3 - 17
G096 3070	Paper Volume Sensor Board	3 - 29
G096 3071	Paper Tray Arm	3 - 8
G096 3075	Paper Size Sensor Board	3 - 7
G096 3078	Protection Label	3 - 26
G096 3078	Protection Label	9 - 2
G096 3083	Spring Tension	3 - 9
G096 3084	Separation Compression Spring	3 - 16
G096 3085	End Fence	3 - 24
G096 3086	End Fence Lever	3 - 23
G096 3087	End Fence Protection	3 - 20
G096 3088	End Fence Pressure	3 - 19
G096 3089	End Fence Compression Spring 3.5n	3 - 22
G096 3090	End Fence Tension Spring 12n	3 - 21
G096 3094	Tape - Sheet : Tray	3 - 2
G096 3144	Paper Set Direction Label	3 - 10
G096 3144	Paper Set Direction Label	9 - 1
G102 2818	Tray Bottom Plate Adhesion (RoHs)	3 - 14
G360 1051	Left Frame	7 - 5
G360 1061	Right Frame	7 - 8
G360 1065	Upper Cover	7 - 7
G360 1071	Upper Frame	7 - 6
G360 1082	Lower Frame	7 - 9
G360 3091	Sheet - Tray 1	3 - 3

Part No.	Description	Page and Index No.
G360 3092	Sheet - Tray 2	3 - 4
G360 3093	Sheet - Tray 3	3 - 5
G360 3114	Middle Drive Roller (RoHs)	5 - 20
G360 3118	Paper Volume Sensor Feeler	5 - 30
G360 3119	Transport Sensor Feeler	5 - 26
G360 3120	Paper End Sensor Feeler	5 - 27
G360 3121	Earth Shaft Spring Plate	5 - 12
G360 3125	Bottom Plate Tray Spring Plate	5 - 18
G360 3128	Upper Ground Plate	5 - 7
G360 3131	Vertical Transport Guide	7 - 1
G360 3142	Compression Spring	5 - 23
G360 3145	Middle Roller Bushing	5 - 21
G360 5310	Harness - Sensor	5 - 10
G360 5320	Harness - I/F 2	5 - 1
G360 5550	Paper Size Push Switch Sensor	5 - 34
G392 1086	Spring Plate:Paper Tray:Ass'y	7 - 4
G392 2657	Compression Spring:paper Feed (RoHs)	5 - 33
G392 3116	Roller:Middle:Driven (RoHs)	5 - 25
G392 3250	Magnetic Clutch:Paper Feed	5 - 11
G555 3113	Paper Feed Shaft Holder	5 - 32
G555 3117	Roller Holder	5 - 24
G555 3127	Feeler Spring	5 - 29
G555 3248	Gear - 20Z	5 - 16

Part No.	Description	Page and Index No.
AA08 0252	Bushing - M4	5 - 22
AW02 0156	Photointerruptor:EE-SX4235A-P2	5 - 28

Part No.	Description	Page and Index No.
0450 3008N	Tapping Screw - M3x8	3 - 101
0450 3008N	Tapping Screw - M3x8	5 - 102
0450 3008N	Tapping Screw - M3x8	7 - 102
0450 3010N	Tapping Screw - M3x10	7 - 101
0451 3006N	Tapping Screw - 3x6	5 - 101
0451 3006N	Tapping Screw - M3x6	5 - 103
0453 3005N	Binding Self Tapping Screw - 3x5	5 - 104
0720 0040E	Retaining Ring - M4	5 - 105
1105 0192	Locking Support	5 - 106

Part No.	Description	Page and Index No.
5053 0223	Bushing - 8mm	5 - 13
5053 0447	Bushing - 6mm	5 - 19
5215 2713	Bottom Plate pad (RoHs)	3 - 15
5447 2681	Snap Ring	5 - 15