SERVICE MANUAL

Monochrome Page Printer

EPSON EPL-5900 / EPL-5900L

COLOR IMAGING
EPSON

EPSON®

SEPG01005

Notice

PRECAUTIONS

Precautionary notations throughout the text are categorized relative to 1)Personal injury and 2) damage to equipment.

DANGER   Signals a precaution which, if ignored, could result in serious or fatal personal injury. Great caution should be exercised in performing procedures preceded by DANGER Headings.

WARNING   Signals a precaution which, if ignored, could result in damage to equipment.

The precautionary measures itemized below should always be observed when performing repair/maintenance procedures.

DANGER

1. ALWAYS DISCONNECT THE PRODUCT FROM THE POWER SOURCE AND PERIPHERAL DEVICES PERFORMING ANY MAINTENANCE OR REPAIR PROCEDURES.

2. NO WORK SHOULD BE PERFORMED ON THE UNIT BY PERSONS UNFAMILIAR WITH BASIC SAFETY MEASURES AS DICTATED FOR ALL ELECTRONICS TECHNICIANS IN THEIR LINE OF WORK.

3. WHEN PERFORMING TESTING AS DICTATED WITHIN THIS MANUAL, DO NOT CONNECT THE UNIT TO A POWER SOURCE UNTIL INSTRUCTED TO DO SO. WHEN THE POWER SUPPLY CABLE MUST BE CONNECTED, USE EXTREME CAUTION IN WORKING ON POWER SUPPLY AND OTHER ELECTRONIC COMPONENTS.

4. WHEN DISASSEMBLING OR ASSEMBLING A PRODUCT, MAKE SURE TO WEAR GLOVES TO AVOID INJURIER FROM METAL PARTS WITH SHARP EDGES.

WARNING

1. REPAIRS ON EPSON PRODUCT SHOULD BE PERFORMED ONLY BY AN EPSON CERTIFIED REPAIR TECHNICIAN.

2. MAKE CERTAIN THAT THE SOURCE VOLTAGES IS THE SAME AS THE RATED VOLTAGE, LISTED ON THE SERIAL NUMBER/RATING PLATE. IF THE EPSON PRODUCT HAS A PRIMARY AC RATING DIFFERENT FROM AVAILABLE POWER SOURCE, DO NOT CONNECT IT TO THE POWER SOURCE.

3. ALWAYS VERIFY THAT THE EPSON PRODUCT HAS BEEN DISCONNECTED FROM THE POWER SOURCE BEFORE REMOVING OR REPLACING PRINTED CIRCUIT BOARDS AND/OR INDIVIDUAL CHIPS.

4. IN ORDER TO PROTECT SENSITIVE MICROPROCESSORS AND CIRCUITRY, USE STATIC DISCHARGE EQUIPMENT, SUCH AS ANTI-STATIC WRIST STRAPS, WHEN ACCESSING INTERNAL COMPONENTS.

5. DO NOT REPLACE IMPERFECTLY FUNCTIONING COMPONENTS WITH COMPONENTS WHICH ARE NOT MANUFACTURED BY EPSON. IF SECOND SOURCE IC OR OTHER COMPONENTS WHICH HAVE NOT BEEN APPROVED ARE USED, THEY COULD CAUSE DAMAGE TO THE EPSON PRODUCT, OR COULD VOID THE WARRANTY OFFERED BY EPSON.

About This Manual

This manual describes basic functions, theory of electrical and mechanical operations, maintenance and repair procedures of the printer. The instructions and procedures included herein are intended for the experienced repair technicians, and attention should be given to the precautions on the preceding page.

Manual Configuration

This manual consists of six chapters and Appendix.

CHAPTER 1.PRODUCT DESCRIPTIONS
Provides a general overview and specifications of the product.
CHAPTER 2.OPERATING PRINCIPLES
Describes the theory of electrical and mechanical operations of the product.
CHAPTER 3.TROUBLESHOOTING
Describes the step-by-step procedures for the troubleshooting.
CHAPTER 4.DISASSEMBLY / ASSEMBLY
Describes the step-by-step procedures for disassembling and assembling the product.
CHAPTER 5.ADJUSTMENT
Provides Epson-approved methods for adjustment.
CHAPTER 6.MAINTENANCE
Provides preventive maintenance procedures and the lists of Epson-approved lubricants and adhesives required for servicing the product.
APPENDIX Provides the following additional information for reference:
• Connector pin assignments
• Electric circuit boards components layout
• Electrical circuit boards schematics
• Exploded diagram & Parts List

Symbols Used in this Manual

Various symbols are used throughout this manual either to provide additional information on a specific topic or to warn of possible danger present during a procedure or an action. Be aware of all symbols when they are used, and always read NOTE, CAUTION, or WARNING messages.

 ADJUSTMENT REQUIRED Indicates an operating or maintenance procedure, practice or condition that is necessary to keep the product's quality.

 CAUTION Indicates an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in damage to, or destruction of, equipment.

 CHECK POINT May indicate an operating or maintenance procedure, practice or condition that is necessary to accomplish a task efficiently. It may also provide additional information that is related to a specific subject, or comment on the results achieved through a previous action.

 WARNING Indicates an operating or maintenance procedure, practice or condition that, if not strictly observed, could result in injury or loss of life.

Safety Precautions for Inspection and Service

When performing inspection and service procedures, observe the following precautions to prevent accidents and ensure utmost safety.

* Depending on the model, some of the precautions given in the following do not apply.

Different markings are used to denote specific meanings as detailed below.

WARNING	**fIndicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.**

CAUTION	**Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.**

The following graphic symbols are used to give instructions that need to be observed.

Used to call the service technician's attention to what is graphically represented inside the marking (including a warning).

Used to prohibit the service technician's from doing what is graphically represented inside the marking.

Used to instruct the service technician's to do what is graphically represented inside the marking.

WARNING

1.Always observe precautions.

- Parts requiring special attention in this product will include a label containing the mark shown on the left plus precautionary notes. Be sure to observe the precautions.
- Be sure to observe the "Safety Information" given in the Operator's Manual.

2.Before starting the procedures, be sure to unplug the power cord.

- This product contains a high-voltage unit and a circuit with a large current capacity that may cause an electric shock or burn.
- The product also contains parts that can jerk suddenly and cause injury.
- If this product uses a laser, laser beam leakage may cause eye damage or blindness.

3.Use the specified parts.

- For replacement parts, always use the genuine parts specified in the manufacturer's parts manual. Installing a wrong or unauthorized part could cause dielectric breakdown, overload, or undermine safety devices resulting in possible electric shock or fire.
- Replace a blown electrical fuse or thermal fuse with its corresponding genuine part specified in the manufacturer's parts manual. Installing a fuse of a different make or rating could lead to a possible fire. If a thermal fuse blows frequently, the temperature control system may have a problem and action must be taken to eliminate the cause of the problem.

4.Handle the power cord with care and never use a multiple outlet.

- Do not break, crush or otherwise damage the power cord. Placing a heavy object on the power cord, or pulling or bending it may damage it, resulting in a possible fire or electric shock.
- Do not use a multiple outlet to which any other appliance or machine is connected.
- Be sure the power outlet meets or exceeds the specified capacity.

5.Be careful with the high-voltage parts.

- A part marked with the symbol shown on the left carries a high voltage. Touching it could result in an electric shock or burn. Be sure to unplug the power cord before servicing this part or the parts near it.

6.Do not work with wet hands.

- Do not unplug or plug in the power cord, or perform any kind of service or inspection with wet hands. Doing so could result in an electric shock.

7.Do not touch a high-temperature part.

- A part marked with the symbol shown on the left and other parts such as the exposure lamp and fusing roller can be very hot while the machine is energized. Touching them may result in a burn.
- Wait until these parts have cooled down before replacing them or any surrounding parts.

8.Maintain a grounded connection at all times.
(This item may not apply in the USA.)

- Be sure to connect the ground wire to the ground terminal even when performing an inspection or repair. Without proper grounding, electrical leakage could result in an electric shock or fire.
- Never connect the ground wire to a gas pipe, water pipe, telephone ground wire, or a lightning conductor.

9.Do not remodel the product.

- Modifying this product in a manner not authorized by the manufacturer may result in a fire or electric shock. If this product uses a laser, laser beam leakage may cause eye damage or blindness.

10.Restore all parts and harnesses to their original positions.

- To promote safety and prevent product damage, make sure the harnesses are returned to their original positions and properly secured in their clamps and saddles in order to avoid hot parts, high-voltage parts, sharp edges, or being crushed.
- To promote safety, make sure that all tubing and other insulating materials are returned to their original positions. Make sure that floating components mounted on the circuit boards are at their correct distance and position off the boards.

⚠ CAUTION

1.Precautions for Service Jobs

- A toothed washer and spring washer, if used originally, must be reinstalled. Omitting them may result in contact failure which could cause an electric shock or fire.
- When reassembling parts, make sure that the correct screws (size, type) are used in the correct places. Using the wrong screw could lead to stripped threads, poorly secured parts, poor insulating or grounding, and result in a malfunction, electric shock or injury.
- Take great care to avoid personal injury from possible burrs and sharp edges on the parts, frames and chassis of the product.
- When moving the product or removing an option, use care not to injure your back or allow your hands to be caught in mechanisms.

2.Precautions for Servicing with Covers and Parts Removed

- Wherever feasible, keep all parts and covers mounted when energizing the product.
- If energizing the product with a cover removed is absolutely unavoidable, do not touch any exposed live parts and use care not to allow your clothing to be caught in the moving parts. Never leave a product in this condition unattended.
- Never place disassembled parts or a container of liquid on the product. Parts falling into, or the liquid spilling inside, the mechanism could result in an electric shock or fire.
- Never use a flammable spray near the product. This could result in a fire.
- Make sure the power cord is unplugged before removing or installing circuit boards or plugging in or unplugging connectors.
- Always use the interlock switch actuating jig to actuate an interlock switch when a cover is opened or removed. The use of folded paper or some other object may damage the interlock switch mechanism, possibly resulting in an electric shock, injury or blindness.

3.Precautions for the Working Environment

- The product must be placed on a flat, level surface that is stable and secure.
- Never place this product or its parts on an unsteady or tilting workbench when servicing.
- Provide good ventilation at regular intervals if a service job must be done in a confined space for a long period of time.
- Avoid dusty locations and places exposed to oil or steam.
- Avoid working positions that may block the ventilation ports of the product.

4.Precautions for Handling Batteries
(Lithium, Nickel-Cadmium, etc.)

- Replace a rundown battery with the same type as specified in the manufacturer's parts manual.
- Before installing a new battery, make sure of the correct polarity of the installation or the battery could burst.
- Dispose of used batteries according to the local regulations. Never dispose of them at the user's premises or attempt to try to discharge one.

5. Precautions for the Laser Beam
(Only for Products Employing a Laser)

- Removing the cover marked with the following caution label could lead to possible exposure to the laser beam, resulting in eye damage or blindness. Be sure to unplug the power cord before removing this cover.
- If removing this cover while the power is ON is unavoidable, be sure to wear protective laser goggles that meet specifications.
- Make sure that no one enters the room when the machine is in this condition.
- When handling the laser unit, observe the "Precautions for Handling Laser Equipment."

Other Precautions

- When handling circuit boards, observe the "HANDLING of PWBs".

- The PC Drum is a very delicate component. Observe the precautions given in "HANDLING OF THE PC DRUM" because mishandling may result in serious image problems.

- Note that replacement of a circuit board may call for readjustments or resetting of particular items, or software installation.

Precautions for Service

When performing inspection and service procedures, observe the following precautions to prevent mishandling of the machine and its parts.

* Depending on the model, some of the precautions given in the following do not apply.

PRECAUTIONS BEFORE SERVICE

☐ When the user is using a word processor or personal computer from a wall outlet of the same line, take necessary steps to prevent the circuit breaker from opening due to overloads.

☐ Never disturb the LAN by breaking or making a network connection, altering termination, installing or removing networking hardware or software, or shutting down networked devices without the knowledge and express permission of the network administrator or the shop supervisor.

HOW TO USE THIS BOOK

☐ DIS/REASSEMBLY, ADJUSTMENT

■ To reassemble the product, reverse the order of disassembly unless otherwise specified.

☐ TROUBLESHOOTING

■ If a component on a PWB or any other functional unit including a motor is defective, the text only instructs you to replace the whole PWB or functional unit and does not give troubleshooting procedures applicable within the defective unit.

■ All troubleshooting procedures contained herein assume that there are no breaks in the harnesses and cords and all connectors are plugged into the right positions.

■ The procedures preclude possible malfunctions due to noise and other external causes.

PRECAUTIONS FOR SERVICE

☐ Check the area surrounding the service site for any signs of damage, wear or need of repair.

☐ Keep all disassembled parts in good order and keep tools under control so that none will be lost or damaged.

☐ After completing a service job, perform a safety check. Make sure that all parts, wiring and screws are returned to their original positions.

☐ Do not pull out the toner hopper while the toner bottle is turning. This could result in a damaged motor or locking mechanism.

☐ If the product is to be run with the front door open, make sure that the toner hopper is in the locked position.

☐ Do not use an air gun or vacuum cleaner for cleaning the ATDC Sensor and other sensors, as they can cause electrostatic destruction. Use a blower brush and cloth. If a unit containing these sensors is to be cleaned, first remove the sensors from the unit.

PRECAUTIONS FOR DIS/REASSEMBLY

☐ Be sure to unplug the copier from the outlet before attempting to service the copier.

☐ The basic rule is not to operate the copier anytime during disassembly. If it is absolutely necessary to run the copier with its covers removed, use care not to allow your clothing to be caught in revolving parts such as the timing belt and gears.

☐ Before attempting to replace parts and unplug connectors, make sure that the power cord of the copier has been unplugged from the wall outlet.

☐ Be sure to use the Interlock Switch Actuating Jig whenever it is necessary to actuate the Interlock Switch with the covers left open or removed.

☐ While the product is energized, do not unplug or plug connectors into the circuit boards or harnesses.

☐ Never use flammable sprays near the copier.

☐ A used battery should be disposed of according to the local regulations and never be discarded casually or left unattended at the user's premises.

☐ When reassembling parts, make sure that the correct screws (size, type) and toothed washer are used in the correct places.

☐ If it becomes necessary to replace the thermal fuse or any other fuse mounted on a board, be sure to use one of the rating marked on the blown fuse. Always note the rating marked on the fuse, as the rating and mounting site or number used are subject to change without notice.

PRECAUTIONS FOR CIRCUIT INSPECTION

☐ Never create a closed circuit across connector pins except those specified in the text and on the printed circuit.

☐ When creating a closed circuit and measuring a voltage across connector pins specified in the text, be sure to use the GND wire.

HANDLING OF PWBS

☐ During Transportation/Storage:

■ During transportation or when in storage, new P.W. Boards must not be indiscriminately removed from their protective conductive bags.

■ Do not store or place P.W. Boards in a location exposed to direct sunlight and high temperature.

■ When it becomes absolutely necessary to remove a Board from its conductive bag or case, always place it on its conductive mat in an area as free as possible from static electricity.

■ Do not touch the pins of the ICs with your bare hands.

■ Protect the PWBs from any external force so that they are not bent or damaged.

☐ During Inspection/Replacement:

■ Avoid checking the IC directly with a multimeter; use connectors on the Board.

■ Never create a closed circuit across IC pins with a metal tool.

■ Before unplugging connectors from the P.W. Boards, make sure that the power cord has been unplugged from the outlet.

- When removing a Board from its conductive bag or conductive case, do not touch the pins of the ICs or the printed pattern. Place it in position by holding only the edges of the Board.

- When touching the PWB, wear a wrist strap and connect its cord to a securely grounded place whenever possible. If you cannot wear a wrist strap, touch a metal part to discharge static electricity before touching the PWB.

- Note that replacement of a PWB may call for readjustments or resetting of particular items.

HANDLING OF OTHER PARTS

☐ The magnet roller generates a strong magnetic field. Do not bring it near a watch, floppy disk, magnetic card, or CRT tube.

HANDLING OF THE PC DRUM

Only for Products Not Employing an Imaging Cartridge.

☐ During Transportation/Storage:

- Use the specified carton whenever moving or storing the PC Drum.

- The storage temperature is in the range between -20°C and +40°C.

- In summer, avoid leaving the PC Drum in a car for a long time.

☐ Handling:

- Ensure that the correct PC Drum is used.

- Whenever the PC Drum has been removed from the copier, store it in its carton or protect it with a Drum Cloth.

- The PC Drum exhibits greatest light fatigue after being exposed to strong light over an extended period of time. Never, therefore, expose it to direct sunlight.

- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.

- Do not scratch the surface of the PC Drum.

- Do not apply chemicals to the surface of the PC Drum.

- Do not attempt to wipe clean the surface of the PC Drum.

If, however, the surface is contaminated with fingerprints, clean it using the following procedure.
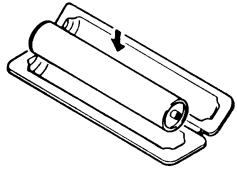
1. Place the PC Drum into one half of its carton.
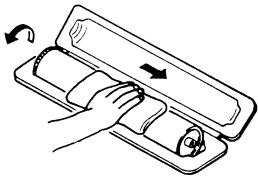
2. Gently wipe the residual toner off the surface of the PC Drum with a dry, Dust-Free Cotton Pad.

    A. Turn the PC Drum so that the area of its surface on which the line of toner left by the Cleaning Blade is present is facing straight up. Wipe the surface in one continuous movement from the rear edge of the PC Drum to the front edge and off the surface of the PC Drum.

    B. Turn the PC Drum slightly and wipe the newly exposed surface area with a CLEAN face of the Dust-Free Cotton Pad. Repeat this procedure until the entire surface of the PC Drum has been thoroughly cleaned.

    At this time, always use a CLEAN face of the dry Dust-Free Cotton Pad until no toner is evident on the face of the Pad after wiping.
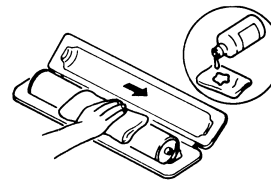
3. Soak a small amount of either ethyl alcohol or isopropyl alcohol into a clean, unused Dust-Free Cotton Pad which has been folded over into quarters. Now, wipe the surface of the PC Drum in one continuous movement from its rear edge to its front edge and off its surface one to two times.

    Never move the Pad back and forth.
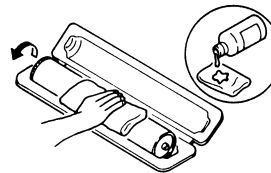
4. Using the SAME face of the Pad, repeat the procedure explained in the latter half of step 3 until the entire surface of the PC Drum has been wiped. Always OVERLAP the areas when wiping. Two complete turns of the PC Drum would be appropriate for cleaning.

NOTE:

☐ ***Even when the PC Drum is only locally dirtied, wipe the entire surface.***

☐ ***Do not expose the PC Drum to direct sunlight. Clean it as quickly as possible even under interior illumination.***

☐ ***If dirt remains after cleaning, repeat the entire procedure from the beginning one more time.***

HANDLING OF THE IMAGING CARTRIDGE

* Only for Products Employing an Imaging Cartridge.

☐ During Transportation/Storage:

- The storage temperature is in the range between -20°C and +40°C.

- In summer, avoid leaving the Imaging Cartridge in a car for a long time.

☐ Handling:

- Store the Imaging Cartridge in a place that is not exposed to direct sunlight.

☐ Precautionary Information on the PC Drum Inside the Imaging Cartridge:

- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.

- Do not scratch the surface of the PC Drum.

- Do not attempt to wipe clean the surface of the PC Drum.

| ⚡ **WARNING** |
|---|
| 🚫 **Do not throw the toner cartridge or toner into an open flame. The hot toner may scatter and cause burns or other damage.** |

SAFETY INFORMATION

LASER SAFETY

This is a digital machine certified as a class 1 laser product. There is no possibility of danger from a laser, provided the machine is serviced according to the instruction in this manual.

INTERNAL LASER RADIATION

semiconductor laser	
Maximum average radiation power(*)	27.1 µW
Wavelength	770-810 nm

*:Laser Aperture of the Print Head Unit

☐ This product employs a Class 3b laser diode that emits an invisible laser beam. The laser diode and the scanning polygon mirror are incorporated in the print head unit.

☐ The print head unit is NOT A FIELD SERVICE ITEM. Therefore, the print head unit should not be opened under any circumstances.

Laser Aperture of the Print Head Unit
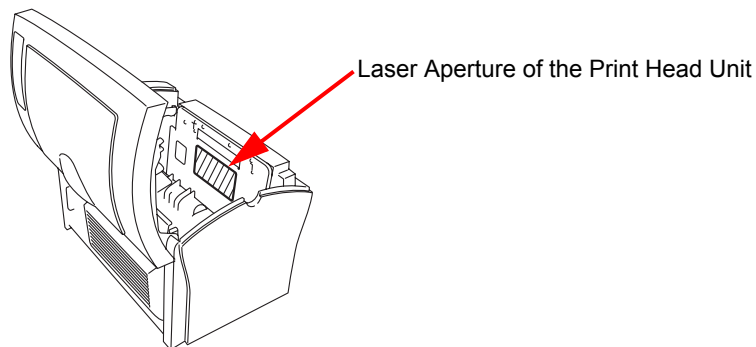
This figure shows the view inside the Top Cover with the Toner Cartridge and the Drum Cartridge removed.

the U.S.A., Canada (CDRH Regulation)

■ This machine is certified as a Class I Laser product under Radiation Performance Stan-dard according to the Food, Drug and Cosmetic Act of 1990. Compliance is mandatory for Laser products marketed in the United States and is reported to the Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration of the U.S. Department of Health and Human Services (DHHS). This means that the device does not produce hazardous laser radiation.

■ The label shown to page 15 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

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

semiconductor laser	
Maximum power of the laser diode	5 mW
Wavelength	770-810 nm

All Areas

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

semiconductor laser	
Maximum power of the laser diode	5 mW
Wavelength	770-810 nm

Denmark

ADVARSEL
Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion.
Undgå udsættelse for stråling. Klasse 1 laser produkt der opfylder IEC60825
sikkerheds kravene.

halvlederlaser	
Laserdiodens højeste styrke	5 mW
bølgelængden	770-810 nm

Norway

ADVERSEL
Dersom apparatet brukes på annen måte enn spesifisert i denne
bruksanvisning, kan brukeren utsettes för unsynlig laserstrålning, som
overskrider grensen for laser klass 1.

halvleder laser	
Maksimal effekt till laserdiode	5 mW
bølgelengde	770-810 nm

Finland, Sweden

LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

VAROITUS!
Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla
saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle
lasersäteilylle.

puolijohdelaser	
Laserdiodin suurin teho	5 mW
aallonpituus	770-810 nm

VARNING!
Om apparaten används på annat sätt än i denna bruksanvisning
specificerats, kan användaren utsättas för osynlig laserstrålning, som
överskrider gränsen för laserklass 1.

halvledarlaser	
Den maximala effekten för laserdioden	5 mW
våglängden	770-810 nm

VARO!
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle
lasersäteilylle. Älä katso säteeseen.

VARNING!
Osynlig laserstråining när denna del är öppnad och spärren är urkopplad.
Betrakta ej stråien.

LASER SAFETY LABEL

A laser safety label is attached to the outside of the machine as shown below.

LASER CAUTION LABEL

A laser caution label is attached to the inside of the machine as shown below.
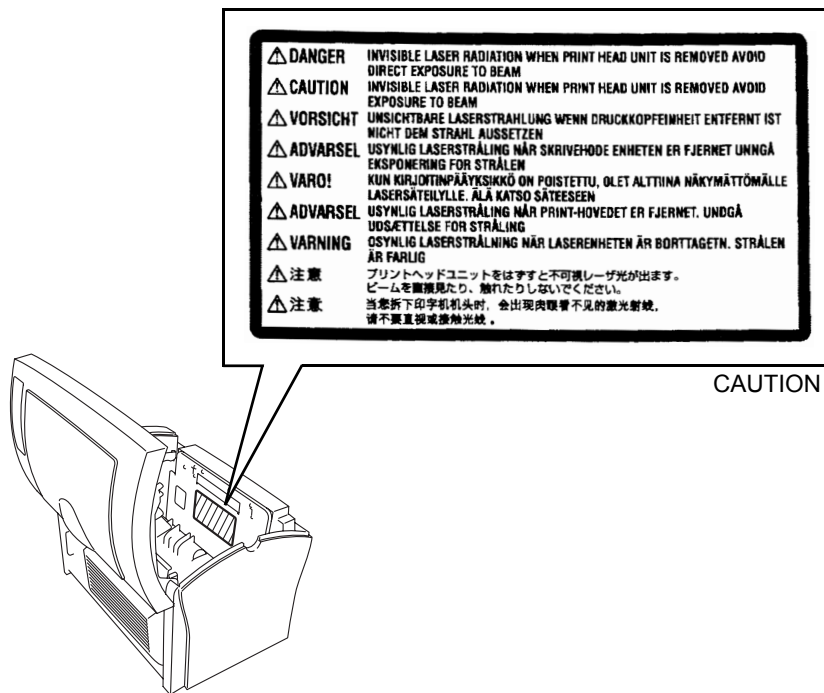
CAUTION

PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

□ When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.

□ When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the printer OFF.

□ If the job requires that the printer be left ON, take off your watch and ring and wear laser protective goggles.

□ A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.

Revision Status

Revision	Date of Issue	Description
0	July 2, 2001	Partial release (Chapter 1/ Chapter4) (provisional)
A	September 20, 2001	Formal first release
B	February 7, 2002	[Revised] The sections listed below are revised. *Chapter 1: Table 1-47. Printer Messages (Only with EPL-5900)* *Chapter 3: Table 3-1. Service Call Error (Engine-Related)* *Chapter 7: 7.4 Exploded Diagrams* *Chapter 7: 7.5 ASP List*

Contents

Chapter 3 Troubleshooting

Chapter 4 Disassembly and Assembly

Chapter 5 Adjustment

Chapter 6 Maintenance

Chapter 7 Appendix

PRODUCT DESCRIPTION

1.1 Outline

EPSON EPL-5900 and EPL-5900L are non-impact page printer with semi-conductor laser and electrophotographic technology.

1.1.1 Features

ENGINE FEATURES

☐ New compact and lightweight, A4 support engine

☐ Resolution/ printing speed: See table below.

Table 1-1. Resolution and Printing Speed

Model	Resolution	Printing Speed
EPL-5900	300 dpi / 600 dpi	12 ppm
	1200 dpi	6 ppm
EPL-5900L	600 dpi	12 ppm

Note: *The engine itself supports True 1200 dpi, but 1200 dpi is not supported with EPL-5900L.*

☐ With EPL-5900, the standard paper supply consists of the cassette-like universal paper tray (250 sheets) and manual feed tray (one sheet).
EPL-5900L is equipped with a 150-sheet paper feed tray.

☐ EPL-5900 supports an optional 500-sheet lower cassette (A4).

☐ Toner life: 3,000 pages with the pre-installed Imaging Cartridge and 6,000 sheets with a replaced Imaging Cartridge.
Neither the pre-installed Imaging Cartridge nor replaced Imaging Cartridge is interchangeable with that for EPL-5800 or EPL-5800L series.

☐ The Photoconductor Unit is common to EPL-5900 Series and EPL-5800 Series.

☐ The face down tray attachment is available as an option.

Note: *This attachment is not a general option. It is supplied on user request or tender request. The capacity depends on user environment. This attachment is not described in manuals or catalogs.*

CONTROLLER FEATURES

<EPL-5900>

☐ High-speed controller, employing new CPU

■ CPU = TMPR4955AF / Clock = 200 MHz

■ 8 MB fitted as standard RAM and Expandable up to 136 MB Max.

☐ PCL6 emulation installed

☐ Two standard interfaces

■ IEEE1284 parallel interface

■ USB interface

☐ Equipped with one Type B interface slot (Level 3 supported)

☐ Real 1200dpi supported (Only in ESC/Page, PCL6, PostScript 3. Up to 600 dpi supported in other modes)

Note: *1200dpi printing needs much memory then the possibility of running short of memory is high with standard memory. Recommendation: Extension of 16MB or more.*

☐ EnhancedMicroGray installed (available only in 600dpi and 300dpi. Automatically switched Off when 1200dpi is selected.)

☐ RITech installed (available only in 600dpi and 300dpi. Automatically switched Off when 1200dpi is selected.)

☐ New control panel design with 3 switches and 6 LEDs

\<EPL-5900L\>

☐ Host based controller

    ■ CPU   Toshiba TMP95C001 24MHz

    ■ RAM   Standard 2MB
                 Expandable up to a maximum of 13 MB (EDO RAM SIMM, access speed 60 ns).

☐ Two standard interfaces

    ■ IEEE1284 parallel interface (ECP supported)

    ■ USB interface (UBS Revision 1.1, USB ID supported)

☐ RITech, EnhancedMicroGray functions installed

☐ Data Compression Technologies

    ■ By sending compressed data from the host computer, almost all data can be printed only with the standard memory.

    ■ High speed processing is realized by use of the expansion circuit hardware.

☐ Expansion of RAM will enhance the following functions and speed up printing.
    EnhancedMicroGray printing
    Increasing the size of the receiving buffer
    High-speed printing

SOFTWARE FEATURE (ONLY WITH EPL-5900)

☐ The following modes and resolution are supported.

Table 1-2. Supported Modes

Mode	1200dpi	600dpi	300dpi	Note
ESC/Page	○	○	○	
PCLXL	○	○	○	
PCL5e	x	○	○	
ESC/P2	x	○	○	
FX	x	○	○	
1239X	x	○	○	
PostScript	○	○	○	Optional (New)

☐ NLSP is included in the main unit font ROM

☐ Compatible with USB Revision 1.1

☐ Job cancellation by panel switch

1.1.2 "EPL-5900" Differences from EPL-5800

Table 1-3. EPL-5900 Differences from EPL-5800

Item	EPL-5900	EPL-5800	Note
Engine speed	12 ppm	10 ppm	
CPU performance	TMPR4955AF-200MHz	R4310-133MHz	
RAM capacity (Standard / Maximum)	8MB / 136MB	16MB / 256 MB	
Paper size at shipment	A4 only	A4/Letter	
Control Panel	3 switches, 6 LEDs	4 switches, 6 LEDs	
LED Status	New specifications		
Status Sheet	New format		
Photoconductor Unit life indicator	Included	Not included	
Consumables information	Indicated	Not indicated	
Selectype			
Preprinted: LC Type/ MP Type	Deleted	Available	
Parallel Menu Bi-D default value	ECP	Nibble	
Standby time	15 minutes	5 minutes	
Optional Letter cassette unit	None	Available	

1.1.3 "EPL-5900L" Differences from EPL-5800L

☐ The standard paper feeder is a folding tray type.

☐ Printing speed 12 ppm (EPL-5800L: 10 ppm)

☐ "Toner Out" setting added (already employed with EPL-1220)

☐ "Invalid Size" error added (already employed with EPL-1220)

☐ The Check Paper Size error and Check Multi Copy P-Size error are not implemented.

1.1.4 "EPL-5900L" Differences from EPL-5900

☐ Compatible with Windows (Windows 95/98/2000, NT 4.0) and Macintosh (Mac OS 8.1 or later) OS only.
Not compatible with the other operating systems, such as DOS, Unix or Linux.
As for Macintosh, EPL-5900L is compatible with only those models which support the standard USB port.
Even in Windows environments, EPL-5900L is not compatible with any machine with a connection port other than the standard USB port.

☐ EPL-5900L is not equipped with fonts and emulations.
No emulations are offered as options.

☐ In image printing, output results may differ, since the ROP and filling methods as well as the half-tone screen, etc. differ.

☐ 1200 dpi resolution is not supported.

☐ Only EDO RAM SIMM (with an access speed of 60 ns or less) is supported for expansion RAM.

☐ Not compatible with direct connection to a network.
Can be used as a Shared Printer in both Windows environments and Macintosh environments.

☐ The standard paper feeder is a folding tray type.

☐ No optional lower cassette is available.

☐ No switches on the control panel

1.1.5 Restrictions on Use of "EPL-5900L"

☐ The Status Sheet can not be printed out with the printer unit in the stand alone state.

☐ If the printer is connected to the parallel interface through a printer switching device, LAN-Parallel switching device, USB-Parallel switching device or any other like device, printing performance is not guaranteed.
⇒ Direct connection to the host's printer port via an ECP compatible cable is premised.
For USB connection, use of a switching device is not covered by the warranty.

☐ With a host computer that does not permit ECP connection, printing with the standard memory may be impossible in some cases.

☐ The maximum RAM size is 13 MB (even when 16/32 MB RAM SIMM is installed).

☐ EPL-5900L can not be used in a system incorporating a terminal server or any other device which does not support bidirectional communication.

1.2 Basic Specifications

1.2.1 Process Specifications

☐ Printer Type
Semi-conductor laser beam scan and dry one-component electromagnetic toner electrophotography

☐ Light Source
Semi-conductor laser

☐ Photoconductor Unit
OPC (organic photoconductor) drum

☐ Charging
Rotary-brush charging method

☐ Development
Exposed area development

☐ Toner
One-component magnetic toner

☐ Transfer
Roller transfer method

☐ Fixing
Heated roller method

☐ Density Adjustment
Variable development bias method (adjustable by user)

1.2.2 Printer Basic Specifications

☐ Resolution:

\<EPL-5900\>	600dpi / 1200dpi
	(1200dpi is half speed control)
\<EPL-5900L\>	600 dpi

☐ Warming Up Time:

21 or less seconds .... Time from power-on to "Ready" display
11 or less seconds ....Warm-up time from sleep mode
(23°C environment, at rated voltage)

☐ First Printing Time:

Table 1-4. First Printing Time with "EPL-5900"

Paper Size	600dpi		1200dpi	
	Main Unit	Lower Cassette Unit	Main Unit	Lower Cassette Unit
A4	15 sec. maximum	16 sec. maximum	24 sec. maximum	26 sec. maximum
LGL	16 sec. maximum	--	25 sec. maximum	--
LT	15 sec. maximum	16 sec. maximum	24 sec. maximum	26 sec. maximum
B5	15 sec. maximum	--	23 sec. maximum	--
A5	14 sec. maximum	--	22 sec. maximum	--

Table 1-5. First Printing Time with "EPL-5900L"

Paper Size	600dpi
A4	15 sec. maximum
LGL	16 sec. maximum
LT	15 sec. maximum
B5	15 sec. maximum
A5	14 sec. maximum

☐ Continuous Printing Speed:

Table 1-6. Continuous Printing Speed

Paper Size	600dpi	1200dpi [1]
A4	12.0 ppm minimum	6.0 ppm minimum
LGL	10.3 ppm minimum	5.1 ppm minimum
LT	12.5 ppm minimum	6.2 ppm minimum
B5	12.5 ppm minimum	6.2 ppm minimum
A5	12.5 ppm minimum	6.2 ppm minimum
Japanese official postcard	12.5 ppm minimum	6.2 ppm minimum
Kakugata #3 [2]	11.0 ppm minimum	5.5 ppm minimum

*1:   1200 dpi is not available with EPL-5900L.

*2:   JIS envelope

NOTE 1: The continuous printing speeds indicated above are common to all the paper feeders.

        2: For printing of custom size paper, printing speed will be lower because automatic cleaning is carried out. In addition, paper sheets of custom size will be printed at the same speed irrespective of the paper size.

☐ Paper Feed Reference
Centerline reference for each paper size and each paper feeder.

☐ Paper Feed:

Table 1-7. Paper Feed with "EPL-5900"

Paper Source		Capacity	Paper Type [*1] and Paper Size	Feedable Paper Thickness [*1]
Standard	Paper Tray	300 sheets (TBD)	Standard paper: FX P Paper: A4	64 g/m^2
		250 sheets	Standard paper: XEROX 4024DP 20lb: Letter	75 g/m^2
			Plain paper or regenerated paper: A4, B5, A5, Letter, GLT, Executive, LGL GLG, F4, Half Letter, Custom size paper	60 ~ 90 g/m^2
		5 sheets	Transparencies: A4, B5, A5, Letter, GLT, Executive, LGL, GLG, F4, Half Letter, Custom size paper	---
		10 sheets	Labels: A4, B5, A5, Letter, GLT, Executive, LGL, GLG, F4, Half Letter, Custom size paper	---
			Thick paper: A4, B5, A5, Letter, GLT, Executive, LGL, GLG, F4, Half Letter, Custom size paper	90 ~ 163 g/m^2
		10 sheets	Envelope: Monarch, Com-10, DL, C5, C6 ISO-B5, Yokei #0 [*4], Yokei #4 [*4], Yokei #6 [*4], Chokei #3 [*4], Chokei #4 [*4], Kakugata #3 [*4]	70 ~ 105 g/m^2
		50 sheets [*3]	Japanese official postcard [*2], Japanese official prepaid postcard [*2]	190 g/m^2
	Manual feed slot	1 sheet	Standard paper, plain paper, special applications: A4, A5, Letter, GLT, Executive, LGL, GLG F4, Half Letter, B5, Monarch, Com-10 DL, C5, C6, ISO-B5, Yokei #0 [*4], Yokei #4 [*4], Yokei #6 [*4], Chokei #3 [*4], Chokei #4 [*4], Kakugata #3 [*4], Custom size paper	60 ~ 163 g/m^2
Optional	500-sheet lower cassette (paper size fixed)	TBD sheets*	Standard paper: FX P Paper: A4	64 g/m^2
		500 sheets	Standard paper: XEROX 4024DP 20lb: Letter	75 g/m^2
			Plain paper or regenerated paper: A4 or Letter	60 ~ 90 g/m^2

Table 1-8. Paper Feed with "EPL-5900L"

Paper Source		Capacity	Paper Type [*1] and Paper Size	Feedable Paper Thickness [*1]
Standard	Paper Tray	300 sheets (TBD)	Standard paper: FX P Paper: A4	64 g/m^2
		150 sheets	Standard paper: XEROX 4024DP 20lb: Letter	75 g/m^2
			Plain paper or regenerated paper: A4, B5, A5, Letter, GLT, Executive, LGL GLG, F4, Half Letter, Custom size paper	60 ~ 90 g/m^2
		5 sheets	Transparencies: A4, B5, A5, Letter, GLT, Executive, LGL, GLG, F4, Half Letter, Custom size paper	---
		10 sheets	Labels: A4, B5, A5, Letter, GLT, Executive, LGL, GLG, F4, Half Letter, Custom size paper	---
			Thick paper: A4, B5, A5, Letter, GLT, Executive, LGL, GLG, F4, Half Letter, Custom size paper	90 ~ 163 g/m^2
		10 sheets	Envelope: Monarch, Com-10, DL, C5, C6 ISO-B5, Yokei #0 [*4], Yokei #4 [*4], Yokei #6 [*4], Chokei #3 [*4], Chokei #4 [*4], Kakugata #3 [*4]	70 ~ 105 g/m^2
		50 sheets [*3]	Japanese official postcard [*2], Japanese official prepaid postcard [*2]	190 g/m^2

*1: Refer to 1.2.4 "Paper Specification".

*2: Curl must be straightened, especially before feeding a postcard for printing of its back side in consideration of manual duplex printing. (Set the postcard so that its side to be printed faces up and its curl is directed upward.)

*3: For the second side printing, set not more than 20 sheets.

*4: JIS envelope

NOTE: *For custom size paper, refer to Paper Feed Sizes and Paper Thickness (p13).*

☐ Applicable Paper Sizes, Paper Types, and Paper Orientation

Table 1-9. Applicable Paper Sizes, Paper Types, and Paper Orientation with "EPL-5900"

	Paper Size	Dimensions in mm (inches)	Paper Tray	Manual Feed Slot	Lower Cassette *4	Paper Orientation
Plain Paper	A4	210.00×297.00	◯	◯	◯*3	SEF
	A5	148.00×210.00	◯	◯	-	SEF
	B5	182.00×257.00	◯	◯	-	SEF
	LT	215.90×279.40 (8.50×11.00")	◯	◯	◯*3	SEF
	HLT	139.70×215.90 (5.50×8.50")	◯	◯		SEF
	LGL)	215.90×355.60 (8.50×14.00")	◯	◯	-	SEF
	EXE	184.15×266.70 (7.25×10.50")	◯	◯	-	SEF
	GLG	215.90×330.20 (8.50×13.00")	◯	◯	-	SEF
	GLT	203.20×266.70 (8.00×10.50")	◯	◯	-	SEF
	F4	210.00×330.00	◯	◯	-	SEF
Special Applications	Japanese official postcard *4	100.00×148.00	◯	◯	-	SEF
	Japanese official prepaid postcard *4	200.00×148.00	◯	◯	-	SEF
	Transparencies	A4: 210.00×297.00 LT: 215.90×279.40	◯	◯	-	SEF
	Labels	A4: 210.00×297.00 LT: 215.90×279.40	◯	◯	-	SEF

Table 1-9. Applicable Paper Sizes, Paper Types, and Paper Orientation with "EPL-5900" (continued)

		Paper Size	Dimensions in mm (inches)	Paper Tray	Manual Feed Slot	Lower Cassette *4	Paper Orientation
Special Applications	Envelope *3, *4	Monarch	98.43×190.50 (3 7/8"×7 1/2")	◯	◯	-	SEF *2
		Com-10	104.78×241.30 (4 1/8"×9 1/2")	◯	◯	-	SEF *2
		DL	110.00×220.00	◯	◯	-	SEF *2
		C5	162.00×229.00	◯	◯	-	SEF *2
		C6	114.00×162.00	◯	◯	-	SEF *2
		ISO-B5	176.00×250.00	◯	◯		SEF *2
		Yokei #0 *5	120.00×235.00	◯	◯	-	SEF *2
		Yokei #4 *5	105.00×235.00	◯	◯	-	SEF *2
		Yokei #6 *5	98.00×190.00	◯	◯		SEF *2
		Chokei #3 *5	120.00×235.00	◯	◯	-	SEF *2
		Chokei #4 *5	90.00×205.00	◯	◯		SEF *2
		Kakugata #3 *5	216.00×277.00	◯	◯	-	SEF *2

*1:   Curls must be straightened.

*2:   Refer to Envelope Orientation *(p.13)* for details on feeding direction of envelopes.

*3:   The lower cassette is available with a fixed paper size.

*4:   Option

*5:   JIS envelope

NOTE: *LEF (Long Edge Feed): the long edge of the paper is fed to the printer.*
         SEF (Short Edge Feed): the short edge of the paper is fed to the printer.

Table 1-10. Applicable Paper Sizes, Paper Types, and Paper Orientation with "EPL-5900L"

Paper Size		Dimensions in mm (inches)	Paper Tray	Paper Orientation
Plain Paper	A4	210.00×297.00	◯	SEF
	A5	148.00×210.00	◯	SEF
	B5	182.00×257.00	◯	SEF
	LT	215.90×279.40 (8.50×11.00")	◯	SEF
	HLT	139.70×215.90 (5.50×8.50")	◯	SEF
	LGL)	215.90×355.60 (8.50×14.00")	◯	SEF
	EXE	184.15×266.70 (7.25×10.50")	◯	SEF
	GLG	215.90×330.20 (8.50×13.00")	◯	SEF
	GLT	203.20×266.70 (8.00×10.50")	◯	SEF
	F4	210.00×330.00	◯	SEF
Special Applications	Japanese official postcard [4]	100.00×148.00	◯	SEF
	Japanese official prepaid postcard [4]	200.00×148.00	◯	SEF
	Transparencies	A4: 210.00×297.00 LT: 215.90×279.40	◯	SEF
	Labels	A4: 210.00×297.00 LT: 215.90×279.40	◯	SEF

Table 1-10. Applicable Paper Sizes, Paper Types, and Paper Orientation with "EPL-5900L" (continued)

Paper Size			Dimensions in mm (inches)	Paper Tray	Paper Orientation
Special Applications	Envelope [3], [4]	Monarch	98.43×190.50 (3 7/8"×7 1/2")	◯	SEF [2]
		Com-10	104.78×241.30 (4 1/8"×9 1/2")	◯	SEF [2]
		DL	110.00×220.00	◯	SEF [2]
		C5	162.00×229.00	◯	SEF [2]
		C6	114.00×162.00	◯	SEF [2]
		ISO-B5	176.00×250.00	◯	SEF [2]
		Yokei #0 [3]	120.00×235.00	◯	SEF [2]
		Yokei #4 [3]	105.00×235.00	◯	SEF [2]
		Yokei #6 [3]	98.00×190.00	◯	SEF [2]
		Chokei #3 [3]	120.00×235.00	◯	SEF [2]
		Chokei #4 [3]	90.00×205.00	◯	SEF [2]
		Kakugata #3 [3]	216.00×277.00	◯	SEF [2]
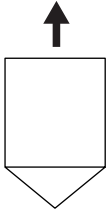
[1]: Curls must be straightened.

[2]: Refer to Envelope Orientation *(p.13)* for details on feeding direction of envelopes.

[3]: JIS envelope

NOTE: *LEF (Long Edge Feed): the long edge of the paper is fed to the printer.*
SEF (Short Edge Feed): the short edge of the paper is fed to the printer.

❑ Envelope Orientation

Feeding Direction	↑	↑	↑
Envelope Types	Chokei #3 [*1], Chokei #4 [*1], Kakugata #3 [*1]	Yokei #0 [*1], Yokei #4 [*1], Yokei #6 [*1], Monarch, Com-10, DL, C6	C5, ISO-B5

*1:   JIS envelope

NOTES: *1. Only envelopes without adhesive or adhesive tapes can be used.*
2. Set the envelope with its side to be printed facing up.

❑ Paper Feed Sizes and Paper Thickness

<EPL-5900>

■ Printer body and Paper tray:
Regular types of paper or custom size paper within the following feedable paper size range
Paper width   76.00 to 216.00 mm
Paper length   127.00 to 356.00 mm
Paper thickness   60 to 163 g/m^2

■ Manual feed slot:
Regular types of paper or custom size paper within the following feedable paper size range
Paper width   76.00 to 216.00 mm
Paper length   148.00 mm to 356.00 mm
Paper thickness   60 to 163 g/m^2

■ Lower cassette unit (option):
Supported paper size = Either A4 or Letter (fixed to only one size)
Paper thickness   60 to 90 g/m^2

<EPL-5900L>

■ Paper tray:
Regular types of paper or custom size paper within the following feedable paper size range
Paper width   76.00 to 216.00 mm
Paper length   127.00 to 356.00 mm
Paper thickness   60 to 163 g/m^2

❑ Output Paper Capacity:

Table 1-11. Output Paper Capacity

	Standard	Optional
Paper exit bin	Face-down	Face-up
Output paper capacity [*1]	100 sheets	20 sheets
Paper sizes	All sizes which can be fed through the printer body (Regular or custom sizes)	
Paper types [*2]	Standard paper, plain paper, special applications	

*1:   In Environment A *(see p.55)*. With standard paper immediately after unpacked

*2:   Refer to 1.2.4 "Paper Specification".

□ Dimensions

■ Stand Alone Outline Dimensions and Weights

Table 1-12. Stand Alone Outline Dimensions and Weights of "EPL-5900"

		Width (mm)	Depth (mm)	Height (mm)	Weight (kg)
Standard	Face-down tray in storage position	399	435	265	7.5
	Face-down tray in use position	399	435	378	7.5
Optional	Face-up tray	248	32	248	0.2
	Lower cassette unit	382	444	137	4

Table 1-13. Stand Alone Outline Dimensions and Weights of "EPL-5900L"

		Width (mm)	Depth (mm)	Height (mm)	Weight (kg)
Standard	Face-down tray in storage position	399	263	256	7
	Face-down tray and Paper tray in use position	399	406	368	7
Optional	Face-up tray	248	32	248	0.2

NOTE **1:** *Unpacked dimensions are stated.*

2: *Dimensions have a tolerance of ±5mm and weights have a tolerance of ±0.5kg.*

3: *The dimensions of the Main Unit does not include those of the controller and consumables.*

■ Outline Dimensions and Weights with Options Installed

Table 1-14. Outline Dimensions and Weights with Options Installed of "EPL-5900"

		Width (mm)	Depth (mm)	Height (mm)	Weight (kg)
Main Unit + Face-up tray	Face-down and Face-up trays in storage position	399	435	269	7.7
	Face-up tray in use position	399	569	428	7.7
Main Unit + Lower cassette unit	Face-down tray in storage position	399	444	377	11
	Face-down tray in use position	399	444	491	11
Main Unit + Lower cassette unit + Face-up tray	Face-down tray in use position	399	578	541	11.2
Main Unit + Paper eject tray attachment	Face-down tray in storage position	399	435	276	7.1
	Face-down tray in use position	399	435	287	7.1

NOTE **1:** *Dimensions have a tolerance of ±5mm and weights have a tolerance of ±0.5kg.*

2: *The dimensions of the Main Unit does not include those of the controller and consumables.*

Table 1-15. Outline Dimensions and Weights with Options Installed of "EPL-5900L"

		Width (mm)	Depth (mm)	Height (mm)	Weight (kg)
Main Unit + Face-up tray	Face-down and Face-up trays and Paper tray in storage position	399	397	280	7.2
	Face-up tray and Paper tray in use position	399	540	418	7
Main Unit + Paper eject tray attachment	Face-down tray and Paper tray in storage position	399	263	267	7.1
	Face-down tray and Paper tray in use position	399	406	278	7.1

NOTE   *1:   Dimensions have a tolerance of ±5mm and weights have a tolerance of ±0.5kg.*

2:   The dimensions of the Main Unit does not include those of the controller and consumables.

☐ Consumables:

■   Imaging Cartridge (black toner)

■   Drum Cartridge (Photoconductor Unit)

Note: Refer to 1.2.10 "Consumable Components".

☐ Regular Replacement Parts

Without taking into account replacement by the user, the lives of regular replacement parts are as follows:

■   Fuser Unit..........................50,000 pages (5% pattern continuous printing)
■   Transfer Roller..................50,000 pages (5% pattern continuous printing)

☐ Power Supply:

    100V ±10%   50 ~ 60Hz ±3Hz
    110V −10%   50 ~ 60Hz ±3Hz
    127V +6%   50 ~ 60Hz ±3Hz
    220 ~ 240V ±10%   50 ~ 60Hz ±3Hz
    Applicable low-voltage power supplies are 100~120 V and 220~240 V only.

☐ Power Consumption

Table 1-16. Power Consumption

		100V	120V	200V System
Maximum current rated		8.6A	7.2A	3.8A
Power Consumption	Maximum	810W	840W	850W
	Average at continuous printing	330Wh	330Wh	330Wh
	Average during standby with heating on	75Wh	75Wh	75Wh
	Average during power save mode with heating off	15Wh	15Wh	15Wh

☐ Product Lifetime

■   Main Unit

180,000 printed pages or 5 years, whichever comes first. (with periodic part replacement) → See *Table 6-2 Regular Replacement Parts and Consumables*

☐ Noise

Table 1-17. Noise

	During standby	During printing
Main Unit only	30.0dB (A)	49.0dB (A)

☐ Exhaust Gas

Ozone Concentration: 0.02 mg/m^3 max.
　　　　　　(by blue angel mark measurement method)
Styrene Concentration: 0.07 mg/m^3 max.
　　　　　　(by blue angel mark measurement method)
Dust Concentration: 0.15 mg/m^3 max.
　　　　　　(by blue angel mark measurement method)

☐ Hazardous Materials
None of the OPC, toner and plastics contains hazardous materials.

Note:　*For safety standards, refer to 1.2.9 "Compliance with Standards and Regulations".*

1.2.3 Various Sensors

Table 1-18. Various Sensors of "EPL-5900"

Unit		Detectable Matter	Sensors	Remarks
Standard	Paper Tray	Out of paper	Automatic detection by sensor	
	Lower Cassette Unit	Out of paper	Automatic detection by sensor	
		Paper size	Automatic setting with projection on cassette	Cassette dedicated to A4 or LT
		Cassette mounted/ unmounted	Combination of both detections for "out of paper" and "paper size"	

Table 1-19. Various Sensors of "EPL-5900L"

Unit		Detectable Matter	Sensors	Remarks
Standard	Paper Tray	Out of paper	Automatic detection by sensor	

1.2.4 Paper Specification

1.2.4.1 Paper Type

☐ Standard Paper
XEROX 4024 DP 20 lb: Letter paper

☐ Plain Paper
60 g/m^2 ~ 90 g/m^2 (16 lb ~ 24 lb)
generally applied copy paper, recycled paper

☐ Special Applications
- ■ Labels
- ■ Transparencies
- ■ Thick paper (90 ~ 163 g/m^2)
- ■ Envelopes

NOTE   *1: lb: Ream weight = lb / 500 sheets/ 17" ×22" (431.8X558.8mm)*
              g/m^2: 1 g/m^2 = 0.2659763 lb

        2: The following types of paper should not be used with this printer. They could cause printing defects, paper jams or printer malfunctions.

- *Carbon paper, non-carbon paper, thermal paper, impact paper, acid-based paper*
- *Paper that is too thin or too thick*
- *Paper that is wet or damp*
- *Paper with special coatings or colored paper with processed surfaces*
- *Glossy (too slick on its surface) paper, or paper with too smooth/rough surfaces*
- *Paper with significantly different roughness on each surface*
- *Paper with punch holes or perforations*
- *Creased, curled or torn paper*
- *Irregularly shaped paper or paper with non-perpendicular corners*
- *Labels that peel off easily*
- *Paper with glue, staples or paper clips attached to it*
- *Ink jet paper for special applications (super-fine, glossy, glossy film, etc.)*
- *Paper that was previously used in a thermal or ink jet printer*
- *Transparencies for color photocopiers or color laser printers*
- *Sheets already printed on other color / monochrome laser printers or photocopiers*
- *Sheets of paper stuck together*

- *Four-leaf printed postcard, postcards made for inkjet printing, or press-sealed postcards*
- *Iron print coated paper (for inkjet or laser printing)*
- *Sheets deteriorate or discolor by heat of the Fuser Unit of approximately 200 °C*

        3: When the Japanese "Kamo mail" post card or official / non-official postcards with illustrations are used, paper feed roller may be soiled with paper dust, and these postcards are not fed properly. In this case, cleaning is required following Table 6-1 Cleaning Items.

1.2.4.2 Paper Feedings

Table 1-20. Paper Feedings

		Standard Paper	Plain Paper	Special Applications			
				Transparencies	Labels	Thick paper	Envelope
Standard	Paper Tray	○	☐	△	△	△	△
Optional	Lower Cassette *1	○	☐	×	×	×	×

*1:   Use of Lower Cassette is not supported with EPL-5900L.

○ : Paper feed reliability and image quality assured.

☐ : Paper feed reliability and image quality assured, but only for the use of generally applied types of paper.

△ : Paper feed and printing are possible for only generally applied types of paper.

× : Sheets cannot be fed.

1.2.4.3 Printable Area

☐ Available Printing Area
208.0 mm × 348.0 mm

☐ Guaranteed Printing Area
All area of the sheet except vertical and horizontal margins of 4 mm (See illustration below)

4mm   4mm

4mm

Guaranteed
print area

4mm
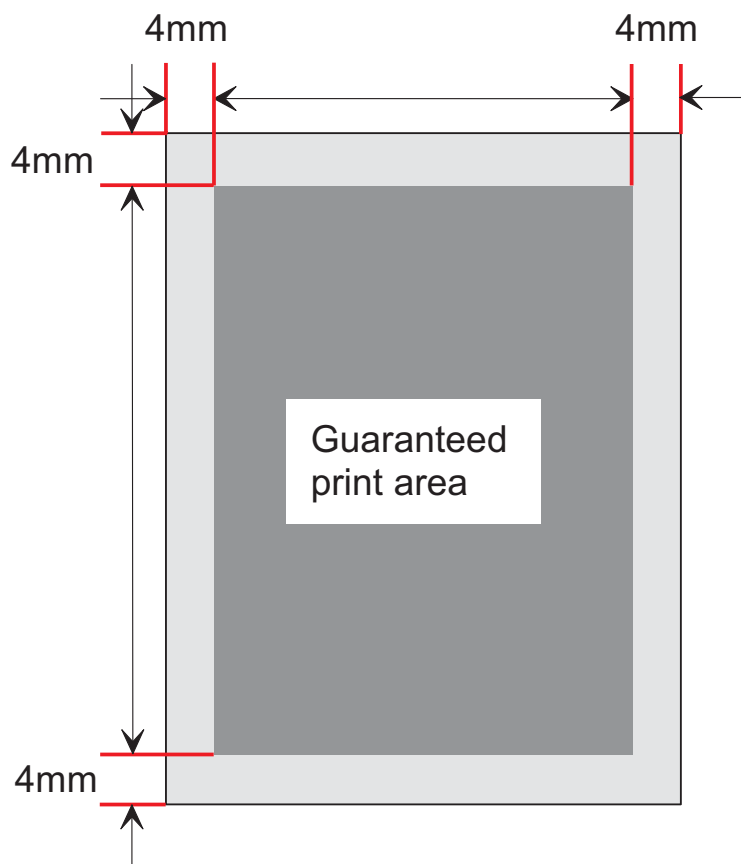
Figure 1-1. Guaranteed Print Area

1.2.5 Reliability, Durability, Serviceability

☐ MPBF
25,000 pages

> *NOTE: MPBF means an average number of pages printed until the occurrence of a malfunction which either requires the replacement of a part or cannot be solved by the user.*

☐ Paper Feed Reliability

Table 1-21. Paper Feed Reliability

Error type	Environment		
	A	B	C
Paper-jam rate[*1]	1/2000 max.	2/2000 max.	3/2000 max.
Paper misfeed	1/2000 max.	2/2000 max.	3/2000 max.
Multiple-sheet feed rate [*2]	1/500 max.	2/500 max.	3/500 max.
Paper creasing	1/1000 max.	2/1000 max.	3/1000 max.
Leading edge folded [*3]	1/1000 max.	2/1000 max.	3/1000 max.

*1: Includes miss feeds, multiple-sheet feed, and other kinds of jam. Does not include multiple-sheet feed at the boundary.

*2: Does not include multiple-sheet feed at the boundary.

• *Boundary means sheets boundary between original paper and replenished paper, occurring after paper is replenished.*

*3: Includes 1 mm or more corner fold, but does not include less than 1 mm corner fold.

> *NOTE 1: Based on use of paper taken from a newly opened package, that is, free from curls and any deterioration.*
>
> *2: This reliability also applies to 1200 dpi printing with EPL-5900.*
>
> *3: This reliability applies to all the relevant paper feeders.*

☐ Printing Start Position Accuracy
(With standard paper fed from Paper tray or Paper cassette)

■ Reference point of Main scanning direction (c) ±2.0 mm

■ Reference point of Sub scanning direction (a) ±2.5 mm
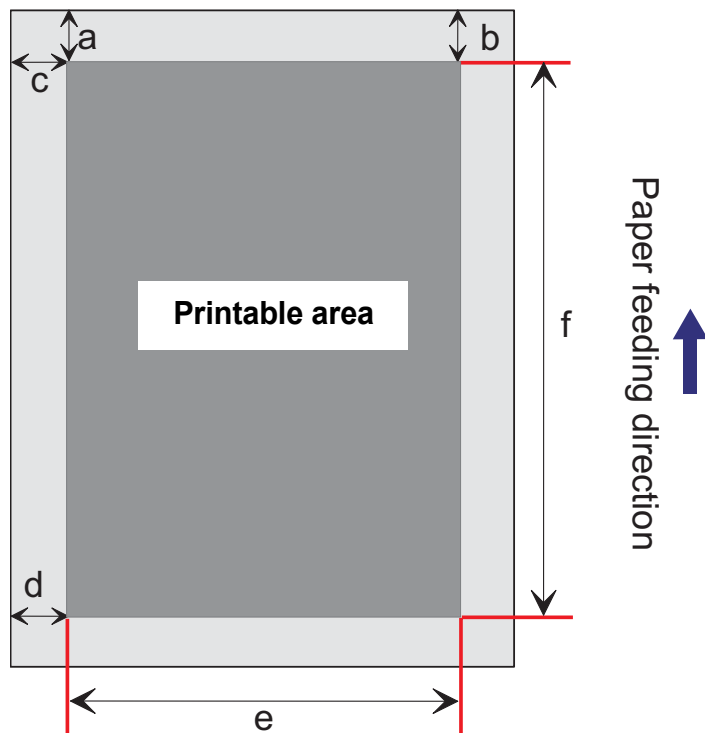
Figure 1-2. Paper Skew

☐   Skew

Table 1-22. Skew

Scanning Direction	A4
Main scanning direction |a-b|	±1.5 mm
Sub scanning direction |c-d|	±2.0 mm

Measured based on the Dot 2 pattern.

Table 1-23. Skew

	A4
Between a and b	2.08
Between c and d	1.51

☐   Height of Curl of Printed Pages

Table 1-24. Height of Curl of Printed Pages

Paper Size		Height
Plain paper		± 30 mm or less
Transparencies	Face-down paper eject	± 20 mm or less
	Face-up paper eject	± 12 mm or less
Other special applications		Not specified

☐   Durability
Printing Volume

Maximum 15,000 sheets / month
Average 2,500 sheets / month

☐   Serviceability

MTTR

Averages within 30 minutes. (Time for service personnel to locate and correct the malfunction)

1.2.6 Operating Conditions (Including Imaging Cartridge)

☐ Temperature and Humidity Conditions

Table 1-25. Temperature and Humidity Conditions

	Temperature ($^{\circ}$C)	Humidity (%RH)	Others
Printer is under operation	10~35	15~85	No condensation
Printer is stopped	0~35	10~85	

☐ Air Pressure
76.0 to 101.0 kpa (Altitude: 0 ~ 2500 m)

☐ Level
Within 1° of level

☐ Lighting
3000 lx or less (do not expose to direct sunlight)

☐ Space Requirements
In order to ensure that the printer operates properly, provide at least as much space as shown in Figure 1-3 (for EPL-5900) and Figure 1-4 (for EPL-5900L).

<EPL-5900>
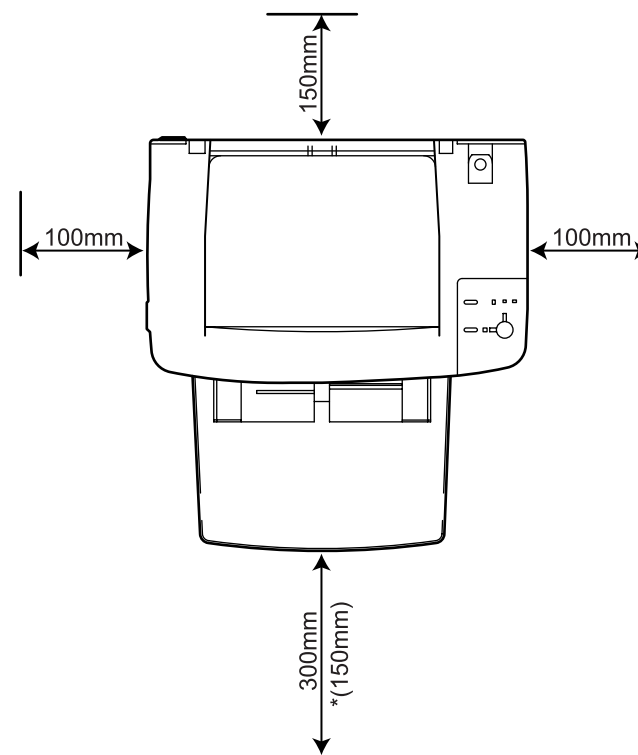
Space22.eps

Figure 1-3. Required Surrounding Space for EPL-5900

NOTE: The space height required is 550 mm or more.

<EPL-5900L>
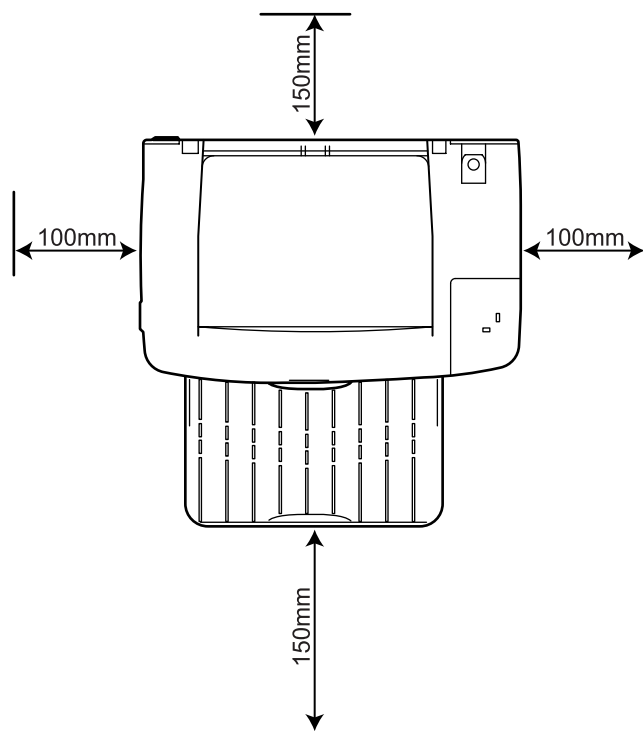
Space12.eps

Figure 1-4. Required Surrounding Space for EPL-5900L

NOTE: The space height required is 550 mm or more.

1.2.7 Storage and Transport of the Printer Main Unit and Optional Products (Consumables Packaged)

☐ Temperature and Humidity Conditions

Table 1-26. Temperature and Humidity Conditions (Option)

	Temperature (°C)	Humidity (%RH)	Warranty Period	Others
Normal Conditions	0 ~ 35	30 ~ 80	18 months	No condensation
Severe Conditions	High temperature: 35 ~ 40 Low temperature: -20 ~ 0	High humidity: 85 ~ 95 Low humidity: 10 ~ 30	1/30 of warranty period.	

☐ Transportation Barometric Pressure
61.3 ~ 101.3 kPa or more (460 ~760 m)

☐ Dropping
No abnormalities according to JIS Z0200-1994 Level 1

☐ Vibration

  ■ Frequency.. 5 ~ 100 Hz
                                                       (Sweep time: 10 minutes)

  ■ Acceleration .... 1 G

  ■ Direction of application .... 3 dimensional

  ■ Time of application .... 60 minutes along each X, Y, Z axis, total of 180 minutes

1.2.8 Electrical Features

□ Fast Transient / Bursts (AC Line Noise)
IEC 61000-4-4 compliance

Voltage 1 kV: no malfunction occurs such as defective image quality.
         2 kV: no damage allowed.

□ Instantaneous Outages
DIP 100% (at rated current - 10%) one cycle.
No effect on printing quality

□ Resistance to Static Electricity
IEC 61000-4-2: 1995 compliance

Direct contact discharge: 4.5kV
Indirect contact discharge: 4.5kV
Aerial discharge: 8.5kV
Even when electric discharge as mentioned above occurs, the printer shall
keep operating normally without any trouble which affects the basic
performance or which can lead to breakdown of the printer.

□ Inrush Current
50A or less (0-peak)

□ Insulation Resistance
10 MΩ or more (at DC 500 V)

□ Dielectric Strength
No break down during application of the voltages shown below for a one minute
period.

Table 1-27. Dielectric Strength

	(Across primary and chassis)
For 100 V system models	AC 1000V
For 110 to 127 V system models	AC 1000V
For 220 to 240 V system models	AC 1000V

□ Leak Current

Table 1-28. Leak Current

Intended Market	Leak Current
100V (Japan)	0.25 mA or less
110 to 127 V system models	3.5 mA or less
220 to 240 V system models	3.5 mA or less

1.2.9 Compliance with Standards and Regulations

□ Safety Standards

Table 1-29. Safety Standards

Model Name	Applicable Standards
For 100 V system models	UL60950 CSA C22.2 No.60950
For 200 V system models	IEC60950 2nd +Amd 1, 2, 3, 4 (1996) EN60950 2nd +Amd 1, 2, 3, 4, 11 (1997) EMKO-TSE(74-SEC)207/94

□ Safety Standards (Laser Transmission)
JIS C 6802(1997)
21CFR Chapter I Subchapter J Part1040
IEC60825-1 +A1(1997)
EN60825-1 +A11(1996)

□ EMI

Table 1-30. EMI

Model Name	Applicable Standards
For 100 V system models	47CFR Part15 Subpart B Class B
For 200 V system models	EN55022 Class B (1998) EN61000-3-2 Class B(1998) EN61000-3-3 (1995) EN55024 (1998)

□ Electrical Power High Frequency
Complies with high frequency control guidelines
EN61000-3-2 Class A

□ Electrical Power Consumption
Conforms to International Energy Star Program standards

□ Others

■ Toner .... Conforms to OSHA, TSCA, and
EINECS
(No materials hazardous to
human health)

- OPC .... Conforms to OSHA
  (No materials hazardous to human health)
- Ozone generation .... Blue angel mark compliant
- Materials.. The materials do not contain any substances use of which is prohibited by laws of the market countries, and the contents of hazardous substances do not exceed their respective allowable levels.

1.2.10 Consumable Components

1.2.10.1 Specifications

Table 1-31. Consumable Specifications for "EPL-5900"

Name	Contents	Life[*1]	Size (mm)	Weight (kg)
Imaging Cartridge	• Developer • Black, one-component, non-magnetic toner	Pre-installed: 3,000 sheets[*3]	(W) 275 (D) 97 72[*2] (H) 114	0.4
		Replaced: 6,000 sheets[*3]		0.5
Drum Cartridge	• OPC drum (organic photoconductor) • Charger (Rotary Brush + Pre-charging Film)	Average 20,000sheets	(W) 283 (D) 57 (H) 124	0.3

Table 1-32. Consumable Specifications for "EPL-5900L"

Name	Contents	Life[*1]	Size (mm)	Weight (kg)
Imaging Cartridge	• Developer • Black, one-component, non-magnetic toner	Pre-installed: 3,000 sheets[*3]	(W) 275 (D) 97 72[*2] (H) 114	0.4
		Replaced: 6,000 sheets[*3]		0.5
Drum Cartridge	• OPC drum (organic photoconductor) • Charger (Rotary Brush + Pre-charging Film)	Average 20,000sheets	(W) 283 (D) 57 (H) 124	0.3

*1: The number of sheets is the approximate number of printable images using A4 portrait continuous printing at 5% image occupation rate. The cartridge life varies according to the image occupation rate and type of printing (continuous, intermittent, printing density, and toner save mode).

*2: When the handle has been folded

*3: The external shape varies with the lives and intended markets.

> **CHECK POINT** ✔
>
> - **Neither the pre-mounted Imaging Cartridge nor replaced Imaging Cartridge is interchangeable between EPL-5900 and EPL-5900L.**
> - **The Drum Cartridge is interchangeable between EPL-5900 and EPL-5900L (common to EPL-5900 and EPL-5900L).**

1.2.10.2 Packing Storage and Transport Environments

☐ Temperature and Humidity Conditions

Table 1-33. Temperature and Humidity Conditions (Consumables)

Conditions		Temperature	Humidity	Warranty Period
Normal		0 ~ 35C°	30 ~ 85%	18 months
Severe	High	35 ~ 40C°	85 ~ 95%	1/30 of warranty period
	Low	-20 ~ 0C°	10 ~ 30%	

☐ Transportation Barometric Pressure

Conforms to the same requirements as for the main unit. → Transportation Barometric Pressure 61.3 ~ 101.3 kPa or more (460 ~760 m) *(p21)*

☐ Dropping

No abnormalities according to JIS Z0200-1994 Level 1

☐ Vibration

- Frequency.. 10 ~ 100 Hz
  (Sweep time: 5 minutes)
- Acceleration .... 1 G
- Direction of application .... 3 dimensional
- Time of application .... 60 minutes along each X, Y, Z axis, total of 180 minutes

1.3 External Appearance and Parts Name

1.3.1 Overall Dimensions of EPL-5900

Figure 1-5 to Figure 1-8 show the overall dimensions of EPL-5900.

dim22_01.eps
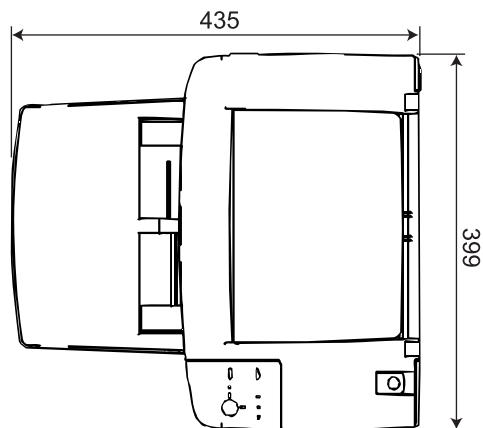
Figure 1-5. Top View of EPL-5900

dim22_02.eps
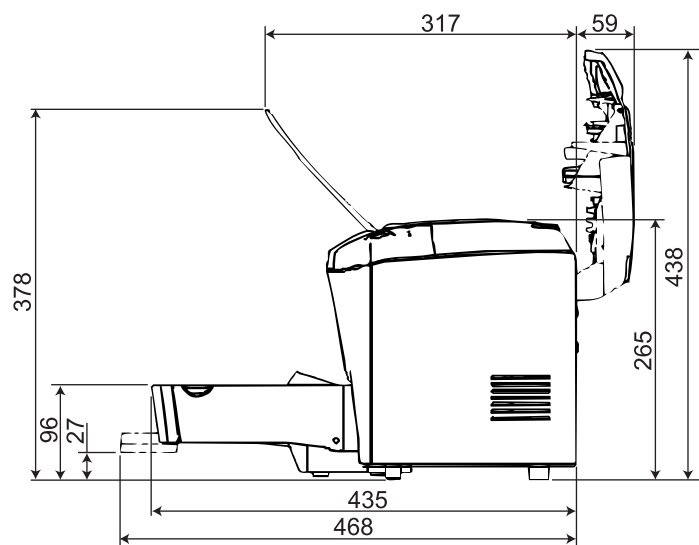
Figure 1-6. Right Side View of EPL-5900

dim22_03.eps
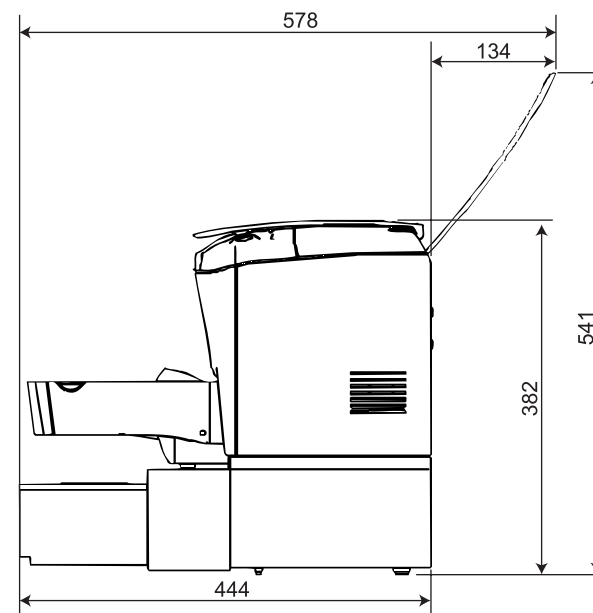
Figure 1-7. Right Side View of EPL-5900 with Optional Components Installed

dim22_04.eps
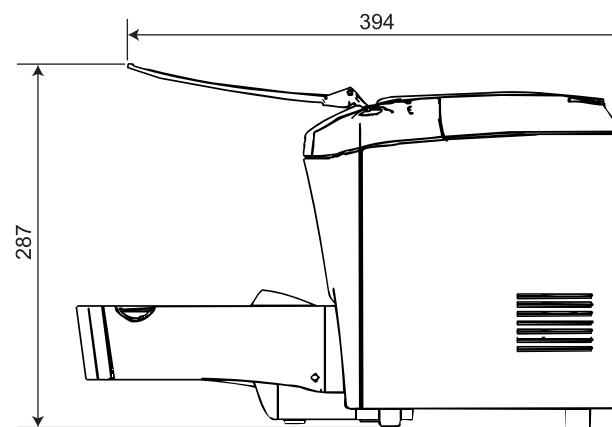
Figure 1-8. Right Side View of EPL-5900 with Paper Eject Tray Attachment Installed

1.3.2 Overall Dimensions of EPL-5900L

Figure 1-9 to Figure 1-12 show the overall dimensions of EPL-5900L.

263

399

dim12_01.eps
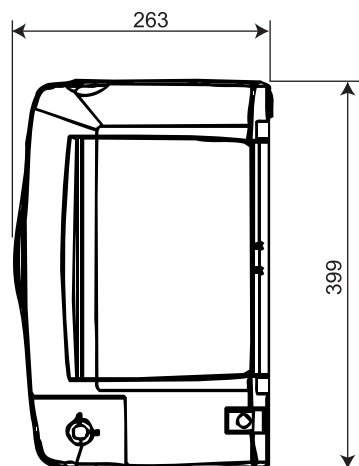
Figure 1-9. Top View of EPL-5900L

465

319

59

368

429

256

406
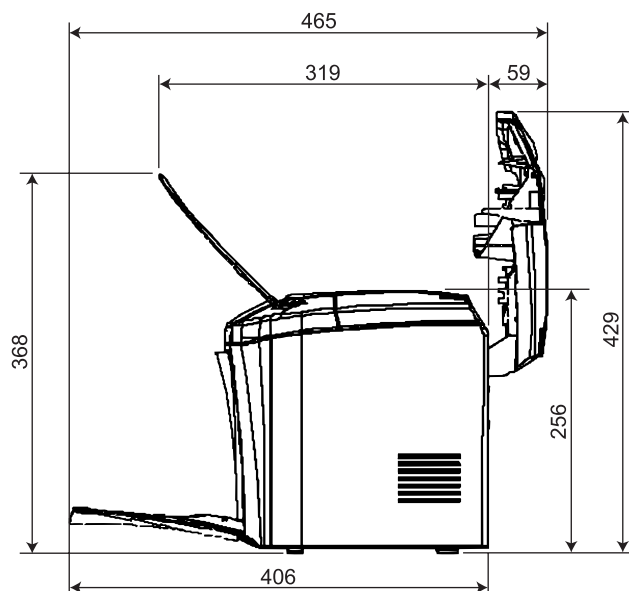
Figure 1-10. Right Side View of EPL-5900L with Top Cover and Tray Open

134

418

260

dim12_04.eps
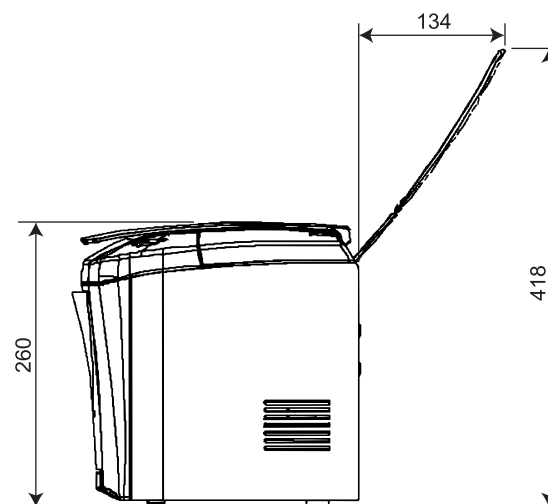
Figure 1-11. Right Side View of EPL-5900L with Optional Component Installed

394

278

dim12_05.eps
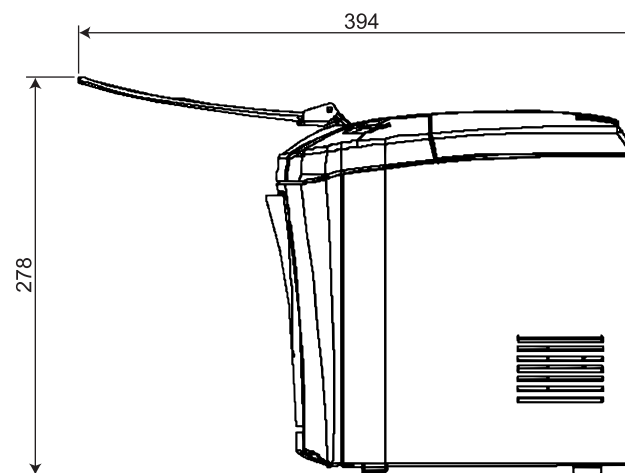
Figure 1-12. Right Side View of EPL-5900L with Paper Eject Tray Attachment Installed

1.3.3 Names of Parts of EPL-5900

Figure 1-13 to Figure 1-19 show names of parts of EPL-5900.

Face-down Tray

Paper Eject
Change Lever

Top Cover

Control Panel

Manual Feed Slot

Paper Tray

name22_01.eps
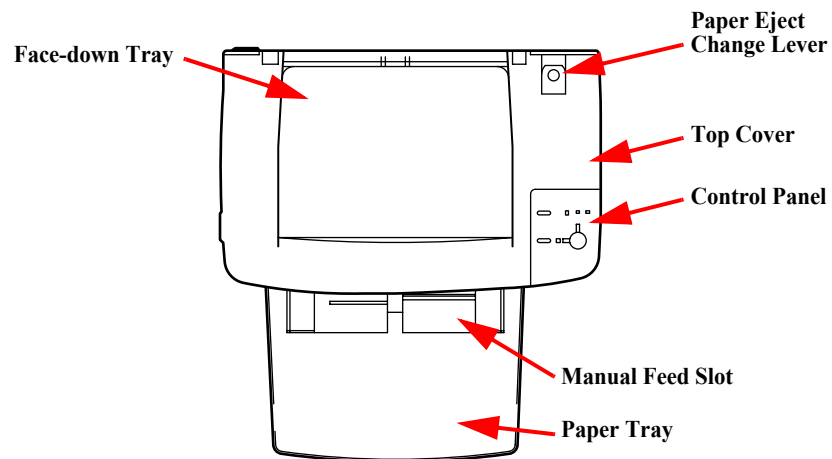
Figure 1-13. Top View of EPL-5900

Paper Tray Front Cover

name22_02.eps
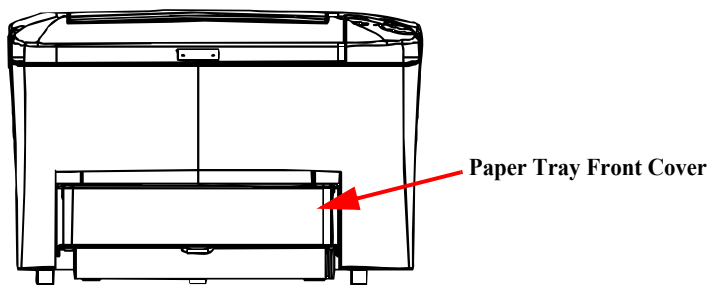
Figure 1-14. Front View of EPL-5900

Face-down Tray

Right Cover (for adding option)

Paper Tray

Paper Tray Front Cover

name22_03.eps
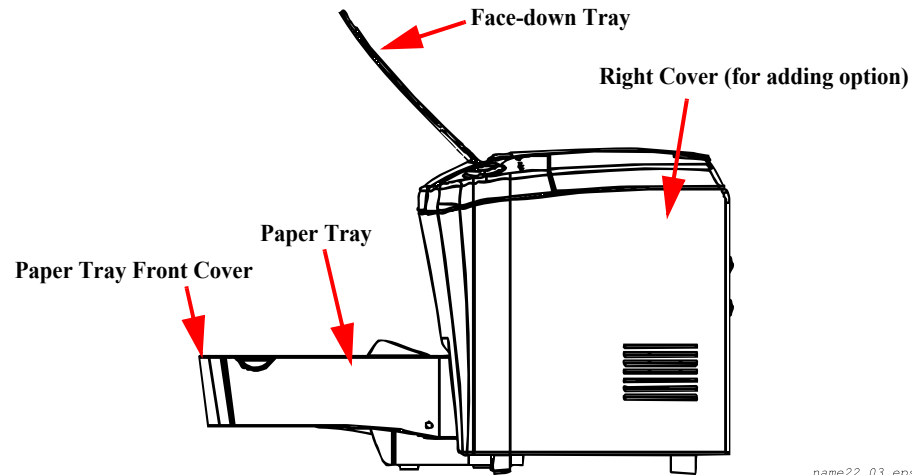
Figure 1-15. Right Side View of EPL-5900

Lock Button

Power Switch

name22_04.eps
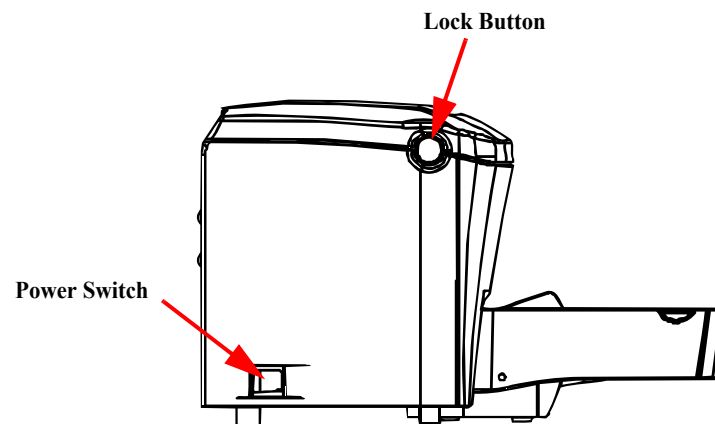
Figure 1-16. Left Side View of EPL-5900

Optional I/F mounting slot cover   Parallel I/F Connector

Face-down Tray

Paper Eject Tray Attachment

GND screws

AC Inlet

USB I/F Connector
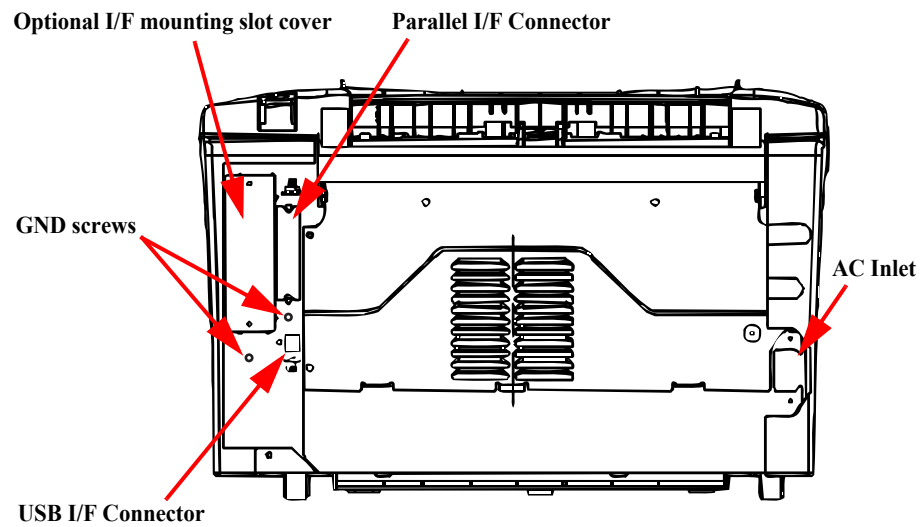
name22_05.eps

name22_07.eps

Figure 1-17. Rear View of EPL-5900
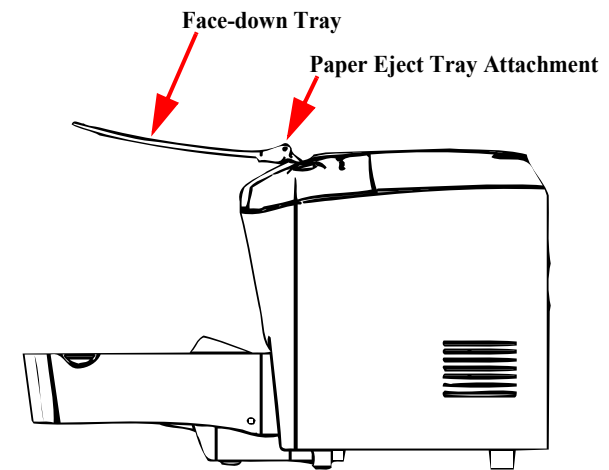
**Figure 1-19. Right Side View of EPL-5900
with Paper Eject Tray Attachment Installed**

Face-up Tray (option)

Lower Cassette Unit:
Paper Cassette (option)

Lower Cassette Unit:
Feeder (option)
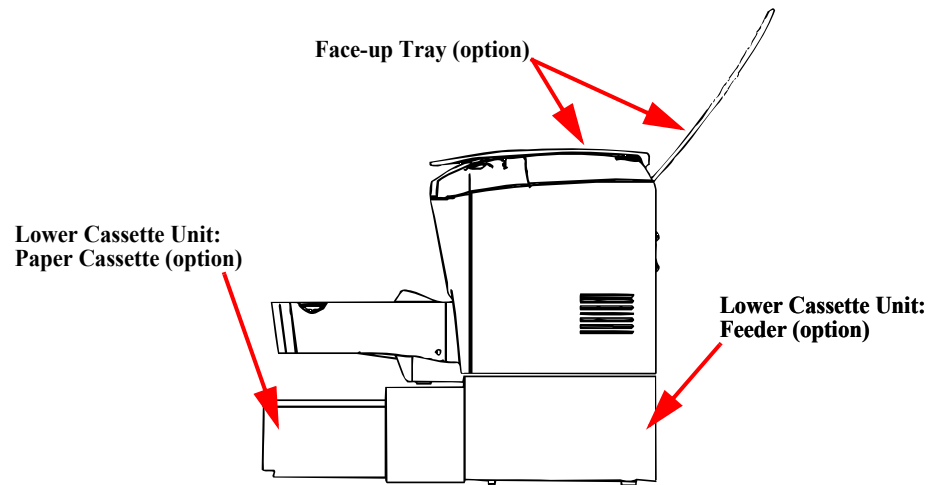
name22_06.eps

**Figure 1-18. Right Side View of EPL-5900
with Optional Components Installed**

1.3.4 Names of Parts of EPL-5900L

Figure 1-20 to Table 1-26 show names of parts of EPL-5900L.

Face-down Tray   **Paper Eject Change Lever**

Top Cover

LED Panel

name12_01.eps
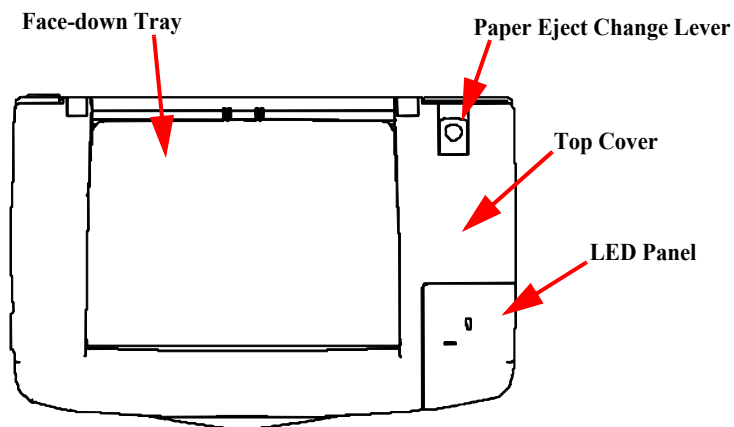
Figure 1-20. Top View of EPL-5900L

Paper Tray

name12_02.eps
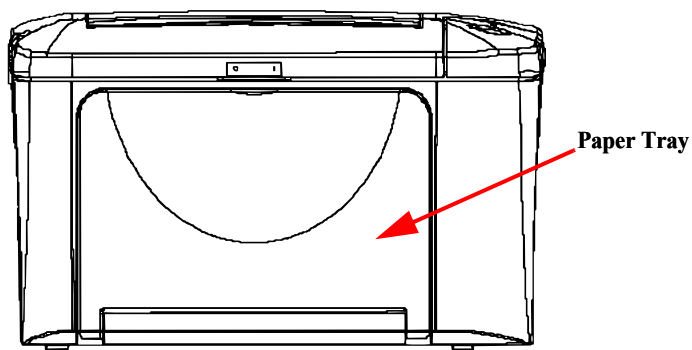
Figure 1-21. Front View of EPL-5900L

Right Cover (for adding optional component)

Paper Tray

name12_03.eps
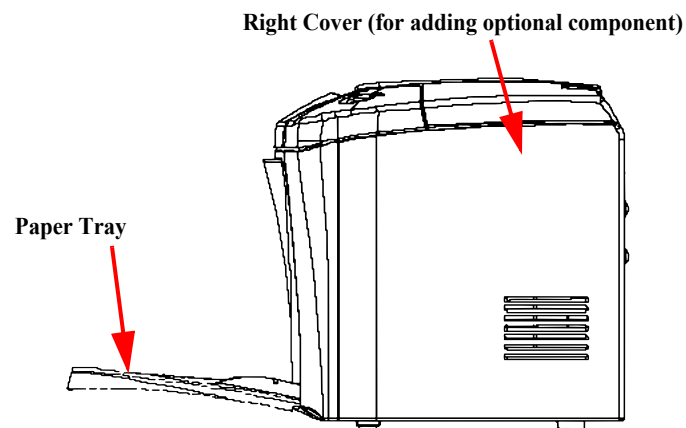
Figure 1-22. Right Side View of EPL-5900L

Face-down Tray

Lock Button

Power Switch

name12_04.eps
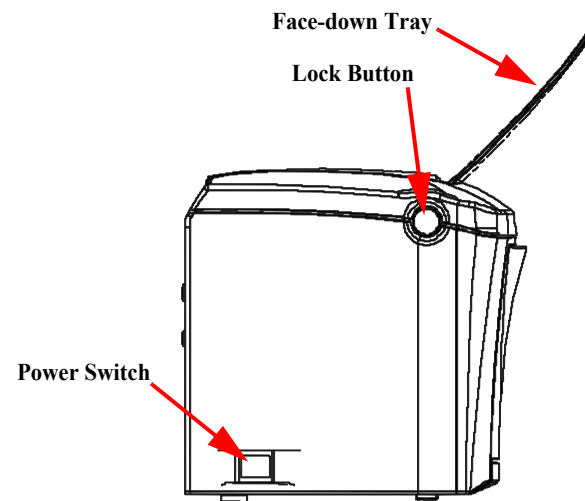
Figure 1-23. Left Side View of EPL-5900L

Parallel I/F Connector

Face-down Tray

Paper Eject Tray Attachment

GND screws

AC Inlet

USB I/F Connector
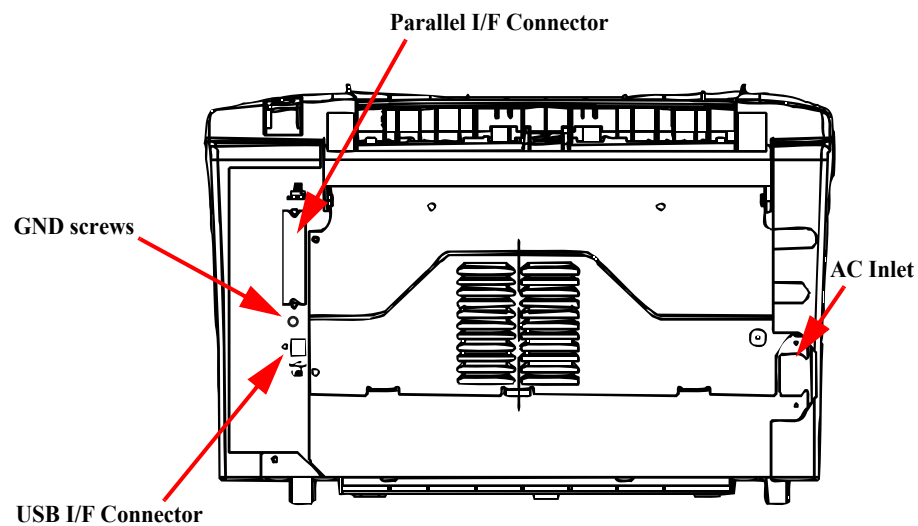
name12_05.eps

name12_07.eps

Figure 1-24. Rear View of EPL-5900L
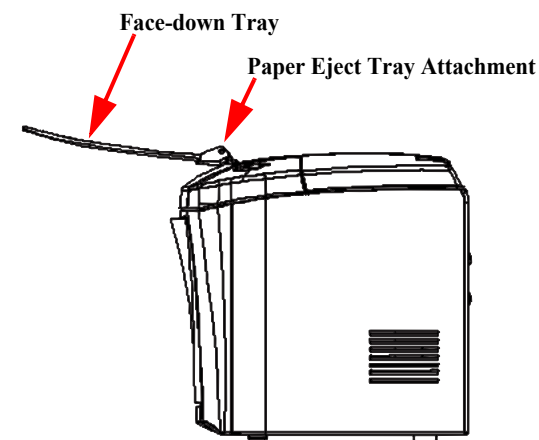
**Figure 1-26. Right Side View of EPL-5900L
with Paper Eject Tray Attachment Installed**

Face-up Tray (option)
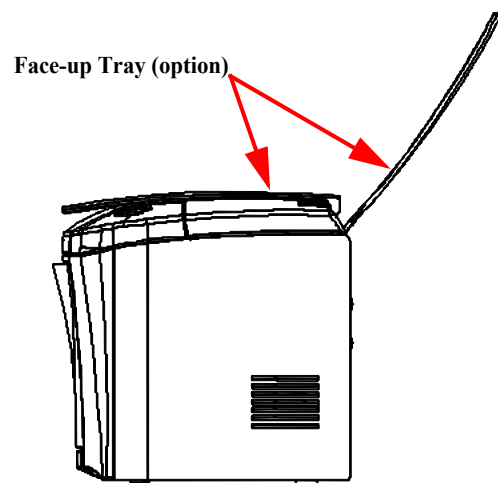
name12_06.eps

**Figure 1-25. Right Side View of EPL-5900L
with Optional Component Installed**

1.4 Controller Specification

1.4.1 Basic Controller Specifications

\<EPL-5900\>

☐ CPU   TMPR4955AF 200MHz

☐ RAM

   \<Standard\>   8MB (SDRAM) (mounted on ROM DIMM board)

   \<DIMM Option\>   16MB, 32MB, 64MB, 128MB (SDRAM, 1 slot)
Maximum 136MB
(when 128MB SDRAM DIMM mounted)

☐ ROM

   \<Fonts\>   4MB (mounted on ROM DIMM board)

   \<Program\>   4MB (mounted on ROM DIMM board)
Initial mass-production in flash memory; once stable in mask ROM

   \<Expansion ROM\>   Single ROM DIMM slot (for PS option or IPDS option)

☐ Host Interface

   \<Standard\>

       Parallel   IEEE1284 compliant bi-directional interface, Type B connector
Compatibility, Nibble, ECP

       Serial   USB

       Option   Type B slot (1 slot)

☐ Control Panel   3 switches and 6 LEDs

☐ Installation Format   Fixed to the printer body

☐ Other   A mechanical control function is incorporated

☐ Installed emulations: PCLXL, PCL5e, GL/2, FX, ESCP2, 1239X, ESC/Page, PostScrtipt3[*1]

*1:   PostScript3 is optional.

\<EPL-5900L\>

☐ CPU   TMP95C001 24 MHz Toshiba

☐ RAM

   \<Standard\>   2MB

   \<SIMM Option\>   up to 13 MB
8MB, 16MB, 32MB, 64MB (EDO RAM SIMM, one slot)
access speed: 60 ns or less

☐ Interface

   \<Standard\>

       Parallel   IEEE1284 compliance interface (Nibble, ECP)

       Serial   USB
(USB Revision 1.1 compatible, USB ID compatible)

       Option   None

☐ Panel   2 LEDs

☐ Installation Format   Fixed to the printer body

☐ Other expansion slots   None

1.4.2 External I/F Specifications

<EPL-5900>

EPL-5900 has the following host interfaces as standard:

☐ IEEE1284 parallel interface

☐ USB interface

☐ Optional Type-B I/F Card slot

<EPL-5900L>

EPL-5900L has the following two external interfaces:

☐ IEEE1284 parallel interface

☐ USB interface

NOTE: Switching between host interfaces is automatic only. Each interface cannot be switched on and off individually.
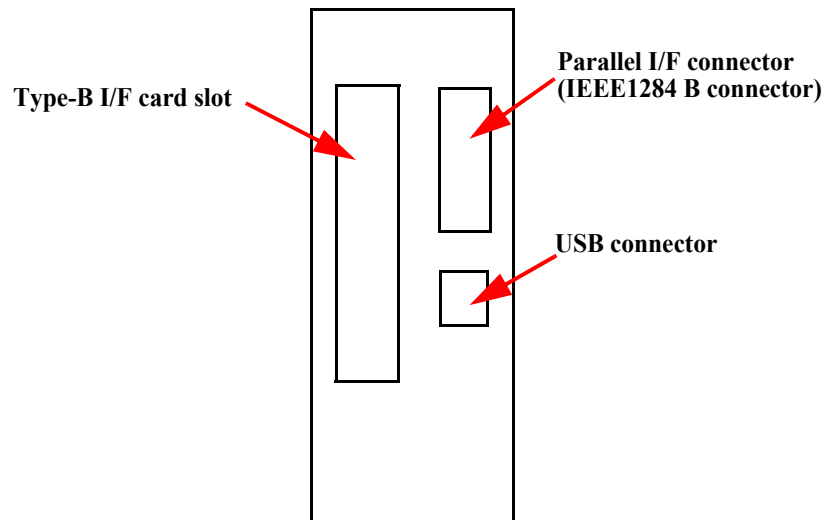
Figure 1-27. Rear View (Interface bracket) of "EPL-5900"
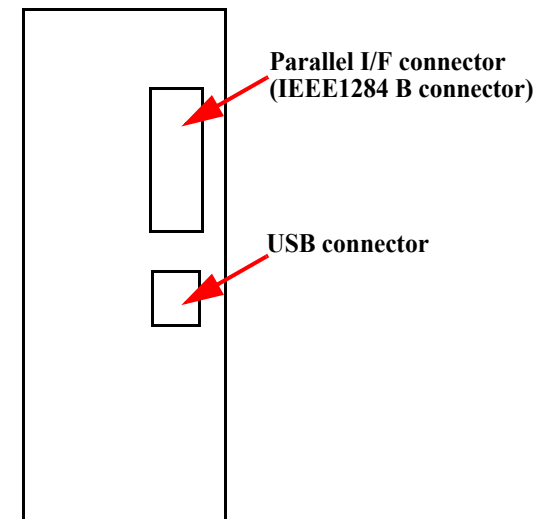
Figure 1-28. Rear View (Interface bracket) of "EPL-5900L"

1.4.2.1 Parallel Interface Specifications

☐ Interface Type
   IEEE 1284 bi-directional high speed parallel interface

☐ Operating Modes
   Compatibility, Nibble, ECP

☐ Connector Model Names
   57RE-40360-830B (D7A) DDK or equivalent products

☐ Conforming Plugs
   Amphenol or equivalents

\<EPL-5900\>

The default device ID setting for EPL-5900 is as follows:

Carriage returns have been inserted into the list below to make it easier to read, but in actual practice the device ID values are displayed as a continuous character string, and no carriage return codes inserted.
The CMD parameters are not in order. CID, MODE, or STATUS parameters are not included.
The DES parameter is a combination of the MFG and MDL parameters with a space between them.

```
**[1].
MFG:EPSON;
CMD:PJL,EJL,ESCPL2,ESCP9,PRPXL24-01,PCL,HPGL2-01,ESCPAGE-04,PCLXL**[2];
MDL:**[3];
CLS:PRINTER;
DES:**[4];
```

MFG, MDL, DES and CID of Device ID are re-definable. (This must not be included in the manual.) And the CID field does not respond with the default value, but responds with the defined character string only when redefined.
Device ID when redefined is as follows. "xxxxx" is user-defined character string.

```
**[1].
MFG:xxxxx;
CMD:PJL,EJL,ESCPL2, ESCP9,PRPXL24-01,PCL,HPGL2-01,ESCPAGE-04;PCLXL**[2];
MDL: xxxxx;
CLS:PRINTER;
DES:xxxxx;
CID:xxxxx;
```

NOTE:

[1]: The hexadecimal value "the total number of Device ID characters + 2" is input.

[2]: Following text string is added when Adobe PS 3 kit ROM DIMM option is installed.
      ",POSTSCRIPT"

[3]: The model name **EPL-5900**

[4]: DES is the text string that MFG and MDL is connected by a space.
      "EPSON EPL-5900" for EPSON EPL-5900.

\<EPL-5900L\>

The default device ID setting for EPL-5900L is as follows:

```
MFG:EPSON;CMD:ESCPAGES-01;MDL:EPL-5900L;CLS:PRINTER;DES:EPSON EPL-5900L
```

The controller board is equipped with a jumper switch "JP1" for selecting the parallel interface's communication mode. If communication with the host is not possible for some reason, JP1 can be set in the "Nibble" position, a mode where ECP communication is not performed. (It is recommended that this jumper be set in the "ECP" position during normal use.)

Nibble: In the Reverse mode, communication with the host is conducted in the Nibble mode.
ECP: If the host supports ECP, communication with the host is conducted in the ECP mode.

This switch is publicly disclosed to users.

1.4.2.2 USB Interface

Supports Windows USB PnP.

Supports the 18-digit USB ID as follows:

**P++YYMMDDhhmmssR

**:	A number of 00 to 99. Acquired for each model. "07" for EPL-5900. "08" for EPL-5900L.
P:	Identifier. Always "P" for page printers.
++:	PC number of assembly line. (00~99)
YY:	The year of assembled date. (lower two digits; 00~99)
MM:	The month of assembled date. (01~12)
DD:	The assembled date (01~31)
hh:	Hour of assembled time. (00~23)
mm:	Minute of assembled time. (00~59)
ss:	Second of assembled time. (00~59)
R:	Reserved and always "0" with EPL-5900/EPL-5900L.

Device ID in Printer Class conforms to 1.4.2.1 "Parallel Interface Specifications".

The USB ID written into the printer can be checked on the Status Sheet. (It is displayed on the bottom left of the Status Sheet next to the ROM Version.)

If the circuit board is replaced, or other service performed, the USB ID may be changed to another ID (this is because the USB ID is rewritten when the EEPROM storing the USB ID is damaged or the circuit board is replaced).In this case, if a printer with the USB ID changed is connected to the PC, it is recognized as a different printer, so the PC requires the USB port driver to be installed again..

> **CAUTION**
> !
> The USB ID is stored on EEPROM of the main board, and you have to re-assign the ID when you replace the main board to new one in repair.
> Refer to Chapter 5 "Adjustment" for the details.

1.4.2.3 Type B Interface (Not Available with EPL-5900L)

EPL-5900 is equipped with one Type-B option I/F slot as standard.

☐ Main System Type:
MTP1200dpi,PW10200dt1200dpi,PRG(****)rev,AP500ma SPD0fast, D4
****: ROM version

☐ Printer Name: Factory default setting is the same as Product Name.

☐ Product Name: EPL-5900

☐ Emulation Type: See Table 1-34.

☐ Entity Type: See Table 1-34.

Table 1-34. Emulation Type and Entity Type

	Emulation	Emulation Type	Entity Type
1	PS[*1]	POSTSCRIPT-00	LaserWriter
2	ESC/Page	ESCPAGE-04	EPSONPAGE4
3	LJ4	PCL5E-00	EPSONPCL5
4	ESCP2	ESCPL2	EPSONLQ2
5	GL/2	HPGL2-01	EPSONHPGL2
6	FX	ESCP9	EPSONFX
7	1239X	PRPXL24-01	EPSONPRPXL24
8	PCLXL	PCLXL	EPSONPCLXL
9	IPDS[*1]	IPDS-00	EPSONIPDS

*1:   Option

When Emulation is set to "Auto", all the Entity Types listed above are returned in the numerical order specified in the table.

When Emulation is fixed, the following Entity Types are returned:

Default Emulation, EPSONPAGE4

NOTE   1:   Entity Type does not change even when Emulation is changed by EJL/PJL Enter Language command or IES of.

*   2:   The numbers of Entity Types returned to host may differ by the installed Type B interface specifications.*

Emulation Type

When Emulation is set to "Auto":

PS3 not started: AUTO (Emulation Type 1, 2, 3...)
PS3 started: EJL (POSTSCRIPT-00, other Emulation Type 1, 2, 3...)

When Emulation is fixed:

EJL (Default Emulation Type, other Emulation Type 1, 2, 3...)

1.5 Control Panel

1.5.1 External Appearance and Names of Parts

Table 1-35. Buttons and LEDs of EPL-5900

No.	Name	Note
1	Information Switch	Color: Gray
2	Ready LED	Color: Green
3	Data LED	Color: Yellow
4	Error LED	Color: Red
5	Start/Stop Switch	Color: Pale green
6	Job Cancel Switch	Color: Brick red
7	Memory LED	Color: Red
8	Toner LED	Color: Red
9	Paper LED	Color: Red

<EPL-5900>

Panel_L.eps

Figure 1-29. Control Panel of EPL-5900

<EPL-5900L>

☐   Meaning of LED Flashing on EPL-5900L

Table 1-37. Meaning of LED Flashing on EPL-5900L

Ready LED	Error LED	Supplement	Meaning
Off	Off	-	Power off
On	Off	-	Ready to print
Flashing	Off	-	Warming up, receiving data
Off	Flashing	-	Recoverable Errors 　Cover Open 　Out of Paper 　Replace paper error 　Paper jam 　Underrun Error [*1]
Flashing	On	-	Protocol Error
Off	On	-	Controller Errors 　Video Error 　Data Expansion Error 　Standard RAM Check Error 　EEPROM Access Error 　Software Error
Flashing	Flashing	Green and red flash alternately	Engine Error

Figure 1-30. Control Panel of EPL-5900

Table 1-36. LEDs of EPL-5900L

No.	Name	Note
1	Ready LED	Color ..... Green
2	Error LED	Color ..... Red

*1:   This error occurs when transmission of print data from the host is not in time. It may occur if the receiving speed is slow or the data volume is considerably large compared to the printer's receiving buffer size.

NOTE: The LEDs do not indicate occurrence of Warning (Check Paper Size error or Optional RAM error).

1.5.2 List of Panel Settings (Only with EPL-5900)

EPL-5900 has no LCD on the control panel, so it is impossible to make function settings on the control panel.
Function settings can be made using "RCP".
Values shown in bold and underlined characters are the factory default setting values.

☐ Function Setting (only with EPL-5900)

Table 1-38. Function Setting (1) (Only with EPL-5900)

Menu	Item	Value
Information Menu	Status Sheet	
	AUX Status Sheet*3	PS3 Status Sheet*1
	PS3 Font Sample*1	ESC/Page Font Sample*2
	LJ4 Font Sample	
	ESCP2 Font Sample	
	FX Font Sample	
	I239X Font Sample	
	Toner	E****F, E***□F, E**□□F, E*□□□F, E□□□□F
	Photocondctr	100%
	Total Pages	0 ~ 99999999
Tray Menu	MP Tray Size	**A4**, A5, B5, LT, HLT, LGL, GLT, GLG, EXE, F4, MON, C10, DL, C5, C6, IB5
	LC Size*6	**A4**
	MP Type	**Plain**, Letterhead, Recycled, Color, Trnsprncy, Labels
	LC Type*6	**Plain**, Letterhead, Recycled, Color
Emulation Menu	Parallel	**Auto**, LJ4, ESCP2, FX, I239X, PS3*1, GL2
	USB	**Auto**, LJ4, ESCP2, FX, I239X, PS3*1, GL2
	AUX*3	**Auto**, LJ4, ESCP2, FX, I239X, PS3*1, GL2

Table 1-38. Function Setting (1) (Only with EPL-5900) (continued)

Menu	Item	Value
Printing Menu	Page Size	**A4**, A5, B5, LT, HLT, LGL, GLT, GLG, EXE, F4, MON, C10, DL, C5, C6, IB5, CTM
	Wide A4	**Off**, On
	Orientation	**Port**, Land
	Resolution	**600**, 1200*4, 300
	RITech*5	**On**, Off
	Toner Save	**Off**, On
	Density	**3**, 4, 5, 1, 2
	Image Optimum	**Auto**, Off, On
	Dot Correction	**Off**, On
	Top Offset	-99.0 ~ **0.0** ~ 99.0mm (0.5mm increments)
	Left Offset	-99.0 ~ **0.0** ~ 99.0mm (0.5mm increments)

*1: This item can be selected only when the optional Adobe PS 3 kit is installed.

*2: Can not be selected / changed by RCP etc.

*3: This item can be selected only when the Type B I/F option is installed.

*4: Effective only for ESC/Page, PCLXL and PostScript. When other mode is selected, it will be printed in 600dpi.

*5: RITech becomes OFF regardless of this item when resolution is set to 1200dpi by mode setting.

*6: Displayed only when the lower cassette unit is installed. Paper sizes are display only.

Table 1-39. Function Setting (2) (Only with EPL-5900)

Menu	Item	Value
Setup Menu	Lang	**English**, Française, Deutsch, ITALIANO, ESPANOL, SVENSKA, Dansk, Nederl., SUOMI, Português
	Time out	0, 5 ~ **60** ~ 300 (1 increments)
	Paper Source	**Auto**, MP, LC[*1]
	MP Mode	**Normal**, Last
	Manual Feed	**Off**, On
	Copies	**1**-999
	Quantity[*2]	**1**-999
	Paper Type	**Normal**, Thick W, Thick N, Trnsprnc
	Skip Blank Page[*3]	**Off**, On
	Auto Eject Page	**Off**, On
	Size Ignore	**Off**, On
	Auto Cont	**Off**, On
	Page Protect	**Auto**, On
	Toner Out	**Continue**, Stop
	Panel Lock[*4]	**Off**, On
Reset Menu[*4]	Warning Clear[*4]	
	SelecType Init[*4]	
	Photocon Count Clear[*4]	
	Toner Count Clear[*4]	

*1:   Displayed only when the optional lower cassette unit is installed. Paper sizes are display only.

*2:   This is not displayed on the panel. This is not printed on status sheet either. It can be set in EJL or PJL. This setting is effective when installed memory is over 64MB. (The installed memory size is determined on the printer driver. Do not describe this matter on the user manual)

*3:   Valid only in PCL5e, ESC/Page, ESC/P2, FX and I239X modes.

*4:   Not printed on the status sheet.

Table 1-40. Function Setting (3) (Only with EPL-5900)

Menu	Item	Value
Parallel Menu	Parallel I/F[*1]	**On**, Off
	Speed[*1]	**Fast**, Normal
	Bi-D[*1]	**ECP**, Off, Nibble
	Buffer Size[*1]	**Normal**, Maximum, Minimum
USB Menu	USB I/F[*1]	**On**, Off
	Buffer Size[*1]	**Normal**, Maximum, Minimum
AUX Menu[*2]	AUX I/F[*1]	**On**, Off
	AUX Config[*3]	**No**, Yes
	Get IPAddress[*4]	Panel, AUTO, PING
	IP Byte 1[*4]	0 to 255
	IP Byte 2[*4]	0 to 255
	IP Byte 3[*4]	0 to 255
	IP Byte 4[*4]	0 to 255
	SM Byte 1[*4]	0 to 255
	SM Byte 2[*4]	0 to 255
	SM Byte 3[*4]	0 to 255
	SM Byte 4[*4]	0 to 255
	GW Byte 1[*4]	0 to 255
	GW Byte 2[*4]	0 to 255
	GW Byte 3[*4]	0 to 255
	GW Byte 4[*4]	0 to 255
	NetWare[*4]	On, Off
	AppleTalk[*4]	On, Off
	NetBEUI[*4]	On, Off
	AUX Init[*4]	
	Buffer Size	**Normal**, Maximum, Minimum

*1:   When changed on the panel or with EJL, these do not become valid immediately. They become valid after warm boot or at power on again. Displaying on the panel, reading with EJL, and printing on the status sheet for themselves are immediately reflected. If they are changed on the panel or with EJL, be sure to perform warm boot or turn on the power again. To change more than one of these, change more than one of them and perform

warm boot or turn on the power again once at the end.

*2: These items are displayed and can be changed only when the optional Type B interface is installed. Network card configurations can not be made from the printer side. Use the utility that comes with each card.

*3: It is displayed and can be changed only when the Level 3 compatible Type B interface card is installed. After the printer status turns to "Ready", this item automatically returns to "AUX Config = No".

*4: They are displayed and can be changed only when "AUX Config=Yes" is selected. The setting value becomes valid when the network card is restarted after shifting to a printable state. Therefore, if you execute the "AUX Status Sheet" printing in the test print menu before coming out of the panel setting mode, new settings are not printed on the sheet.

Table 1-41. Function Setting (4) (Only with EPL-5900)

Menu	Item	Value
ESC/Page Menu*[1]	Auto CR	**On**, Off
	Auto FF	**On**, Off
	CR Function	**CR**, CR+LF
	LF Function	**CR+LF**, LF
	FF Function	**CR+FF**, FF
	Error Code	**Ignore**, Space
	Avoid Error	**Off**, On
	PGI*[2]	**On**, Off

Table 1-41. Function Setting (4) (Only with EPL-5900) (continued)

Menu	Item	Value
LJ4 Menu	Font Source	**Resident**, DIMM, Download
	Font Number	**0** ~ available (Max 65535)
	Pitch*[3]	0.44 ~ **10.00** ~ 99.99 cpi (0.01 cpi increments)
	Height*[3]	4.00 ~ **12.00** ~ 999.75 pt (0.25 pt increments)
	SymSet*[4]	**IBM-US**, Roman-8, Roman-9, ECM94-1, 8859-2 ISO, 8859-9 ISO, 8859-10 ISO, 8859-15 ISO, PcBlt775, IBM-DN, PcMultiling, PcE. Europe, PcTk437, PcEur858, Pc1004, WiAnsi, WiE. Europe, WiTurkish, WiBALT, DeskTop, PsText, VeInternati, VeUS, MsPublishin, Math-8, PsMath, VeMath, PiFont, Legal, UK, ANSI ASCII, Swedis2, Italian, Spanish, German, Norweg1, French2, Windows, McText, PcIcelandic, PcLt774, PcTurk1, PcPortugues, PcET850, PcTurk2, PcCanFrench, PcS1437, PcNordic, 8859-3 ISO, 8859-4 ISO, WinBaltic, WiEstonian, WiLatvian, Mazowia, CodeMJK, BpBRASCII, BpAbicomp, PcGk437, PcGk851, PcGk869, 8859-7 ISO, WiGreek, Europe3, PcCy855, PcCy866, PcLt866, PcUkr866, PcLit771, 8859-5 ISO, WiCyrillic, Bulgarian, Hebrew7, 8859-8 ISO, Hebrew8, PcHe862, Arabic8, PcAr864, 8859-6 ISO, OCR A, OCR B
	Form	5 ~ **64** ~ 128 Lines
	Source SymSet	0 ~ **277** ~ 3199
	Dest Symset	0 ~ **277** ~ 3199
	CR Function	**CR**, CR+LF
	LF Function	**LF**, CR+LF
	Tray Assign	**4**, 4K, 5S

*1: These items are not displayed on the panel. These are not printed on status sheet either. Setting or acquiring information with EJL is enabled. This menu is not open to users.

*2: If the Resolution setting is 1200, PGI setting will be ignored.

*3: Display of this item changes depending on the selected font type.
When fixed pitch scalable font is selected, "Pitch" is displayed.
When proportional scalable font is selected, "Height" is displayed.
When bitmap font is selected, neither of them are not displayed.

*4: When the font which is specified by Font number setting has not the setting symbol set, Font Source = Resident, Font Number = 0 setting is automatically made, and therefore to print this symbol set, a font must be selected for which the Font Source and Font Number Value are supported by this symbol set.

Table 1-42. Function Setting (5) (Only with EPL-5900)

Menu	Item	Value
GL2 Menu	GL-Mode	GLlike, **LJ4GL2**
	Scale	**Off**, A0, A1, A2, A3
	Origin	**Corner**, Center
	Pen	**Pen0**, Pen1, Pen2[*1], Pen3[*1], Pen4[*1], Pen5[*1], Pen6[*1]
	End	**Butt**, Square, Triangular, Round
	Join	**Miterend**, Meteredbeveled, Triangular, Round, Beveled, None
	Pen0	0.05 ~ **0.35** ~ 5.00 mm (0.05 mm Increments)
	Pen1	0.05 ~ **0.35** ~ 5.00 mm (0.05 mm Increments)
	Pen2[*1]	0.05 ~ **0.35** ~ 5.00 mm (0.05 mm Increments)
	Pen3[*1]	0.05 ~ **0.35** ~ 5.00 mm (0.05 mm Increments)
	Pen4[*1]	0.05 ~ **0.35** ~ 5.00 mm (0.05 mm Increments)
	Pen5[*1]	0.05 ~ **0.35** ~ 5.00 mm (0.05 mm Increments)
	Pen6[*1]	0.05 ~ **0.35** ~ 5.00 mm (0.05 mm Increments)
PS3 Menu[*2]	Error Sheet	**Off**, On

*1:   Appears only in the GLlike mode.

*2:   Appears only when optional Adobe PS 3 kit is installed.

Table 1-43. Function Setting (6) (Only with EPL-5900)

Menu	Item	Value
ESCP2 Menu	Font	**Courier**, Prestige, Roman, Sans serif, Roman T, Orator S, Sans H, Script, OCR A, OCR B
	Pitch	**10cpi**, 12cpi, 15cpi, Prop.
	Condensed	**Off**, On
	T. Margin	0.40 ~ **0.50** ~ 1.50 inch (0.05 inch increments)
	Text	1 ~ **66** ~ available (Max 81) Lines
	CGTable	**PcUSA**, Italic, PcMultilin, PcPortugue, PcCanFrenc, PcNordic, PcTurkish2, PcIceLandic, PcE.Europe, BpBRASCII, BpAbicomp, Roman-8, PcEur858, ISO Latin1, 8859-15 ISO, PcS1437, PcTurkish1, 8859-9 ISO, Mazowia, CodeMJK, PcGk437, PcGk851, PCGk869, 8859-7 ISO, PcCy855, PcCy866, PcUkr866, PcLit771, Bulgarian, Hebrew7, Hebrew8, PcAr864, PcHe862
	Country	**USA**, France, Germany, UK, Denmark, Sweden, Italy, Spain1, Japan, Norway, Denmark2, Spain2, LatinAmeric, Korea, Legal
	Auto CR	**On**, Off
	Auto LF	**Off**, On
	Bit Image	**Dark**, Light, BarCode
	ZeroChar	**0**, φ

Table 1-43. Function Setting (6) (Only with EPL-5900) (continued)

Menu	Item	Value
FX Menu	Font	**Courier**, Prestige, Roman, Sans serif, Script, Orator S, OCR A, OCR B
	Pitch	**10cpi**, 12cpi, 15cpi, Prop.
	Condensed	**Off**, On
	T. Margin	0.40 ~ **0.50** ~ 1.50 ~ inch (0.05 inch increments)
	Text	1 ~ **66** ~ available (Max 81) Lines
	CGTable	**PcUSA**, Italic, PcMultilin, PcPortugue, PcCanFrenc, PcNordic, PcTurkish2, PcIcelandic, PcE.Europe, BpBRASCII, BpAbicomp, Roman-8, PcEur858, ISO Latin1, 8859-15 ISO
	Country	**USA**, France, Germany, UK, Denmark, Sweden, Italy, Spain1, Japan, Norway, Denmark2, Spain2, LatinAmeric
	Auto CR	**On**, Off
	Auto LF	**Off**, On
	Bit Image	**Dark**, Light, BarCode
	ZeroChar	**0**, φ
I239X Menu	Font	**Courier**, Prestige, Gothic, Orator, Script, Presentor, Sans serif
	Pitch	**10cpi**, 12cpi, 15cpi, 17cpi, 20cpi, 14cpi, Prop.
	Code Page	**437**, 850, 858, 860, 863, 865
	T. Margin	0.30 ~ **0.40** ~ 1.50 inch (0.05 inch increments)
	Text	1 ~ **67** ~ available (Max 81) Lines
	Auto CR	**Off**, On
	Auto LF	**Off**, On
	Alt. Graphic	**Off**, On
	Bit Image	**Dark**, Light
	ZeroChar	**0**, φ
	CharacterSet	**2**, 1
Support Menu*1	Standby*2	**Enable**, Disable

*1:   This is not printed on the status sheet.

*2:   The default time to enter Standby is 15 minutes. (EJL STANDBYTIME command is available (this command is not opened to users))

1.5.2.1 Setting Items (Model-dependent) (Only with EPL-5900)

Described below are model-dependent specification details of the setting items for EPL-5900.

MP MODE

When the paper source setting is "Auto" or not specified, MP mode determines the priority of the sources.

Normal: MP > LC (MP Tray has priority)
Last: LC > MP (Lower Cassette has priority)

TRAY ASSIGN

Tray Assign changes the assignment for the paper source select command (ESC&I#H). Effective only for PCL mode.

Table 1-44. Tray Assign

The correspondence of the parameter #	MP	LC	Notes
4	1	4	HP Laser Jet 4 compatible
4K	4	1	HP Laser Jet 4000/5000/8000 compatible
5S	8	1	HP Laser Jet 5Si compatible

PAPER TYPE

Specifies the paper type loaded in the MP Tray.

- Normal: Normal paper
- Thick W: Thick paper
- Thick N: Thick and narrow paper like an envelop.
- Transprnc: OHP sheets

MP TYPE, LC TYPE

Specifies the paper type for MP Tray or LC.

When "Paper Source = Auto", MP Type and LC Type are used to select a unit that matches the paper type specified by the printer driver.

In a printer mode without such command, the same operation as when "Plain" is selected is performed.

"Transpmcy" and "Label" cannot be set to LC1 Type. Other parameters are common to MP Type.

The correspondence of "Paper Type" and "MP Type" setting and the printing media is as follows:

Table 1-45. Paper Type, MP Type, and the Printing Media

Paper Type (Setup Menu)	MP Type	Printing Media
Normal	OHP	OHP
Normal	Other than OHP	Normal paper
Thick W	Any	Thick paper
Thick N	Any	Postcard/Envelop
Transprnc	Any	OHP

PARALLEL I/F, USB I/F, AUX I/F

Only interfaces that are set to "On" by the panel setting can be used by the automatic selection.
All interfaces are set to "On" at the factory default setting.

To use a fixed interface, set "On" only for the interface that to be used.

Changes to the interface setting will be effective after the Reset All is performed or the power is turned on again.

If "Off" is set to all interfaces, they are reset to "On" after the Reset All is performed or the power is turned on again. (It is not allowed to set "Off" to all interfaces.)

Table 1-46. Interface Settings

	Parallel	USB	Type B	Operations
Using Fixed I/F	O	X	X	Only parallel is used.
	X	O	X	Only USB is used
	X	X	O	Only Type B is used.
I/F automatic selection	O	O	O	Automatic selection (all interfaces)
	O	O	X	Automatic selection (Parallel and USB)
	O	X	O	Automatic selection (Parallel and Type B)
	X	O	O	Automatic selection (USB and Type B)
Not effective	X	X	X	Returns to the factory default after the Reset All is performed or the power is turned on again.

O: On, X: Off

1.5.3 Printer Messages (Only with EPL-5900)

A list of printer messages with EPL-5900 is shown below.

Table 1-47. Printer Messages (Only with EPL-5900)

Printer Status	Classification	EJL Status	LED Indications					
			Error LED	Memory LED	Toner LED	Paper LED	Ready LED	Data LED
Service Req. Cffff *[1]	Service call error	6XXX	On	On	On	On	On	On
Service Req. Eggg *[2]	Service call error	6XXX	On	On	On	On	On	On
ROM CHECK	Status	-	Off	Off	Off	On	Off	Off
RAM CHECK	Status	-	Off	Off	On	Off	Off	Off
Self Test	Status	-	Off	On	Off	Off	Off	Off
Cancel All Print Job	Status	1003	Blink 1	Blink 1	-	Off	Blink 1	-
Cancel Print Job	Status	1003	Blink 1	Off	-	Off	Blink 1	-
Unable Clear Error*[3]	Status	-	Off	-	-	-	Off	-
Exiting Paper Jam	Error	4012	On	Off	Off	On	Off	-
Paper Jam	Error	4008	On	Off	Off	On	Off	-
Feed Jam	Error	4009	On	Off	Off	On	Off	-
Printer Open	Error	4002	On	Off	Off	Off	Off	-
Manual Feed ssss tttt	Error	1013	Blink 2	Off	Off	Blink 2	Blink 2	-
Paper Out sssss tttt	Error	4010	On	Off	Off	Blink 1	Off	-
Toner Out	Error	4001	Blink 2	Off	On	Off	Off	-
Paper Set sssss tttt	Error	3003	Blink 1	Off	Off	Blink 1	Off	-
Print Overrun	Error	3000	Blink 1	On	Off	Off	Off	-
Mem Overflow	Error	3001	Blink 1	On	Off	Off	Off	-
Invalid PS3	Error	4201	On	On	Off	Off	Off	-
Invalid IPDS	Error	4232	On	On	Off	Off	Off	-
Invalid Aux I/F Card	Error	4014	On	Blink 1	Off	Off	Off	-
Invalid ROM A	Error	4003	On	On	Off	Off	Off	-
Write Error ROM A*[3]	Error	4006	On	On	Off	Off	Off	-
Write Error ROM P*[3]	Error	4006	On	On	Off	Off	Off	-
Writing ROM A*[3]	Status	1005	-	-	-	-	-	Blink 1
Writing ROM P*[3]	Status	1005	-	-	-	-	-	Blink 1

Table 1-47. Printer Messages (Only with EPL-5900) (continued)

Printer Status	Classification	EJL Status	LED Indications					
			Error LED	Memory LED	Toner LED	Paper LED	Ready LED	Data LED
Collate was disabled	Warning	2013	(Off)	Blink 1	-		-	-
Check Paper Size	Warning	2004	(Off)	-	-	Blink 1	-	-
Image Optimum	Warning	2002	(Off)	Blink 1	-	-	-	-
Check Paper Type	Warning	2008	(Off)	-	-	Blink 1	-	-
Need Memory	Warning	2003	(Off)	Blink 1	-	-	-	-
Format Error ROM A	Warning	2000	(Off)	-	-	-	-	-
Form Feed	Status	1008	(Off)	-	-	-	-	Blink 1
Printing Status Sheet by panel operation*3	Status	1010	(Off)	-	-	-	-	Blink 1
Warming Up	Status	1006	(Off)	-	-	-	Blink 1	-
Offline	Status	1001	Blink3	-	-	-	Off	-
Cancel Print Job (by host)	Status	1003	Blink 1	-	-	-	Blink 1	-
Toner Low	Warning	2001	(Off)	-	Blink 1	-	-	-
(Processing Job)*3	Status	1002	-	-	-	-	-	-
Standby	Status	1007	(Off)	-	-	-	Blink 3	-
Ready (On Line)	Status	1000	(Off)	-	-	-	On	-
(Printing)*3	Status	1009	(Off)	-	-	-	-	-
(Communicate with non-active I/F)*3	Status	1012	-	-	-	-	-	-

*1: This pattern and another pattern are alternately displayed. The other pattern depends on the error status as shown in Table 3-2.

*2: This pattern and another pattern are alternately displayed. The other pattern depends on the error status as shown in Table 3-1.

*3: These are not described in the user manual.

NOTE: *In the table above, the items of Printer Status are listed in the order of priority. (Upper items have higher priority)*
   - *When an error and a warning occur simultaneously, a warning message does not appear.*
   - *When a warning occurs during occurrence of another warning, all the corresponding LEDs flash.*
   - *The "-" mark shows that the indication of the LED is independent of the relevant printer status.*
     This LED can flash or light up if a printer status of a lower priority occurs.

1.5.3.1 Status Specifications (Model-dependent)

☐   Manual Feed Mode

This section describes only the standard specifications. Further specifications are described in the Basic Operation Specifications for Page Printer.

<Outline>

Manual Feed mode is useful when users want to use a special type of paper for which no paper feeder of the printer has not been set. For printing in this mode, the printer displays Manual Feed mode and waits user's operation before executing Manual Feed printing job. As the paper source, priority is given to the Manual feed slot.

<Specifications>

■   Available languages: all

ESC/page, PS3, LJ4, PCLXL, ESCP2, FX, I239X and IPDS

■   Unit of job in Manual Feed mode (unit of job controlled by Printqueue)

•   Printing from Network: one job per connection
•   The job is started by job start command of EJL/PJL.
•   The job will be ended when the receiving time-out (Selectype setting) occurs. (Connectionless type)

[Restriction]
If many data in Manual Feed mode are sent continuously on the conditions under which distinction between jobs can not be made, the printer recognizes them as one job. Then the printer does not display the Manual Feed mode at the beginning of the 2nd data and thereafter sheets will be fed continuously.

NOTE: When the following data, namely, Data 1 and Data 2, are sent to the printer even on the same conditions as mentioned above under which distinction between jobs can not be made, the printer recognizes the mode correctly.
That is, when the data are sent in the order of Data 1 and Data 2, the Data 2 will be printed in normal mode. When the data are sent in the order of Data 2 and Data 1, the Data 1 will be printed in Manual Feed mode.
Data 1: Page to be printed in Manual Feed mode
Data 2: Page to be printed in normal mode

■   Operation

Before starting to print the first page of the job in Manual Feed mode, the printer displays Manual Feed mode and wait user's pressing of the Start/Stop switch.

    LCD display: Manual Feed XXXX: XXXX: Paper size

Pressing the Start/Stop switch starts printing of the job and prints all the pages automatically.

NOTE: Pressing the Start/Stop switch too long is invalid.

■   Paper source

♦   When the Start/Stop switch has been pressed

Table 1-48. Paper Source when the Start/Stop switch has been pressed

Conditions		Paper Source	Remarks
If there is paper in Manual Feed slot		Manual Feed slot	No check of paper size/paper type
If there is no paper in Manual Feed slot	There are paper feeder(s) where there is paper	Paper feeder to which priority is given	Priority is according to the current auto mode specification of Manual Feed mode.
	There is no paper in any paper feeder	-	Manual Feed mode is displayed again

♦   After paper feed has started

Once the Start/Stop switch has been pressed and paper feeding has started, printing in Manual Feed mode is continued by feeding paper from the same paper source until paper is used up. (The paper source does not change until paper is used up.)

[Examples] During the same Manual Feed job, the paper source does not change even in any of the following cases:

•   Changing the Page Size or Paper Type
•   Paper Jam
•   Ready/Off Line
•   In Manual Feed after Manual Feed is quit once

Once the Start/Stop switch has been pressed, Paper Set error does not occur until the paper in the paper source is used up.

Neither Check Paper Size error nor Check Paper Type occurs.

♦ When paper has been used up during printing

When the printer has run out of paper, it displays Manual Feed mode again. And the subsequent operation will be the same as when it prints the first sheet in Manual Feed mode.

♦ Printing of multiple copies

Printing of multiple copies is handled as one job in Manual Feed mode. It is not necessary to press the Start/Stop switch at printing the first sheet of each copy.

♦ When pages to be printed in Manual Feed mode and pages to be printed in normal mode are mixed in one job

The printer displays Manual Feed mode and waits user's operation only before printing the first page of the first copy in Manual Feed mode.
The printer does not stop to wait user's operation before printing the second and subsequent copies in Manual Feed mode.
Paper source setting is effective in the job.

[Explanation of symbols]
Table 1-49 shows the symbols referred to in the examples below:

Table 1-49. Explanation of Symbols

	Symbol	Meaning
Command	M-	Manual Feed mode
	TX-	Specify tray X (No manual feed mode)
	aM, aTM	"a" represents a page number.
Result	:M	Manual Feed mode (waiting user's operation)
	:MC	If there is some paper in a tray, the printer automatically starts continuous printing.
	:TX	The printer loads paper from the tray X.

[Ex.1]   \<Command\> 1M-2M-3T1-4M- (two copies in one job)
             \<Result\>   1st copy   1M:M-2M:MC-3T1:T1-4M:MC
                             2nd copy   1M:MC-2M:MC-3T1:T1-4M:MC

[Ex.2}   \<Command\> 1T1-2M-3M-4T2- (two copies in one job)
             \<Result\>   1st copy   1T1:T1-2 M:M-3 M:MC-4T2-T2
                             2nd copy   1T1:T1-2 M:MC-3 M:MC-4T2-T2

NOTE: *In the 2nd or subsequent Manual Feed mode in a job, sheets will be fed from the paper source which was selected by user's operation in the previous Manual Feed mode.*

♦ In the case of double-sided printing

Printing is carried out in a mode selected for the first page.

♦ In the case of n-up printing (set by printer driver)

Printing is carried out as specified for the first page.

■ Others

• MP Mode (SelecType setting) does not influence operation in Manual Feed mode.
• If the paper source setting command and the Manual Feed command are issued for the same page, the paper source setting is ignored.

\<Recommended operation\>

■ Recommended operation to ensure that paper is fed from your desired paper source:

1. Set only the required number of sheets in the desired paper source.
2. Remove all the sheets, if any, from the other paper sources or set the sources unavailable.
3. Press the Start/Stop switch.

■ Recommended operation when the printer is to be operated the same way as the old model:

1. Set only one sheet of required paper in the desired paper source.
2. Remove all the sheets, if any, from the other paper sources or set the sources unavailable.
3. Press the Start/Stop switch.

1.6 RAM Expansion

<EPL-5900>

When EPL-5900 runs out of memory, the Memory LED flashes or lights up.

NOTE: *This indication corresponds to "Mem Overflow" or "Image Optimum"*
or "Need Memory" or "Collate was disabled" displayed on the LCD of
an LCD-mounted model.

This problem may be solved by taking appropriate ones of the following measures:

■   Reducing the resolution.

■   Select "Halftone" when using Enhanced MicroGray.

■   Reducing the receiving buffer size to "Minimum".

■   Use only one interface and set "Off" for other interfaces.

The only way to definitely avoid memory shortages is to install more memory.
(Commercially available (only for EPSON) SDRAM DIMMs for PCs: 90pins, 32-bit
without SPD)

<EPL-5900L>

If a problem with insufficient memory occurs in EPL-5900L, an underrun error is
displayed on the host computer's screen. In this case, it is necessary to install additional
memory.

Depending on use conditions, the recommended RAM capacity is as shown below.
However, there are some cases where an underrun error is displayed even when
memory has been expanded if an image of an extremely low compression ratio is
handled. In such cases, not only should the memory be expanded, but the resolution
should be reduced to 300 dpi, EnhancedMicroGray should not be used or other
appropriate changes made in the settings.

Table 1-50. RAM Capacity and Conditions of Use

RAM Capacity	Conditions of Use
Without RAM Expansion	In some cases EnhancedMicroGray printing at 600 dpi may be impossible. In the case of a host with a slow transfer rate, printing at 600 dpi may be impossible.
8 MB Expansion (Total 10 MB)	Printing under all conditions is possible.

1.7 System Requirements (Only for EPL-5900L)

The minimum system configuration and recommended system configuration when using EPL-5900L are shown in Table 1-51 and Table 1-52.

Table 1-51. Windows System Requirements

Windows	Minimum	Recommended
CPU	Pentium	←
Clock	100 MHz	233 MHz
Memory	16 MB	64 MB
Interface	IEEE1284 Parallel Standard USB [*1]	←
OS	Windows 95/98 Windows ME [*2] Windows NT 4.0 Windows 2000	←

Table 1-52. Mac System Requirements

Mac	Minimum	Recommended
Machine	Power Mac G3 with standard USB or iMac iBook	←
Clock	233 MHz	←
Memory	32 MB	64 MB
Interface	Standard USB	←
OS	Mac OS 8.1 or later	←

*1:   Limited to PC's which support the USB as standard equipment. Operation is not guaranteed with a USB port installed in an expansion slot. Connection through a device that switches the interface, such as a Parallel – USB converter is not covered by the warranty. When connecting through a USB port, operation under Windows 95 is not covered by the warranty.

*2:   Windows ME depends on Microsoft product shipping conditions.

1.8 Special Operation (Only with EPL-5900)

With EPL-5900, the functions described below are activated by holding the specified switches down when turning the printer on.

Table 1-53. Special Operation (1)

Function	Methods of operation
Hexadecimal dump	Turn power on with the Start/Stop switch pressed [1]
Toner level reset	Turn power on with the Start/Stop + Job Cancel switches pressed [1, 2]
Photoconductor life reset	Turn power on with the Start/Stop + Information Switches pressed [1, 2]

Table 1-54. Special Operation (2)

Function	Methods of operation
Initializing EEPROM	Turn power on with the Start/Stop + Job Cancel + Information Switches pressed [1, 2]
Initializing the panel setting value	Turn power on with the Job Cancel switch pressed [1, 2]
Program ROM DIMM copy	Turn power on with the Job Cancel + Information Switches pressed [1, 2]
Printing an error sheet (after resetting the CPU)	Press the Information Switch at the occurrence of a service call error. An error sheet will be printed after warm boot.

[1]: The On Line and Error LEDs light up simultaneously when the printer recognizes the function. Then all the LEDs go out.

[2]: When the switches are released, the On Line and Error LEDs light up simultaneously, and keep lighting during execution of the function.

CAUTION

!

The functions as listed in *Table 1-54 Special Operation (2)* above are not opened to users.

1.9 Paper Feed Specifications (Only for EPL-5900L)

1.9.1 Paper Size

The following three types of information related to paper sizes are available:

Printer paper size:	Paper sizes for the MP Tray that the printer recognizes, stored in EEPROM
MP Tray paper size:	A size of paper that is loaded in the MP Tray and is actually fed.
User setting size:	Paper sizes that the user specifies in the printer driver.

<Supported paper sizes>

A4, A5, B5, LT, HLT, LGL, GLT, GLG, EXE, F4, MON, C10, DL, C5, C6, IB5, User defined size

The aforementioned printer paper size is changed or determined as follows:

When the printer is powered on: Undefined.

After ejecting paper: When the User setting size is a standard size:
If the Check Paper Size error does not occur
→ User setting size.
If the Check Paper Size error occurs → Undefined.

When the Paper Out error occurs: Undefined.
However, if paper runs out during continuous printing, previous value remains.

When User setting size is the User defined size:
No modification is added to the paper size.

NOTE: Refer to 1.9.3 "Case List".

1.9.2 Paper Feed Specifications

Table 1-55. Paper Feed Specifications

Items	Specifications
Methods of detecting the Paper Set error	The printer detects the error when the Printer paper size differs from the User setting size (red LED blinks). However, this error does not occur if the User setting size is other than standard sizes (User defined size) or the Printer paper size is undefined.
Methods of detecting the Check Paper Size (warning)	The printer detects the error when the User setting size differs from the MP Tray paper size. However, when the User setting size is other than standard sizes (User defined size), this error is not detected.
Error processing after printing	After printing, even if the Check Paper Size error occurs, printing continues until the job completes.

Paper Set error occurs only once in one document.

NOTE: Refer to 1.9.3 "Case List".

1.9.3 Case List

The table below shows a case list of paper feed specifications for each paper size.

Table 1-56. Case List

User setting size A	Printer paper size B	MP Tray paper size C	Relation between B and C	Paper Set error	Check Paper Size error	Printer paper size after printing
User defined size	Regular	-	-	Does not occur	Does not occur	B: No resizing
	Undefined			Does not occur	Does not occur	Undefined (no resizing)
Regular paper size	A = B	A =C	(B = C)	Does not occur	Does not occur	B: No resizing
	A not = B		(B not = C)	Occurs	Does not occur	A
	Undefined		-	Does not occur	Does not occur	Undefined (no resizing)
	A = B	A not = C	(B not = C)	Does not occur	Occurs	Undefined
	A not = B		B=C	Occurs	Occurs	Undefined
			B not = C	Occurs	Occurs	Undefined
	Undefined		-	Does not occur	Occurs	Undefined

NOTE   *1:*   *"-" means "Don't care".*

  2:   *The User setting size (A) and the Printer paper size (B) determine whether the Paper Set error occurs or not.*

  3:   *The User setting size (A) and the MP Tray paper size (C) determine whether the Check Paper Size error occurs or not.*

  4:   *Differences between the Printer paper size (B) and the MP Tray paper size (C) do not influence each error occurrence.*

1.9.4 Special Notes

☐   When the User defined size is specified for the User setting size, the Check Paper Size error does not occur. However printing speed in continuous printing is reduced due to cleaning after printing.

☐   When the Printer paper size is undefined, the Check Paper Size error occurs in some cases.

1.10 Notes on Operation

1.10.1 Powering Off (EPL-5900)

EPL-5900 incorporates an internal non-volatile memory (EEPROM).
If the printer is powered off during the process of writing in non-volatile memory, the writing operation to the non-volatile memory cannot be guaranteed. And therefore the next time the printer is powered on or the "Reset All" is carried out, panel settings may be initialized or a service call error may occur.
The non-volatile memory saves the function settings, and the following cases are those in which the memory is rewritten, and therefore the printer should not be powered off:

- ■ After the printer is powered on, until the Ready LED lights up.

- ■ While the printer is printing.
  (While the paper feed motor is operating.)

- ■ While the Data LED is flashing or lit.
  To stop the printer, either put it off line or carry out All Print Data Cancel.

1.10.2 Caution About Hot Parts (EPL-5900/EPL-5900L)

The fuser unit inside the printer is heated to high temperatures, once the printer cover is opened to clear paper jam or for some reasons, take care not to touch the fuser unit.

1.10.3 About the Moist Environment Mode Select Jumper (EPL-5900L)

Jumper switch "JP9" on the controller board is a jumper for selecting the moist environment mode.
This is a switch to be operated to lower the print density in a high humidity environment. Ordinarily it should not be operated.
Use this switch only in cases where the above special environmental conditions exist. When the environment of use returns to normal environmental conditions, it is necessary to return it to the original setting immediately. The following jumper setting 1-2 is excluded from the print quality guarantee in the normal environment.

If the user environment is special and it is difficult to handle environmental conditions by any other method, this setting can be set by a service technician. This jumper is not disclosed to the public and is not accessible to users.

    Setting:
    1-2   Set if the printer is used in a high humidity environment.
    2-3   Set when the printer is used in a normal humidity environment (factory default setting).

1.11 Engine Environment Setting

CAUTION !	**The description here is not open to users.**

For EPL-5900/EPL-5900L, control the settings of engine environment as below:

☐ Humidity mode
Controlled by setting the jumper on the main control board.

<EPL-5900>Jumper: JP102
    Setting   Open: Normal humidity mode (Default)
                        Short: High humidity mode

<EPL-5900L>Jumper: JP9
    Setting   2-3:   Normal humidity mode (Default)
                        1-2:   High humidity mode

NOTE: *For further information on JP9 setting, see 1.10.3 "About the Moist Environment Mode Select Jumper (EPL-5900L)".*

☐ 1st print time mode
Standard 1st print time mode (This setting cannot be changed.)

☐ Paper Wave control mode
Paper Wave control mode (2) (This setting cannot be changed.)

1.12 Ambient Conditions

The ambient conditions to ensure the performance of EPL-5900/EPL-5900L are as follows:

Environment A: Range of ambient conditions to guarantee image quality and paper feed
Environment B: Range of ambient conditions to guarantee paper feed
Environment C: Range of ambient conditions to guarantee paper feed
Environment X: Range of ambient conditions to guarantee operation

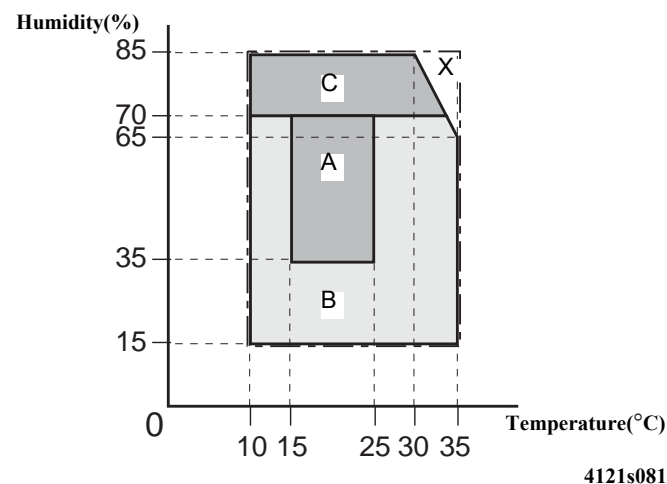The definitions of Environments A, B, C and D are as shown in Figure 1-31 blow.

4121s081

Figure 1-31. Temperature and Humidity Environment

1.13 Differences in Specifications between Intended Markets

1.13.1 Differences in Specifications

The table below shows differences in specifications between intended markets.

Table 1-57. Differences in Specifications between Intended Markets

Model	EPL-5900		LP-2200	EPL-5900L		LP-1200
Intended Markets	South America and Taiwan	South America, FIGSP, UK, Australia, North Europe, Hong Kong, Russia, China and Singapore	Japan	South America and Taiwan	South America, FIGSP, UK, Australia, North Europe, Hong Kong, Russia, China and Singapore	Japan
Resolution / Printing Speed	1200dpi/6ppm, 600dpi/12ppm, 300dpi/12ppm		←	600dpi/12ppm		←
Toner Life	Pre-installed: 3000 sheets, Replaced: 6000 sheets		←	Pre-installed: 3000 sheets, Replaced: 6000 sheets		3000 sheets
Standard RAM	8 MB		←	2 MB		←
RAM Expansion	136 MB max.		←	13 MB max		←
Optional ROM Slot	1 slot (for PS or IPDS option)		None	None		None
Type-B Slot	Supported		←	None		None
Control Panel	3 switches and 6 LEDs		←	2 LEDs		←
Main Board Assy	C427MAIN (WW spec)		C427MAIN (J spec)	C428MAIN (WW spec)		C428MAIN (J spec)
Memory Board Assy	C427PROG (WW spec) (initial products) or C427PROG-B (WW spec) (by stable production)		C427PROG (J spec) (initial products) or C427PROG-B (J spec) (by stable production)	-		-
Power Supply Unit	120V system	200V system	120V system	120V system	200V system	120V system

CHECK POINT ✔ **There is a difference in jumper setting between "WW spec" and "J spec" of C427MAIN/C428MAIN. Refer to 1.13.2 "Jumper Setting".**

1.13.2 Jumper Setting

☐ C427MAIN is equipped with two resistance jumpers and one DIC jumper.

Table 1-58. Jumper Setting on C427MAIN

	Resistance Jumper		DIC Jumper
	JP100	**JP101**	**JP102**
	WW: Letter/A4 　Installed: Letter 　Not installed: A4 J: FBitstreemFont availability 　Installed: Not available 　Not installed: Available	WW: No setting J: OEM/Brand 　Installed: OEM 　Not installed: Brand	Transfer current setting (normal / high humidity) Open: Normal Short: High humidity
WW spec setting	Not installed (A4)	Not installed (default)	Open (normal)
J spec setting	Not installed (Font available)	Not installed (brand)	Open (normal)

☐ C428MAIN is equipped with two DIC jumpers and two resistance jumpers

Table 1-59. Jumper Setting on C428MAIN

	DIC Jumper		Resistance Jumper	
	Parallel Mode	**Transfer Current**	**Setting for Markets**	
	JP1	**JP9**	**R89**	**R90**
J spec setting	2-3 (ECP Mode)	2-3 (Normal)	Not installed	Installed
WW spec setting	2-3 (ECP Mode)	2-3 (Normal)	Installed	Not installed

OPERATING PRINCIPLES

2.1 Overview

EPL-5900 and EPL-5900L are almost the same in operating principles. However, do not forget that there are some differences in mechanisms between EPL-5900 and EPL-5900L.

2.1.1 EPL-5900 Major Components

Table 2-1. EPL-5900 Major Components

No.	EPL-5900 Major Components
1	Imaging Cartridge
2	Drum Cartridge
3	Paper Eject Changeover Lever
4	Face-up Tray *
5	Fusing Separation Claw
6	Paper Eject Sensor (PS3)
7	Backup Roller
8	Heat Roller
9	Photoconductor (OPC Drum)
10	Transfer Roller
11	Paper Feed Sensor(PS1)
12	Lower Cassette Unit *
13	Paper Feed Roller
14	Second Paper Feed Roller *
15	Paper Empty Detection Lever *
16	Paper Push-up Plate *
17	Paper Feed Cassette *
18	Paper Guide
19	Paper Tray
20	Manual Feed Paper Guide
21	Paper Empty Sensor (PE1)
22	Print Head Unit
23	Face Down Tray

* The components 4, 12, 14, 15, 16 and 17 are optional.
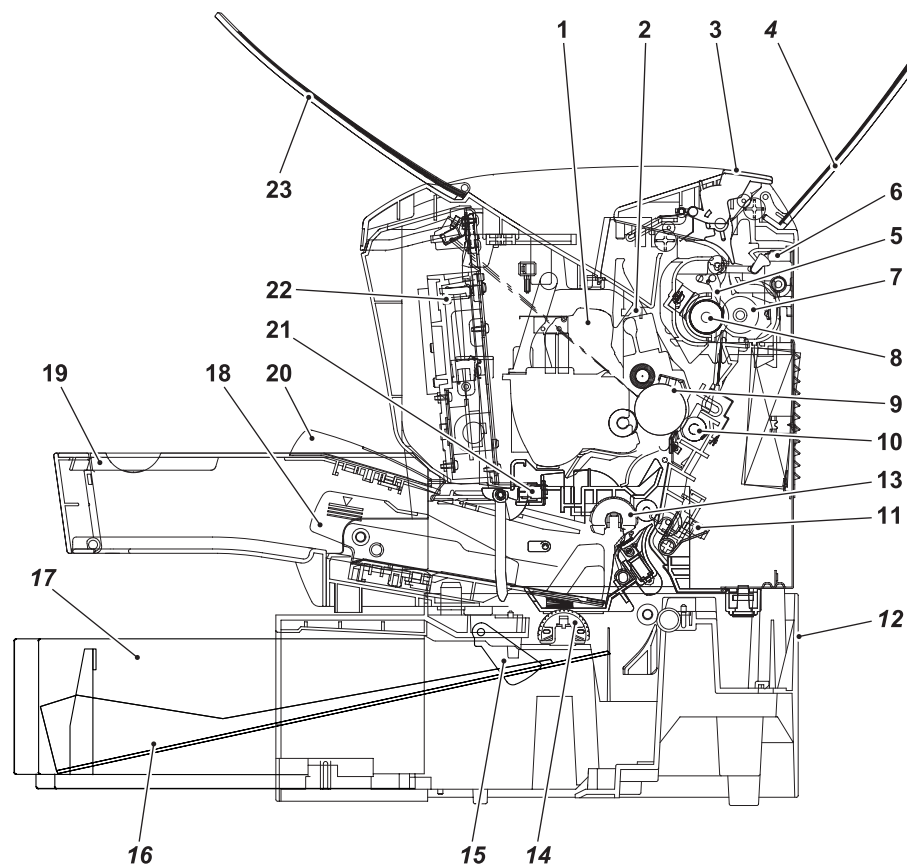

mecha001.eps

Figure 2-1. Sectional View of Mechanism (EPL-5900)

2.1.2 EPL-5900L Major Components

Table 2-2. EPL-5900L Major Components

No.	EPL-5900L Major Components
1	Imaging Cartridge
2	Drum Cartridge
3	Paper Eject Changeover Lever
4	Face-up Tray *
5	Fusing Separation Claw
6	Paper Eject Sensor (PS3)
7	Backup Roller
8	Heat Roller
9	Photoconductor (OPC Drum)
10	Transfer Roller
11	Paper Feed Sensor(PS1)
12	Paper Feed Roller
13	Paper Empty Sensor (PE1)
14	Print Head Unit
15	Face Down Tray
16	Paper Tray

* The face-up tray of 4 is optional.
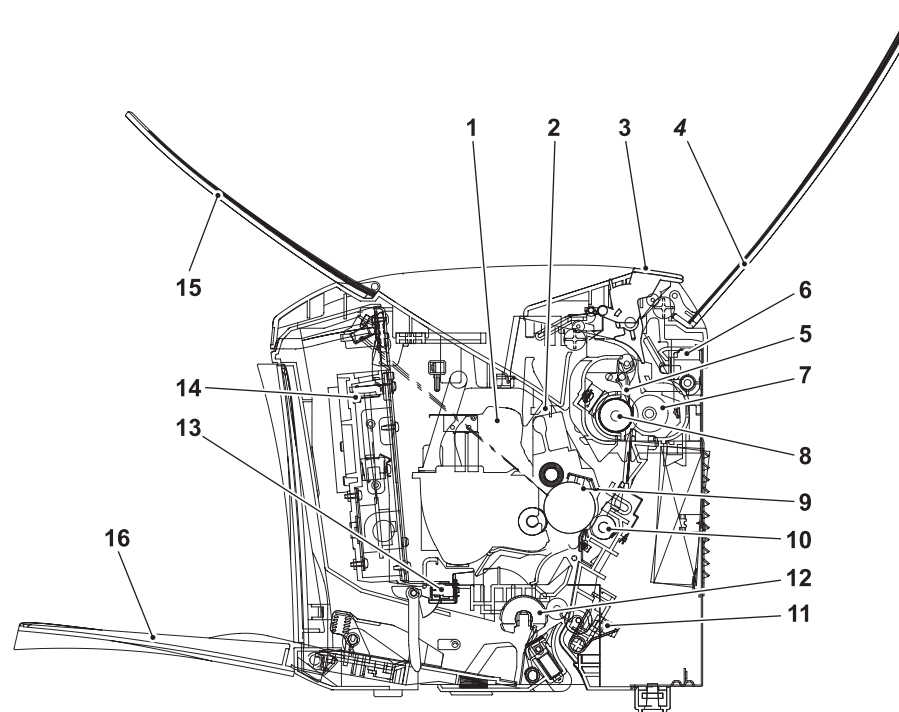
mecha101.eps

Figure 2-2. Sectional View of Mechanism (EPL-5900L)
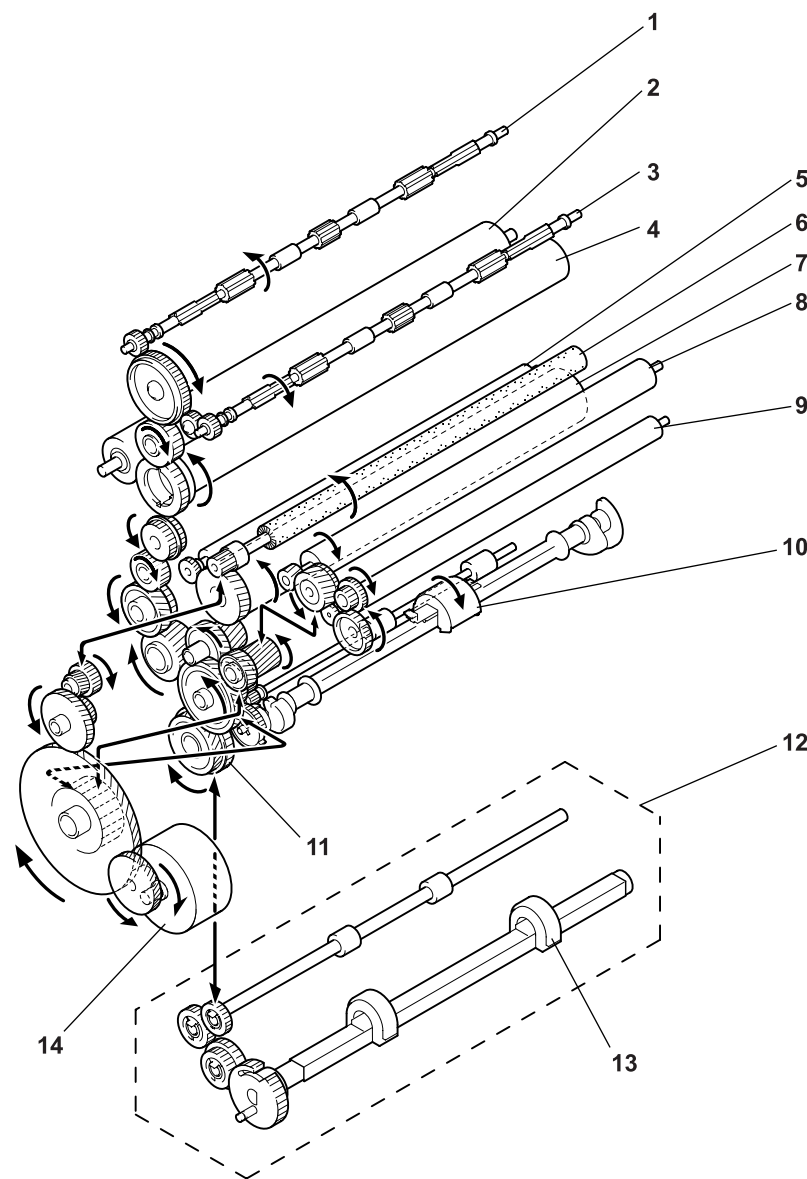
2.1.3 Drive System

OVERVIEW

The operation of the Main Motor (M1) is transmitted via gears to drive the rollers of the printer body, and in EPL-5900 the rollers of the optional Lower Cassette Unit.

Table 2-3. Drive System Components

No.	Description
1	Paper Eject Roller (Face-up)
2	Backup Roller
3	Paper Eject Roller (Face-down)
4	Heat Roller
5	Transfer Roller
6	Charging Brush
7	Photoconductor (OPC Drum)
8	Sleeve Roller
9	Toner Sending Roller
10	Paper Feed Roller
11*1	Connecting Gear
12*1	Lower Cassette Unit (Option)
13*1	Second Paper Feed Roller
14	Main Motor (M1)

*1: EPL-5900L is not equipped with any of the components 11, 12 and 13.

drive01.eps

Figure 2-3. Drive System

2.1.4 Names and Functions of Electrical Parts (Printer Body)

Table 2-4. Names and Functions of Electrical Parts

Symbol	Name	Function
M1	Main Motor	Drives the printer.
M2	Cooling Fan Motor	Expels the heat from the printer body.
H1	Heater Lamp	Heats the Heat Roller.(600W)
TH1	Thermistor	Detects surface temperature of the Heat Roller, and feeds back the detected temperature to the heater control circuit.
TS1	Thermostat	Shuts off current to the Heater Lamp (H1) if the temperature of the fuser has risen too high. (215°C)
PH	Print Head Unit	Forms a latent image on the surface of the OPC drum.
M3	Polygon Motor (inside the Print Head Unit)	The polygon motor, equipped with a polygon mirror having uniform seven facets, runs at a high speed to direct a laser beam in the main scanning direction.
PWB-D	Laser Diode Control Board (inside the Print Head Unit)	The SOS sensor detects the printing start position and the laser diode emits a laser beam according to the image signal so that it hits a corresponding position on the OPC drum.
S1	Power Switch	Turns power on/off.
S2	Interlock Switch	Turns off all the output power except DC 2V when detecting the opening of the Top Cover.
PE1	Paper Empty Sensor	Detects the absence of paper. L when no paper is detected
PS1	Paper Feed Sensor	Detects feeding of paper. L when no paper is detected
PS3	Paper Eject Sensor	Detects ejection of paper. L when no paper is detected
SL1	Paper Feed Solenoid	Transmits the driving force of the main motor to the Paper Feed Roller.
PU1	Power Supply Unit	Changes supply voltage from AC power to DC power, and outputs it. AC power is supplied to the Heater Lamp (H1).
HV1	High Voltage Circuit Board	Supplies the following parts with the respective voltages: Charging brush roller: Charging voltage Development sleeve roller: Development bias voltage Development toner control plate: Development blade voltage Development toner collect plate: Under development seal voltage Transfer roller: Transfer voltage

Table 2-4. Names and Functions of Electrical Parts (continued)

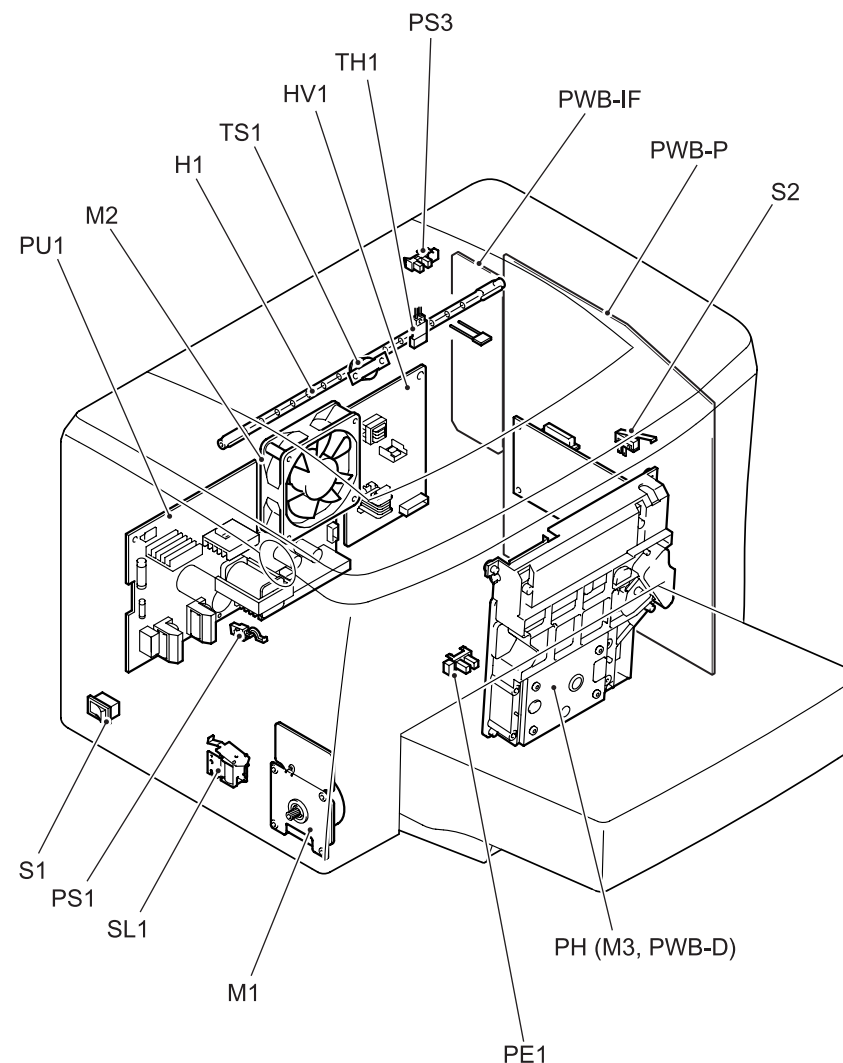| Symbol	Name	Function
PWB-P	Controller Circuit Board	Communicates with the personal computer, and controls all the operation of the printer.
PWB-IF	Interface Circuit Board	Connects the Main Board Assy to the personal computer.

Figure 2-4. Locations of Electric Parts (Printer Body)

2.1.5 Names and Functions of Electrical Parts (Lower Cassette) (Not Applicable to EPL-5900L)

Table 2-5. Names and Functions of Electrical Parts (Lower Cassette)

Symbol	Name	Function
SL21	Paper Feed Solenoid	Controls the gear clutch to transmit the driving force from the main motor to the Paper Feed Roller. Solenoid ON: Driving force is transmitted
SW21	Cassette Type Sensor Switch	This triple pushbutton switch detects the cassette type determined by the paper size.
PI2	Paper Empty Sensor (on PWB-A)	Detects the absence of paper. L when there is paper
PWB-A	Relay Board	Relays power and control signals from the printer to the electrical parts inside the lower cassette unit.
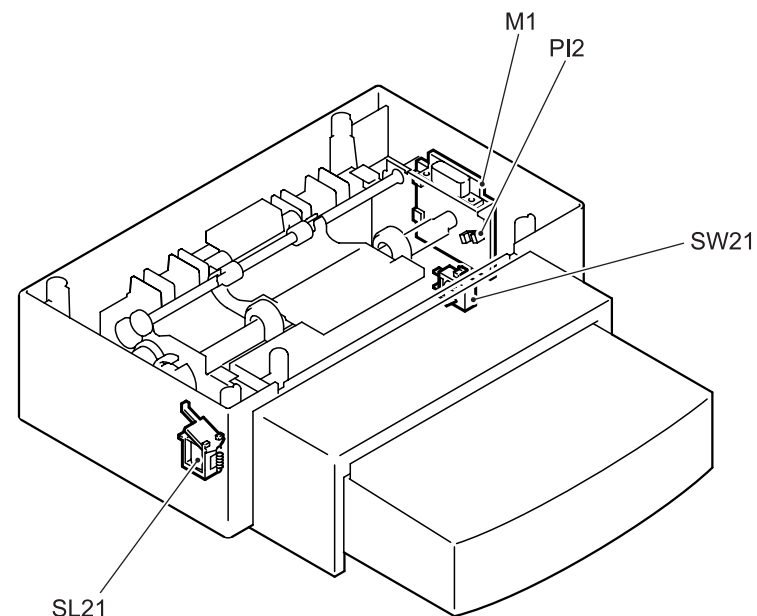
elec_pa02.eps

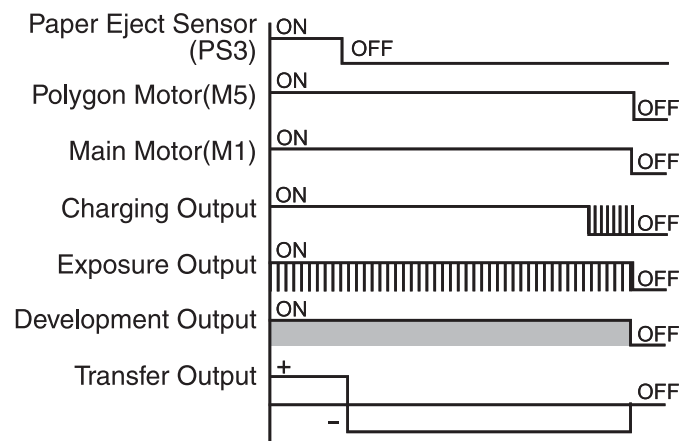**Figure 2-5. Locations of Electrical Parts (Lower Cassette Unit)**

2.1.6 Timing Chart

☐   At Printing Start
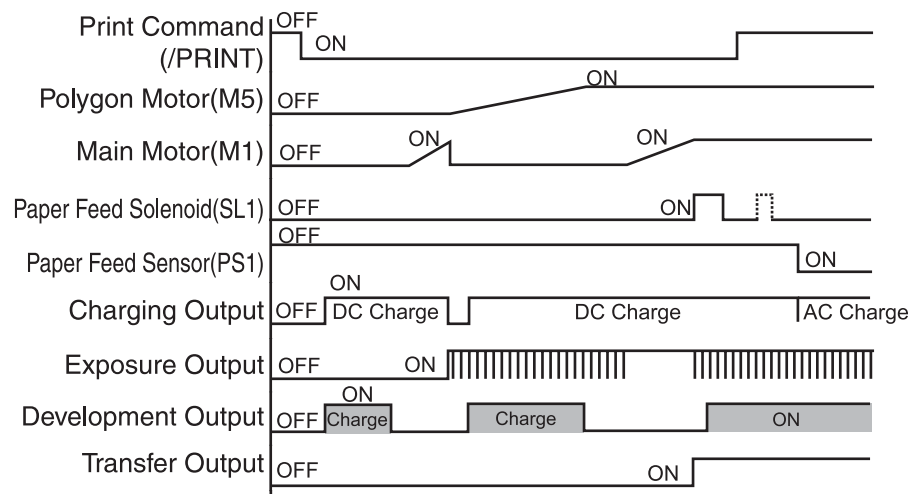
timing_c01.eps

☐   At Printing End

timing_c02.eps

## 2.2 Description of Mechanisms

2.2.1 Paper Path

☐ EPL-5900 (2 paper feed methods)
   Paper Tray: 250 sheets
   Manual Feed Slot：   1 sheet

*NOTE: An optional lower cassette unit (500 sheets) can be installed so that three
         paper feed methods are available.*

☐ EPL-5900L (1 paper feed method)
   Paper Tray: 150 sheets

Paper once fed by the paper feed roller is carried through transfer roller → fusing roller →
paper exit roller and ejected to the paper eject tray.
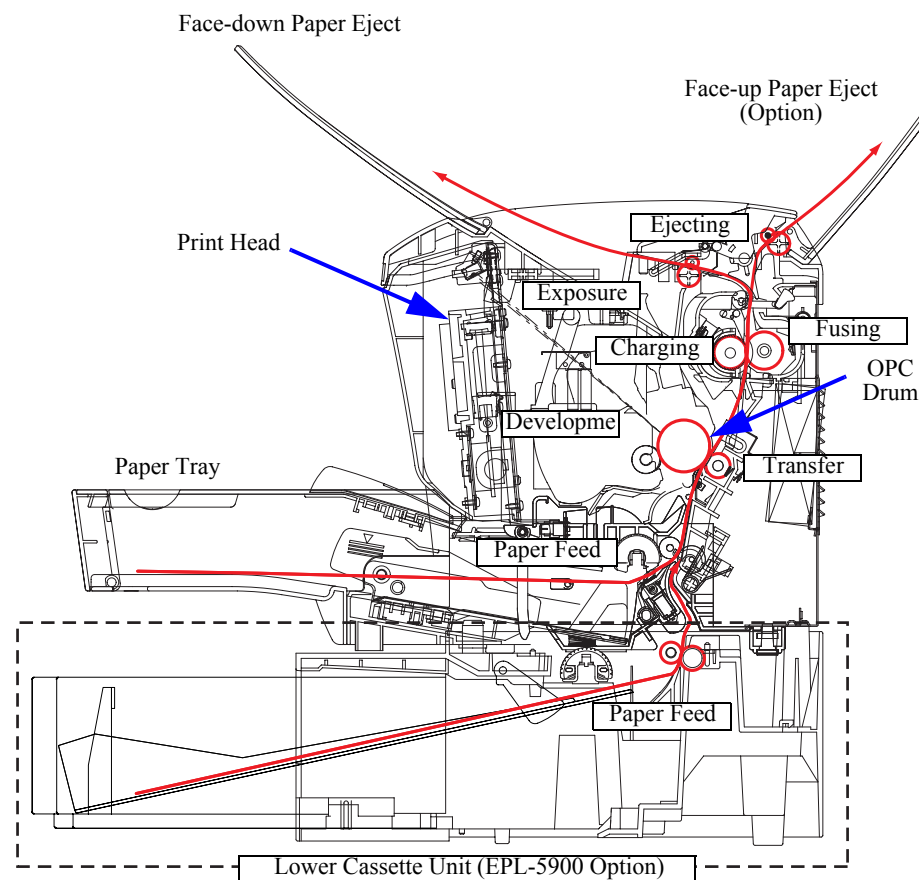
process01.eps

Figure 2-6. Paper Path (EPL-5900)

2.2.2 Paper Feed Mechanism

2.2.2.1 Paper Tray

PAPER FEED OPERATION

When the paper feed solenoid (SL1) is turned ON, the driving power from the main motor (M1) is transmitted to the paper feed roller via the paper feed clutch, and the paper feed roller rotates.

At the same time, the push down cam rotates, and it lifts the tray. Paper on the tray is carried into the printer by the paper feed roller.

Separation pad method is used in order to separate each sheet of paper and prevent feeding the second sheet together.

Since there is no paper size sensor mechanism in the paper tray, the printer detects the length of paper by the ON period of paper feed sensor (PS1), and judges the paper size.

So, when sheets of paper have the same length, the printer judges the sheets to have the same size even if they are different in width.

PAPER EMPTY SENSOR

Paper empty sensor (PE1) is mounted on the upper part of the paper tray and it detects the absence of paper in the paper tray.

When there is paper on the tray, the actuator is lifted and the sensor turns OFF.

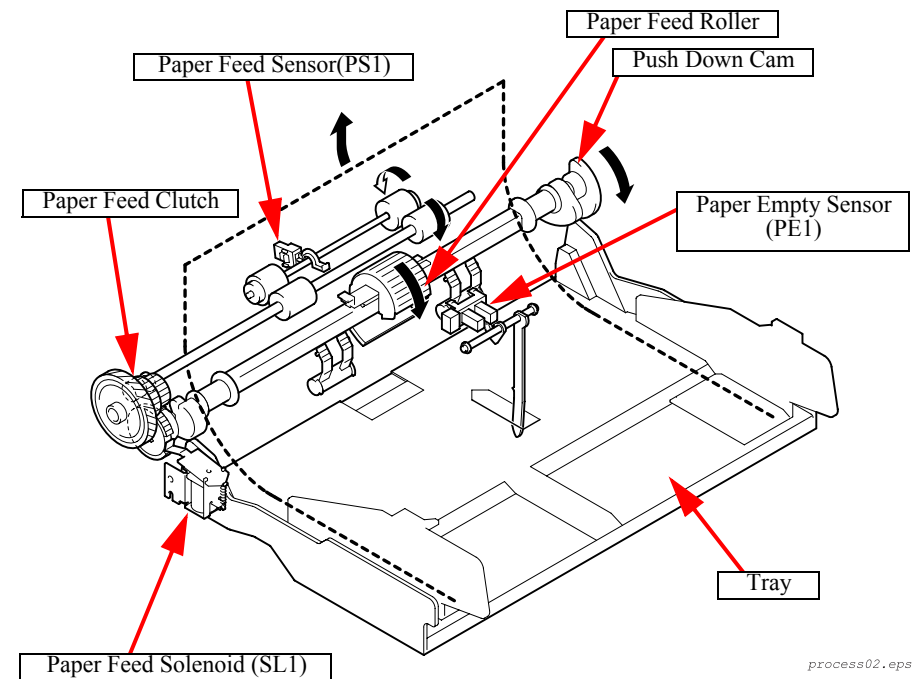When the tray is empty of paper, the actuator falls into the hole in the tray and the sensor turns ON.
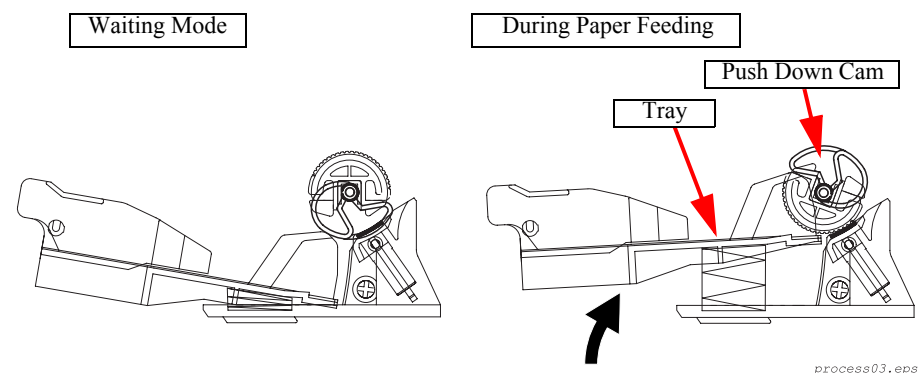

Figure 2-7. Paper Feed Mechanism 1

Figure 2-8. Paper Feed Mechanism 2

2.2.2.2 Lower Cassette Unit (Option for EPL-5900)

MECHANISM

Since the Lower Cassette Unit does not have drive motor, driving power in the Lower Cassette Unit for feeding and carrying paper is transmitted from the printer (from M1) via the connecting gear.

Paper feed method is the same as with the paper tray. However, paper separation method is different; the separation pad method is used for the paper tray, while the separator claw is used for the Lower Cassette Unit.

The separator claw method uses the paper separator claw installed at the paper cassette and the elasticity of paper. Only one sheet of paper is fed by one paper feed operation.

The paper feed solenoid (SL21) is controlled from the printer side via the relay board (PWB-A) of the Lower Cassette Unit.

PAPER EMPTY SENSOR

The paper empty sensor (PI2) is mounted on the relay board (PWB-A) of the Lower Cassette Unit and it detects "paper empty" (absence of paper) in the paper feed cassette.

When there is paper on the tray, the actuator is lifted and the sensor turns OFF.

When the tray is empty of paper, the actuator falls into the hole in the paper lifting board and the sensor turns ON.
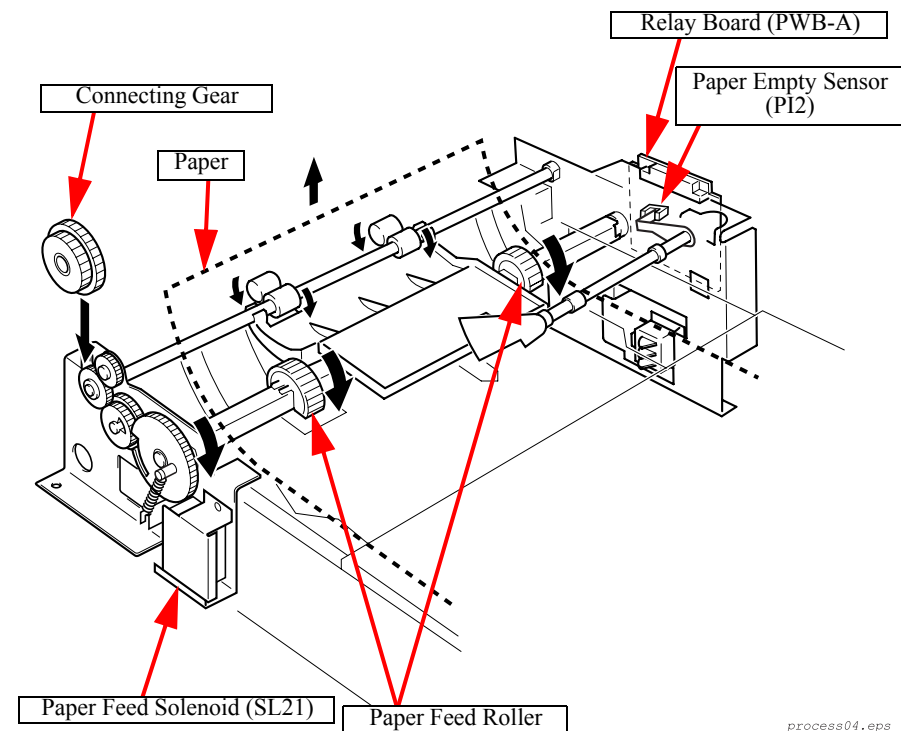

Figure 2-9. Paper Feed Mechanism (Lower Cassette Unit)
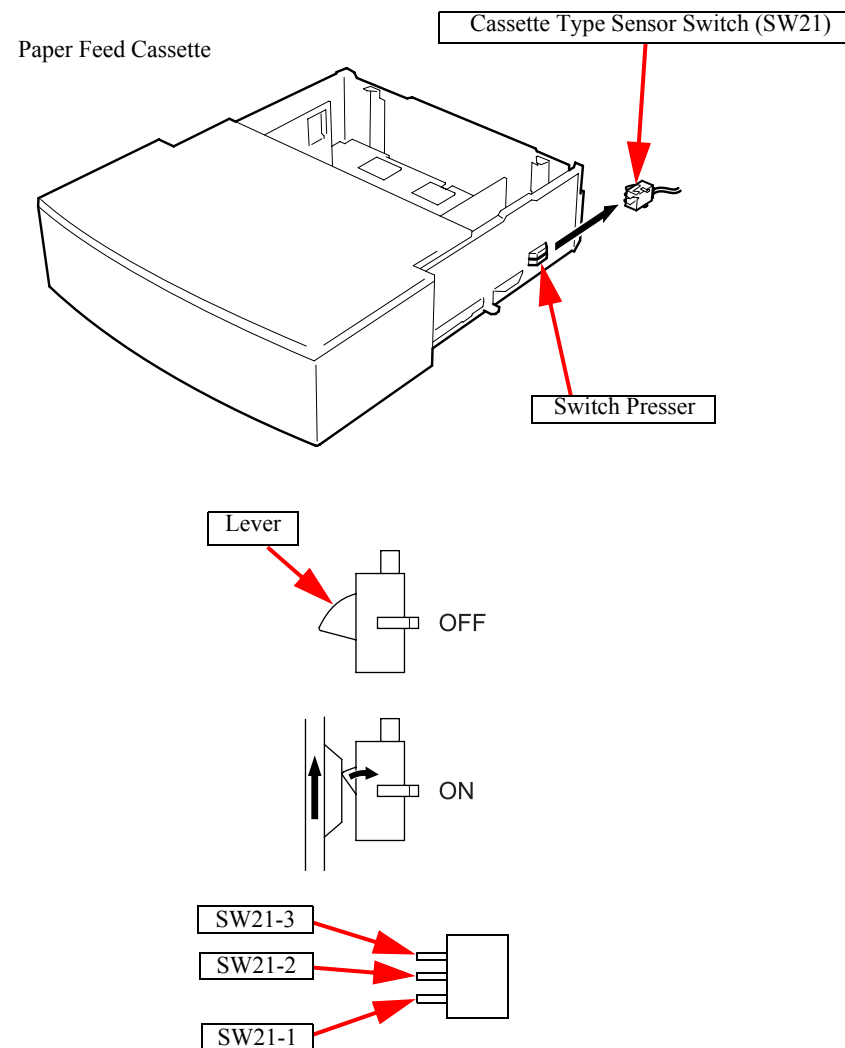
CASSETTE TYPE SENSOR

The Lower Cassette Unit is equipped with the cassette type sensor switches (SW21) having a sector-shaped lever.

When the cassette for a paper size is inserted, the switch presser on the right side of the cassette pushes the lever according to the paper size and it turns the cassette type sensor ON.

These triple switches enable the printer to distinguish the cassette types (paper sizes) by ON/OFF combinations of the switches.

Table 2-6. Cassette Type Sensor Switches

Cassette Type	SW21-1	SW21-2	SW21-3
A4	OFF	OFF	ON
B5	ON	ON	OFF
Letter	OFF	ON	OFF
Legal	ON	OFF	OFF
Exective	OFF	ON	ON
No cassette or undefined cassette	OFF	OFF	OFF
	ON	ON	ON
	ON	OFF	ON

process05.eps

Figure 2-10. Cassette Type Sensor Mechanism

2.2.3 Charging Process

☐ Overview

Before laser exposure, static electricity is given to the OPC drum (Organic Photoconductor) to charge it.

The surface of the OPC drum is charged by the rotating brush (charging brush) and pre-charging film.

Charging by the rotary brush (charging brush) and the pre-charging film rarely causes ozone generation resulting from corona discharge. In addition, since charge is given directly to the OPC drum, this charging method requires a low voltage and excels in homogeneity and stability of the electric potential.

The pre-charging film performs preliminary charging before charging with the rotary brush (charging brush) to enhance efficiency of charging.

The rotary brush (charging brush) is rotated by the driving force which is transmitted from the main motor (M1) to the gear of the brush.

The electric potential on the surface of the OPC drum after charging is about -800V.
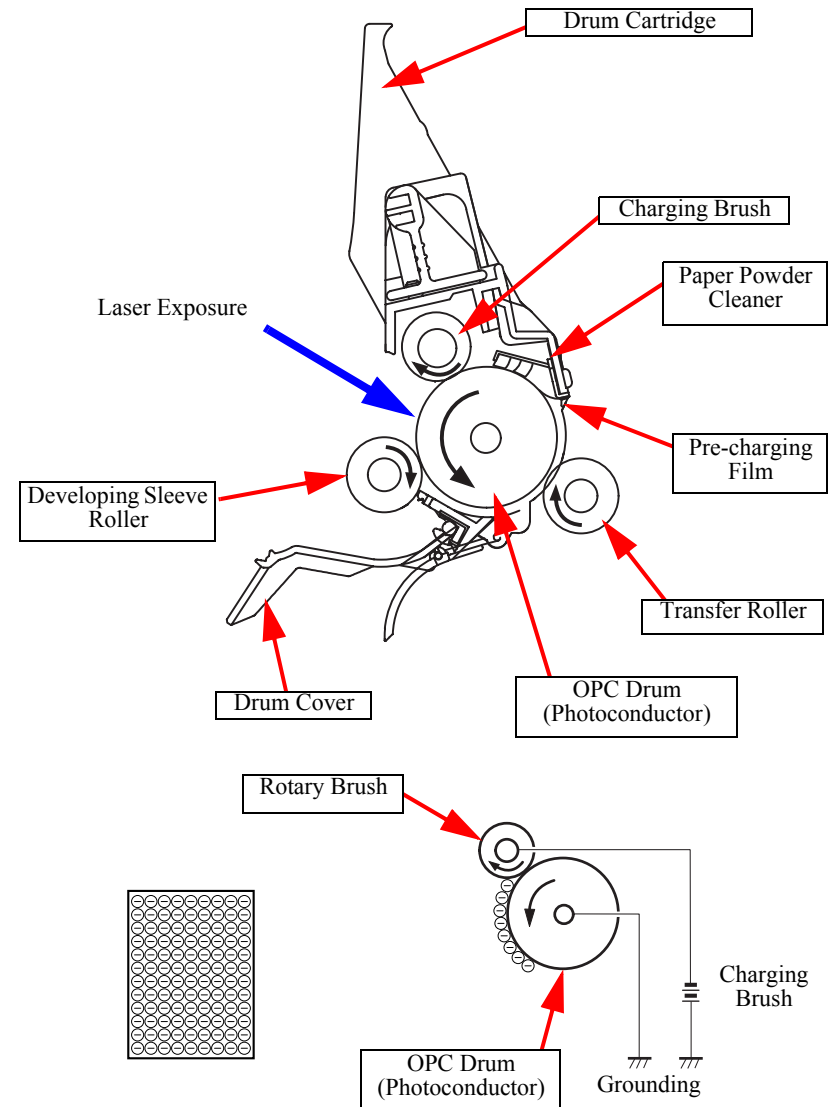
process06.eps

Figure 2-11. Charging Mechanism

2.2.4 Exposure Process

The laser beam from the print head creates an electrostatic latent image on the OPC drum surface.

The following control is performed in order to find the appropriate timing to print the image.

SUB SCANNING DIRECTION (VERTICAL SCANNING DIRECTION)

When the printer receives the PRINT signal, the polygon motor (M3) and the main motor (M1) operate, and paper feeding is started.

Upon passage of a specified period of time after the front end of the fed sheet turns the paper feed sensor ON (TOD signal), the main control board sends the VIDEO signal to the print head, and printing starts.

When moving on from the first line to the second line, the print starting position is shifted down by delaying the VIDEO signal sending time

MAIN SCANNING DIRECTION (HORIZONTAL SCANNING DIRECTION)

The laser diode control board (PWB-D) is equipped with the SOS sensor to unify the timing of the laser emission for every one line of main scanning.

PRINTABLE AREA

The main control board sends the VIDEO signal corresponding to the paper size to the engine (controller).

The main control board determines the printing start position by TOD signal (sub scanning direction) and the HSYNC signal, which are sent from the engine (controller).

Upon receiving the VIDEO signal, the print head starts laser emission.
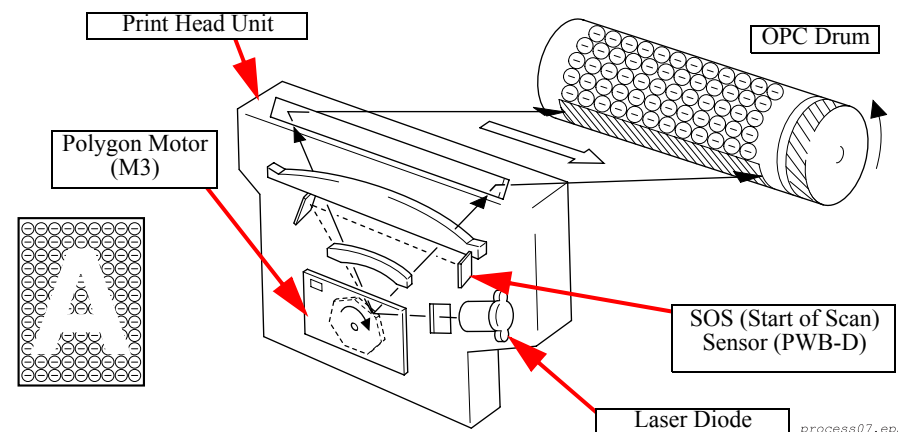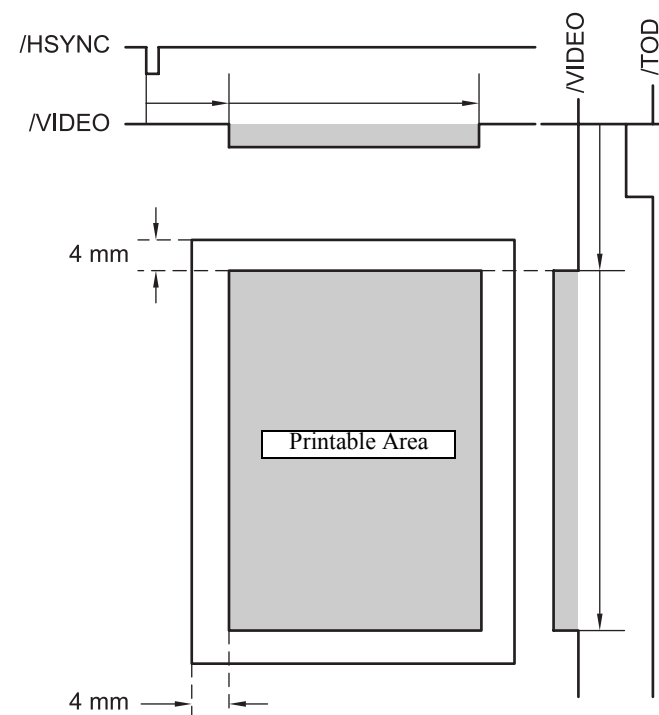

Figure 2-12. Exposure Control

Figure 2-13. Printable Area

2.2.5 Development Process

OVERVIEW

Putting toner on the static latent image on the OPC drum produces the toner image.

Table 2-7. Functions of Components

| Symbol	Name	Function
1	Toner hopper	Contains toner.
2	Toner agitation wing	Agitates the toner inside the toner hopper and sends toner to the toner sending roller.
3	Toner sending roller	Conveys toner to the sleeve roller.
4	Sleeve Roller	Rotates the resin sleeve.
5	Resin sleeve	Conveys toner to the surface of the OPC drum.
6	Photoconductor (OPC Drum)	Creates the latent image on the surface by the laser beam. Develops the image by the resin sleeve and carries the developed image to the paper surface.
7	Toner blade	Puts toner in a thin and even layer on the resin sleeve. Gives negative charge to toner while the toner is passing through between the toner blade and the resin sleeve.
8	Bias seal	Attracts, toward the sleeve roller, the toner which did not stick to the OPC drum.
9	Development blade voltage terminal (VBL)	DC-550V (DC-490V/-590V max)
10	Development voltage terminal (VB)	DC-300V (DC-240V/-340V max)
11	Under development seal terminal (VSS)	DC-300V (DC-240V/-340V max)

Imaging Cartridge
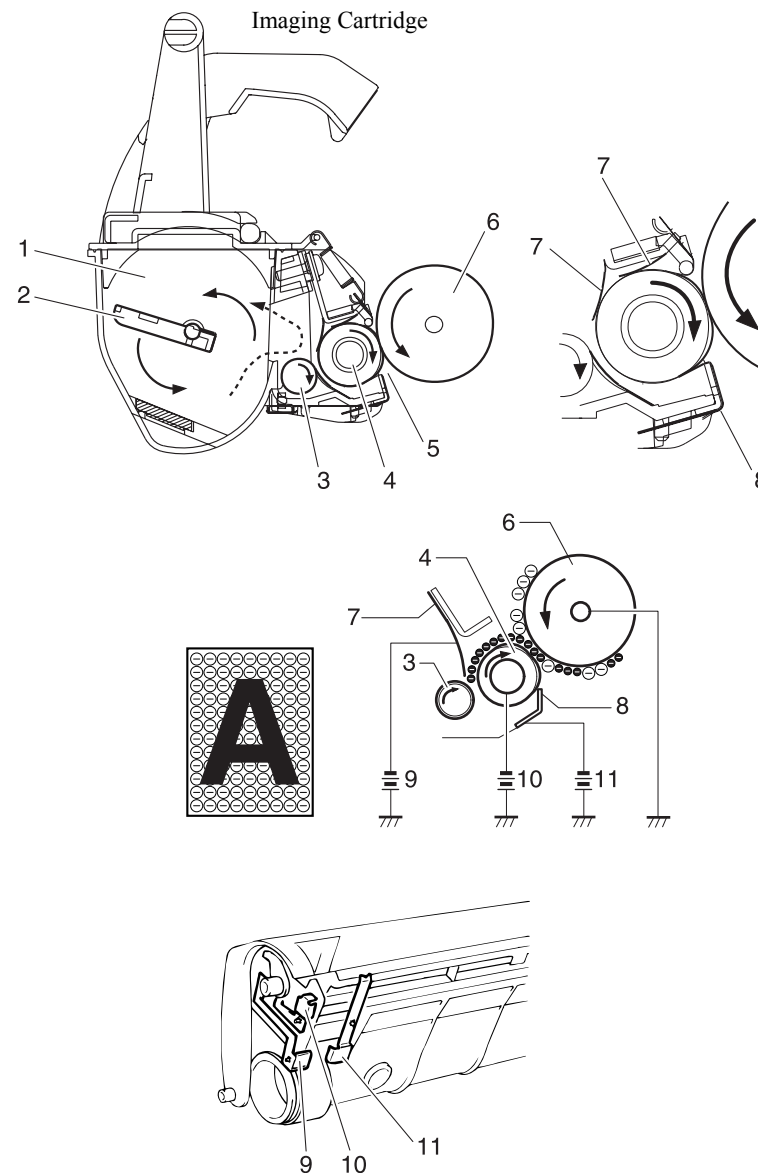
process08.eps

Figure 2-14. Developing Mechanism
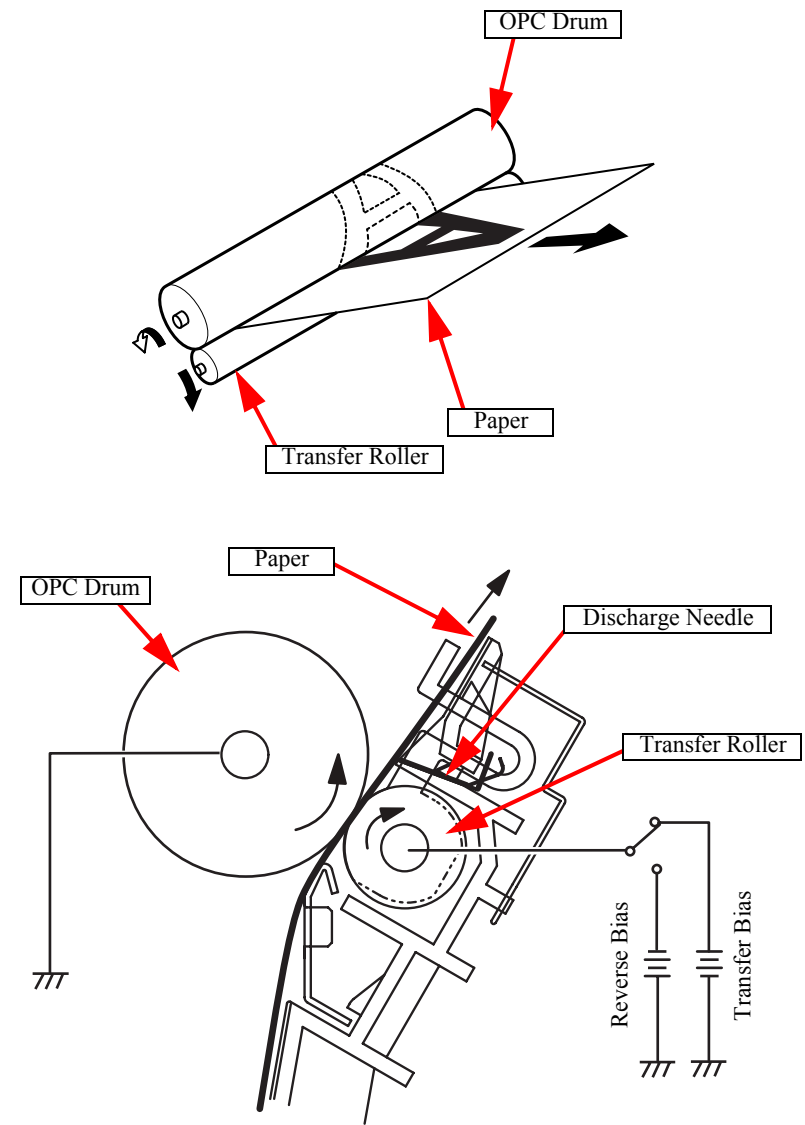
2.2.6 Transfer Process

OVERVIEW

The image created on the OPC drum in the development process is transferred to the paper.

Transfer method is not the corona transfer but the roller transfer method by the transfer roller.

By the roller transfer method, ozone generation resulting from corona discharge rarely occurs, and the transferred image is little dislocated because the paper is always retained between the drum and the transfer roller during printing.

A reversed bias is applied to the transfer roller during cleaning of the transfer roller prior to printing.

The residual electric potential on the paper is removed by the discharge needle.

Figure 2-15. Transfer Mechanism

2.2.7 Fusing Process

OVERVIEW

In this process, the toner transferred to the paper in the transfer process is fused to the paper.

For fusing, this printer uses the heat roller fusing system. The sheet with toner on passes between the heat roller, which is heated up by the heater lamp, and the back-up roller. During this passage, heat and pressure are applied to permanently fuse the toner to the paper.

FUSING TEMPERATURE CONTROL CIRCUIT

The thermistor (TH1) detects the surface temperature of the fusing heat roller and inputs the analog voltage to IC1A-78. Based on the thermistor detected temperature, IC1A-55 outputs the heater lamp ON/OFF signal. According to this signal, the heater lamp (H1) turns ON (lights up) and OFF (goes out) to control the temperature of the fusing components.

If the heater lamp does not turn OFF even when the thermistor detects too high temperature (when the surface temperature of the fusing heat roller exceeds 250°C), the output from IC-79 changes from L to H and forcibly turns the heater lamp OFF.
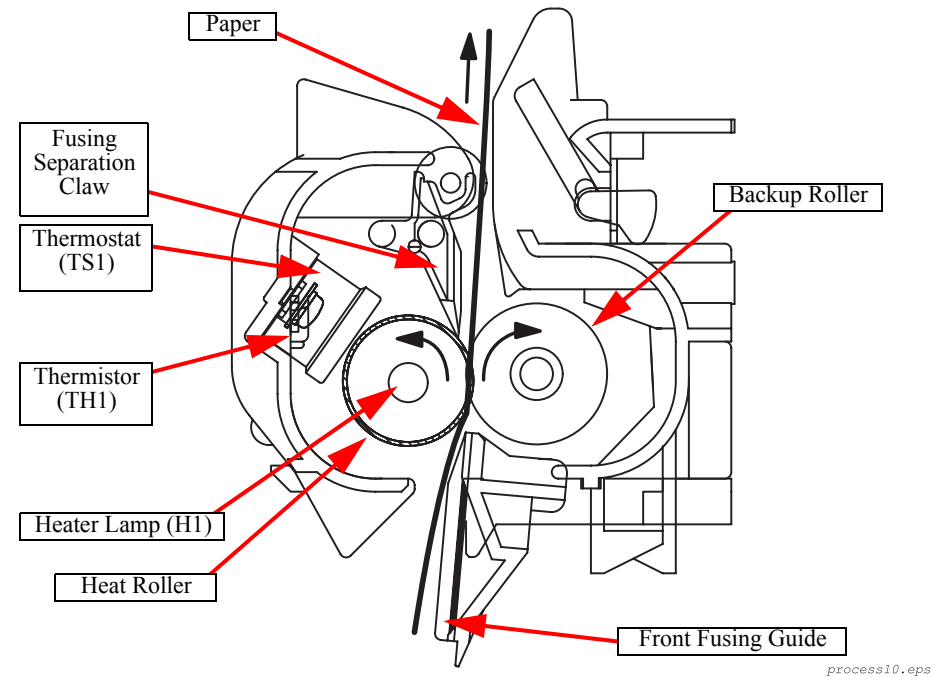

process10.eps

Figure 2-16. Fusing Mechanism

process11.eps

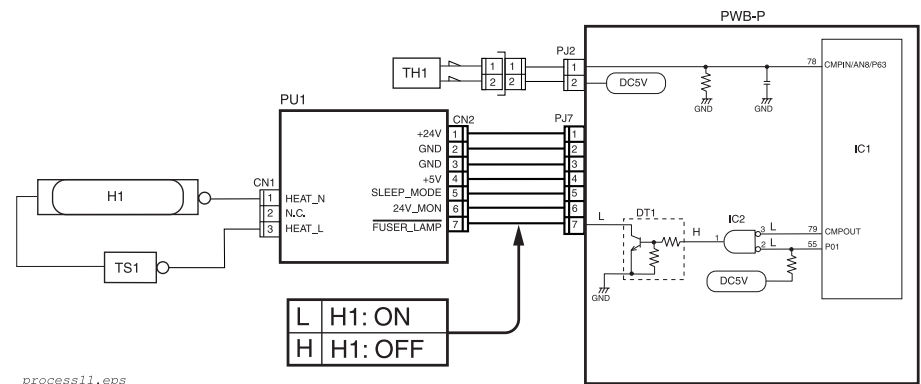| L	H1: ON
H	H1: OFF

Figure 2-17. Fusing Temperature Control Circuit

☐ At 600 dpi
When the power switch is turned ON, the printer performs initialization, warm-up starts, and the heater lamp turns on. Then, the following temperature controls are performed.

■ Temperature control mode 1
This mode keeps temperature at 195°C during printing and at 115°C during standby. After continuance of this mode for 90 seconds, the printer enters the mode 2.

■ Temperature control mode 2
After continuance of this mode for 208 seconds, the printer enters the mode 3. Printing temperature of the fusing roller gradually lowers from 195°C to 185°C.

■ Temperature control mode 3
Keeps temperature at 185°C during printing and at 115°C during standby. Unless any errors are generated or the upper cover is opened, the printer is kept in this mode.

☐ At 1200 dpi
When the power switch is turned ON, the printer performs initialization, warm-up starts, and the heater lamp turns on. The heater lamp stays ON until the temperature of the heat roller reaches about 155°C. Then, the following temperature controls are performed.

■ Temperature control mode 1
Keeps temperature at 155°C during printing and at 115°C during standby. After continuance of this mode for 90 seconds, the printer enters the mode 2.

■ Temperature control mode 2
After continuance of this mode for 208 seconds, the printer enters the mode 3. Printing temperature of the fusing roller gradually lowers from 155°C to 150°C.

■ Temperature control mode 3
Keeps temperature at 150°C during printing and at 115°C during standby. Unless any errors are generated or the upper cover is opened, the printer is kept in this mode.
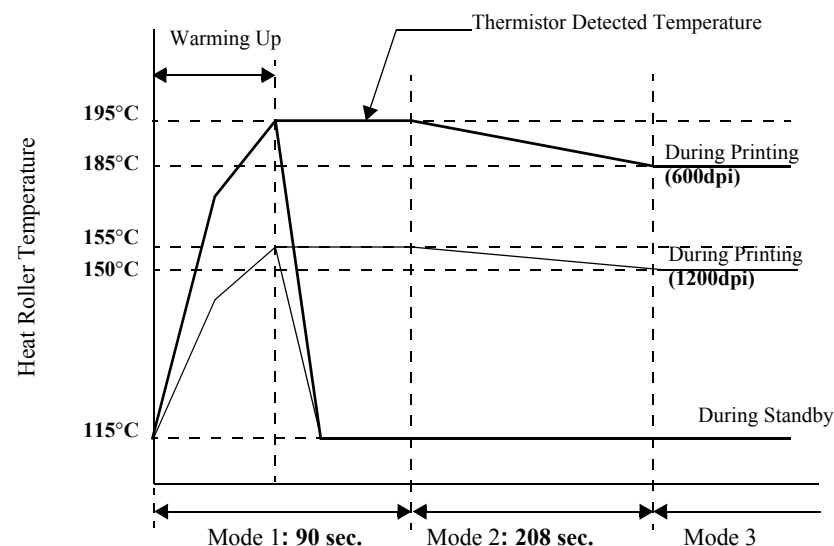
Figure 2-18. Heat Roller Temperature Control

Table 2-8. Heat Roller Temperature Control

Condition before interruption of temperature control	Temperature just after starting of temperature control		
	Below 50°C	50°C or above and below 115°C	115°C or above
Mode 1, during warm-up	Mode 1		
Mode 2, 3, or when power supply OFF	Mode 1	Mode 2	Mode3
	Temperature just after starting of temperature control		

2.2.8 Paper Eject Process
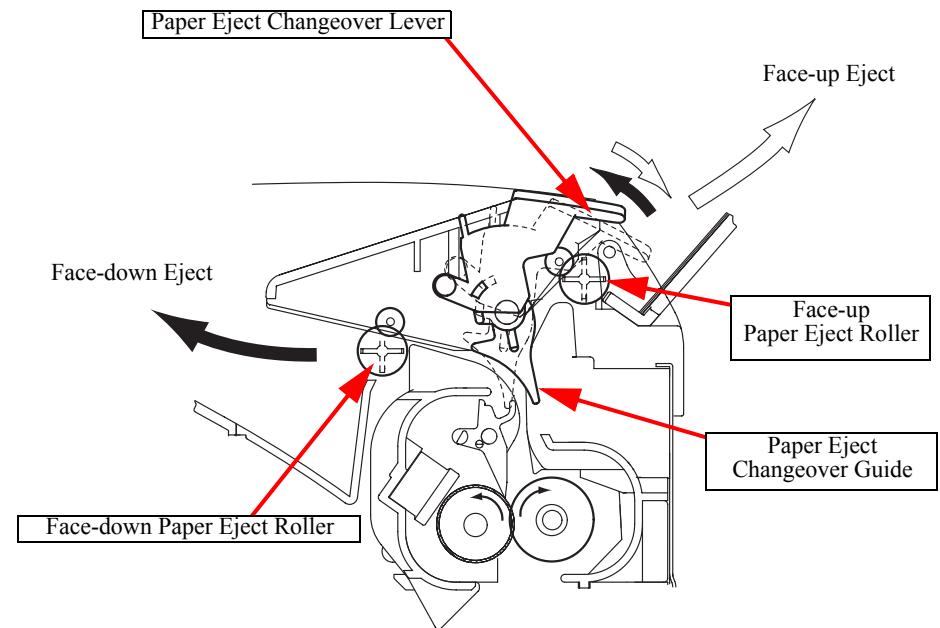
FACE UP / FACE DOWN CHANGEOVER FUNCTION

After fusing process, paper is ejected either face up or face down by the face-up/face-down changeover function.

Manual operation of the paper eject changeover lever moves the tray changeover guide inside the printer, and the paper path is switched for either face up ejection or face down ejection.

☐ Face down ejection
Paper is ejected to the face down tray which is located on the top of the printer.

☐ Face up ejection
Paper is ejected to the optional face up tray.
Face up ejection is available even without optional face up tray.

Table 2-9. Capacity of Paper Exit Trays

Capacity of Paper Exit Trays (plain paper)	
Face down tray	100 sheets
Face up tray	20 sheets

process12.eps

Figure 2-19. Face-up/Face-down Changeover Mechanism

2.3 Operating Principles of Electric Circuitry

2.3.1 Operation Overview of the Main Control Circuit Board

<EPL-5900>

EPL-5900 succeeds to major features of EPL-5800, but its performance is improved in the following points:

- Processing speed enhanced by use of Toshiba CPU "TMPR4955A"
- Totally improved memory control and I/O control integrated ASIC: DLC
- Data bus clock of 66.7MHz
- 8 MB standard memory
- Totally improved ROM ensures higher-speed access to ROM
- USB mounted

CONSTITUTION OF MAIN CONTROL CIRCUIT BOARD

☐ Main Board Assy:
C427MAIN (WW spec)

☐ Memory Board Assy:
C427PROG (IPL+ code + font) (initial products)
C427PROG-B (IPL+ code + font) (by stable production)

MAJOR ELEMENTS

Table 2-10. Major Elements

| Name		Location	Remarks
CPU / Clock		IC100	TMPR4955AF-200 / 200MHz
ASIC	DLC: E05B96BA	IC101	Memory control and I/O control integrated ASIC
ROM DIMM	Standard ROM DIMM	IC5	IPL, code, font, SDRAM
	OPTION	CN301	Option 1 slot for local language and extension ROM, ConvROM (Board C). +3.3V DIMM.
onboard SDRAM		IC7	Mounted on the DIMM for code. 64Mbit(x32): one 8MB
SDRAM DIMM		CN201	For printer memory expansion (1 slot) New 90pin. 16, 32, 64, 128 MB
EEPROM		IC102	128Kbit, serial type, for storage of printer settings
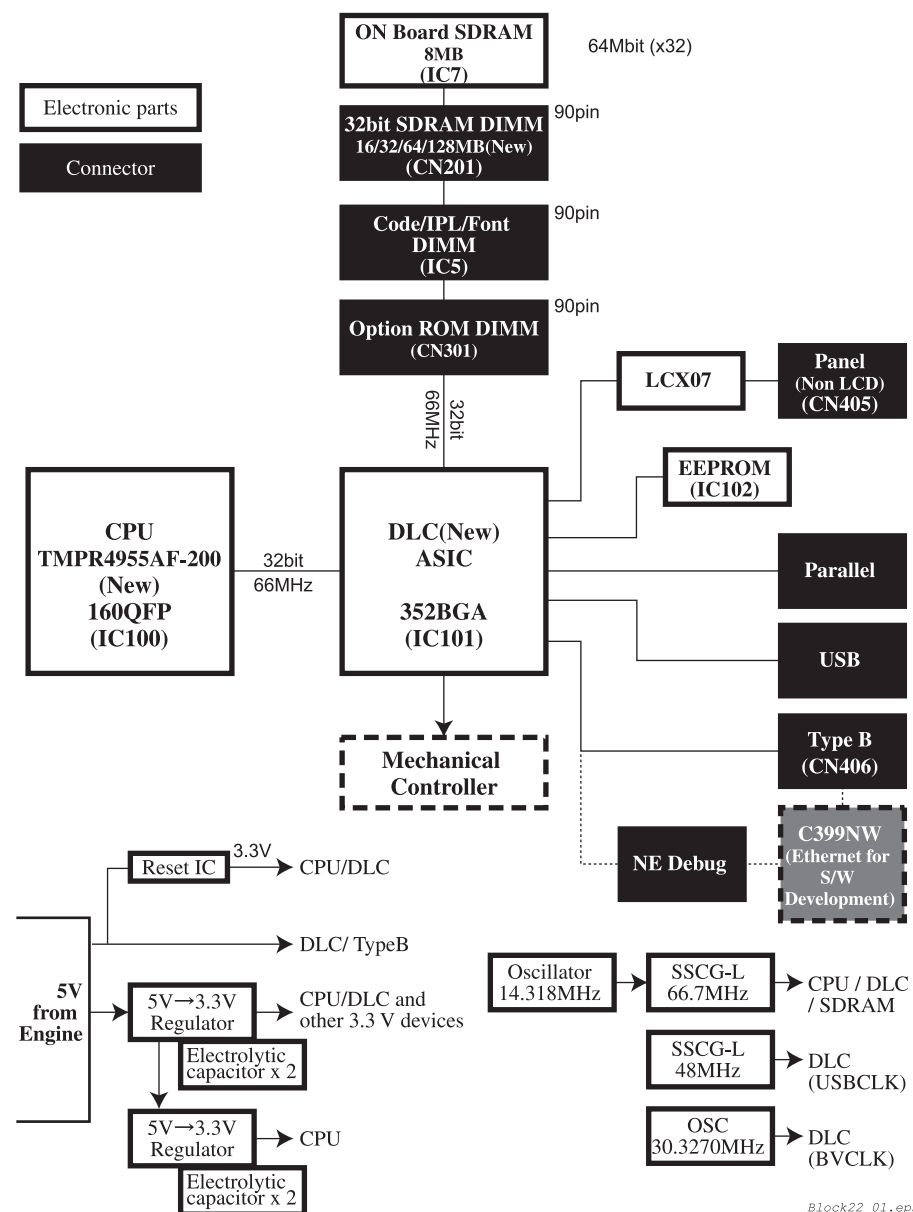
Figure 2-20. C427 Controller Block Diagram (EPL-5900)

<EPL-5900L>

EPL-5900L succeeds to the features of EPL-5800L/EPL-5800i. The fundamental configuration of the Main Board Assy is the same.
The table below shows the major specifications for the controller:

Table 2-11. Major Specifications for Controller

Item	EPL-5800L/EPL-5800i	EPL-5900L
CPU	Toshiba TMP95C001	←
System Clock	23.8436MHz	22.74525MHz
ROM	0.5MB	←
Standard RAM	2MB	←
Maximum RAM Size	13MB	←
RAM SIMM Slot	1 slot	←
Engine	MLT made SP-501, 10ppm	MLT made SP-601, 12ppm
Video Frequency	11.9218MHz	15.1635MHz
Interface	Parallel (Nibble, ECP) USB	←
Panel	2 LEDs (Green, Red)	←

CONSTITUTION OF MAIN CONTROL CIRCUIT BOARD

☐   Main Board Assy:
    C428MAIN

MAJOR ELEMENTS

Table 2-12. Major Elements (EPL-5900L)

Name		Location	Remarks
CPU / Clock		IC1	Toshiba TMP95C001 / max 25MHz TLCS900H900H (CPU series name) 64-pin, QFP, supply voltage 5V single
ASIC	SLC: E05B68NA	IC5	This ASIC has the following functions: • Memory control (Video, I/O) • RITech (Resolution Improvement Tech.) / EnhancedMicroGray function control • Control of LEDs on the control panel Package 208-pin, QFP Power voltage 5/3.3V Operation frequency: DMAC max 25MHz PIF max 25MHz DCMP max 60MHz PIT max 100MHz

	TUSB:
	E05B69NB
		IC21	Control of USB I/F
			  Package 64-pin, QFP
			  Supply voltage 5V/3.3V
			  Operation frequency max. 48MHz

TTL: SN74LV161284DGG		IC7	1284 driver, Receiving and transmission of parallel I/F signals, Power voltage 5V
on board DRAM		IC3	16Mb, 16-bit, 60ns, One EDO, operating as the standard memory
on board ROM		IC2	4Mb, 16-bit, 40-pin module, storing control program
Reset IC		IC6	M51953BFP-600C
Regulator IC PQ033EZ01ZP		IC9	3.3V, 1A
RAM SIMM		CN1	For printer memory expansion (1 slot) 72-pin
EEPROM		IC8	

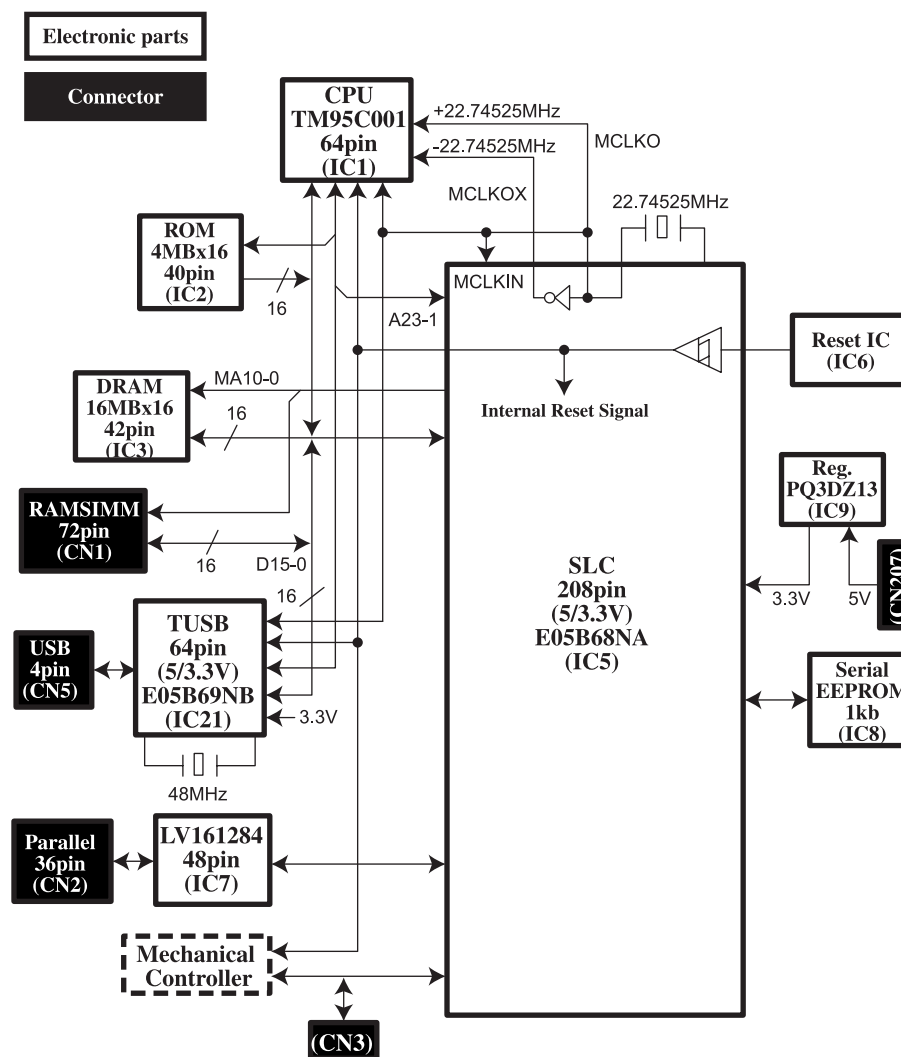Figure 2-21. Controller Block Diagram (EPL-5900L)

TROUBLESHOOTING

3.1 Overview

With this printer, almost all troubles can be coped with by using "EPSON Printer Window !3" installed on the host personal computer. Once an error occurs, the "EPSON Printer Window !3" will appear as a pop-up window on the screen of the host PC. It will show details of how to cope with the trouble. In almost all cases, the user can recover the printer with this unit from the error, provided that the user follows the instructions indicated on the pop-up window.

In addition, the User's Manual for EPSON EPL-5900/EPL-5900L describes detailed steps to be taken for recovery from typical errors.

3.1.1 Specified Tools

This printer does not require any specified tools for troubleshooting.

3.1.2 Procedure for Troubleshooting

Before entering actual troubleshooting work, execute the following works:

- Check the inside of the printer, and remove foreign matters, if any, such as paper clips, staples, bits of paper, paper dust or toner.
- Clean the inside of the printer and the rubber rolls.

3.1.3 Printer Messages (EPL-5900)

Messages of EPL-5900 are given in the following four types:

- ☐ Status:
  Indicates an operation state of the printer.
  Status messages are displayed only when no error is occurring or during initialization.

- ☐ Error:
  Indicates that any error has occurred.

- ☐ Warning:
  Indicates that warning is given.

- ☐ Service Call Error
  Indicates that any error requiring service call has occurred.

NOTE: *For a list of printer messages, refer to "1.5.3 Printer Messages (Only with EPL-5900)" (p.62).*

3.1.3.1 Service Call Error

When there is any error display, such as a service call error, print an error sheet to identify the content of error first, and then recover or repair the printer.

- ☐ How to print an error sheet
  Press the Information switch at the occurrence of a service call error. An error sheet will be printed after warm boot.

For special operations on the control panel, refer to *"1.8 Special Operation (Only with EPL-5900)" (p.68)*

⚠ CAUTION	**This function, a hidden function, must not be opened to any user.**

☐   Engine Errors

Table 3-1 below shows the engine-related service call errors in EPL-5900.

Table 3-1. Service Call Error (Engine-Related)

Error Code Eggg	Explanation	Paper LED	Toner LED	Memory LED	Ready LED	Data LED	Error LED
001	Fuser warming up problem	●					●
002	Main Motor problem		●				●
003	Fan problem	●	●				●
004	Polygon Motor problem			●			●
005	Laser problem	●		●			●
006	High voltage circuit problem		●	●			●
007	Fuser low temperature problem	●	●	●			●
008	Fuser high temperature problem				●		●
014	Engine communication error		●	●	●		●

☐ Controller Errors (Only in EPL-5900)

Table 3-2 below shows a list of controller-related service call errors in EPL-5900.

Table 3-2. Service Call Error (Controller-Related)

Error Code Cffff	Explanation	Paper LED	Toner LED	Memory LED	Ready Led	Data LED	Error LED
0017	CPU Error (Undefined interruption occurred)				●		●
0081	CPU Error (TLB revision exception)	●			●		●
0082	CPU Error (TLB mistake exception [Load/Fetch])	●			●		●
0083	CPU Error (TLB mistake exception [Store])	●			●		●
0084	CPU Error (Address error exception [Load/Fetch])		●		●		●
0085	CPU Error (Address error exception [Store])		●		●		●
0086	CPU Error (Bus error exception [Fetch])	●	●		●		●
0087	CPU Error (Bus error exception [Load/Store])	●	●		●		●
0088	CPU Error (SYSCALL exception)			●	●		●
0089	CPU Error (Break exception)			●	●		●
0090	CPU Error (Reservation command exception)			●	●		●
0091	CPU Error (Coprocessor unused exception)	●		●	●		●
0092	CPU Error (FPU exception)	●		●	●		●
0093	CPU Error (TLB exception)	●			●		●
0094	CPU Error (XTLB exception)	●			●		●
0095	CPU Error (Cash exception)			●	●		●
0096	CPU Error (Trap exception)			●	●		●
0097	CPU Error (FPU error exception)	●		●	●		●
0098	CPU Error (Watch exception)		●	●	●		●
0128~0254	CPU Error (Undefined trap)			●	●		●
0255	CPU Error (NMI exception)	●	●	●	●		●
0256	CPU Error (Division by 0)					●	●
0257	CPU Error (Arithmetic Overflow)					●	●
0258	CPU Error (Break generated)					●	●
0800	IPL Error (Controller defective)	●				●	●
0998	Engine Communication Error (only occurs at power on)		●			●	●

Table 3-2. Service Call Error (Controller-Related)

Error Code Cffff	Explanation	Paper LED	Toner LED	Memory LED	Ready Led	Data LED	Error LED
0999	No Program Data in Flash ROM	●	●			●	●
1000	Standard RAM Error (No RAM at all, etc.)			●		●	●
1001	Standard RAM Error (Not enough for minimum stack, etc.)	●		●		●	●
1002	Standard RAM Error (Not enough for standard size, etc.)		●	●		●	●
1020	RAM Error (slot 0)	●	●	●		●	●
1021	RAM Error (slot 1)	●			●		
1022	RAM Error (slot 2)		●		●		
1100	ROM Checksum Error (bit0-15)(font)	●	●		●		
1101	ROM Checksum Error (bit16-31)(font)	●	●		●		
1120	ROM Checksum Error (bit0-7)(program)	●	●		●		
1121	ROM Checksum Error (bit8-15)(program)	●	●		●		
1122	ROM Checksum Error (bit16-23)(program)	●	●		●		
1123	ROM Checksum Error (bit24-31)(program)	●	●		●		
1180	Optional ROM module A checksum error			●	●		
1181	Optional ROM module B checksum error			●	●		
1185	Unsupported ROM module			●	●		
1200	EEPROM writing error	●		●	●		
1210	EEPROM writing limit		●	●	●		
1400	Engine initialization error	●	●	●	●		
1700	Built-in network hardware error					●	
1999	Other hardware error	●				●	
2000	Software error		●			●	

●: Lighting up

3.1.4 Printer Messages (EPL-5900L)

EPL-5900L is not equipped with an LCD. Once an error occurs, the "EPSON Printer Window !3" will appear as a pop-up window on the screen of the host PC, showing the trouble.

Printer status items that occur with EPL-5900L are listed below.

3.1.4.1 Printer Status.

Table 3-3. Printer Status

Printer status
Printing Job
Collate Printing
Standby
Warming Up
Printing Succeeded
Optional RAM Check Error
Collate Was Disabled
Check Paper Size (warning)
Toner Low
Invalid Size
Paper Set
Front Cover Open
Paper Out
Toner Cart Out
Paper Jam History
Exiting Paper Jam
Paper Jam
Feed Jam
Print Underrun
Software Error
EEPROM Access Error
Standard RAM Check Error
Data Expansion Error

Table 3-3. Printer Status (continued)

Printer status
Video Error
Engine Error
Protocol Error

3.1.4.2 Engine Error

Table 3-4. Engine Error

Engine Error
Fuser Problem
Main Motor Problem
Fan Problem
Polygon Motor Problem
High Voltage Circuit Problem
Laser Problem
Communication Error

3.1.5 Paper Jam Detection

3.1.5.1 Overview

DETECTION OF PAPER REMAINING INSIDE THE PRINTER

The printer checks to see if there is paper remaining in the printer by detecting the signals (H/L) from the paper feed sensor (PS1) and the paper eject sensor (PS3).

DETECTION OF PAPER JAM DURING PAPER PASSING

Paper jam during paper passing is detected by monitoring the timing of rise and fall of signals from PS1 and PS3.

When paper jam is detected, all the drive is turned OFF (except for the cases as described below).

CONTINUOUS PRINTING

When detecting case 1 in *3.1.5.2 "Paper Jam Conditions"*, and if there is paper being carried in the printer, the printer turns all the drive OFF after ejecting the paper being carried.

SINGLE PRINTING

When detecting only case 1 in *3.1.5.2 "Paper Jam Conditions"*, since there is no paper in the fusing unit, the printer does not turn the heater lamp (H1) OFF, but turns the other drive OFF.

3.1.5.2 Paper Jam Conditions

1. The paper feed sensor (PS1) is turned ON
    - within about 0.2 seconds (within about 0.4 sec at 1200dpi) after the multi paper feed tray starts feeding paper (the paper feed solenoid is turned ON, so that the paper feed roller starts rotating), or
    - within about 0.45 seconds (within about 0.9 sec at 1200dpi) after the second paper feed unit starts feeding paper.

2. The paper feed sensor (PS1) is not turned ON
    - between about 0.2 seconds and 1.48 seconds (between about 0.4 sec and 2.96 sec at 1200dpi) after the multi paper feed tray starts feeding paper (the paper feed solenoid is turned ON, so that the paper feed roller starts rotating), or
    - between about 0.45 seconds and 1.97 seconds (between about 0.9 sec and 3.94 sec at 1200dpi) after the second paper feed unit starts feeding paper

3. The paper feed sensor (PS1) is not turned OFF between about 1.66 seconds and 5.25 seconds (between about 3.32 sec and 10.5 sec at 1200dpi) after the leading edge of paper reaches the paper feed sensor (PS1) (PS1 is turned ON).

4. The paper eject sensor (PS3) is not turned ON between about 1,79 seconds and 2.34 seconds (between about 3.58 sec and 4.68 sec at 1200dpi) after the leading edge of paper reaches the paper feed sensor (PS1) (PS1 is turned ON).

5. The paper eject sensor (PS3) is not turned OFF between about 1.77 seconds and 2.39 seconds (between about 3.54 sec and 4.78 sec at 1200dpi) after the tail edge of paper passes the paper feed sensor (PS1) (PS1 is turned OFF).

6. The paper feed sensor (PS1) is ON when the power ON/OFF switch (S1) is turned ON or when the cover is closed.

7. The paper eject sensor (PS3) is ON when the power ON/OFF switch (S1) is turned ON or when the top cover is closed.

3.1.5.3 Resetting the Paper Jam

After the paper jam is cleared, the error display is canceled by closing the top cover.

3.1.6 Detection of Abnormal Operations

If the following errors are detected by a built-in diagnostic function, all the drive is turned OFF and the hardware error is indicated on the control panel.

ABNORMAL LASER

- Immediately after start of the polygon motor (M3), the laser diode is forced to emit light and the laser power is adjusted.
  During laser power adjustment, if the adjustment signal (LD_APC1, LD_APC2) goes out of the rated value, it is detected as abnormal laser.

ABNORMAL POLYGON MOTOR

This error is detected in any of the following cases:

- The /SSCAN signal is never detected within 0.8 seconds after the polygon motor is turned ON.
- The rotation frequency of polygon motor does not settle within ±0.5% within 6.0 seconds after the polygon motor is turned ON.
- After the polygon motor is turned ON and the rotation frequency of polygon motor has settled within ±0.5%, the rotation frequency goes beyond ±3% for more than 5.5 seconds continuously.

ABNORMAL MAIN MOTOR

This error is detected in any of the following cases:

- The motor lock signal (/MotorLock) is not detected within 1.0 sec after the main motor is turned ON.
- The motor lock signal (/MotorLock) is turned OFF for 0.1 sec continuously.

ABNORMAL FUSING

This error is detected in any of the following cases:

- If during temperature control the thermistor detects that the temperature exceeds 220°C for 50 msec, it is detected as abnormal fusing high temperature.

- The temperature detected by the thermistor within a period from 8 seconds after to 12 seconds after warming-up is found below the standard value for 50 msec, the thermistor is determined to be in trouble.
  (This detection applies only when the temperature detected by the thermistor is below 80°C.)
- If no temperature rise is detected by the thermistor for more than 3 seconds within a period from 700 msec after turning on of the heater lamp (H1) to the turning off of the heater lamp (H1), it is detected as abnormal fusing temperature rise.
- If the heater lamp (H1) is kept on for more than 30 seconds, it is detected as abnormal fusing temperature rise.
- In any mode, if the temperature detected by the thermistor goes below the setting temperature for 50 msec continuously, it is determined as abnormal fusing low temperature.
  Setting temperature is 140°C (600dpi) or 110°C (1200dpi) in the printing mode and 70°C in the waiting mode.

ABNORMAL COOLING FAN

If the input value for the FAN_LOCK(AN) signal is detected to be below 2.0 V for 2.0 seconds continuously during operation of the cooling fan (M2), the cooling fan is determined to be faulty.

ABNORMAL CHARGING VOLTAGE

If the HVC_MON(AN) signal is detected to be out of the specified limits after passage of 0.5 seconds from power on, charging voltage is determined to be abnormal.

3.2 Troubleshooting for Paper Jam

3.2.1 Paper Jam when the Power is ON

Table 3-1. Paper Jam when the Power is ON

Step	Check Item	Remedy
1	☐ **Checking for paper inside the printer** • Are there any sheets or pieces of paper inside the printer?	Yes: Remove all the paper in the printer. No : Go to Step 2
2	☐ **Checking the operation of paper eject sensor** • Does the lever of the paper eject sensor (PS3) operate normally?	Yes: Go to Step 3 No : Correct the lever operation.
3	☐ **Checking the operation of sensors** 1. Paper feed sensor (PS1) 2. Second paper feed sensor (PS21) • Does the lever for each of the sensors above operate normally?	Yes: Replace the appropriate one of the following parts: • PS1 *(p.130)* or PS21 *(p.136)* • PS3 *(p.126)* • Main Board Assy *(p.120)* No : Correct the lever operation.

3.2.2 Paper Jam in Paper Feed to Paper Transport

Table 3-2. Paper Jam in Paper Feed to Paper Transport

Step	Check Item	Remedy
1	☐ **Checking the rotation of paper feed rollers** 1. Paper feed roller 2. Second paper feed roller • Do the paper feed rollers above operate properly?	Yes: Go to Step 2 No : Replace the appropriate one of the following parts: • Paper feed solenoid (SL1) *(p.122)* • Second paper feed solenoid (SL21) *(p.137)*
2	☐ **Checking the paper** • Is a specified type of paper used?	Yes: Go to Step 3 No : Ask the user to use a specified type of paper.
3	☐ **Checking the paper condition** • Is paper curled, wrinkled, or wet?	Yes: Replace the paper and tell the user how to keep paper. No : Go to Step 4
4	☐ **Checking the paper feed rollers** 1. Paper feed roller 2. Second paper feed roller • Is any of the paper feed rollers above deformed? Or is it worn out by friction or is there any dirt?	Yes: Replace the appropriate one of the following parts: • Paper feed roller *(p.123)* • Second paper feed roller *(p.134)* No : Go to Step 5
5	☐ **Checking the paper feed sensor** • Does the lever of the paper feed sensor (PS1) operate normally?	Yes: Replace the appropriate one of the following parts: • PS1 *(p.130)* • Main Board Assy *(p.120)* No : Correct the lever operation.

3.2.3 Paper Jam in Paper Transport to Paper Eject

Table 3-3. Paper Jam in Paper Transport to Paper Eject

Step	Check Item	Remedy
1	☐ **Checking the transfer roller** • Is the transfer roller deformed? Or is it worn out by friction or is there any dirt? (Has the life of the transfer roller expired?)	Yes: Replace the transfer roller. *(p.117)*
		No : Go to Step 2
2	☐ **Fusing roller** • Is the fusing roller deformed? Or is it worn out by friction or is there any dirt?	Yes: Replace the fuser unit. *(p.125)*
		No : Go to Step 3
3	☐ **Checking the paper eject roller** • Does the paper eject roller rotate?	Yes: Go to Step 4
		No : Replace the top cover assembly. *(p.124)*
4	☐ **Lever of eject sensor** • Does the lever of the paper eject sensor (PS3) operate normally?	Yes: Replace the appropriate one of the following parts: • Fuser unit *(p.125)* • PS3 *(p.126)* • Main Board Assy *(p.120)*
		No : Correct the lever operation.

3.3 Troubleshooting for Abnormal Operations

3.3.1 Abnormal Laser

Table 3-4. Abnormal Laser

Cause	Remedy
Abnormal laser diode	Replace the print head unit. *(p.123)*
	Replace the Main Board Assy. *(p.120)*

3.3.2 Abnormal Polygon Motor

Table 3-5. Abnormal Polygon Motor

Cause	Remedy
Abnormal Polygon Motor	Replace the print head unit. *(p.123)*
	Replace the Main Board Assy. *(p.120)*

3.3.3 Abnormal Main Motor

Table 3-6. Abnormal Main Motor

Cause	Remedy
Main Motor (M1) does not rotate.	Replace the main motor (M1). *(p.132)*
	Replace the Main Board Assy. *(p.120)*

3.3.4 Abnormal Fusing

Table 3-7. Abnormal Fusing

| Step	Check Item	Remedy
1	☐ **Checking the temperature** • Is the fusing unit warmed-up?	Yes: Replace the appropriate one of the following parts: • Thermistor (TH1) *(p.129)* or fuser unit *(p.125)* • Main Board Assy *(p.120)*
		No : Go to Step 2
2	☐ **Continuity of the connector** • Is there continuity between Pin 1 and Pin 3 of the connector of the fusing unit?	Yes: Replace the appropriate one of the following parts: • Power supply unit (PU1) *(p.130)* • Main Board Assy *(p.120)*
		No : Replace the fuser unit *(p.125)* Or replace the heater lamp (H1) or the thermostat (TS1). *(p.129)*

3.3.5 Power Cannot be Turned ON

Table 3-8. Power Cannot be Turned ON

Step	Check Item	Remedy
1	□ **Power switch** • Is the power switch (S1) ON?	Yes: Go to Step 2
		No : Turn the power switch ON.
2	□ **Power cord** • Is the power cord plugged in properly?	Yes: Go to Step 3
		No : Connect the power cord properly.
3	□ **Fuses on the power supply board** 1. Fuse (F1) 2. Fuse (F2) • Is the fuse (F1 or F2) in the power unit (PU1) blown?	Yes: Replace the fuse (F1 or F2). *(p.130)*
		No : Replace the appropriate one of the following parts: • Power supply unit (PU1) *(p.130)* • Main Board Assy *(p.120)*

3.4 Troubleshooting for Print Quality Problems

If any print quality problem occurs, replace the imaging cartridge and the drum cartridge first, and determine whether the problem is caused by a cartridge or caused by the printer.

For a periodical print quality problem, measure the occurrence pitch (p) of the abnormal image (x), and identify the abnormal component by referring to the table below.
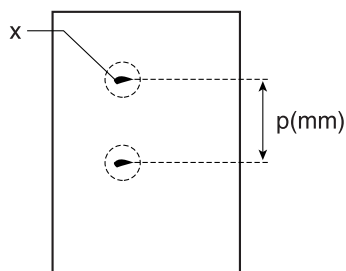
pitch.eps

Figure 3-1. Pitch of Abnormal Print Image

Table 3-9. Pitch of Abnormal Image and Possible Abnormal Component

Pitch	Possible Abnormal Component (Diameter)	Component to be Replaced
28 mm	Sleeve Roller (ϕ 15.7 mm)	Imaging Cartridge (*p.116*)
94.2 mm	OPC Drum (ϕ 30 mm)	Drum Cartridge (*p.116*)
50.3 mm	Transfer Roller (ϕ 16 mm)	Transfer Roller (*p.117*)
62.8 mm	Heat Roller (ϕ 20 mm)	Fuser Unit (*p.125*)
67.8 mm	Backup Roller (ϕ 21.6 mm)	

3.4.1 All White

Table 3-10. Print Quality Problem (All White)

Print Quality Problem	Cause	Remedy
	No Imaging Cartridge	Install the Imaging Cartridge.
	No toner in Imaging Cartridge	Replace the Imaging Cartridge.
	No Drum Cartridge	Install the Drum Cartridge.
	Defective OPC Drum	Replace the Drum Cartridge.
	Abnormal laser emission	Replace print head. (*p.123*)
		Replace the high voltage unit (HV1). (*p.130*)
		Replace the Main Board Assy. (*p.120*)
	Improper transfer	Replace the transfer roller. (*p.117*)
		Replace the high voltage unit (HV1). (*p.130*)
		Replace the Main Board Assy. (*p.120*)

3.4.2 All Black

Table 3-11. Print Quality Problem (All Black)

Print Quality Problem	Cause	Remedy
	Abnormal laser emission	Replace print head. (*p.123*)
		Replace the Main Board Assy. (*p.120*)
	Abnormal charging	Replace the high voltage unit (HV1). (*p.130*)
		Replace the Main Board Assy. (*p.120*)

3.4.3 White Out

Table 3-12. Print Quality Problem (White Out)

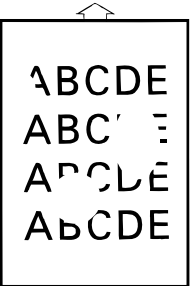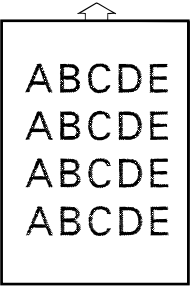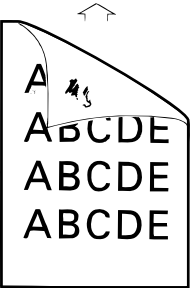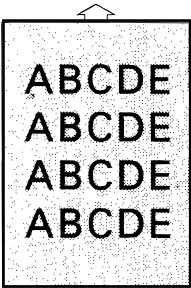| Print Quality Problem	Cause	Remedy
	Paper is wet	Replace paper.
	Improper transfer	Replace the transfer roller. (*p.117*) Replace the high voltage unit (HV1). (*p.130*) Replace the Main Board Assy. (*p.120*)

3.4.4 Back of Paper Gets Dirty

Table 3-13. Print Quality Problem (Back of Paper Gets Dirty)

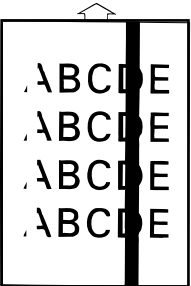| Print Quality Problem	Cause	Remedy
	Fusing roller is dirty	Replace the Fuser Unit (fusing roller). (*p.125*)
	Transfer roller is dirty	Replace the transfer roller. (*p.117*)
	Paper path is dirty	Clean the paper path.

3.4.5 Low Image Density

Table 3-14. Print Quality Problem (Low Image Density)

Print Quality Problem	Cause	Remedy
	No toner in Imaging Cartridge	Replace the Imaging Cartridge.
	Defective OPC drum (life has expired)	Replace the Drum Cartridge.
	Defective developing bias	Replace the high voltage unit (HV1). (*p.130*) Replace the Main Board Assy. (*p.120*)

3.4.6 Foggy Background

Table 3-15. Print Quality Problem (Foggy Background)

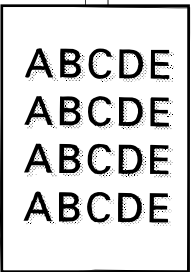| Print Quality Problem	Cause	Remedy
	Defective developing bias	Replace the high voltage unit (HV1). (*p.130*) Replace the Main Board Assy. (*p.120*)
	Defective OPC drum (life has expired)	Replace the Drum Cartridge.

3.4.7 White Line / Black Line

Table 3-16. Print Quality Problem (White Line / Black Line)

Print Quality Problem	Cause	Remedy
	There is scar or damage on the OPC drum	Replace the Drum Cartridge.
	Defective print head	Replace print head. *(p.123)* Replace the Main Board Assy. *(p.120)*

3.4.8 Offset Image

Table 3-17. Print Quality Problem (Offset Image)

Print Quality Problem	Cause	Remedy
	Defective fusing roller	Replace the Fuser Unit (fusing roller). *(p.125)*
	Defective transfer roller	Replace the Transfer Roller. *(p.117)*

DISASSEMBLY AND ASSEMBLY

4.1 Overview

This section describes procedures for disassembling the main components of the product. Unless otherwise specified, disassembly units or components can be reassembled by reversing the disassembly procedure. Things, if not strictly observed, that could result in injury or loss of life are described under the heading "Warning". Precautions for any disassembly or assembly procedures are described under the heading "CAUTION". Chips for disassembling procedures are described under the heading "CHECK POINT".

If the assembling procedure is different from the reversed procedure of the disassembling, the procedure is described under the heading "REASSEMBLY".

Any adjustments required after disassembling the units are described under the heading "ADJUSTMENT REQUIRED". When you have to remove any units or parts that are not described in this chapter, refer to the exploded diagrams in the appendix.

Read precautions described in the next section before starting.

4.1.1 Precautions

See the precautions given under the heading "WARNING" and "CAUTION" in the following column when disassembling or assembling the product.

WARNING	
⚡	■ **Disconnect the power cable before disassembling or assembling the printer. If you need to work on the printer with power applied, strictly follow the instructions in this manual.** ■ **Always wear gloves for disassembly and reassembly to avoid injury from sharp metal edges.** ■ **To protect sensitive microprocessors and circuitry, use static discharge equipment, such as anti-static wrist straps, when accessing internal components.** ■ **Do not expose yourself to the laser beam to prevent injury (blindness).** ■ **When you perform maintenance or service of the laser printer, never open any cover on which a warning label about laser beam has been affixed.** ■ **Understand how the laser beam functions and take maximum precautions not to injure yourself or anyone around you. When working on the FUSER ASSY or nearby parts, be sure to wait until the temperature of the parts cools down to a safe level.** *Wait at least 40 minutes before you start working on the printer.* ■ **To avoid dust explosion or ignition, never bring any consumables close to flame or throw them into fire.** ■ **Take great care not to put developer or toner contained in the consumables into your mouth or eye or not to inhale it.** ■ **Take due care that no one around you put developer or toner into the mouth or eye or inhale it. Spread a sheet of paper inside and around the printer to prevent soiling.** ■ **When developer or oil stuck to your skin or clothes, wipe it off with a dry cloth carefully and wash it away with water completely.**

CAUTION ⚠	■ **Avant de commencer, assurez vous que l'imprimante soit eteinte et que le cordon d'alimentation soit debranche.**

| CAUTION ⚠	■ **Use only recommended tools for disassembling, assembling or adjusting the printer.** ■ **Observe the specified torque when tightening screws.** ■ **Apply lubricants and adhesives as specified. (See Chapter 6 for details.)** ■ **Make the specified adjustments when you disassemble the printer. (See Chapter 5 for details.)** ■ **Take following precautions when connecting or disconnecting flat cables.**

1. **To disconnect a flat cable, unlock the connector first and then pull out the cable.**
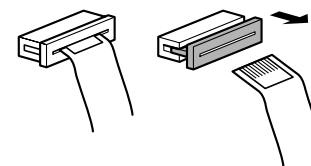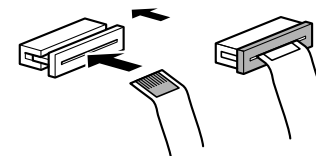

cable_F01.eps

2. **Connect each flat cable with its terminal side facing upward.**
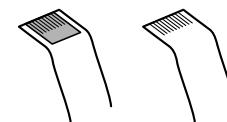
cable_F02.eps

3. **To connect a flat cable, insert the cable first and then lock the connector.**

cable_F03.eps

4.1.2 Tools

Use only specified tools to avoid damaging the printer.

Name	Commercial Availability	Code
Phillips screwdriver No. 1	Available	B743800100
Phillips screwdriver No. 2	Available	B743800500
Mini Phillips screwdriver		
Slotted screwdriver	Available	B743000100

4.1.3 Screws

Table 4-18. Screws

Ref. No.	Nominal Size	Name and Specification	Appearance
1305	3x6	+ Pan Head Screw - with Spring Washer and Plain Washer (Sems)	
1308	3x8		
3501	3x6	+ Cup Screw	
3504	3x8		
3907	3x8	+ Bind B-tite Screw	
1112	3x6	+ Bind S-tite Screw	
3704	3x8	+ Cup B-tite Screw	

4.2 Main Unit Disassembly

The flowchart below shows step-by-step disassembly procedure. When disassembling each component, refer to the page number shown in the figure.

4.2.1 Preparation before Dis-assembling (p99)

Open the Top Cover

4.2.2   Imaging Cartridge and Drum Cartridge Removal *(p99)*

4.3.2   Paper Separator Unit Removal *(p101)*

4.3.3   Right Cover Removal *(p101)*

4.3.1   Transfer Roller Removal *(p100)*

4.3.4   Control Panel Removal *(p102)*

4.3.5   Main Board Assy Removal *(p103)*

4.3.7   Left Cover Removal *(p105)*

4.3.6   Interface Board (C409 I/F) Removal *(p104)*

4.3.8   Front Cover Removal *(p105)*

4.3.12 Top Cover and Rear Cover Removal *(p107)*

4.3.13 Fuser Unit Removal *(p108)*

4.3.10 Printing Head Unit Removal *(p106)*

4.3.9   Paper Feed Roller Removal *(p106)*

4.3.11 Paper Empty Sensor (PE1) Removal *(p107)*

4.3.15 Power Supply Unit and High Voltage Board Removal *(p113)*

4.3.16 Main Motor Assy (M1) Removal *(p115)*

Paper Feed Sensor (PS1)

Cooling Fan Motor (M2)

4.3.14 Fuser Unit Disassembly (p109)

Paper Eject Sensor (PS3)

Backup Roller

Heater Lamp (H1)

Heat Roller

Thermistor (TH1)

Thermostat (TS1)

Note: The components shown with an underline are Regular Replacement Parts.

Flowchart 4-1. Disassembly Flowchart

4.2.1 Preparation before Disassembling

Before disassembling the printer, at least the units as shown below must be removed.

- Imaging Cartridge
- Drum Cartridge
- Paper Tray (Only with EPL-5900)
- Face-up Tray

4.2.2 Imaging Cartridge and Drum Cartridge Removal

1. Press the Top Cover Release Button, and open the Top Cover into the full open position.

2. Take out the Imaging Cartridge.
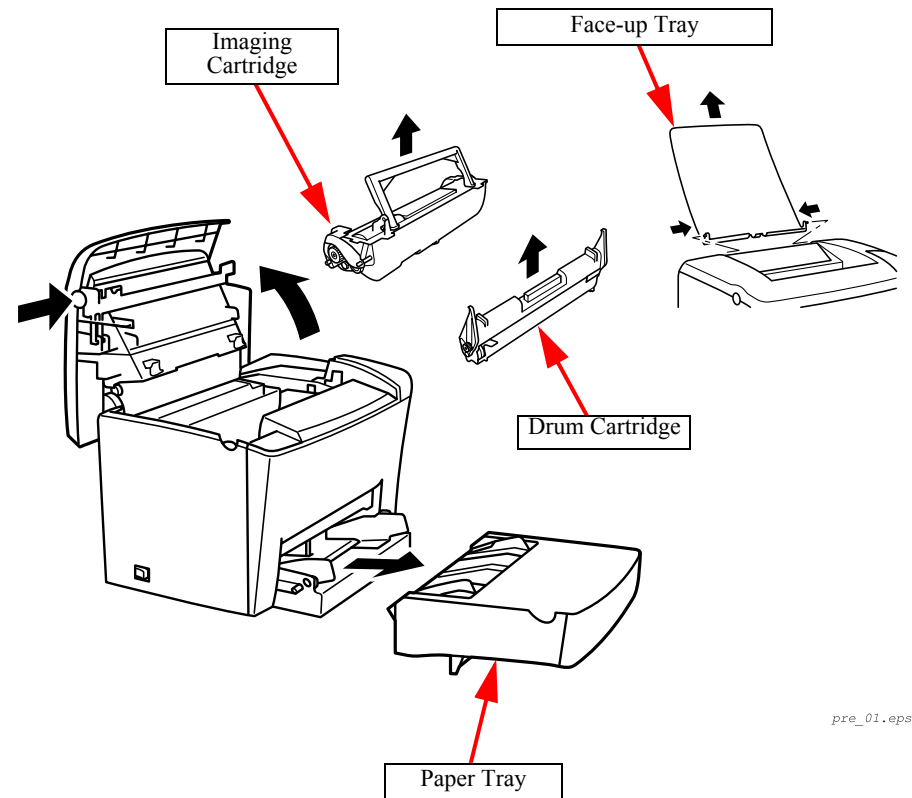
3. Take out the Drum Cartridge.

Figure 4-2. Removal of Minimum Units

4.3 Disassembly and Reassembly of the Printer Body

4.3.1 Transfer Roller Removal

1. Push down each lever of the right and left shaft supports (white) for the Transfer Roller toward the front, and remove the Transfer Roller from the Transfer Roller Holder. *(See Figure 4-3)*

CAUTION !	■ **Do not touch the surface of the Transfer Roller nor stain it with chemicals or toner, for the dents or dirt on the surface of the Transfer Roller badly affects the print quality.** ■ **When handling the Transfer Roller, hold the shaft of the roller or the shaft supports.**

2. Remove the right and left shaft supports and the gear from the removed Transfer Roller, and install them on the new Transfer Roller. *(See Figure 4-4)*
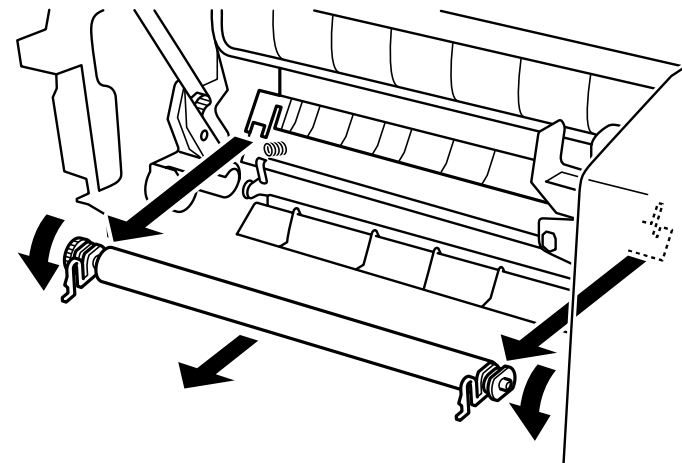
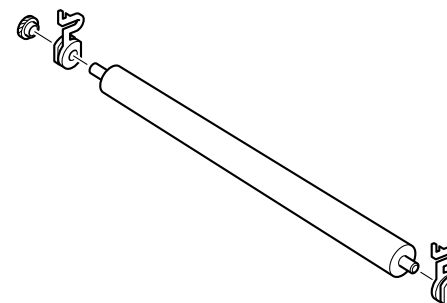| Reassembly	**In installation, insert the Transfer Roller in the Transfer Roller Holder of the printer body, and raise the lever of each shaft support.**
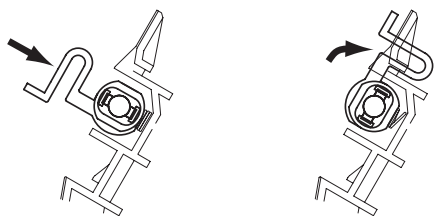
roller03.eps

roller01.eps

Figure 4-3. Transfer Roller Replacement 1

roller02.eps

Figure 4-4. Transfer Roller Replacement 2

4.3.2 Paper Separator Unit Removal

1. Place the printer body with its rear side down, and remove the Paper Separator Unit. (Four screws) *(See Figure 4-5)*

4.3.3 Right Cover Removal

1. Remove the Right Cover. (Two screws and five hooks) *(See Figure 4-6)*

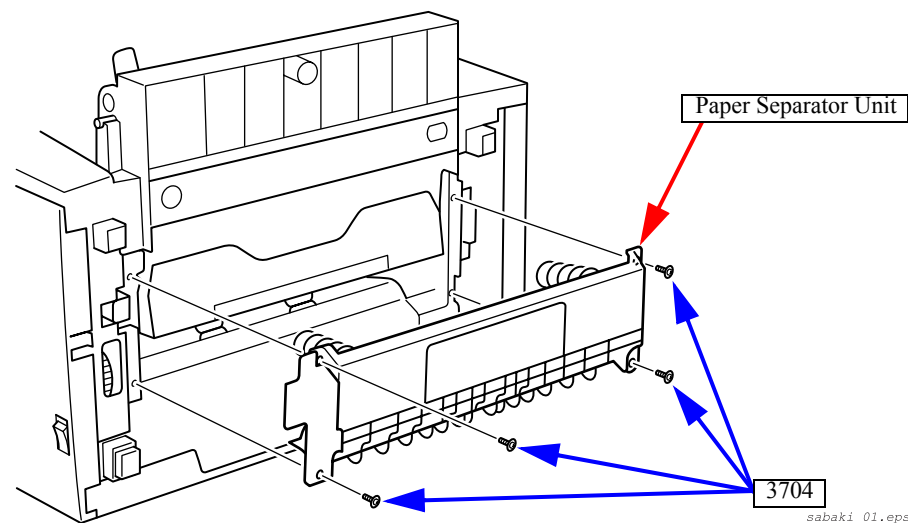| Reassembly	Engage the three hooks of the Right Cover with the printer body frame first.

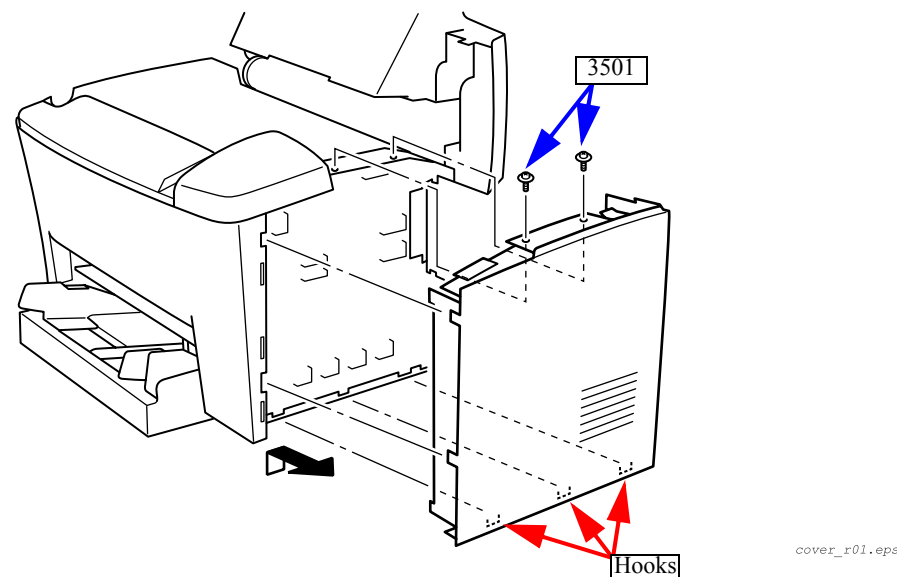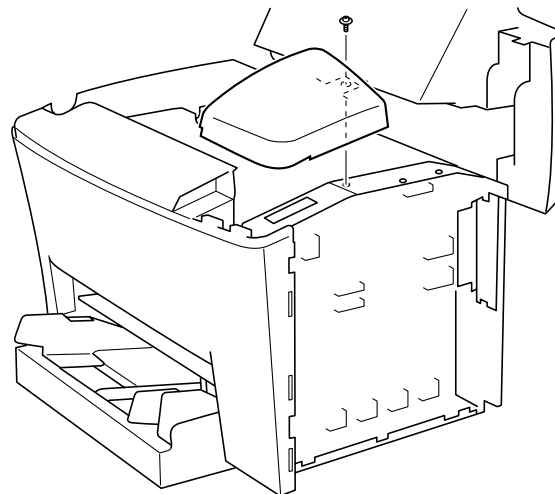Figure 4-5. Paper Separator Unit Removal

Figure 4-6. Right Cover Removal

4.3.4 Control Panel Removal

1. Remove the Right Cover.
    (See "*4.3.3 Right Cover Removal (p.101)*")

2. Remove the Control Panel. (One screw)
    (See Figure 4-7)

Panel101.eps

Figure 4-7. Control Panel Removal

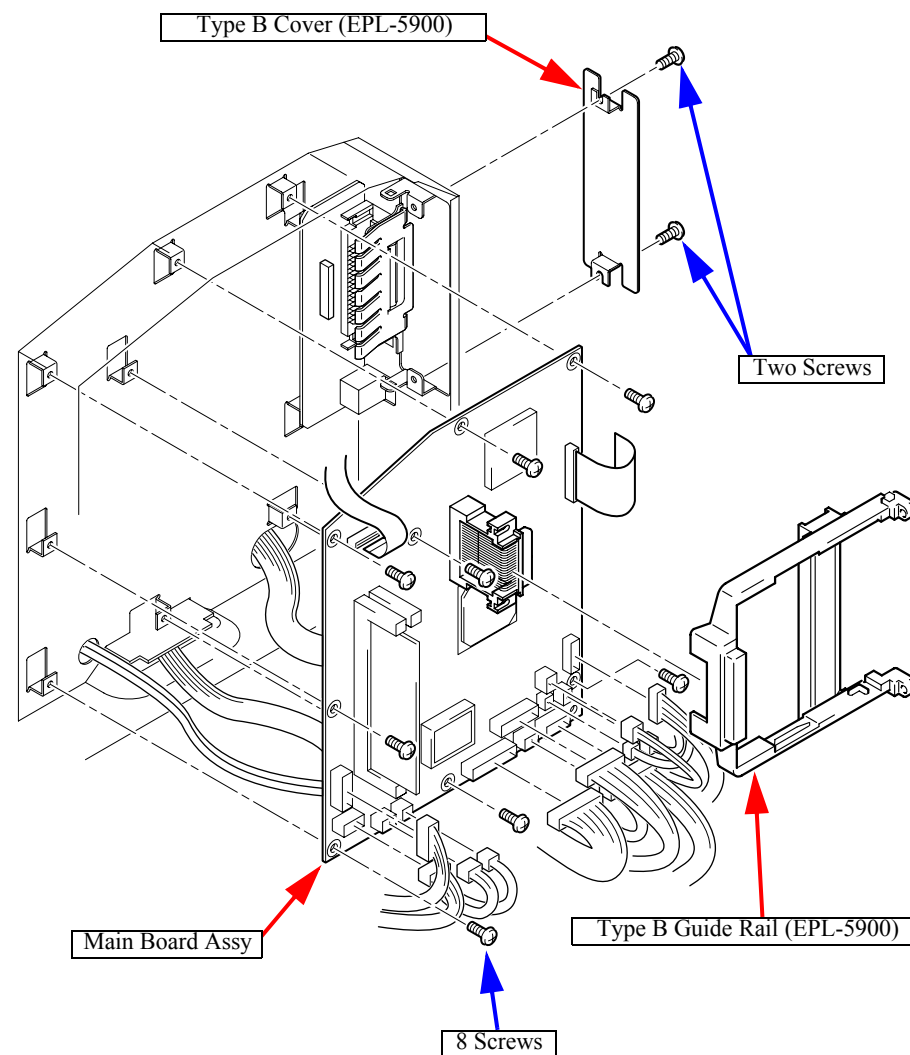## 4.3.5 Main Board Assy Removal

- ■ EPL-5900   : C427MAIN (13 connectors, 8 screws)
- ■ EPL-5900L : C428MAIN (xx connectors, x screws)

1. Remove the Right Cover.
    (See "*4.3.3 Right Cover Removal (p.101)*")

2. Remove the Type B Guide Rail and the Type B Cover. (Two screws)

NOTE: Type B interface is not available with EPL-5900L.

3. Disconnect all the connectors on the Main Board Assy first and then remove the Main
    Board Assy. *(See Figure 4-8)*

NOTE: For connection of connectors, refer to "7.1 Connectors (p. 129)".
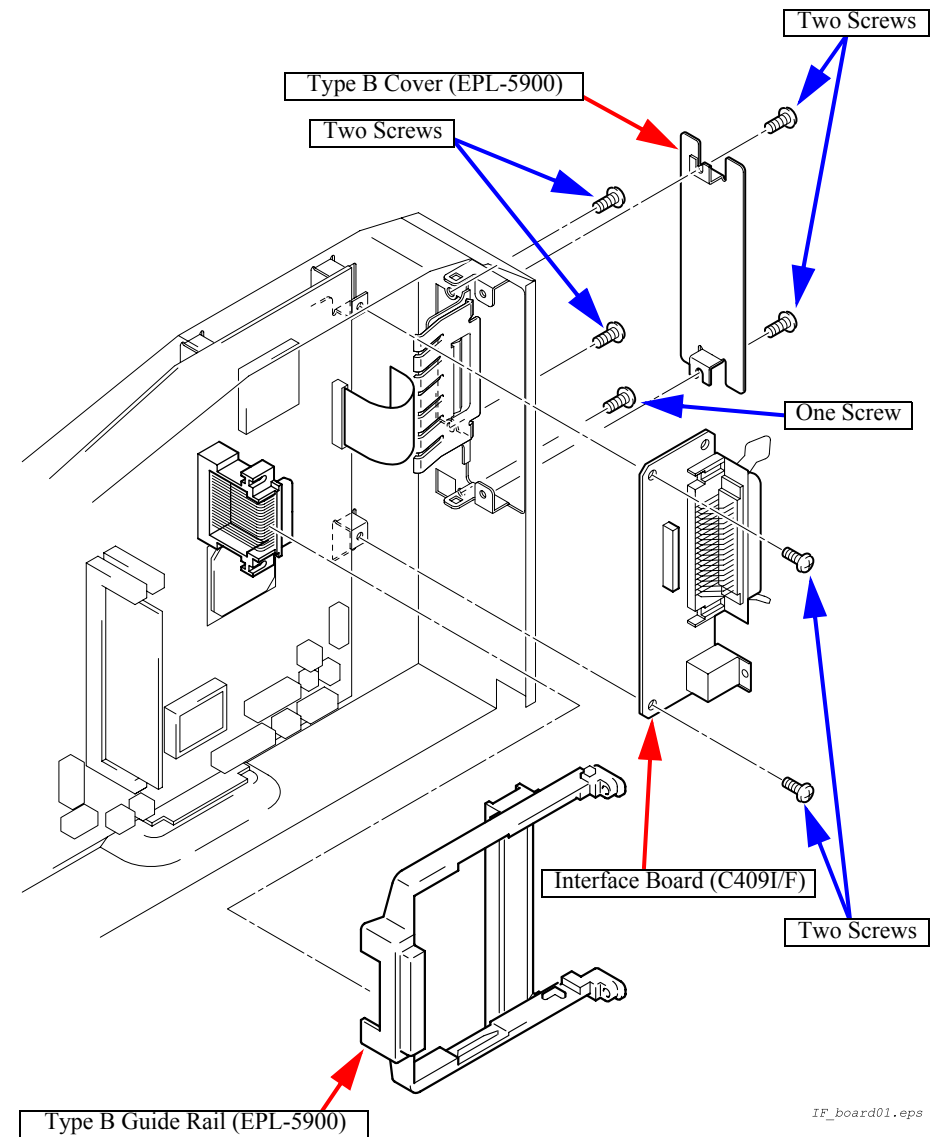

Figure 4-8. Main Board Assy Removal

4.3.6 Interface Board (C409I/F) Removal

1. Remove the Right Cover.
    (See "*4.3.3 Right Cover Removal (p.101)*")

2. Remove the Type B Guide Rail and Type B Cover. (Two screws)

NOTE: *Type B interface is not available with EPL-5900L.*

3. Disconnect the flat cable first and then remove the Interface Board (C409I/F).
    (Five screws) *(See Figure 4-9)*

Two Screws

Type B Cover (EPL-5900)

Two Screws

One Screw

Interface Board (C409I/F)

Two Screws

Type B Guide Rail (EPL-5900)

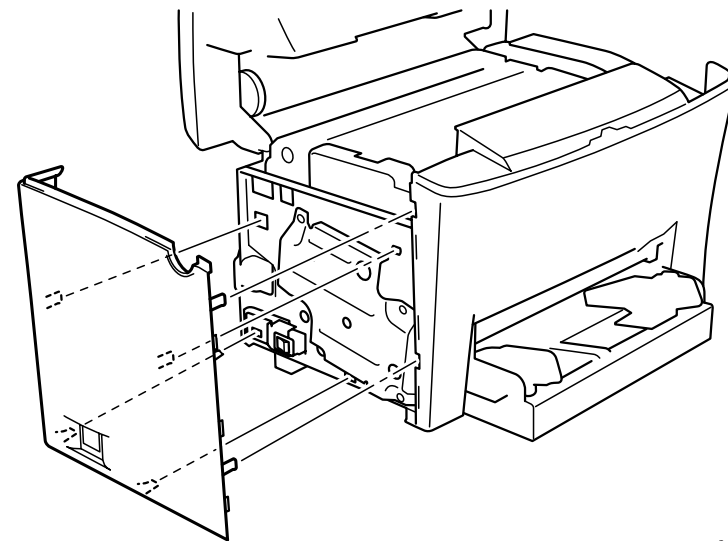*IF_board01.eps*

Figure 4-9. Interface Board (C409I/F) Removal

4.3.7 Left Cover Removal

1. Remove the Right Cover.
    (See "*4.3.3 Right Cover Removal (p.101)*")

2. Remove the Left Cover (disengage the six hooks).
     (See Figure 4-10)

4.3.8 Front Cover Removal

1. Remove the Right Cover, the Left Cover and the Paper Separator Unit.
    (See "*4.3.2 Paper Separator Unit Removal (p.101)*")
    (See "*4.3.3 Right Cover Removal (p.101)*")
    (See "*4.3.4 Control Panel Removal (p.102)*")
    (See "*4.3.7 Left Cover Removal (p.105)*")

2. Disengage the two upper hooks of the Front Cover, and lift the printer front slightly and disengage the two lower hooks. *(See Figure 4-11)*
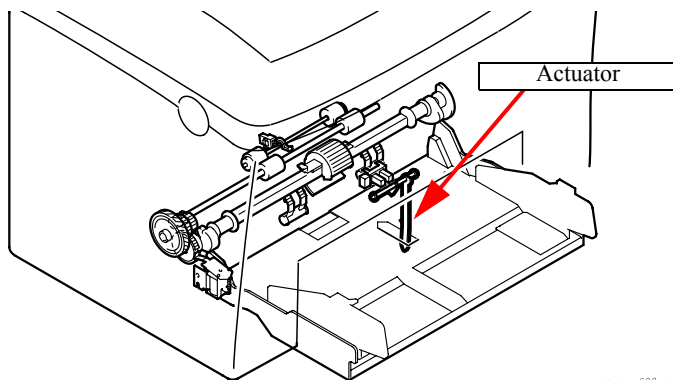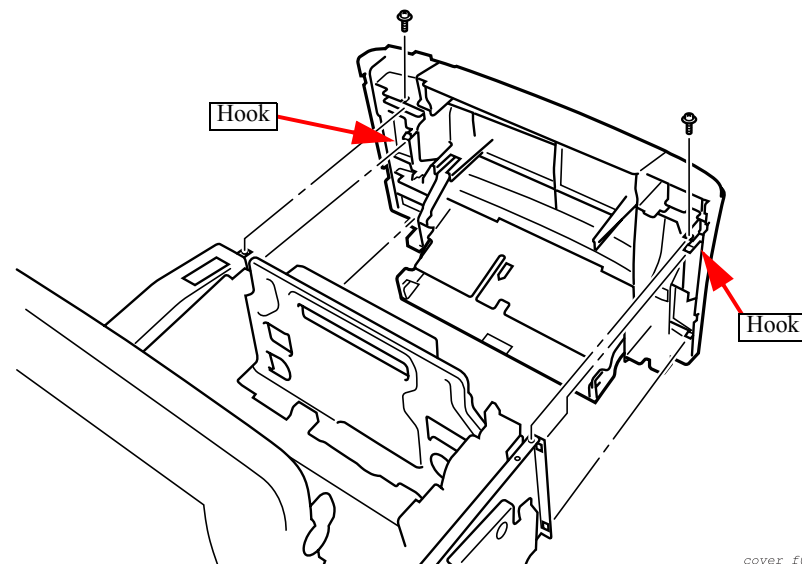

Figure 4-10. Left Cover Removal

CAUTION

When removing the Front Cover, take care not to bend the actuator of the Paper Empty Sensor (PE1).

Actuator

Hook

Hook

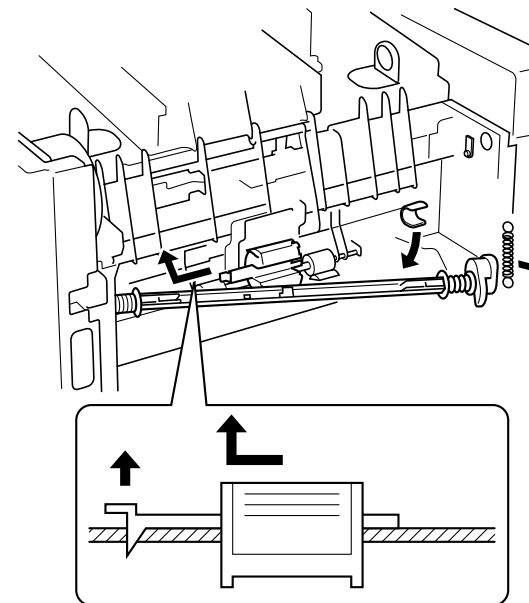**Figure 4-11. Front Cover Removal**

4.3.9 Paper Feed Roller Removal

1. Remove the Right Cover, Left Cover, Paper Separator Unit and Front Cover.
   (See "*4.3.2 Paper Separator Unit Removal (p.101)*")
   (See "*4.3.3 Right Cover Removal (p.101)*")
   (See "*4.3.4 Control Panel Removal (p.102)*")
   (See "*4.3.7 Left Cover Removal (p.105)*")
   (See "*4.3.8 Front Cover Removal (p.105)*")

2. Place the printer body with its rear side down. *(See Figure 4-12)*

3. Remove the spring, and take the right side of the Paper Feed Roller Shaft off the shaft support.
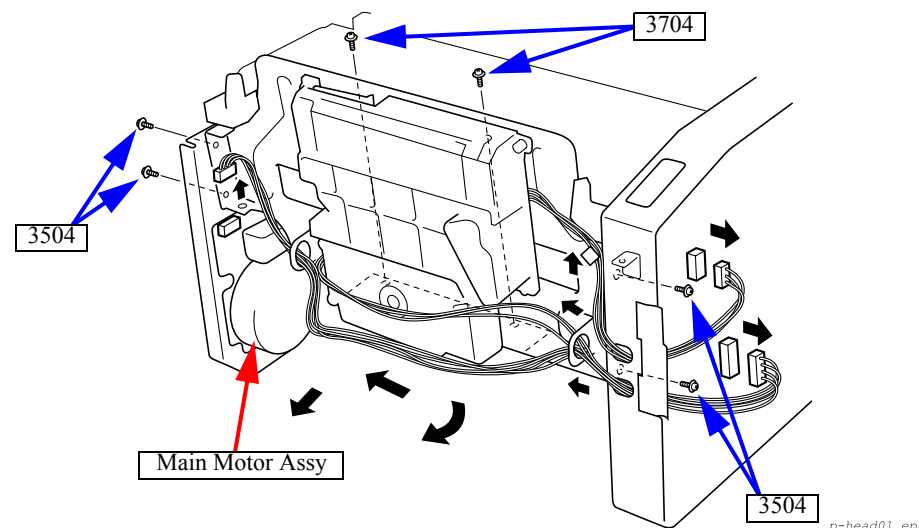
4. Remove the Paper Feed Roller.

roller04.eps

Figure 4-12. Paper Feed Roller Replacement

4.3.10 Printing Head Unit Removal

1. Remove the Right Cover, Left Cover, Paper Separator Unit and Front Cover.
   (See "*4.3.2 Paper Separator Unit Removal (p.101)*")
   (See "*4.3.3 Right Cover Removal (p.101)*")
   (See "*4.3.4 Control Panel Removal (p.102)*")
   (See "*4.3.5 Main Board Assy Removal (p.103)*")
   (See "*4.3.7 Left Cover Removal (p.105)*")
   (See "*4.3.8 Front Cover Removal (p.105)*")

2. Pull the connector (CN1) out of the Main Motor Assy, and release the wiring from the cord holder. *(See Figure 4-13)*

3. Pull the connectors (CN805 and CN809)) out of PWB-X, and release the wiring from the cord holder.

4. Remove the Printing Head Unit (PH). (Six screws)

Main Motor Assy

p-head01.eps

Figure 4-13. Printing Head Unit Removal

4.3.11 Paper Empty Sensor (PE1) Removal

1.   Remove the Right Cover, Left Cover, Paper Separator Unit, Front Cover and Printing
     Head Unit.
     (See "*4.3.2 Paper Separator Unit Removal (p.101)*")
     (See "*4.3.3 Right Cover Removal (p.101)*")
     (See "*4.3.4 Control Panel Removal (p.102)*")
     (See "*4.3.7 Left Cover Removal (p.105)*")
     (See "*4.3.8 Front Cover Removal (p.105)*")
     (See "*4.3.10 Printing Head Unit Removal (p.106)*")

2.   Remove the Paper Empty Sensor (PE1), and pull out the connector.
     (See Figure 4-14)
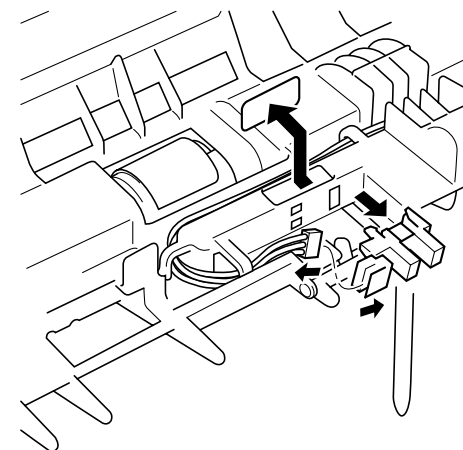
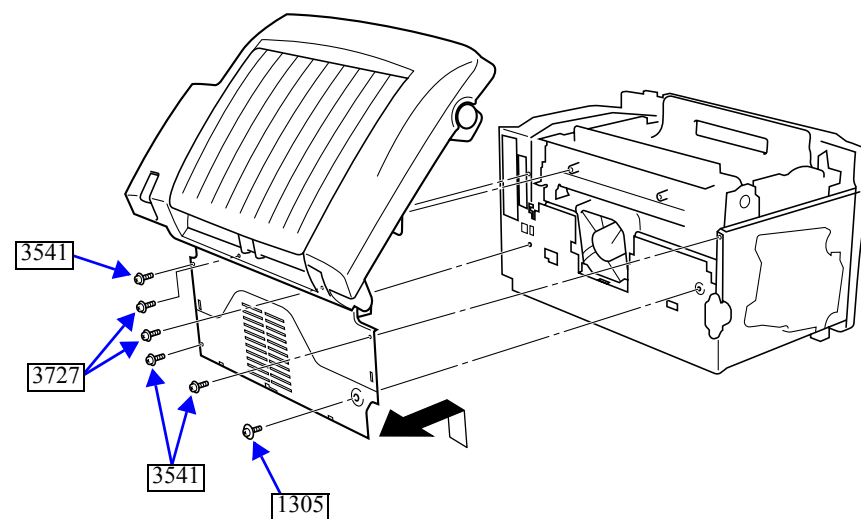se_pe101.eps

Figure 4-14. Paper Empty Sensor (PE1) Removal

4.3.12 Top Cover and Rear Cover Removal

1.   Remove the Right Cover and Left Cover.
     (See "*4.3.3 Right Cover Removal (p.101)*")
     (See "*4.3.7 Left Cover Removal (p.105)*")

2.   Remove the Top Cover and Rear Cover. (Six screws)
     (See Figure 4-15)

cover_t01.eps

Figure 4-15. Top Cover and Rear Cover Removal

4.3.13 Fuser Unit Removal

Replace the Fuser Unit with a new one every printing of about 50,000 sheets, as a rule.

1. Remove the Right Cover, Left Cover, Top Cover and Rear Cover.
    (See "*4.3.3 Right Cover Removal (p.101)*")
    (See "*4.3.7 Left Cover Removal (p.105)*")
    (See "*4.3.12 Top Cover and Rear Cover Removal (p.107)*")

2. Remove the Fuser Unit .(Three screws and three connectors)
    (See Figure 4-16)

If you need to disassemble the fuser unit because of image quality problems and
defective components, follow the procedure described in *4.3.14"Fuser Unit
Disassembly"*.
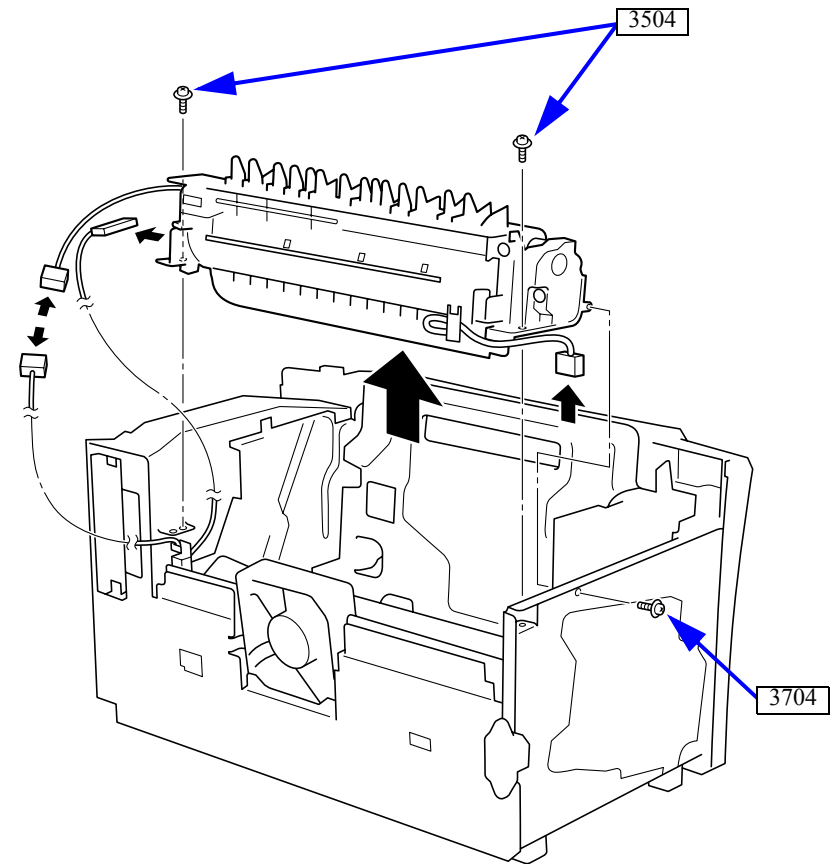
fuser01.eps

Figure 4-16. Fuser Unit Removal

4.3.14 Fuser Unit Disassembly

1. Remove the Paper Eject Sensor (PS3). *(See Figure 4-17)*

2. Remove the Heater Lamp Holder Cover. (One screw)
   (See Figure 4-18)
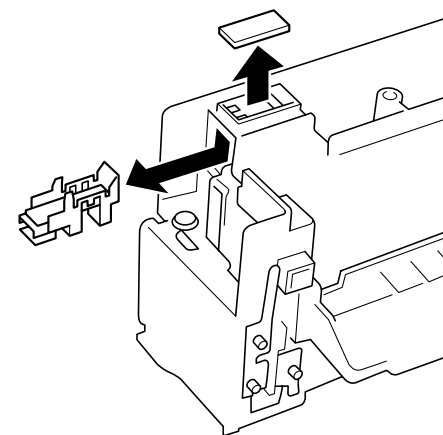
fuser11.eps

Figure 4-17. Paper Eject Sensor (PS3) Removal

3704
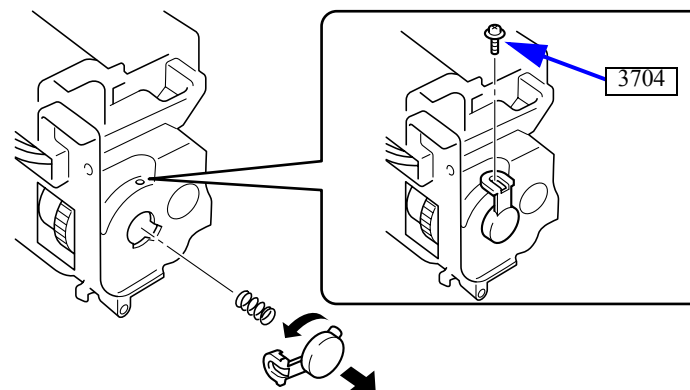
fuser12.eps

Figure 4-18. Heater Lamp Holder Cover Removal

3. Remove the two securing screws. *(See Figure 4-19)*

4. Press the right and left hooks (2 hooks), and separate the Fuser Unit into the upper and lower parts.

5. Remove the Backup Roller. *(See Figure 4-20)*

6. Shift the Front Fusing Guide to the left once and take out the right side of the Front Fusing Guide first, and then pull out the left side of the Front Fusing Guide, and remove it.

3704

fuser04.eps
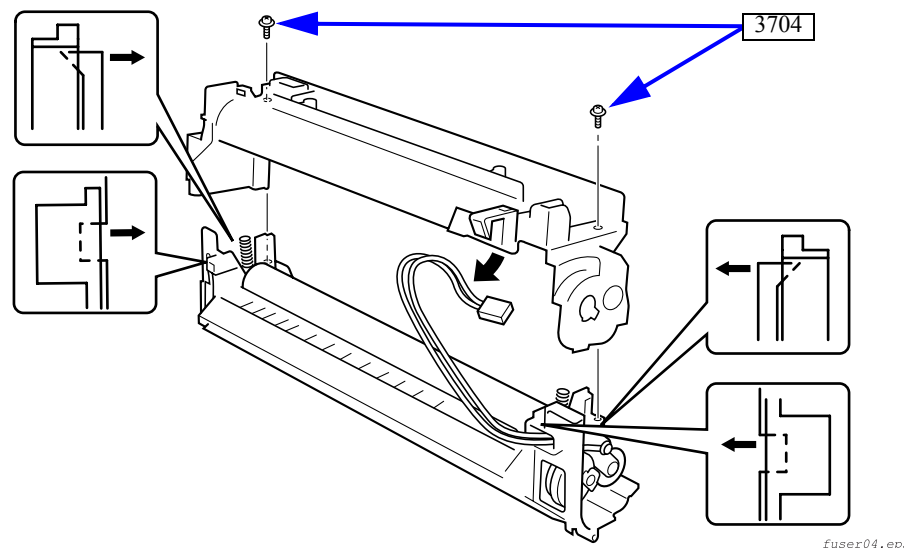
Figure 4-19. Fuser Unit Separation

Backup Roller

1

3

2

Front Fusing Guide

fuser05.eps
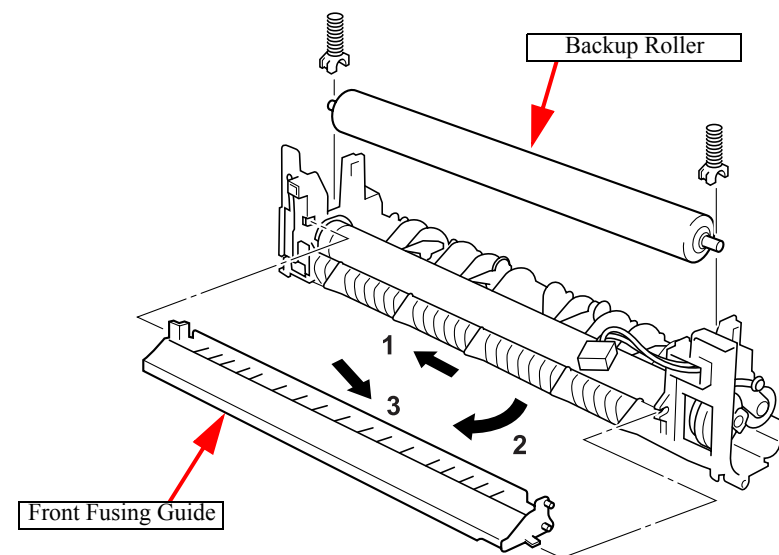
Figure 4-20. Front Fusing Guide Removal

7. Remove the terminal board. (Two screws) *(See Figure 4-21)*

8. Pull out the Heater Lamp.

<table>
<tr>
<td>

CAUTION

!

</td>
<td>

■ **Do not touch the glass of the lamp with bare hands.**
■ **When installing the Heater Lamp, install it so that the Voltage Indicator faces the gear side.**

</td>
</tr>
</table>

9. Remove the drive gear from the Heat Roller. *(See Figure 4-22)*

10. Shift the Heat Roller to the right (1) once and then move it in the (2) direction, and pull the roller out in the (3) direction.

<table>
<tr>
<td>

CAUTION

!

</td>
<td>

To avoid scratching the heat roller surface by the fusing separation claw, when removing or installing the roller, keep the fusing separation claw lifted untouched. Take great care not to scratch the surface of the Heat Roller.

</td>
</tr>
</table>
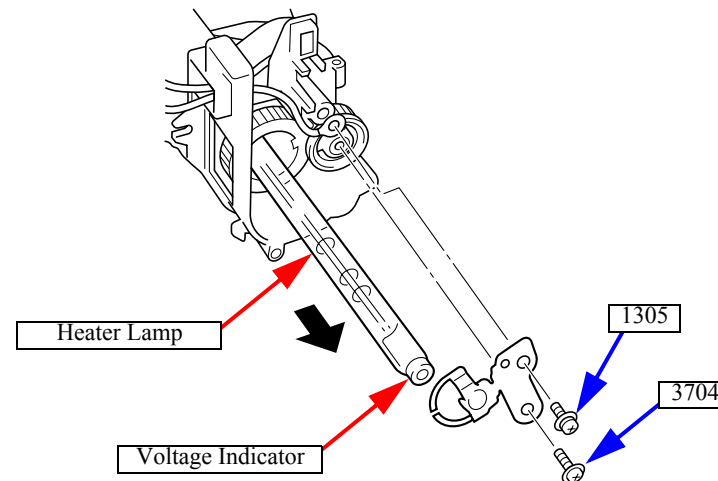
fuser06.eps

Figure 4-21. Heater Lamp Removal
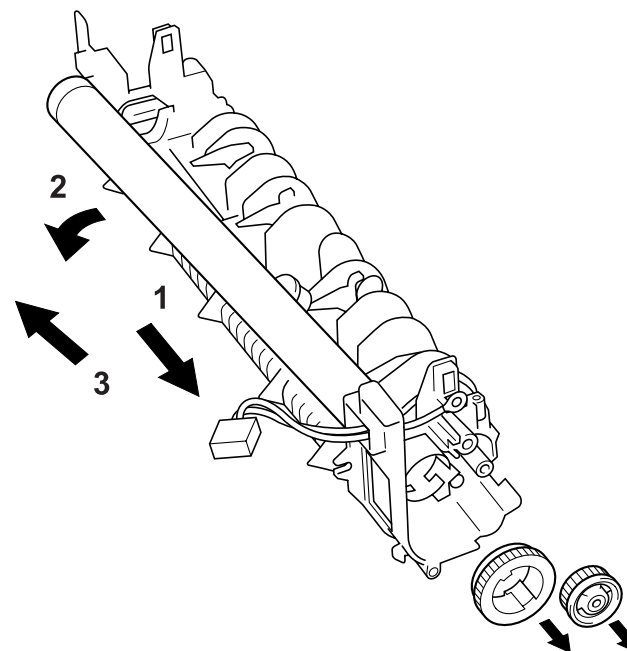
fuser07.eps

Figure 4-22. Heat Roller Removal

11. Remove the four Fusing Separation Claws.

12. Remove the thermistor (TH1). (One screw)
    (See Figure 4-23)

Reassembly	When installing the thermistor, lead the harness as shown here.
	(Back of the Fuser Unit)
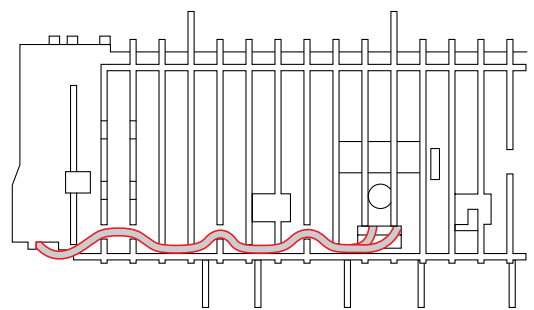
13. Remove the thermostat (TS1). (Two screws)

1305

Thermostat (TS1)

Thermistor (TH1)

3923

fuser09.eps
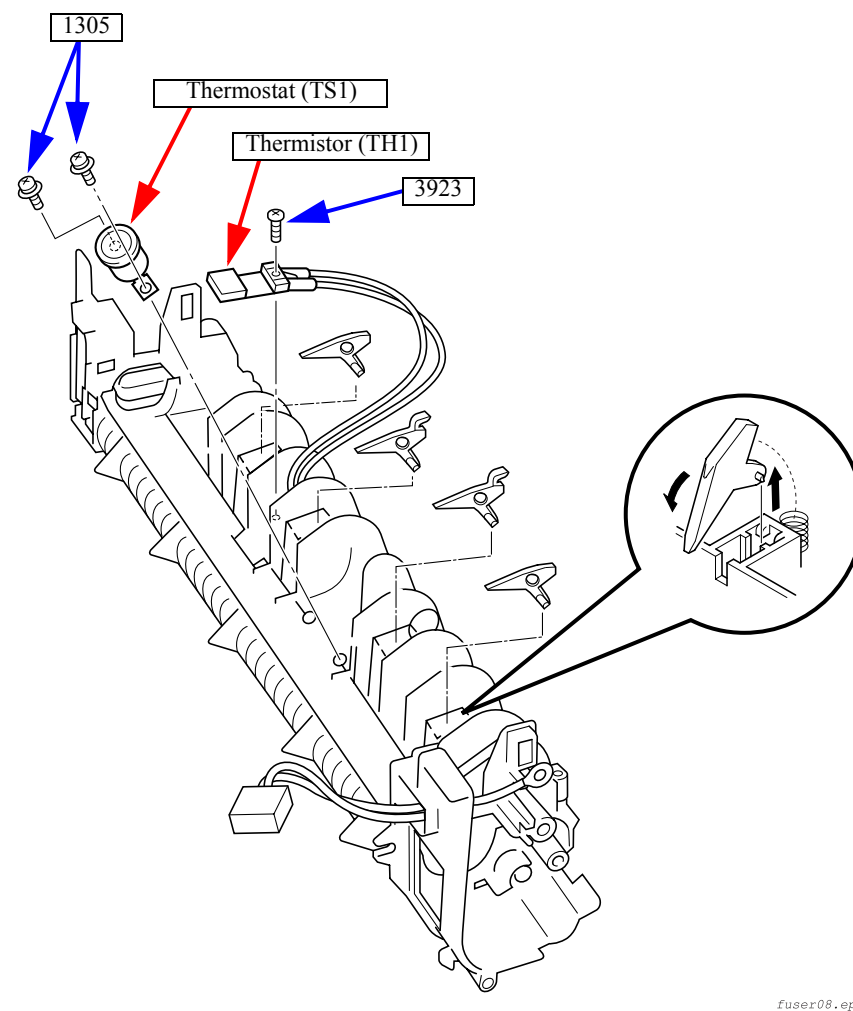
fuser08.eps

Figure 4-23. Thermistor (TH1) Removal

4.3.15 Power Supply Unit and High Voltage Board Removal

1. Remove the Right Cover, Left Cover, Top Cover, Rear Cover and Fuser Unit.
    (See "*4.3.3 Right Cover Removal (p.101)*")
    (See "*4.3.7 Left Cover Removal (p.105)*")
    (See "*4.3.12 Top Cover and Rear Cover Removal (p.107)*")
    (See "*4.3.13 Fuser Unit Removal (p.108)*")

2. Pull the connectors (CN807 and CN813) out of the controller board, and release the wiring from the cord holder. *(See Figure 4-24)*

3. Remove the Power Unit Assy. (Six screws and two connectors)

PU01.eps
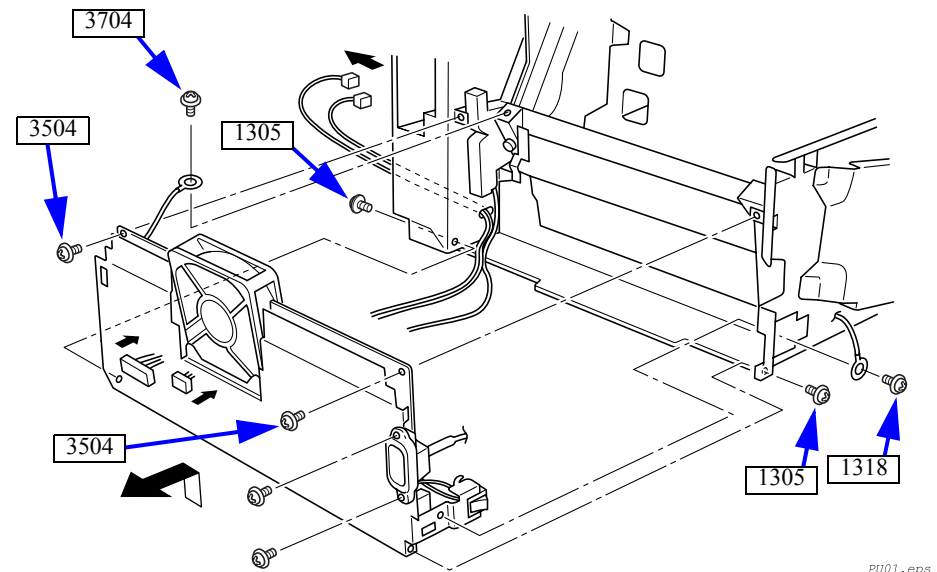
Figure 4-24. Power Unit Assy Removal

4.   Remove the Power Supply Unit (PU1). (Four screws) *(See Figure 4-25)*

5.   Remove the High Voltage Board (HV1). (One screw)

6.   Remove the Fan Motor. (Two screws)

7.   Remove the Paper Feed Sensor (PS1). (One connector) *(See Figure 4-26)*
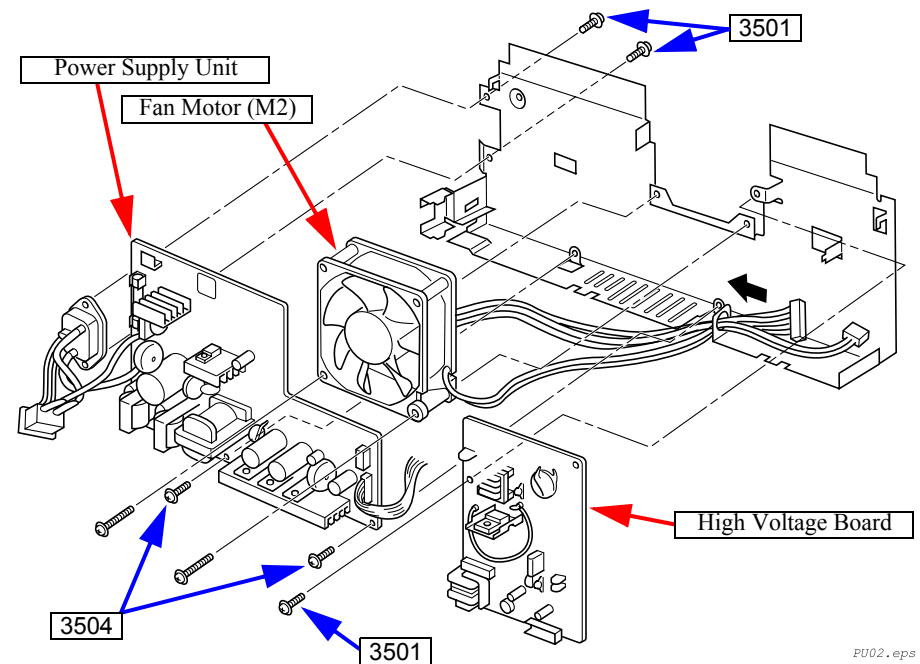
Figure 4-25. Power Supply Unit and High Voltage Board Removal
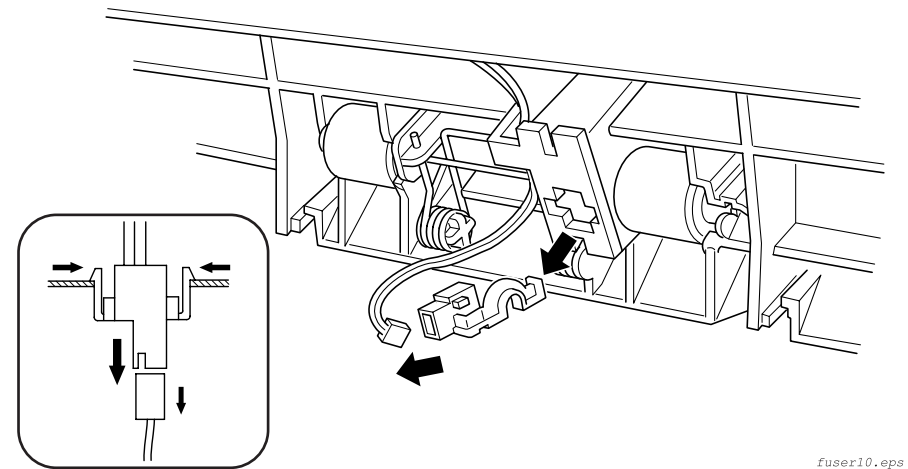
Figure 4-26. Paper Feed Sensor (PS1) Removal

4.3.16 Main Motor Assy (M1) Removal

1. Remove the Right Cover, Left Cover, Paper Separator Unit, Front Cover, Top Cover,
    Rear Cover, Fuser Unit and Power Unit Assy.
    (See "*4.3.2 Paper Separator Unit Removal (p.101)*")
    (See "*4.3.3 Right Cover Removal (p.101)*")
    (See "*4.3.7 Left Cover Removal (p.105)*")
    (See "*4.3.8 Front Cover Removal (p.105)*")
    (See "*4.3.12 Top Cover and Rear Cover Removal (p.107)*")
    (See "*4.3.13 Fuser Unit Removal (p.108)*")
    (See "*4.3.15 Power Supply Unit and High Voltage Board Removal (p.113)*")

2. Remove the Gear Plate. (Four screws)
    (See Figure 4-27)

3. Remove the two gears.

4. Remove the Left Side Plate. (Two screws and one connector)
    (See Figure 4-28)
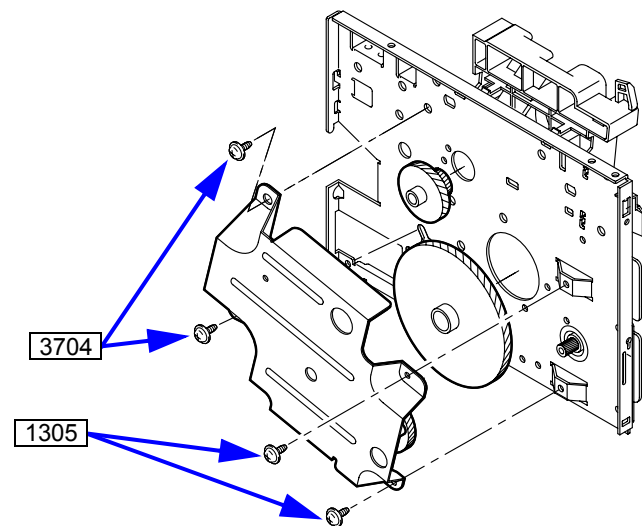
Motor_ma01.eps

Figure 4-27. Gear Plate Removal
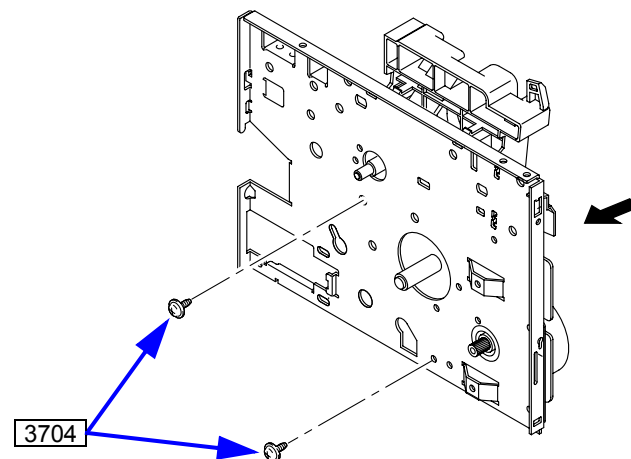
Motor_ma02.eps

Figure 4-28. Left Side Plate Removal

5. Remove the Cartridge Positioning Plate. (Four hooks)
    (See Figure 4-29)

6. Remove the Main Motor Assy (M1). (Four screws and one connector)
    (See Figure 4-30)
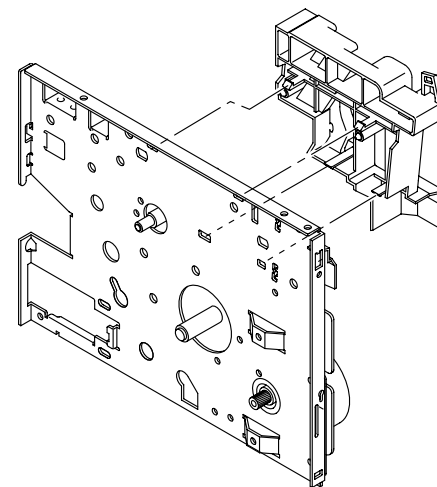
Motor_ma03.eps

Figure 4-29. Cartridge Positioning Plate Removal
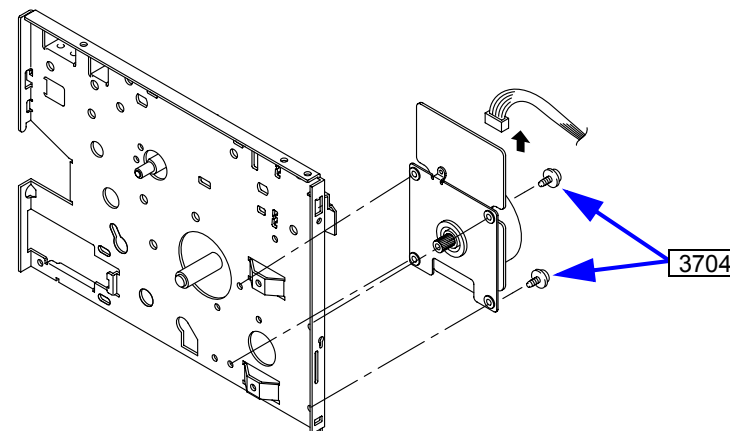
Motor_ma04.eps

Figure 4-30. Main Motor Assy Removal

4.4 500-sheet Lower Cassette Unit (Optional)

4.4.1 Second Paper Feed Roller Removal

1. Separate the optional 500-sheet Lower Cassette Unit from the printer.

2. Lift the tab of the Paper Feed Roller, shift the roller to the right and remove it.
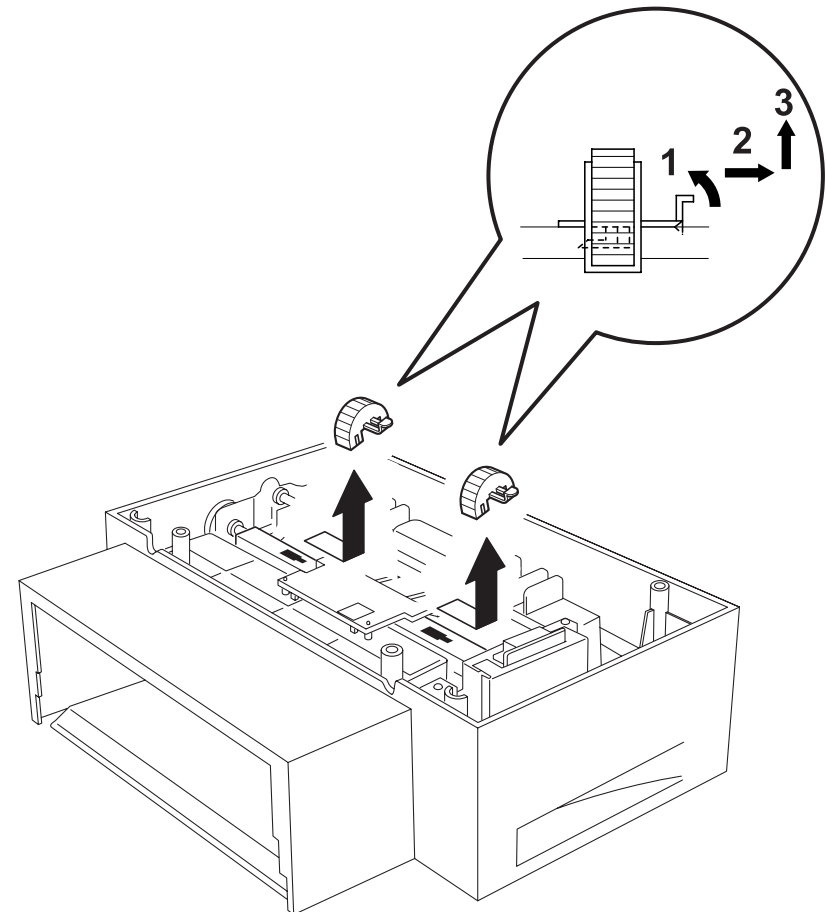
opt_ca01.eps

Figure 4-31. Second Paper Feed Roller Removal

4.4.2 Second Paper Feed Unit Removal

1. Remove the black cover. (Two hooks)
   (See Figure 4-32)

2. Remove the actuator.

3. Remove the Second Paper Feed Unit. (Six screws)
   (See Figure 4-33)
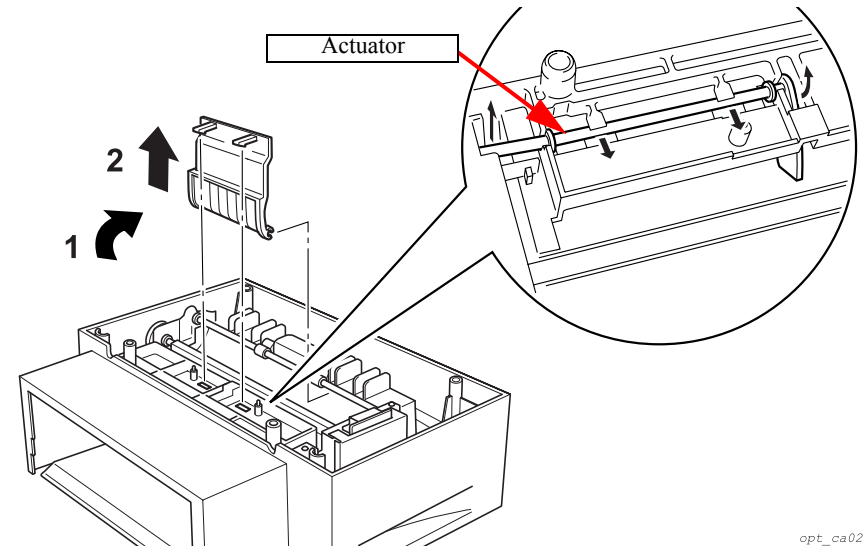
opt_ca02.eps

Figure 4-32. Actuator Removal
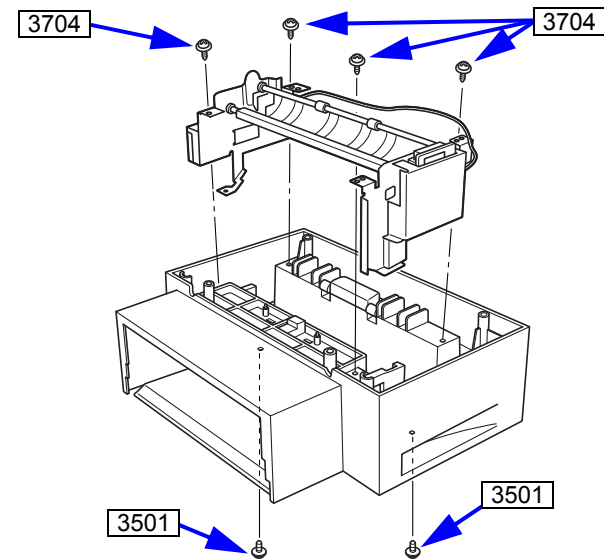
opt_ca03.eps

Figure 4-33. Second Paper Feed Unit Removal

4.4.3 Relay Board (PWB-A) Removal

1. Remove the cover. (One screw and two connectors)
    (See Figure 4-34)

2. Remove the Relay Board (PWB-A). (Two screws)

4.4.4 Cassette Type Detect Switch (SW21) Removal

1. Remove the Cassette Type Detect Switch (SW21).
    (See Figure 4-35)
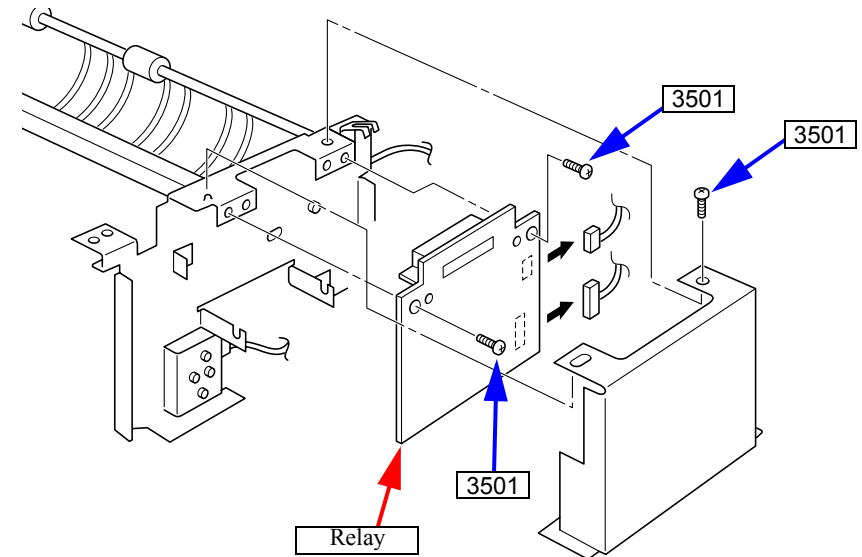
opt_ca04.eps

Figure 4-34. Relay Board (PWB-A) Removal
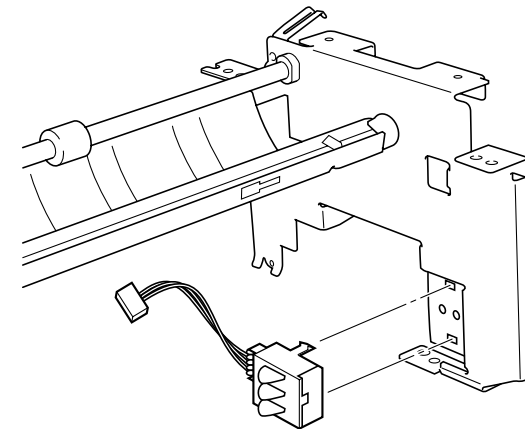
opt_ca05.eps

Figure 4-35. Cassette Type Detect Switch (SW21) Removal

4.4.5 Second Paper Feed Solenoid (SL21) Removal

1. Remove the cover. (One screw) *(See Figure 4-36)*

2. Remove the Second Paper Feed Solenoid (SL21). (One screw and one connector)

3501

3501

Second Paper Feed Solenoid (SL21)
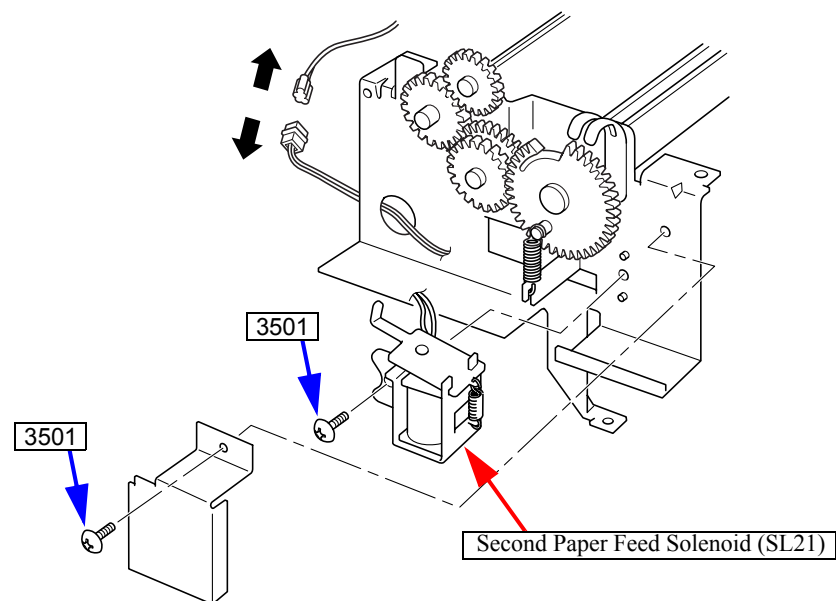
opt_ca06.eps

Figure 4-36. Second Paper Feed Solenoid (SL21) Removal

ADJUSTMENT

5.1 Overview

This printer does not require any adjustment on hardware side. However, the USB ID must be written after replacing the Main Board Assy. The next section describes how to write the USB ID.

5.2 USB ID Input

EPL-5900/EPL-5900L comes with the USB interface as standard, and the PC connected to the EPL-5900/EPL-5900L via the USB interface identifies the printer by referring to the USB ID information specific to each printer.

Since this USB ID information is stored on EEPROM on the MAIN Board of the printer, you have to re-define the ID information by the procedure described below when you have replaced the MAIN Board for repair.

CAUTION !	When you repair the printer and re-define the USB ID information, you have to tell the user to uninstall the previously installed printer driver as it is referring to the old USB ID information.

The program for USB ID input and the supported operating environment are as follows:

□ Program
USBID_EJL.exe

□ Operating environment
   ■ OS: .... Windows95 OSR2.0 or later or Windows98
   ■ Port used:............ LPT1 ~ LPT3 (Windows95/98)

5.2.1 Installation Procedure for Program

Copy the adjustment program file (USBID_EJL.exe) onto the desktop or into a folder.

5.2.2 Procedure for Program Operation

CAUTION !	■ Do not start the adjustment program before connecting the parallel cable to the printer. ■ This program can not be executed together with EPW (Epson Printer Window) on Windows 95/98. Be sure to terminate the EPW before starting the adjustment program. ■ If the power to the printer is turned off or the parallel cable is disconnected during running of the adjustment program, be sure to restart the program. ■ On the "Details of Display" tab of "Property of Screen", do not change "font size."

1. When you execute the program "USBID_EJL.exe", the menu window shown below will appear.

2. Select the model name "EPL-5900/EPL-5900L", then click the OK button.

Figure 5-1. Program Start Window

3. When the window as shown in Figure 5-2 is displayed, check "USB ID input" and click the OK button.
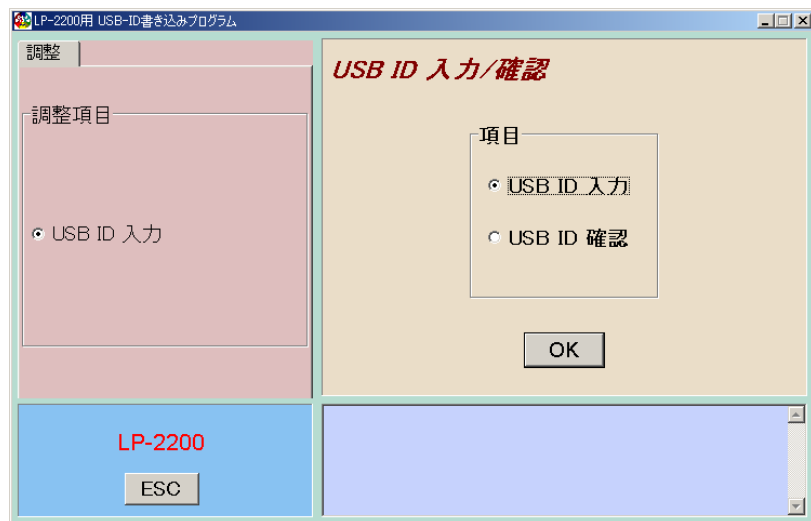
Figure 5-2. USB ID Input Window (1)

4. When the window as shown below appears, input the serial number (10 digits) of the printer and click "Ok" button to store the USB ID information (18 digits in total) in EEPROM on the main board of the printer. The USB ID value will be displayed in the status window in the bottom area of the program for your later check of the inputted USB ID.
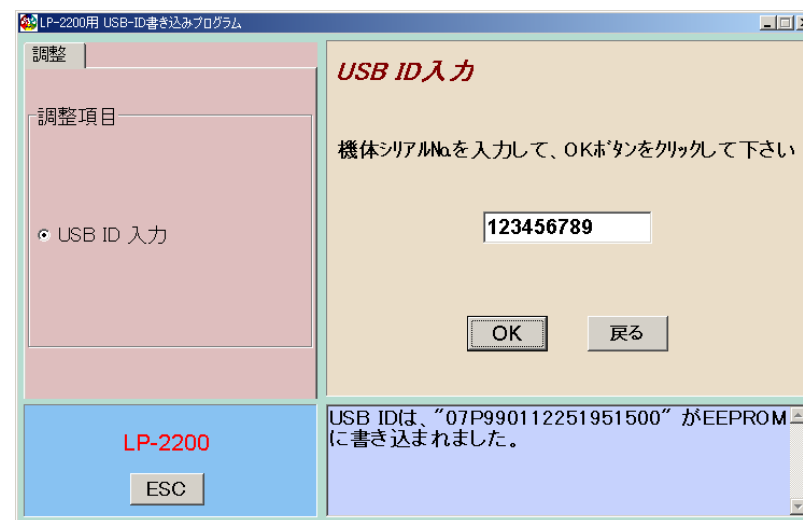
Figure 5-3. USB ID Input Window (2)

5.2.3 USB ID Confirmation

CAUTION **!**

Once you have input a new USB ID, never forget to confirm it on the status sheet.

1. Execute the program "USBID_EJL.exe" which was used to write the USB ID, and select the model name.

2. When the window as shown below appears, check "Verify USB ID" and click the OK button.
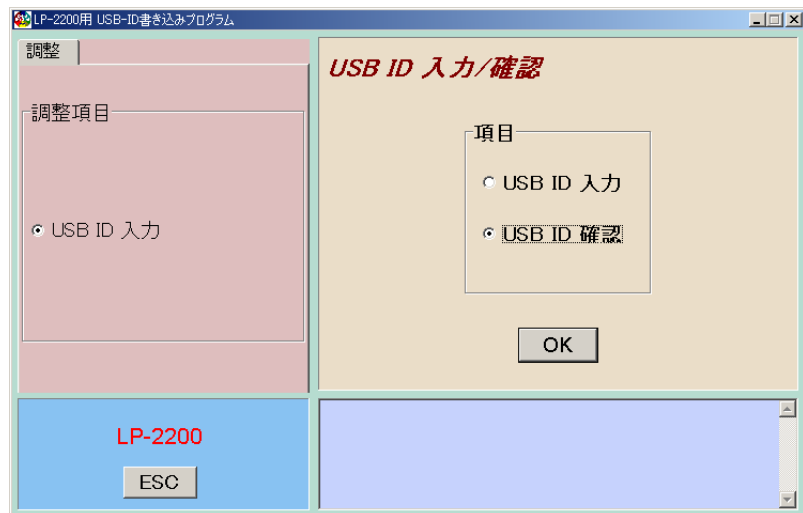
Figure 5-4. USB ID Confirmation Window 1

3. The window as shown below will appear and a status sheet will be printed automatically.
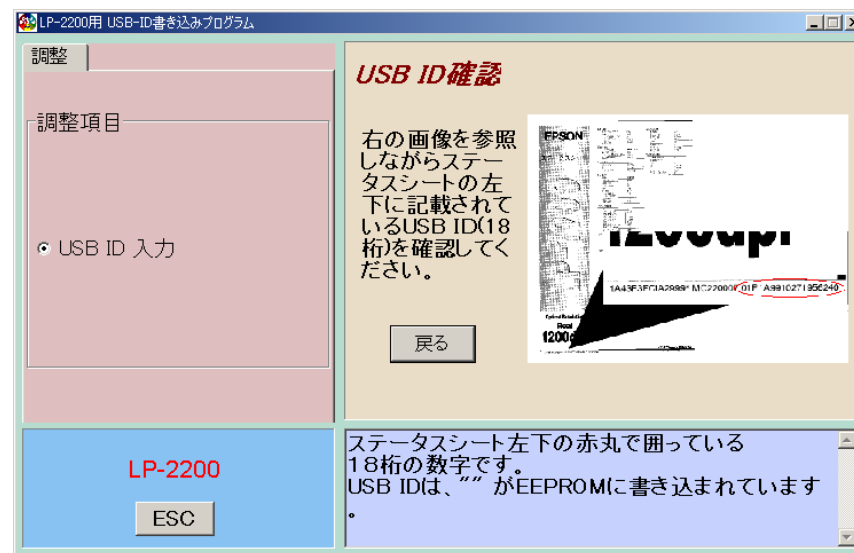
Figure 5-5. USB ID Confirmation Window 2

4. Check that the USB ID printed on the status sheet is identical with that shown on the window.
    After completion of confirmation, press the Return button.

CHAPTER
6

MAINTENANCE

6.1 Overview

This section gives information neccesary for maintaining the printer in its optimum condition.

In maintenance and checks, never fail to observe the following precautions.

WARNING	■ **Disconnect the power cable before starting maintenance and checks of the printer.** ■ **Always wear gloves for maintenance and checks to avoid injury from sharp metal edges.** ■ **Do not expose yourself to the laser beam to prevent injury (blindness).** ■ **When you perform maintenance or service of the laser printer, never open any cover on which a warning label about laser beam has been affixed.** ■ **Understand how the laser beam functions and take maximum precautions not to injure yourself or anyone around you. When working on the FUSER ASSY or nearby parts, be sure to wait until the temperature of the parts cool down to a safe level.** *After stopping operation of the printer, wait at least 40 minutes and then start working on the printer.* ■ **To avoid dust explosion or ignition, never bring any consumables close to flame or throw them into fire.**

CAUTION	■ **Do not use alcohol, paint thinner, or other such solvents** ■ **Do not clean the surface of the roller in the Transfer Roller Unit. If the roller is particularly dirty, try printing some sheets to remove the dirt, or take out the Transfer Roller Unit and blow the dirt off using a compressed air gun.**

6.1.1 Cleaning

Check the inside of the printer, and remove foreign matters, if any, such as paper clips, staples, bits of paper, paper dust or toner.

Table 6-1. Cleaning Items

Item	Time for Cleaning	Cleaning Method
Paper Feed Roller	When image quality has lowered or paper feed error occurs	Wipe the rubber surface with a soft cloth soaked in water once and then squeezed strongly.

6.1.2 Maintenance

Regular Replacement Parts and Consumables are as listed below:

The maintenance work of this printer does not require any special tool or grease.

Table 6-2. Regular Replacement Parts and Consumables

Parts Requiring Periodical Replacement	Time for Replacement
Imaging Cartridge	After printing of average 6,000 sheets (Pre-installed Imaging Cartridge: 3,000 sheets)
Drum Cartridge (Photoconductor Unit)	After printing of about 20,000 sheets
Fuser Unit	After printing of about 50,000 sheets (5% pattern continuous printing)
Transfer Roller	After printing of about 50,000 sheets (5% pattern continuous printing)

APPENDIX

7.1 Connectors

7.1.1 Circuit Boards

7.1.1.1 Connectors on Main Board Assy (EPL-5900)

Table 7-1. Connectors on Main Board Assy (EPL-5900)

Connector No.	Description	Pins	Connection (CN No.)
CN201	Slot for memory expansion	90 (new)	-
CN300	Slot for standard ROM-DIMM	90	-
CN301	Slot for optional ROM-DIMM	90	-
CN403	Interface Board	(FFC)	CN3
CN405	Control Panel	(FFC)	-
CN406	Type-B slot		-
CN802	Fuser Unit Thermistor (TH1)	2	-
CN803	Second Paper Feed Solenoid (SL21)	2	-
CN804	High Voltage Unit (HV1)	10	CN1
CN805	Print Head Unit	8	-
CN806	Main Motor Assy	9	CN1
CN807	Power Supply Unit	7	CN2
CN808	Fuser Unit Paper Eject Sensor (PS3)	3	-
CN809	Print Head Unit	5	-
CN810	Paper Feed Sensor (PS1)	2	-
CN811	Optional Lower Cassette Relay Board	12	-
CN812	Paper Empty Sensor (PE1)	3	-
CN813	Fan Motor (M2)	3	-

board_ma22.eps
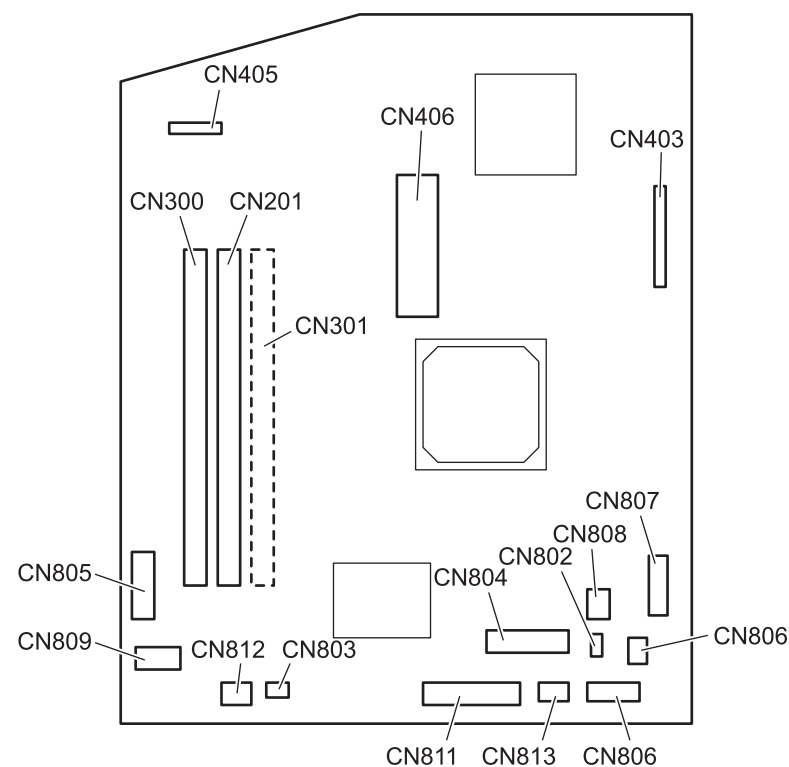
Figure 7-1. EPL-5900 Main Board Assy (C427MAIN)

7.1.1.2 Connectors on Main Board Assy (EPL-5900L)

Table 7-2. Connectors on Main Board Assy (EPL-5900L)

Connector No.	Description	Pins	Connection (CN No.)
CN1	Slot for memory expansion (EDO RAM SIMM)	72	-
CN2	Interface Board	(FFC)	CN3
CN4	Control Panel		-
CN802	Fuser Unit Thermistor (TH1)	2	-
CN803	Second Paper Feed Solenoid (SL21)	2	-
CN804	High Voltage Unit (HV1)	10	CN1
CN805	Print Head Unit	8	-
CN806	Main Motor Assy	9	CN1
CN807	Power Supply Unit	7	CN2
CN808	Fuser Unit Paper Eject Sensor (PS3)	3	-
CN809	Print Head Unit	5	-
CN810	Paper Feed Sensor (PS1)	2	-
CN811	(Not used with EPL-5900L)	12	-
CN812	Paper Empty Sensor (PE1)	3	-
CN813	Fan Motor (M2)	3	-
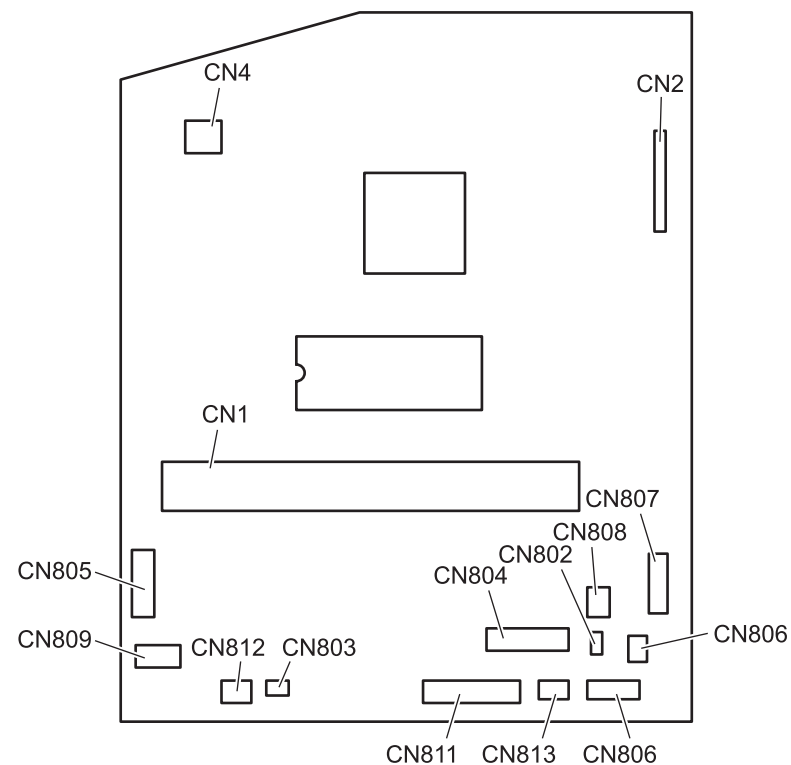
board_ma12.eps

Figure 7-2. EPL-5900L Main Board Assy (C428MAIN)

7.1.1.3 Interface Board (C409I/F)

Table 7-3. Interface Board (C409I/F)

Component	
CN1	Parallel Interface
CN2	USB Interface
CN3	Connector for Main Board Assy (FFC)

7.1.1.4 PU1 (Power Supply Unit) Board

Table 7-4. PU1 (Power Supply Unit) Board

Component	
F1	Fuse (Rating: 5A, 125V)
F2	Fuse (rating: 12A, 250V)
VR61	Variable Resistor for adjustment at the factory (adjustment prohibited)

7.1.1.5 HV1 (High Voltage Unit) Board

Table 7-5. HV1 (High Voltage Unit) Board

Component	
C	Charging voltage output terminal (DC-1286V/AC-811V)
B	Development voltage output terminal (DC-240V/DC-340V max)
SS	Under development seal voltage output terminal (DC-240V/DC-340V max)
BL	Development blade voltage output terminal (DC-490V/DC-590V max)
T	Transfer voltage output terminal (DC3500V/DC-500V max)
VR51	Variable Resistor for adjustment at the factory (adjustment prohibited)
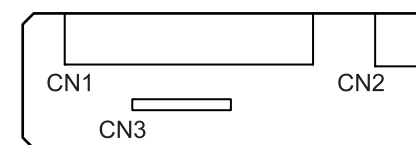
board_IF1.eps

Figure 7-3. Interface Board (C409I/F)
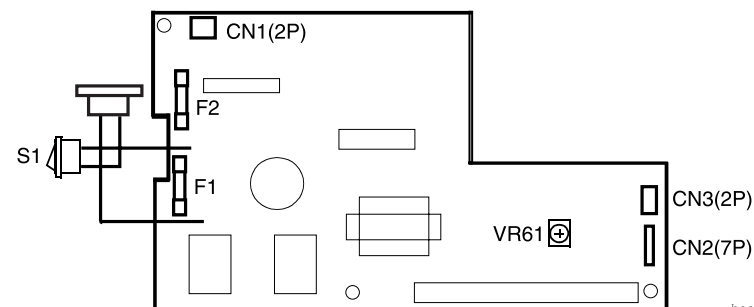
board_pul.eps

Figure 7-4. PU1 (Power Supply Unit) Board
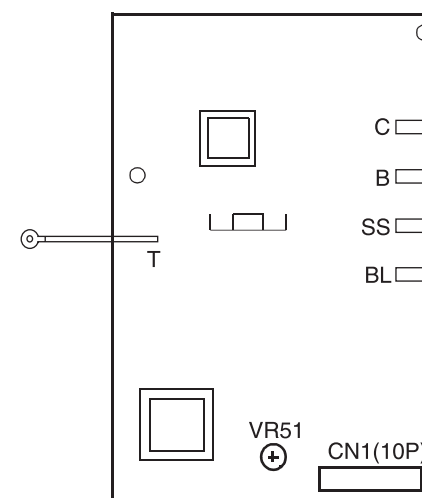
board_hv1.eps

Figure 7-5. HV1 (High Voltage Unit) Board

7.2 Circuit Board Component Layout

This section shows the component layout drawings for various circuit boards.

Table 7-6. Component Layout Drawing List

Model	Circuit Board Name	Description	See
EPL-5900	C427MAIN	Main Board Assy	p.133
	C427PROG/C427PROG-B	Memory Board Assy (ROM DIMM)	-
EPL-5900L	C428MAIN	Main Board Assy	p.135
EPL-5900/ EPL-5900L	C409I/F	Interface Board	-
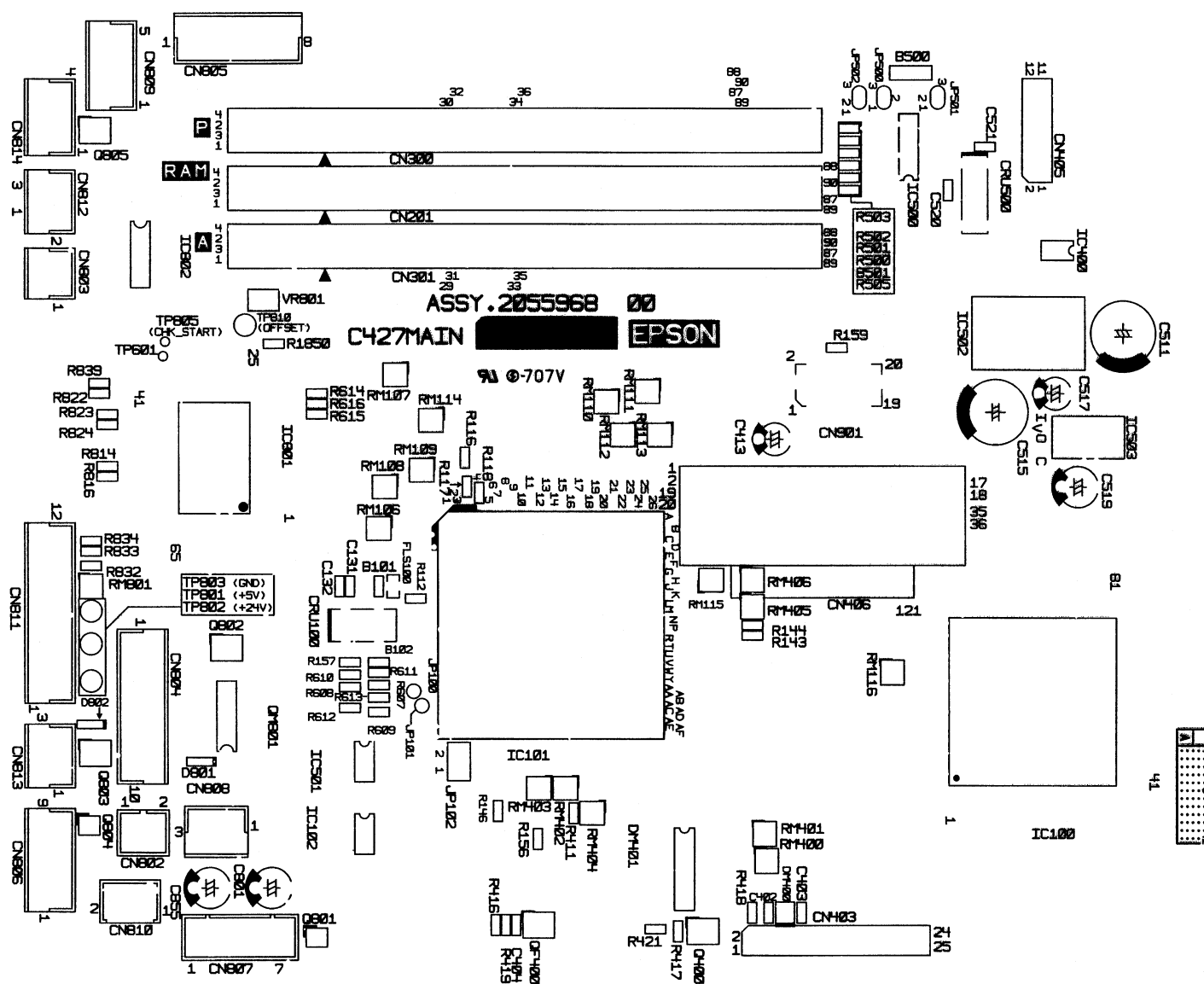
Figure 7-6. EPL-5900 Main Board Assy (C427MAIN) Front Side
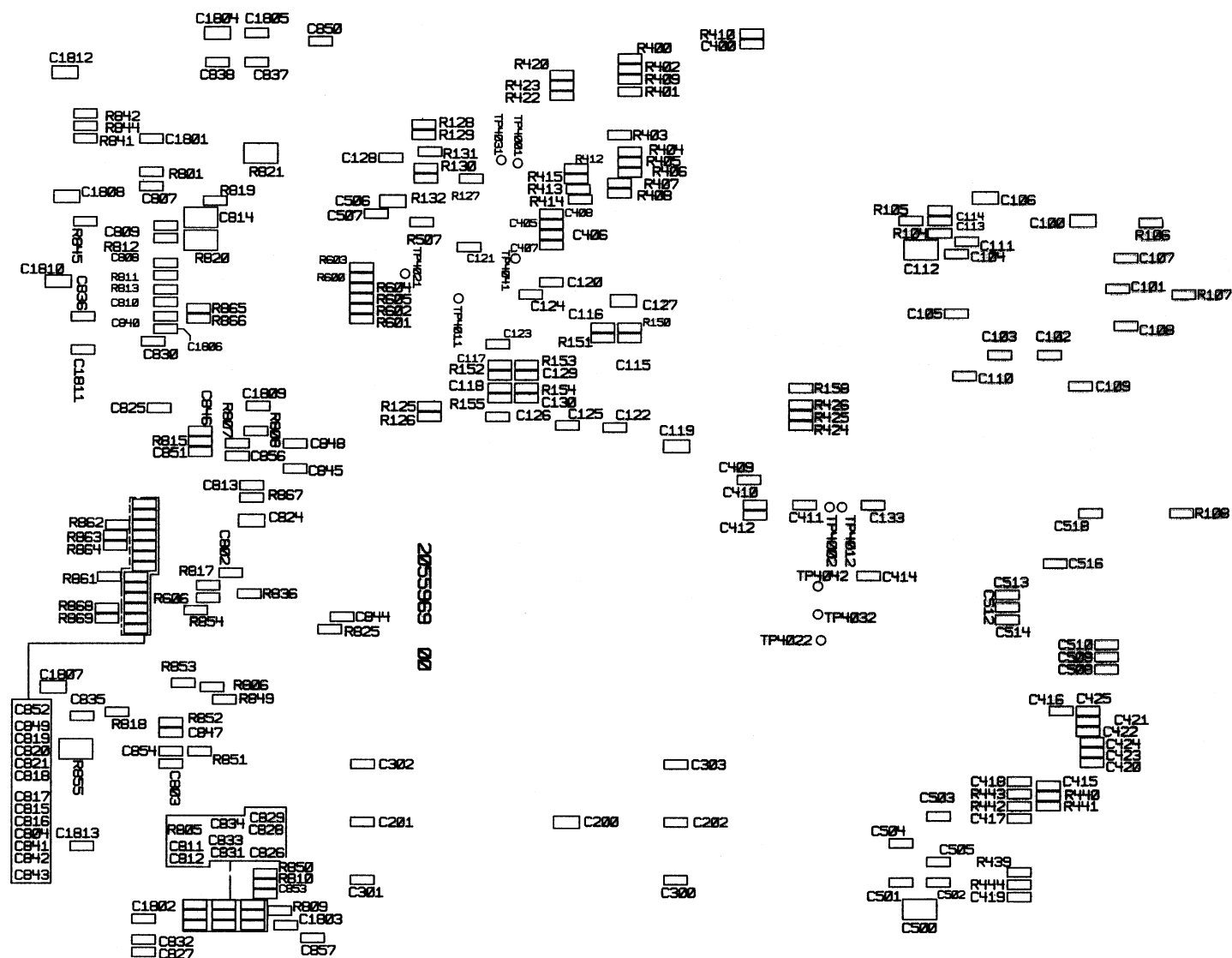
Figure 7-7. EPL-5900 Main Board Assy (C427MAIN) Back Side
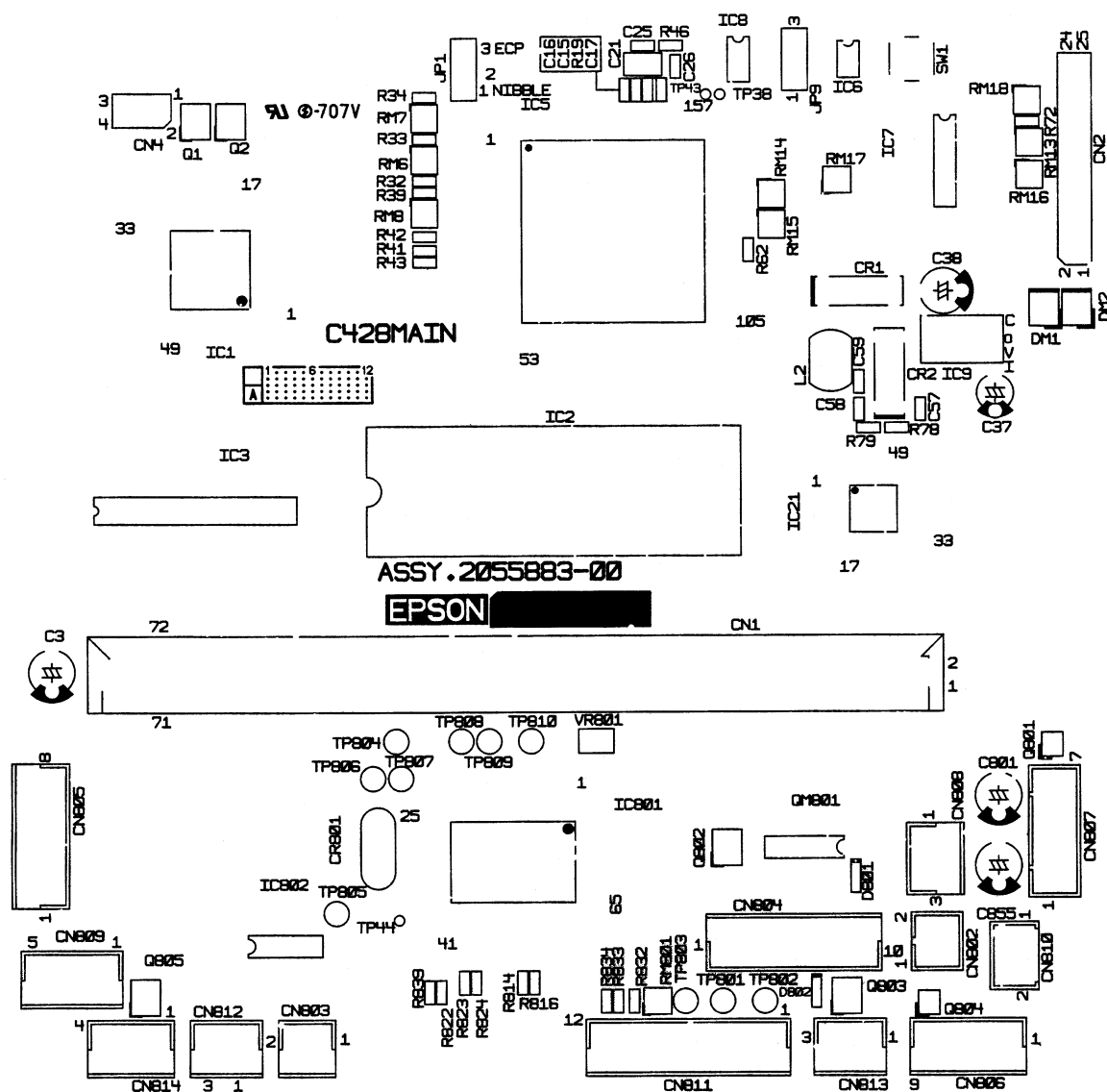
Figure 7-8. EPL-5900L Main Board Assy (C428MAIN) Front Side
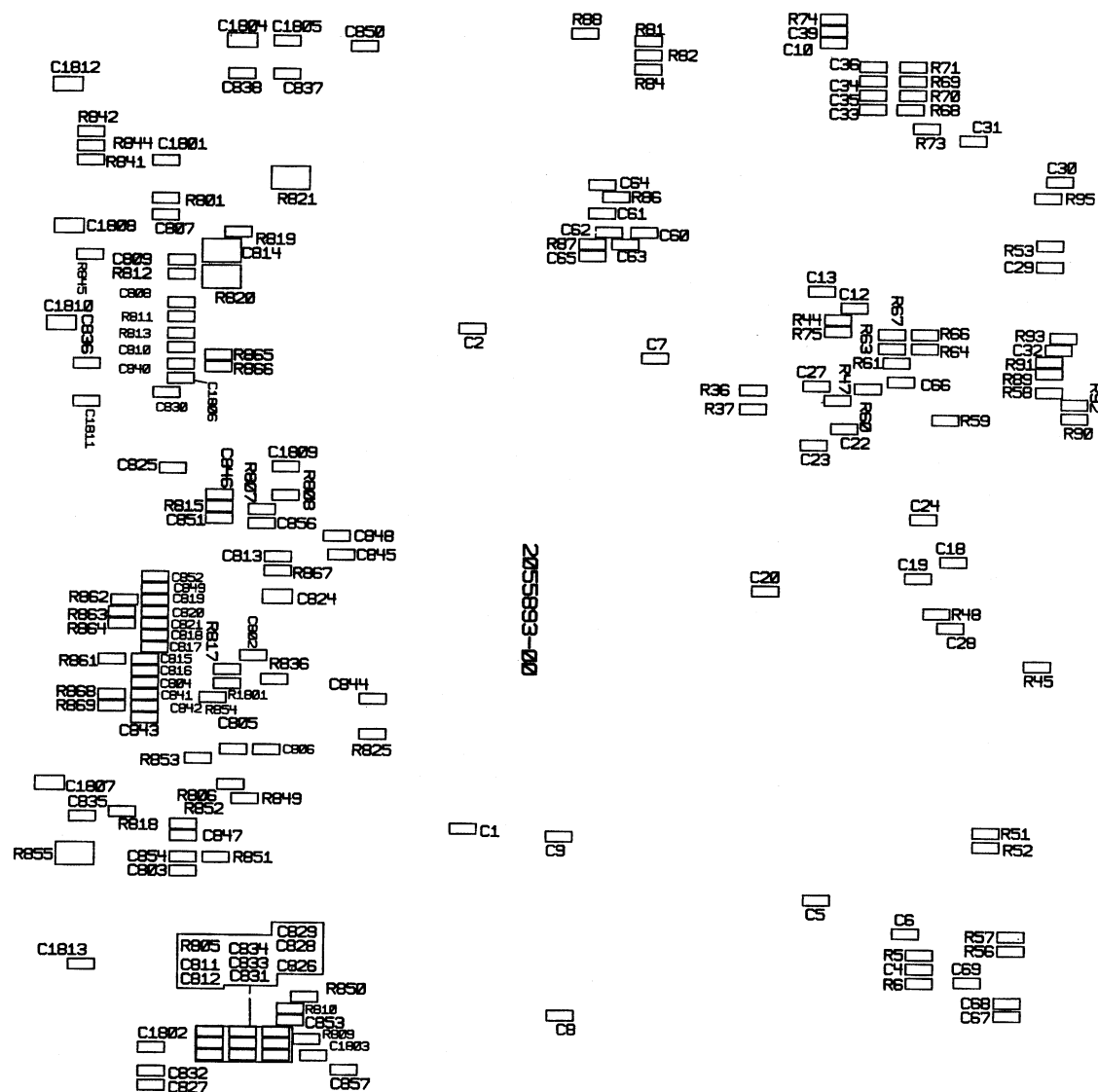
Figure 7-9. EPL-5900L Main Board Assy (C428MAIN) Back Side

7.3 Circuit Diagrams

This section shows electric control circuit diagrams of EPL-5900/EPL-5900L.

Table 7-7. Circuit Diagrams List

Model	Circuit Board Name	Description	See
EPL-5900	C427MAIN	Main Board Assy	p.133
	C427PROG/C427PROG-B	Memory Board Assy (ROM DIMM)	p.142
EPL-5900L	C428MAIN	Main Board Assy	p.143
EPL-5900/ EPL-5900L	C409I/F	Interface Board	-

Model: LP-2200 / EPL-5900
Board: C427MAIN BOARD
Sheet: 1 of 4
Rev. : A

CN301

CN300

CN201

MEMD[0-31]
MEMA[2-24]
DQM[0-3]
ROMPX[0-1]
RAMBX[0-1]
RAMAX[0]

ROMAX[0-1]

RDX
WRX
ROMDBENX
ROMDIR
DIMMIP1
SPDSCL
SPDSDA
DIMMIP0

RASX
CASX
WEX
CLKENA
CLKENB
DIMMIP2
CPU2
CPU3

Sheet 1, DLC
Sheet 3, CLOCK IC

OPTION-DIMM
CODE-DIMM
32bit-SDRAM-DIMM

Model: LP-2200 / EPL-5900
Board: C427MAIN BOARD
Sheet: 2 of 4
Rev. : A

A   B   C   D   E   F   G   H

1

C520
22p
50V
GND

CRU500
MA-406
14.318MHz CL=6.5pF
SSCG_X1

C521
22p
50V
GND

IC500
CY24242
SSCG_X2

X1

X2

CPU0 24
CPU1 23
CPU2 21
CPU3 20

CPU3-A
CPU2-A
CPU1-A
CPU0-A

R500 47
R501 68
R502 68
R503 68

SCON CPU3
SCON CPU2
SCON CPU1
SCON CPU0

Sheet 2, SDRAM_DIMM
Sheet 2, CODE_DIMM
Sheet 1, DLC
Sheet 1, CPU

+5V   +3.3V

IC502
EZ10B5CM-3.3TR

C508
0.1u
25V

C513
0.1u
25V

SDRAM0 10
SDRAM1   9
SDRAM2   8
SDRAM3   7

2

+3.3V B500
BLM41PG600SN1L

C500
10u
10V

SSCG_VDD

C503
0.1u
25V

8 VDDS
22 VDDC
25 VDDU

VDDCORE
VDDCORE

USBCLK   26
USBCLKEN 28

USBCLK-A

SSON 17

B501
BLM18BB151SN1D

USBCLK-B R505 47

SCON USBCLK

JUMPER_3
JP500

C509
0.1u
25V

C511
470u
25V

C512
0.1u
25V

C514
0.1u
25V

C501
0.01u
50V

C504
0.1u
25V

C505
0.1u
25V

1
12

FS0 15
FS1 16

GND

JUMPER_3
JP501

C510
0.1u
25V

C515
470u
25V

C502
0.01u
50V

3
11
19
27

GND
GND
GND
GND

SSX0 14
SSX1 18

SDEN 13

GND

JUMPER_3
JP502

GND

GND

*For GND wiring for SSCG_VDD and SSCG,
use as thick leads as possible.

REF 2

JUMPER_3

Achieve pattern shorting between terminals.

GND

3

+3.3V   +1.5V

IC503
PQ015EZ01Z

Vin Vo

Vc GND

NC

C516
0.1u
25V

C517
22u
25V

C518
0.1u
25V

C519
100u
25V

GND

4

+5V   +3.3V

R507
1K

IC501

7 VCC OUT 6

SCON MAINRESETX

Sheet 1, Connector for DLC and CPU debug

*For IC100 (CPU)

5 NC 1
C NC 2
NC 3
4 GND NC 8

C506
1u
16V

C507
0.1u
25V

M51953BFP-600C

GND

5
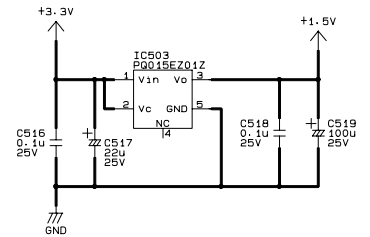
Note: JP* is not any actual part mounted, but a pattern by art work.

6

Model: LP-2200 / EPL-5900
Board: C427MAIN BOARD
Sheet: 3 of 4
Rev. : A

Model: LP-2200 / EPL-5900
Board: C427MAIN BOARD
Sheet: 4 of 4
Rev. : B
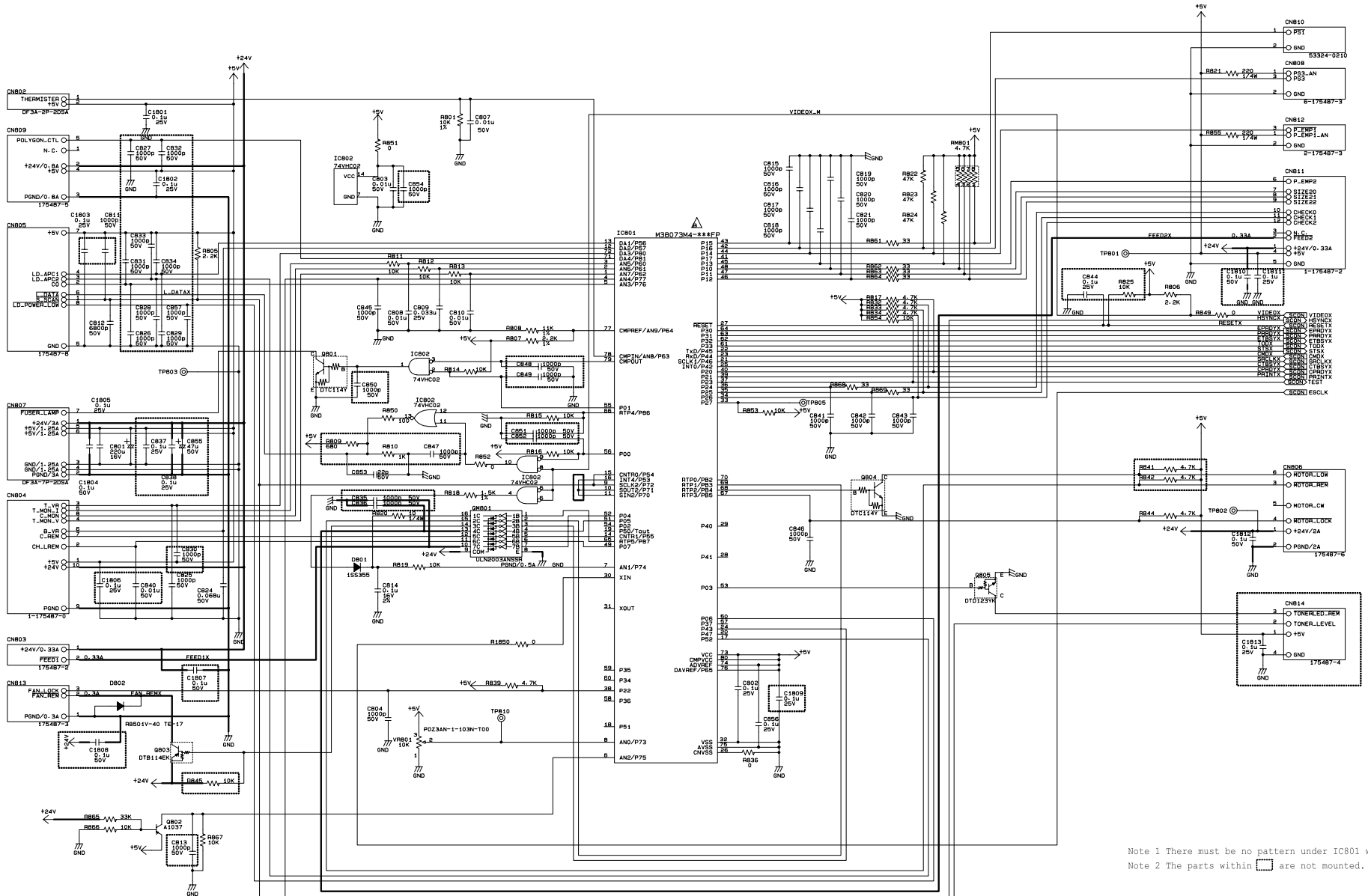
Note 1 There must be no pattern under IC801 within ▢
Note 2 The parts within ▢ are not mounted.

〈IC3・IC4搭載デバイスによるジャンパ設定〉

○ 実装
× 未実装

IC3・4 (Code)		RJ1	RJ2	RJ3	RJ4	IC2・C2	R1	RJ7	IC1・C1
FLASH	富士通8Mbit	×	○	×	×	○	○	×	○
	SHARP8Mbit	×	○	○	○	○	○	○	○
	MXIC16Mbit	○	×	○	×	×	○	○	○
	富士通16Mbit	○	×	×	○	×	○	○	○
MASK	MASK8Mbit	×	×	×	×	×	×	○	○
	MASK16Mbit	○	×	×	×	×	×	○	○

IC3・IC4は42SOJ(OKI)も搭載可能なパターンとする
42SOJの21番ピンを44SOPの22番ピンと
42SOJの22番ピンを44SOPの23番ピンと合わせること

〈IC5搭載デバイスによるジャンパ設定〉

IC5 (Font)		RJ5	RJ6	IC3・C5	IC4・C6	IC3・4設定
MASK	32Mbit	○	×	○	○	上記
	64Mbit	×	○	×	×	全て×

〈IC5 32Mbit MASK ROM No.〉
  FOREIGN : M320A48**
  JAPAN   : M320A49**

〈IC3・IC4 8Mbit FLASH Pin Assign〉
  #1 : RY/BYX(OUTPUT)
  #43 : WEX
  #44 : RESETX

Model: LP-2200 / EPL-5900
Board: C427PROG BOARD
Sheet: 1 of 1
Rev. : A
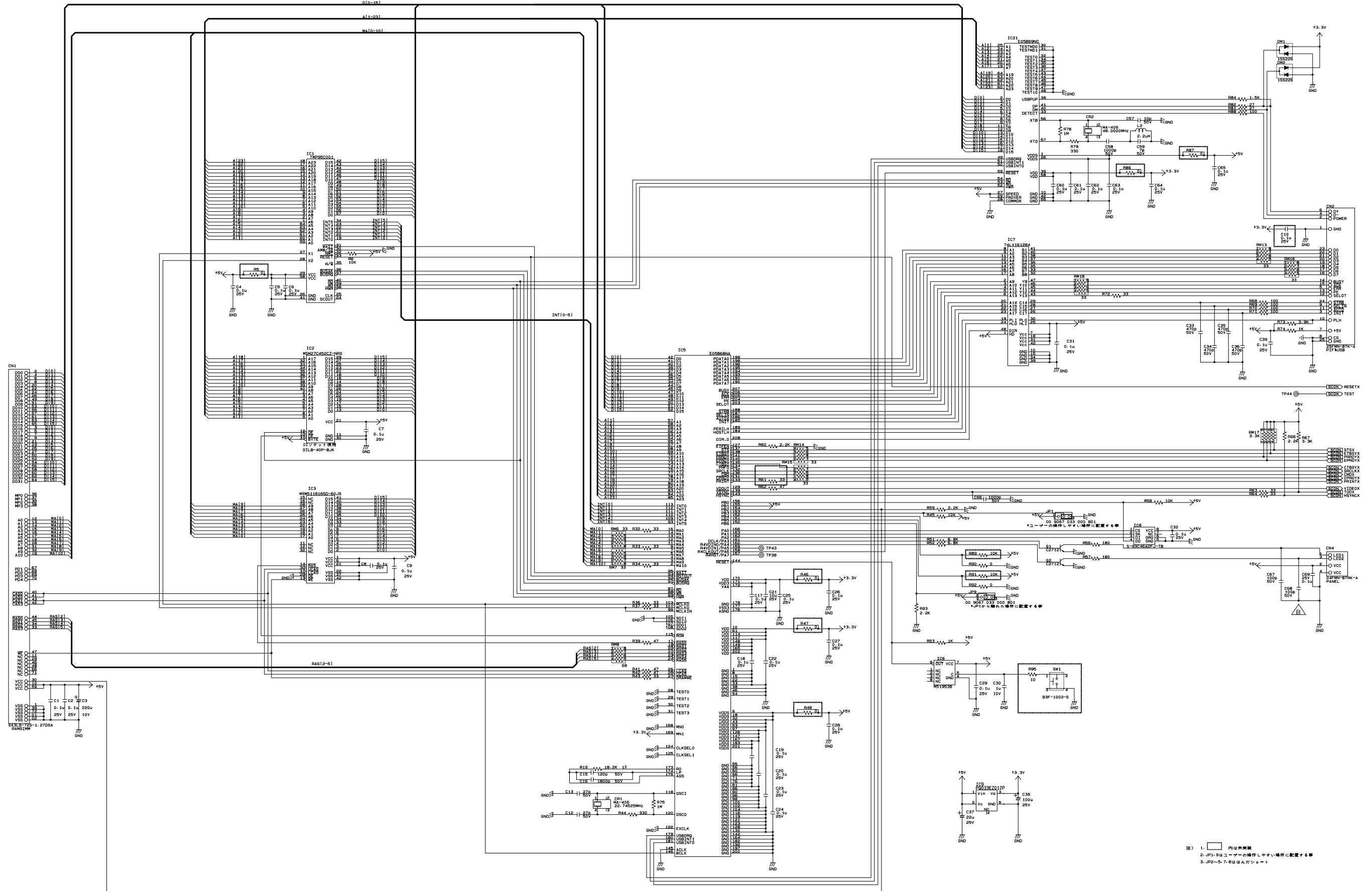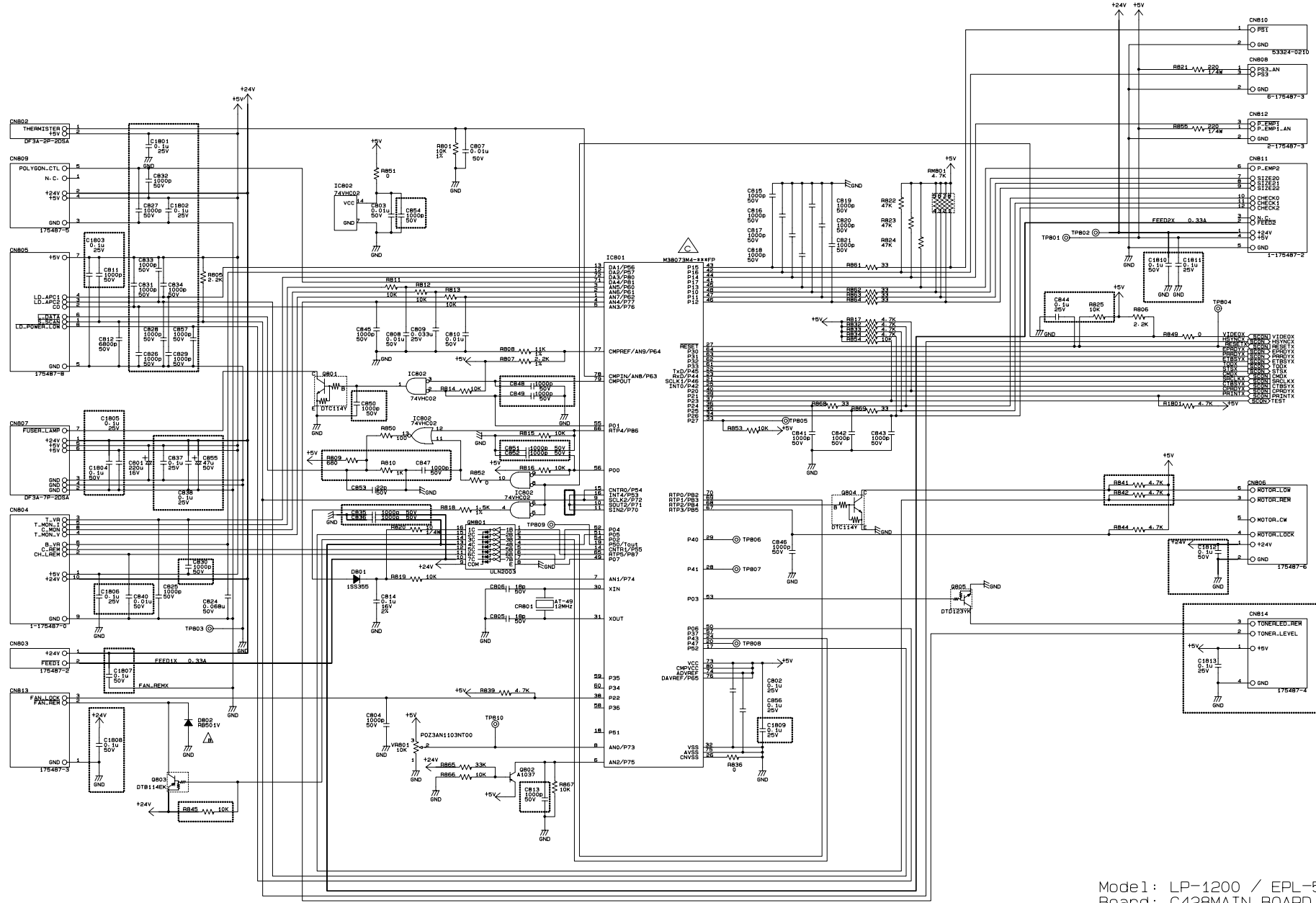
Model: LP-1200 / EPL-5900L
Board: C428MAIN BOARD
Sheet: 1 of 2
Rev. : B

Model: LP-1200 / EPL-5900L
Board: C428MAIN BOARD
Sheet: 1 of 2
Rev. : C

7.4 Exploded Diagrams

This section shows exploded diagrams of EPL-5900/EPL-5900L.

The exploded diagrams consist of the following components:

- ☐   Housing components
- ☐   Electrical components
- ☐   Engine - Paper transport mechanism
- ☐   Engine - Drive mechanism
- ☐   Engine - Fusing/Paper ejection mechanism
- ☐   Packing materials

C427-CASE-001

The parts to which no reference number
is assigned will not be available as
after-sale service parts.

1-3
1-2
1-1
1-4
1-6
1-6
1-7
1-28
1-6
1-6
1-26
1-5
1-10
1-8
1-24
1-29
1-4
1-25
3704
1-9
1-21
1-20
1-22
1-11
1-13
1-27
1-13
1-14
1-15
1-18
1-12
1-16
3705
1-15
1-17
1-19

FOR LP-2200/EPL-5900 NO.01   Rev.01 C427

C427-ELEC-001

The parts to which no reference number is assigned will not be available as after-sale service parts.

FOR LP-2200/EPL-5900 NO.05   Rev.01 C427
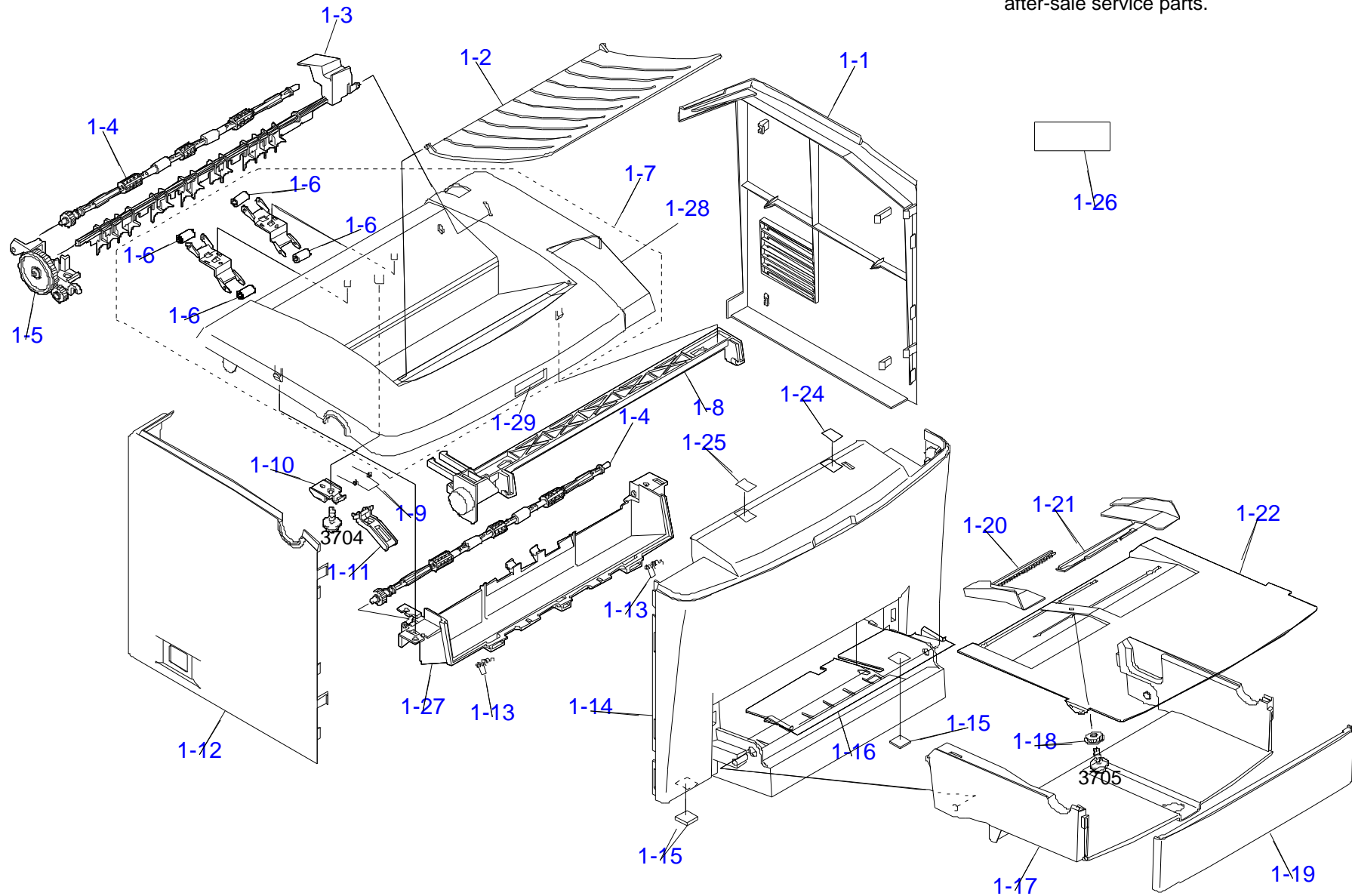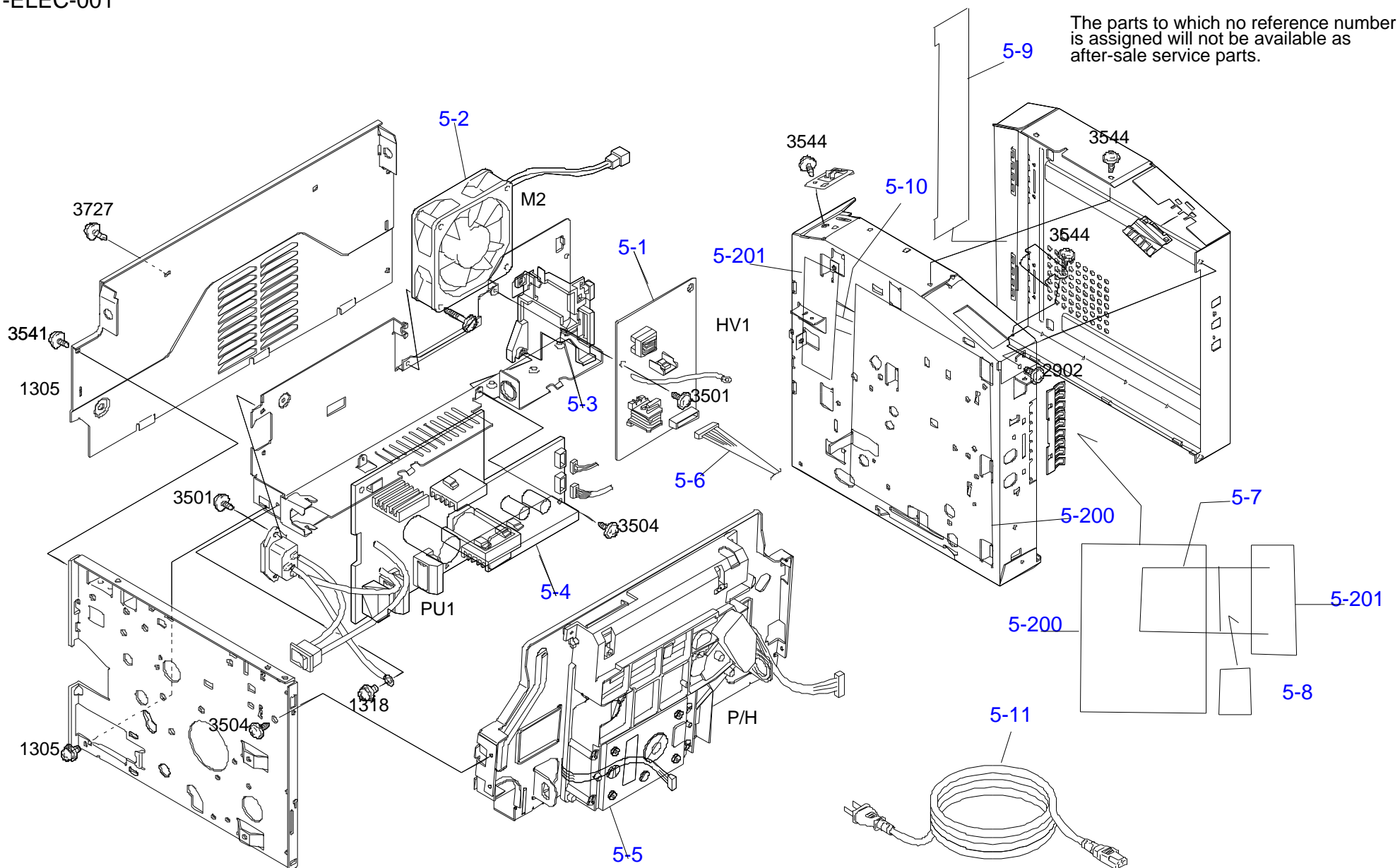
C427-MECH-001

The parts to which no reference number
is assigned will not be available as
after-sale service parts.

2-1
2-3
2-2
2-6
2-5
2-4
2-7
PE1
2-12
2-23
2-20
2-19
2-18
2-21
2-11
2-14
2-8
2-21
2-13
2-17
2-9
2-14
2-16
2-9
2-22
2-26
2-10
2-15
3704
2-25
SL1
2-15
2-24
2-27
3704
2-16
3704
3704
2-16

FOR LP-2200/EPL-5900 NO.02 Rev.01 C427   Rev.01 C427

C427-MECH-002

The parts to which no reference number is assigned will not be available as after-sale service parts.

3-2

PS3

3-3

3-5   3-1   3-10

3704   H1

3-6   3-8

3-9

3504   3704

3-4   3-7   3-15   3923   TH1   1305

3704   3-15

3-9

3-7   1305

3-5   3-8   3-9   TS1   3-11   3-18

3-9

3704   3-13   3-12

3-16   3504

1305   3704

3-17

1305   3-14

FOR LP-2200/EPL-5900 NO.03   Rev.01 C427

C427-MECH-003

4-4

4-3

4-2

3704

S2

4-12

3501

4-10

4-11

M1

3501

4-1

4-5

4-7

PS1

3704

4-6

4-7

3704

4-8

4-9

FOR LP-2200/EPL-5900 NO.04   Rev.01 C427

C427-PACK-001

08

04

09

12

02

10

05

03

01

11

06

07
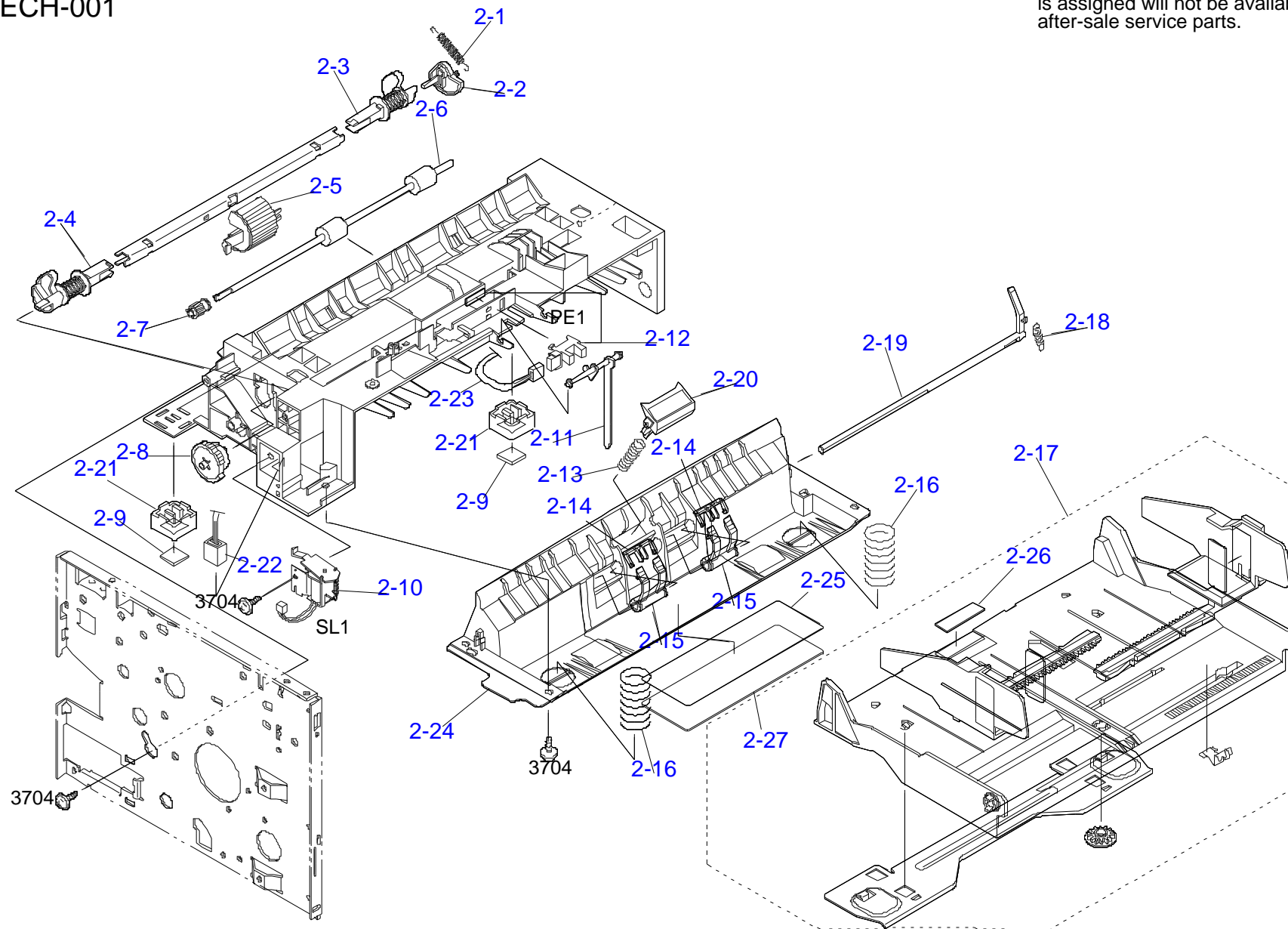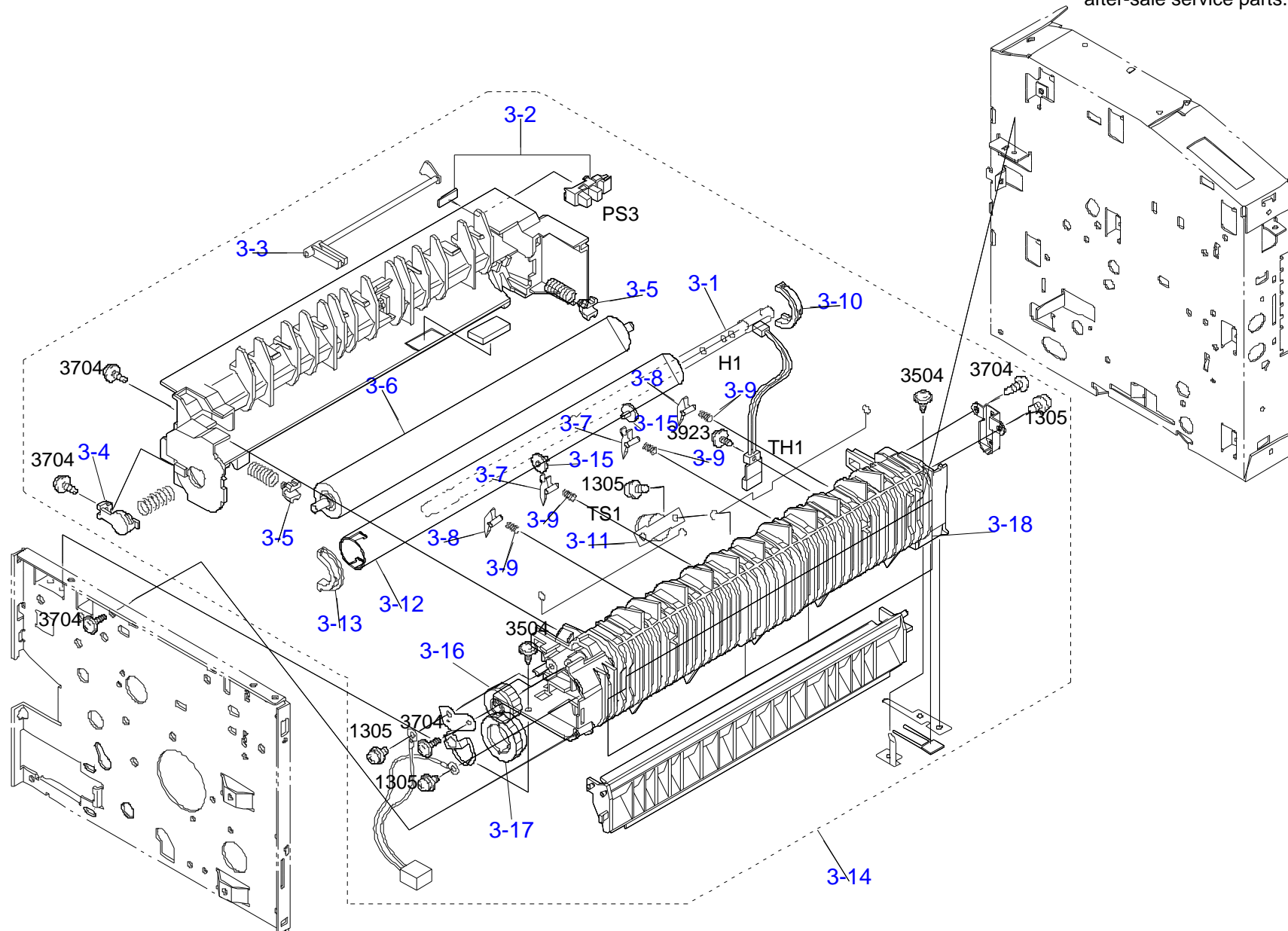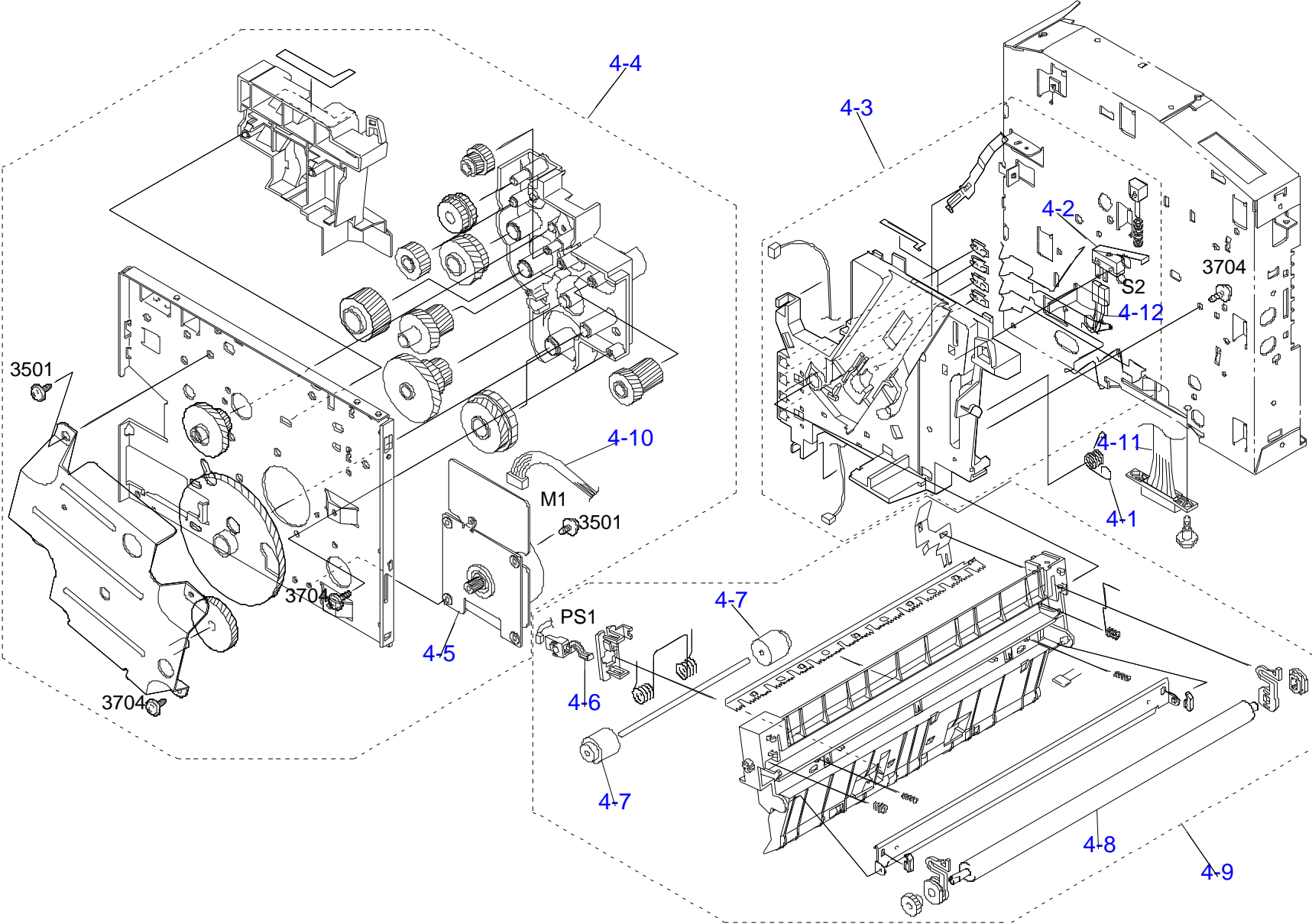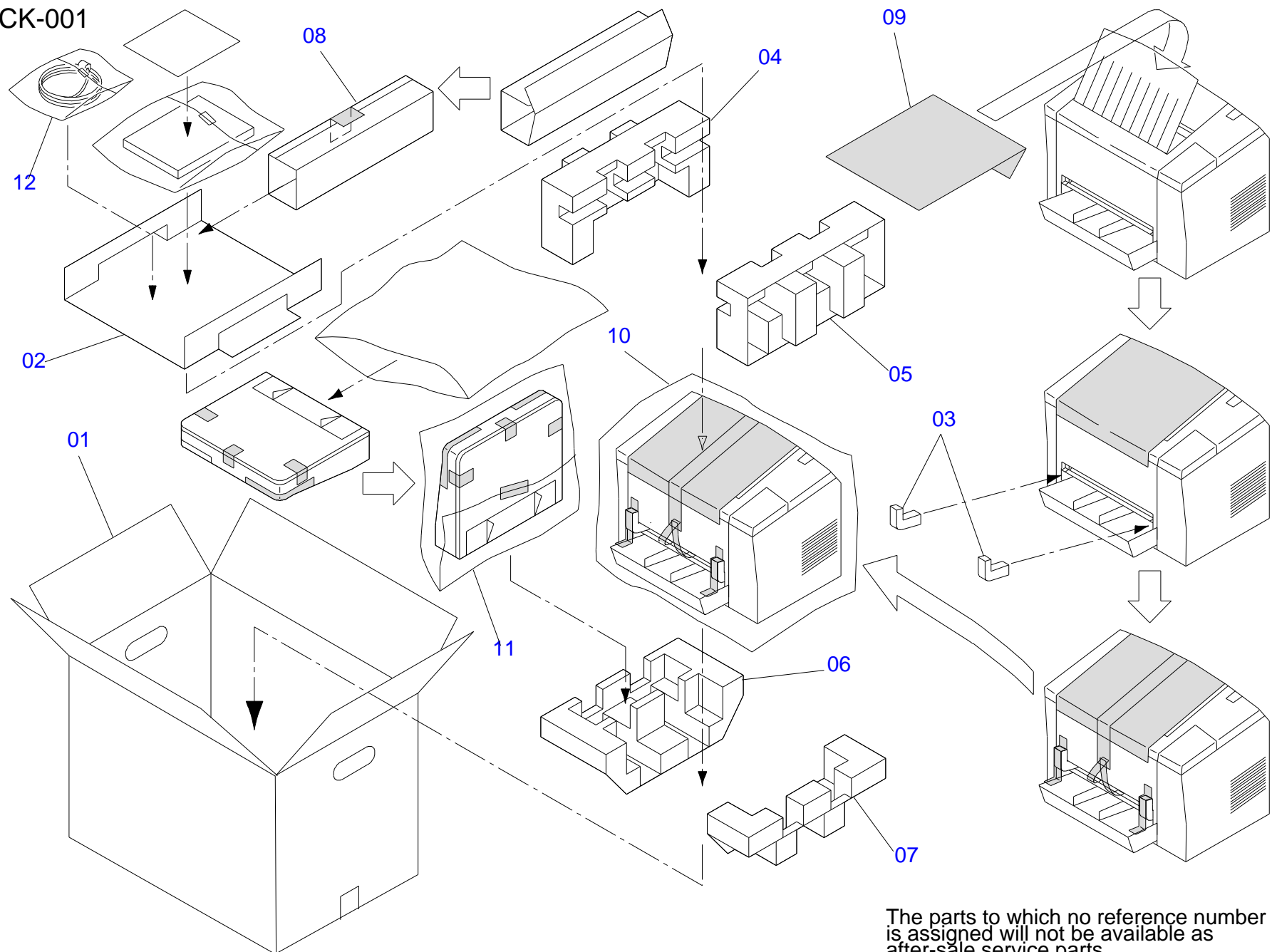
The parts to which no reference number
is assigned will not be available as
after-sale service parts.

FOR LP-2200/EPL-5900 NO.06 Rev.01 C427

C428-CASE-001

The parts to which no reference number
is assigned will not be available as
after-sale service parts.

1-3
1-2
1-1
1-4
1-6
1-7
1-28
1-26
1-6
1-6
1-6
1-5
1-29
1-4
1-8
1-24
1-25
1-23
1-10
1-9
3704
1-13
1-11
1-13
1-14
1-27
1-13
1-15
1-12
1-15

FOR LP-1200/EPL-5900L NO.01   Rev.01 C428

C428-ELEC-002

5-2

M2

3727

3544

5-10

3541

3544

5-1

5-201

HV1

1305

5-3

3501

2902

5-6

3501

5-10

3504

5-200

5-4

PU1

5-200

5-201

1318

P/H

3504

1305

5-5

5-11

FOR LP-1200/EPL-5900L NO.05 Rev.02 C428

The parts to which no reference numb
is assigned will not be available as
after-sale service parts.

2-1
2-3
2-2
2-6
2-5
2-4
2-7
PE1
2-12
2-18
2-19
2-23
2-20
2-21
2-11
2-14
2-13
2-8
2-21
2-9
2-14
2-17
2-9
2-14
2-16
2-22
2-10
2-15
2-26
3704
SL1
2-15
2-25
2-24
2-16
3704
2-27
3704
2-16
3704

FOR LP-1200/EPL-5900L NO.02   Rev.01 C428

The parts to which no reference number
is assigned will not be available as
after-sale service parts.

4-4

4-3

4-2

3704

S2

4-12

3501

4-10

4-1

M1

3501

3704

4-7

4-5

PS1

4-7

3704

4-6

4-7

4-8

4-9

FOR LP-1200/EPL-5900L NO.04   Rev.01 C428

C428-MECH-004

The parts to which no reference number is assigned will not be available as after-sale service parts.

3-2
PS3
3-3
3-5
3-19 3-1
3-10
3704
3-6
H1
3-8
3-9
3-7 3-15
3923
TH1
3704 1305
3704 3-4
3-7 3-15
1305
3-5
3-9 TS1
3504 3704
3-8 3-9
3-11
3-18
3-19
3-12
3-16
1305
3504
3-13
3704
1305 3704
3-17
1305
3-14

FOR LP-1200/EPL-5900L NO.03 Rev.02 C428

C428-PACK-001

12

04

09

02

05

10

01

03

06

07

FOR LP-1200/EPL-5900L NO.06   Rev.01 C428

The parts to which no reference number
is assigned will not be available as
after-sale service parts.

7.5 ASP List

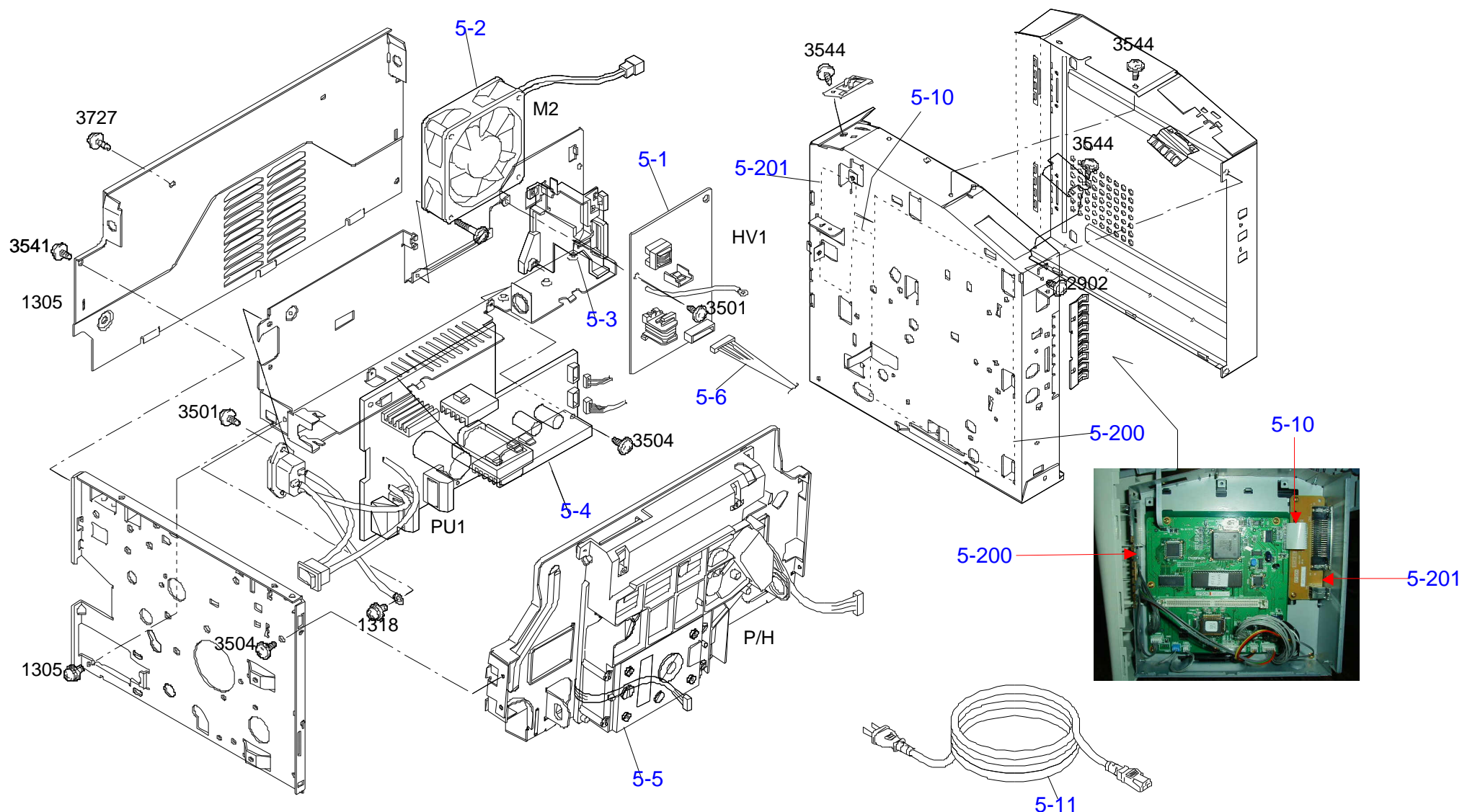This section shows the ASP list of EPL-5900/EPL-5900L.

EPL-5900

Table 7-8. ASP List - EPL-5900

Ref No.	Part Name
1−1	COVER
10−1	HOLDER
11−1	MEMBER
12−1	COVER
13−1	TORTION SPRING
14−1	FRONT COVER
15−1	RUBBER FOOT
16−1	TRAY
17−1	TRAY
18−1	GEAR
19−1	COVER
2−1	TRAY
20−1	REGULATION PLATE
21−1	REGULATION PLATE
22−1	COVER
24−1	LABEL
25−1	LABEL
26−1	LABEL
27−1	COVER
28−1	CONTROL PANEL
29−1	LOGO PLATE 10X40;C
3−1	GUIDE
4−1	RPLLER
5−1	GEAR ASSY
6−1	ROLL
7−1	TOP COVER ROLL ASSY
8−1	LEVER
9−1	TORSION SPRING
3704	TAPPING SCREW

Table 7-8. ASP List - EPL-5900

Ref No.	Part Name
3705	TAPPING SCREW
1318	SCREW
2902	SCREW
3541	TAPPING SCREW
3544	TAPPING SCREW
3727	TAPPING SCREW
1−5	HV TRANSFORMER
10−5	WIRE HARNESS
11−5	POWER CORD
2−5	FAN MOTOR
5−200	”BOARD ASSY.
5−201	”BOARD ASSY.
3−5	HOLDER
4−5	POWER SUPPLY 100V
5−5	PRINT HEAD ASSY
6−5	WIRE HARNESS ASSY
7−5	GUIDE RAIL
8−5	”GROUNDING SPRING
9−5	”COVER
B101	BEADS CORE
B102	BEADS CORE
B500	BEADS CORE
B501	BEADS CORE
C413	ELECTROLYTIC CAPACITOR
C511	ALUMINIUM ELECTROLYTIC CAPACITOR
C515	ALUMINIUM ELECTROLYTIC CAPACITOR
C517	ALUMINIUM ELECTROLYTIC CAPACITOR
C519	ELECTRIC ALMI CAPACTOR
C801	ELECTRIC ALMI CAPACITOR
CN201	CONNECTOR

Table 7-8. ASP List - EPL-5900

Ref No.	Part Name
CN300	"BOARD ASSY.
CN300	CONNECTOR
CN301	COINNECTOR
CN403	CONNECTOR
CN405	CONNECTOR
CN406	CONNECTOR
CN802	CONNECTOR
CN803	CONNECTOR
CN804	CONNECTOR
CN805	CONNECTOR
CN806	CONNECTOR
CN807	CONNECTOR
CN808	CONNECTOR
CN809	CONNECTOR
CN810	CONNECTOR
CN811	CONNECTOR
CN812	CONNECTOR
CN813	CONNECTOR
CRU100	OSCILLATOR
CRU500	QUARTZ OSCILLATOR
D801	DIODE
D802	SHOT KEY BARRIER DIODE
DM400	ZENER DIODE
IC100	MICROCONTROLLER
IC101	ASIC
IC102	EEP-ROM(BLANK)
IC400	CMOS IC
IC500	HYBRID IC
IC501	RESET IC
IC502	VOLTAGE REGULATOR

Table 7-8. ASP List - EPL-5900

Ref No.	Part Name
IC503	VOLTAGE REGULATOR
IC802	CMOS IC
JP102	JUMPER CONNECTOR(X601002000)
JP102	JUMPER CONNECTOR(X601002200)
Q400	TRANSISTOR
Q801	TRANSISTOR
Q802	TRANSISTOR
Q803	TRANSISTOR
Q804	TRANSISTOR
Q805	TRANSISTOR
QF400	FET
QM801	TRANSISTOR ARRAY
VR801	POTENTIOMETER
1305	SCREW
1−2	TENSION SPRING
10−2	SOLENIOD
11−2	ACTUATOR
12−2	PHOTO INTERRUPTER
13−2	PRESSURE SPRING
14−2	GUIDE
15−2	STOPPER
16−2	PRESSURE SPRING
17−2	REGULATING PLATE ASSY
18−2	TENSION SPRING
19−2	LEVER
2−2	CAM
20−2	SEPARATOR PAD
21−2	HOLDER
22−2	WIRE HARNESS ASSY
23−2	WIRE HARNESS ASSY

Table 7-8. ASP List - EPL-5900

Ref No.	Part Name
24−2	GUIDE
25−2	REINFORCE PLATE
26−2	FRICTION SHEET
27−2	SEAL
3−2	CAM
4−2	CAM
5−2	RPLLER
6−2	ROLLER
7−2	GEAR
8−2	GEAR
9−2	RUBBER FOOT
1−3	HEATER 120V
10−3	BUSHING
11−3	THERMAL SWITCH
12−3	FUSING ROLLER
13−3	BUSHING
14−3	FUSING UNIT 120V
15−3	ROLL
16−3	GEAR
17−3	GEAR
18−3	SEAL
19−3	BALL BEARING
2−3	PHOTO INTERRUPTER
3−3	ACTUATOR
4−3	HOLDER
5−3	BUSHING
6−3	FUSING ROLLER-RR
7−3	SEPARATOR
8−3	SEPARATOR
9−3	PRESSURE SPRING

Table 7-8. ASP List - EPL-5900

Ref No.	Part Name
3501	TAPPING SCREW
3504	TAPPING SCREW
3923	TAPPING SCREW
1−4	TORSION SPRING
10−4	WIRE HARNESS ASSY
11−4	WIRE HARNESS ASSY
12−4	WIRE HARNESS ASSY
2−4	SWITCH
3−4	I/C GUIDE ASSY
4−4	DRIVE GEAR ASSY
5−4	MOTOR
6−4	MICRO-SWITCH
7−4	ROLL
8−4	TRANSFER ROLLER
9−4	TRANSFER GUIDE ASSY
1−1	INDIVIDUAL CARTON BOX Latin120V/ETT
2−1	ACCESSORIES PAD
3−1	GUIDE FIX PARTS
4−1	CUSHION (UL)
5−1	CUSHION (UR)
6−1	CUSHION (BL)
7−1	CUSHION (BR)
8−1	SLEEVE
9−1	PROTECTION SHEET
10−1	POLY BAG
11−1	POLY BAG
12−1	POLY BAG
NONFIG	CUSHION
NONFIG	PROTECTION

EPL-5900L

Table 7-9. ASP-List - EPL-5900L

Ref No.	Part Name
1-1	COVER
10-1	HOLDER
11-1	MEMBER
12-1	COVER
13-1	TORTION SPRING
14-1	FRONT COVER
15-1	RUBBER FOOT
2-1	TRAY
23-1	TRAY
24-1	LABEL
25-1	LABEL
26-1	LABEL
27-1	COVER
28-1	CONTROL PANEL
29-1	LOGO PLATE 10X40;C
3-1	GUIDE
4-1	RPLLER
5-1	GEAR ASSY
6-1	ROLL
7-1	TOP COVER ROLL ASSY
8-1	LEVER
9-1	TORSION SPRING
3704	TAPPING SCREW
1318	SCREW
2902	SCREW
3541	TAPPING SCREW
3544	TAPPING SCREW
3727	TAPPING SCREW
1-5	HV TRANSFORMER

Table 7-9. ASP-List - EPL-5900L

Ref No.	Part Name
10-5	WIRE HARNESS
11-5	POWER CORD
2-5	FAN MOTOR
5-200	"BOARD ASSY.
5-201	"BOARD ASSY.
3-5	HOLDER
4-5	POWER SUPPLY 100V
5-5	PRINT HEAD ASSY
6-5	WIRE HARNESS ASSY
C3	ALUMINIUM ELECTROLYTIC CAPACITOR
C37	ALUMINIUM ELECTROLYTIC CAPACITOR
C38	ELECTRIC ALMI CAPACTOR
C801	ELECTRIC ALMI CAPACITOR
CN1	CONNECTOR
CN2	CONNECTOR
CN4	CONNECTOR
CN802	CONNECTOR
CN803	CONNECTOR
CN804	CONNECTOR
CN805	CONNECTOR
CN806	CONNECTOR
CN807	CONNECTOR
CN808	CONNECTOR
CN809	CONNECTOR
CN810	CONNECTOR
CN812	CONNECTOR
CN813	CONNECTOR
CR1	CRYSTAL
CR2	QUARTZ OSCILLATOR
CR801	QUARTZ OSCILLATOR

Table 7-9. ASP-List - EPL-5900L

Ref No.	Part Name
D801	DIODE
D802	SHOT KEY BARRIER DIODE
DM1	DIODE ARRAY
DM2	DIODE ARRAY
IC2	EP-ROM
IC2	IC SOCKET(X630114030)
IC21	ASIC
IC3	DRAM
IC5	GATE ARRAY
IC6	RESET IC
IC7	TTL IC
IC8	EEPROM
IC802	CMOS IC
IC9	VOLTAGE REGULATOR
JP1	CONNECTOR(X601000320)
JP1	JUMPER CONNECTOR(X601002000)
JP9	CONNECTOR(X601000320)
JP9	JUMPER CONNECTOR(X601002000)
L2	INDUCTOR
Q1	CHIP TRANSISTOR(X306271209)
Q2	CHIP TRANSISTOR(X306271209)
Q801	TRANSISTOR
Q802	TRANSISTOR
Q803	TRANSISTOR
Q804	TRANSISTOR
Q805	TRANSISTOR
QM801	TRANSISTOR ARRAY
VR801	POTENTIOMETER
1305	SCREW
1−2	TENSION SPRING

Table 7-9. ASP-List - EPL-5900L

Ref No.	Part Name
10−2	SOLENIOD
11−2	ACTUATOR
12−2	PHOTO INTERRUPTER
13−2	PRESSURE SPRING
14−2	GUIDE
15−2	STOPPER
16−2	PRESSURE SPRING
17−2	REGULATING PLATE ASSY
18−2	TENSION SPRING
19−2	LEVER
2−2	CAM
20−2	SEPARATOR PAD
21−2	HOLDER
22−2	WIRE HARNESS ASSY
23−2	WIRE HARNESS ASSY
24−2	GUIDE
25−2	REINFORCE PLATE
26−2	FRICTION SHEET
27−2	SEAL
3−2	CAM
4−2	CAM
5−2	RPLLER
6−2	ROLLER
7−2	GEAR
8−2	GEAR
9−2	RUBBER FOOT
1−3	HEATER 120V
10−3	BUSHING
11−3	THERMAL SWITCH
12−3	FUSING ROLLER

Table 7-9. ASP-List - EPL-5900L

Ref No.	Part Name
13−3	BUSHING
14−3	FUSING UNIT 120V
15−3	ROLL
16−3	GEAR
17−3	GEAR
18−3	SEAL
19−3	BALL BEARING
2−3	PHOTO INTERRUPTER
3−3	ACTUATOR
4−3	HOLDER
5−3	BUSHING
6−3	FUSING ROLLER-RR
7−3	SEPARATOR
8−3	SEPARATOR
9−3	PRESSURE SPRING
3501	TAPPING SCREW
3504	TAPPING SCREW
3923	TAPPING SCREW
1−4	TORSION SPRING
10−4	WIRE HARNESS ASSY
12−4	WIRE HARNESS ASSY
2−4	SWITCH
3−4	I/C GUIDE ASSY
4−4	DRIVE GEAR ASSY
5−4	MOTOR
6−4	MICRO-SWITCH
7−4	ROLL
8−4	TRANSFER ROLLER
9−4	TRANSFER GUIDE ASSY
1−1	"INDIVIDUAL CARTON BOX

Table 7-9. ASP-List - EPL-5900L

Ref No.	Part Name
2−1	ACCESSORIES PAD
3−1	GUIDE FIX PARTS
4−1	CUSHION UL
5−1	CUSHION UR
6−1	CUSHION BL
7−1	CUSHION BR
9−1	PROTECTION SHEET
10−1	POLY BAG
12−1	POLY BAG
NONFIG	CUSHION
NONFIG	PROTECTION