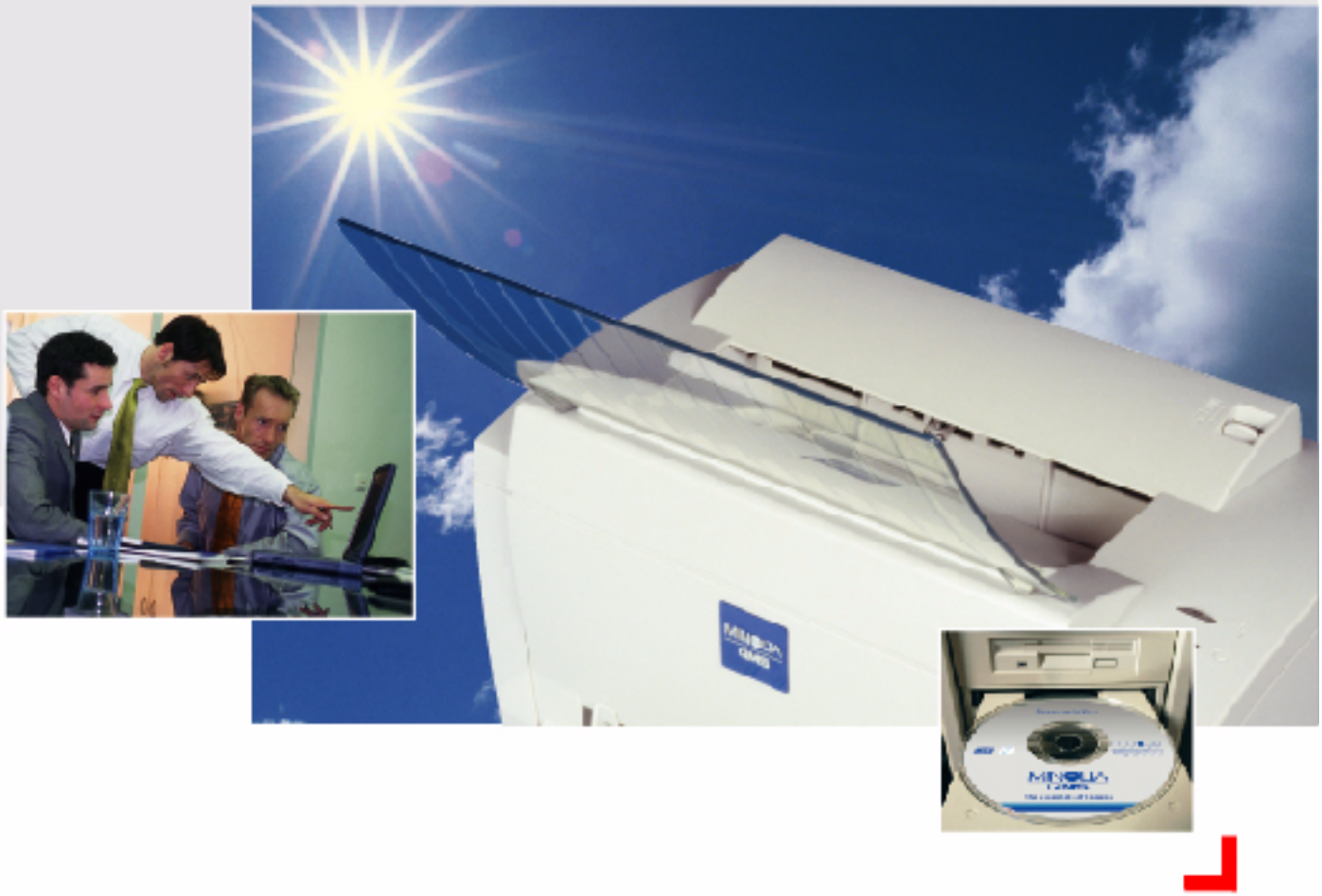
PagePro 1200 Series Service Manual



P/N 1750056-001

MINOLTA QMS

The essentials of imaging

Contents

1. 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

- 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.

⚠ CAUTION

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

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

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

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

1-1. Warning

⚠ 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.

⚠ WARNING

3. Do not throw toner or the toner bottle into a fire.

- Do not throw toner or the Toner Bottle (Imaging Cartridge, Toner Cartridge) into a fire. Toner expelled from the fire may cause burns.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

⚠ WARNING

9. Maintain a grounded connection at all times.

- Connect the power cord to an electrical outlet that is equipped with a grounding terminal.

10. 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.

11. 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.

1-2. Caution

⚠ CAUTION

1. Precautions for Service Jobs.

- A star 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.

⚠ CAUTION

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 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."

6. Precautions for storing the toner or imaging cartridge.

- Be sure to keep the toner or imaging cartridge out of the reach of children. Ingesting toner is harmful to your health.

1-3. Used Batteries Precautions

ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Germany

VORSICHT!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen gleichwertigen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

France

ATTENTION

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.
Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.
Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

Denmark

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Finland, Sweden

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

Norway

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

1-4. Other Precautions

- When handling circuit boards, observe the guidelines presented in “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.

1-5. 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.

1. 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.

2. 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.

3. Precautions for Service

- 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.

4. Precautions for Dis/Reassembly

- Be sure to unplug the printer from the outlet before attempting to service the printer.
- Generally, do not to operate the printer anytime during disassembly. If it is absolutely necessary to run the printer 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 printer has been unplugged from the wall outlet.
- While the product is energized, do not unplug or plug connectors into the circuit boards or harnesses.
- Never use flammable sprays near the printer.
- 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.

5. 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.

6. Handling of PWBs

During Transportation/Storage

- P.W. Boards should be left in antistatic bags during transportation and storage.
- 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.

7. Handling of Other Parts

- The magnet roller generates a strong magnetic field. Keep it away from watchs, floppy disks, magnetic cards, or CRT tubes.

8. Handling of the Imaging Cartridge

During Transportation/Storage

- The storage temperature is in the range between –20 °C and +40 °C.
- Do not leave the Imaging Cartridge in a hot car for an extended period of 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, or other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

1-6. Safety information

(1) 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.

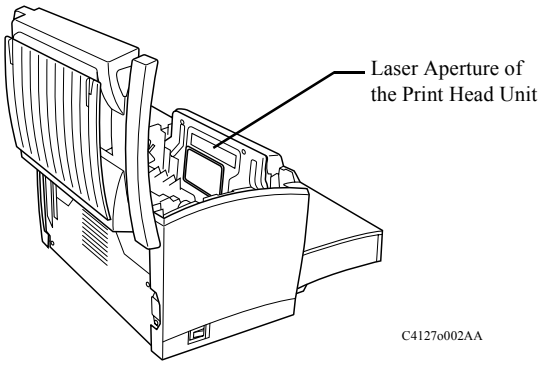
(2) Internal Laser Radiation

Semiconductor Laser	
Maximum average radiation power(*)	PagePro 1200W: 27µW PagePro 1250E: 35µW
Wavelength	PagePro 1200W: 770-810nm PagePro 1250E: 770-795nm

*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.

PagePro 1250E shown below



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 Standard 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 13 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

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	PagePro 1200W: 770-810nm PagePro 1250E: 770-795nm

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	PagePro 1200W: 770-810nm PagePro 1250E: 770-795nm

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	PagePro 1200W: 770-810nm PagePro 1250E: 770-795nm

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	PagePro 1200W: 770-810nm PagePro 1250E: 770-795nm

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

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

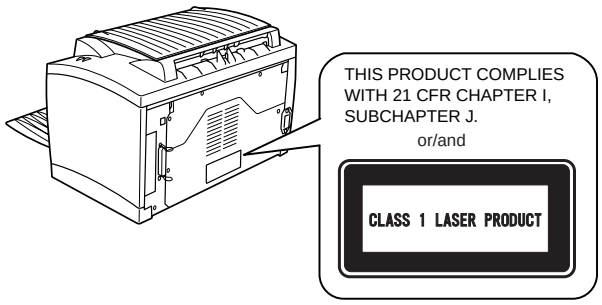
Norway

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	PagePro 1200W: 770-810nm PagePro 1250E: 770-795nm

1-7. Laser Safety Label

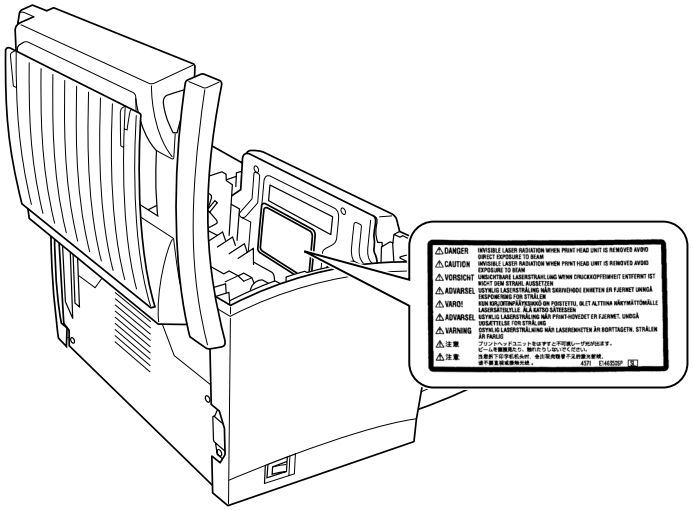
• A laser safety label is attached to the outside of the machine as shown below.



C4127o0559AA

1-8. Laser Caution Label

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



C4127o502AA

1-9. PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- 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.

2. Installation

2-1. Installation Environment

When installing the printer, please avoid the types of locations listed below, both for safety considerations and to avoid breakdowns.

- Areas with high temperatures or humidity, or with low temperatures and humidity
- Areas where the temperature and/or humidity fluctuate sharply
- Places where the printer will be in direct sunlight
- Areas near a cooler, heater, ventilation opening or in the direct path of wind
- Areas near heaters or other heat-generating equipment
- Locations with poor ventilation
- Areas where water is likely to fall on the equipment or electrical short is likely
- Areas where corrosive gases (ammonia gases, etc.) are present
- Areas where there is a high volume of dust, dirt and vibration
- Areas where the floor is not sufficiently strong or is not level
- Areas containing volatile and flammable materials and curtains

2-2. Usage Environment

In order to make sure the printer functions properly, please make sure the ambient environment satisfies the following requirements:

Temperature: 10-35°C	Temperature fluctuation: ±10°C per hour or less
Humidity: 15-85%RH	Humidity fluctuation: ±20% RH per hour or less

2-3. Installing the Power Supply

Do not plug the Power Cord into a power outlet via an extension cord supplying electricity to more than one unit.
Do not connect the printer to a power outlet used for other equipment or appliances. More than one appliance connected to a single outlet could cause a drop or surge in the electrical supply, resulting in operational problems for the printer.

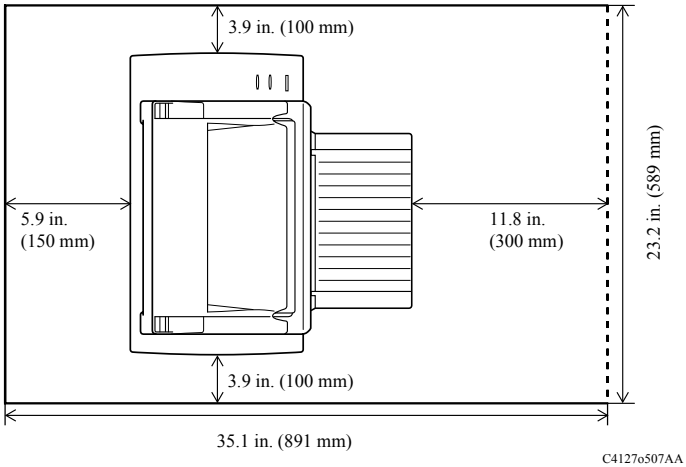
Voltage fluctuation	Specified voltage ±10%
Frequency fluctuation	Specified frequency ±3Hz

The following items should be checked periodically:

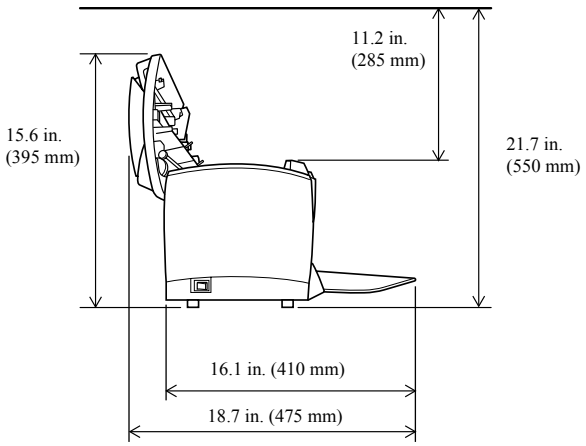
- Make sure the power supply plugs do not feel warm.
- Power supply cords should be free of cracks and scratches.
- Power supply plugs should be firmly plugged into outlets.

2-4. Installation Space

PagePro 1200W shown below

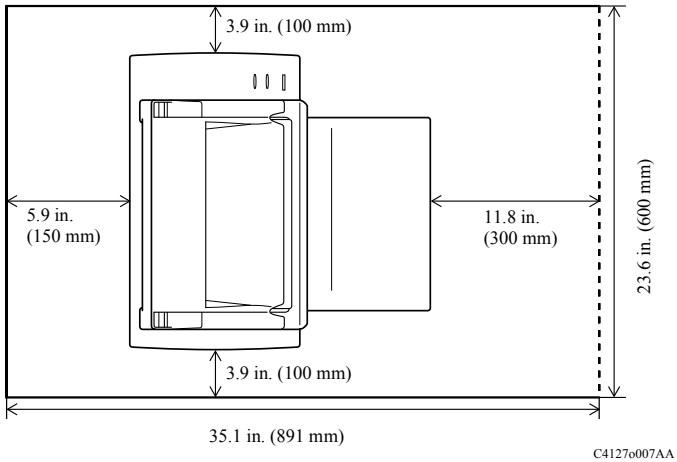


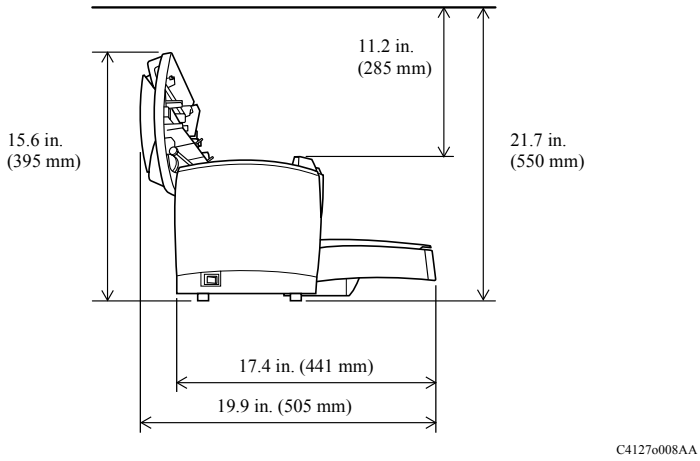
C4127o507AA



C4127o508AA

PagePro 1250E shown below





3. General Information

3-1. Specifications

(1) Printer

Type	Desk-Top Laser Beam Printer
Printing System	Electrostatic dry powdered imaging system
Exposure System	Laser diode + Polygon Mirror scanning
Resolution	PagePro 1200W: 300 DPI (dot/inch), 600 DPI (dot/inch), 1200 DPI (dot/inch) PagePro 1250E: DPI (dot/inch), 1200 DPI (dot/inch)
Media Size	A4L (210 x 297 mm) JIS B5L (182 x 257 mm) A5 L (148 x 210 mm)*1 LetterL (8.5 x 11 in) LegalL (8.5 x 14 in) ExecutiveL (7.25 x 10.5 in) Half Letter (5.5 x 8.5 in)*1 Chinese 16K (185 x 260 mm)*1 Chinese 32K (130 x 185 mm)*1 Envelope (Commercial 10, Monarch, DL, C5, C6, B5, Choukei-3Gou, Choukei-4Gou)*1 Postcard*1 Custom paper (3.0-8.5 in x 5.0-14.0 in; 76-216 x 127-356 mm)*1 *1: Multi-purpose Tray only
Media Type	Plain paper (16 to 24 lbs; 60-90 g/m^2), transparencies*1, envelopes*1,thick paper*1,postcard*1 *1: Multi-purpose Tray only
First Printing Time	At 300 dpi: 15 sec. or less (A4 or Letter) (PagePro 1200W only) At 600 dpi: 15 sec. or less (A4 or Letter) At 1200 dpi: 24 sec. or less (A4 or Letter)
Multi Print Speed	At 300 dpi: 12 prints/min. or more (A4 or Letter) (PagePro 1200W only) At 600 dpi: 12 prints/min. or more (A4 or Letter) At 1200 dpi: 6 prints/min. or more (A4 or Letter)
Warm-up Time	Within 21 sec. (when the rated voltage is supplied at 23°C) Recovery time from Save mode: within 8 sec. (when the rated voltage is supplied at 23°C)
System Speed	PagePro 2100W: 73.90 mm/sec PagePro 2150E: 94.886 mm/sec PagePro 2100W: 36.95 mm/sec (during half-speed control) PagePro 2150E: 44.443 mm/sec (during half-speed control)
Paper Feeding System	2-way system (Maximum 3-way)*2

	Multi-purpose Tray (plain paper: 150 sheets) Manual Feed Tray (1 sheet) Second Paper Cassette Unit (plain paper: 500 sheets) *2: Expandable to 3-way system when the optional Second Paper Cassette Unit is installed.
Paper Exit System	Face down (maximum: 100 sheets) Face up (maximum: 20 sheets)
Drum Charging System	Rotating brush and pre-charge film system
Developing System	Single element developing system FMT (Fine Micro Toning) system
Density Control	Developing bias adjusting system
Image Transfer System	Transfer Roller system
PC Drum	OPC (Organic Photoconductor)
Drum Cleaning System	Non-cleaner system
Paper Separating System	Curvature separating system and charge neutralizing pin
Fusing System	Heated roller system
Dimensions	**PagePro 1200W (closed face-down tray):** Width:15.3 in (389 mm) Depth:17.4 in (253 mm) Height:10.2 in (262 mm) **PagePro 1250E (closed face-down tray):** Width:15.3 in (389 mm) Depth:17.1 in (435 mm) Height:10.4 in (263 mm)
Weight	Approximately 15.4 lbs (7.0 kg) (without cartridges) Drum Cartridge: approx. 0.66 lbs (0.3 kg) Toner Cartridge:approx. 1.1 lbs (0.5 kg)
Power Supply Voltage	AC100 V ± 10%, AC110-127 V (AC110 V - 10%, AC127 V + 6%), AC220-240 V ± 10%
Frequency	50/60 Hz ± 3 Hz
Power Consumption	Operating: 810 W or less (100 V area), 840 W or less (120 V area), 850 W or less (220-240 V area) Continuation printing (average): 330 W or less Standby (fuser off): 15 W or less Standby (fuser on): 50 W or less (average) Standby (sleep): 15 W or less
Acoustic noise	**PagePro 1200W**: Printing: 62 dB or less*3 **PagePro 1250E**: Printing: 67 dB or less*3 Standby: 30 dB or less*3 *3; Supporting Blue Angel
Operating Environment	50° to 95°F (10° to 35°C),15 to 85%
Drum Cartridge Life	20,000 prints or more (in continuous printing) 15,000 prints or more (in single printing) *Black/White ratio=5%

Toner Cartridge Life (replacement T/C)	6,000 prints or more (in continuous printing) 4,800 prints or more (in single printing) *Black/White ratio=5%
Toner Cartridge Life (starter T/C)	1,500 prints or more (in continuous printing) 1,200 prints or more (in single printing) *Black/White ratio=5%
Options	Face-up Tray Second Paper Cassette Unit **PagePro 1250E only:** Expansion memory (SDRAM-DIMM)

(2) Second Paper Cassette Unit (Option)

Name	Second Paper Cassette Unit
Paper Cassette	Standard cassette: Letter (for U.S.A), A4 (for Europe) Option cassette: Legal, Executive, JIS B5
Media Type	Plain paper (16 to 24 lbs; 60-90 g/m^2)
	Recycled paper(16 to 24 lbs; 60-90 g/m^2)
Cassette Capacity	Up to 500 sheets
Paper Feeding System	One-way system with paper separation by means of paper separators
Power Source	supply from main unit (DC24V, DC5V)
Drive Source	supply from main unit
Dimensions	Width: 15.0 in (382 mm) Depth: 12.0 in (305 mm) Height: 5.3 in (135 mm) (without Paper Cassette)
Weight	approx. 4 lbs (1.8 kg) *without Paper Cassette

(3) Controller

PagePro 1200W:

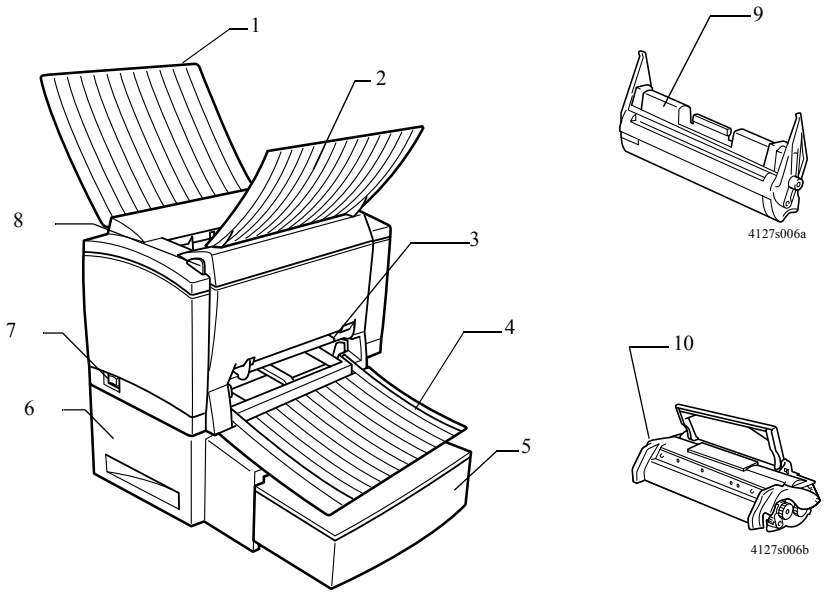
CPU	M38073M4
ASIC	N1-Chips(Naltec original ASIC)
Imaging Method	Band Buffer method Run-length compression
Memory configuration	Standard ROM:64KB Standard RAM:8MB
Standard Interface	IEEE1284 Parallel (Compatible/Nibble/ECP) USB (Revision 1.1 compliant)
Toner Saver Mode	On / OFF
Resolution	300 x 300 dpi, 600 x 600 dpi, 1200 x 1200 dpi (at half speed)
Printer Driver	Standard (GDI) driver: For Windows95/98/NT4.0/2000/Me /WindowsXP

PagePro 1250E:

ASIC	Destiny ASIC D8401A 75MHz
Imaging Method	Band Buffer method
Memory configuration	Standard ROM: 4MB Standard RAM: 16MB(64Mbit SDRAM: 1M x 16 bit x 4)
DIMM specifications	Capacity: 16, 32, 64, 128 MB Function type: Burst mode CAS Latency: 2 or 3 ECC: None (Usable even with ECC) Access speed: 10 ns Number of pins: 168 Module type: SDRAM-DIMM (Double In-line Memory Module) Operating voltage: 3.3V
Standard Interface	IEEE1284 Parallel (Compatible/Nibble/ECP) USB (Revision 1.1 compliant)
Fine-ART Mode	Equipping a function equivalent with HP's Ret
Toner Saver Mode	Function to regulate the toner consumption
Image Density	Function to regulate the toner consumption
Resolution	600 x 600 dpi, 1200 x 1200 dpi (at half speed)
Emulation	PCL XL 2.0, PCL 5e, Adobe PostScript 2.0 (Compatible with HP LaserJet 1200)
Printer Driver	Standard (PCL5e) driver: For Windows95/98/NT4.0/2000//Me Enhanced (PCLXL) driver: For Windows95/98/NT4.0/2000/Me PS driver: For Windows95/98/NT4.0/2000/Me, Macintosh OS 9.x/X
Printer Resident Fonts	1 bitmap font 80 outline fonts(35 Agfa Intellifont, 10 True Type fonts, 35 PS fonts)
Test Print	Configuration Page Demo Page PCL Resident font List PS Resident font List

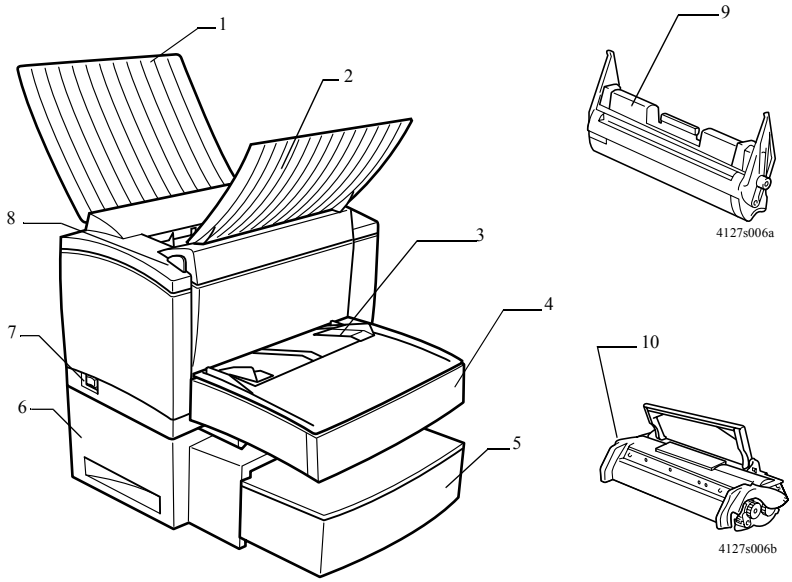
3-2. Parts Identification

PagePro 1200W shown below



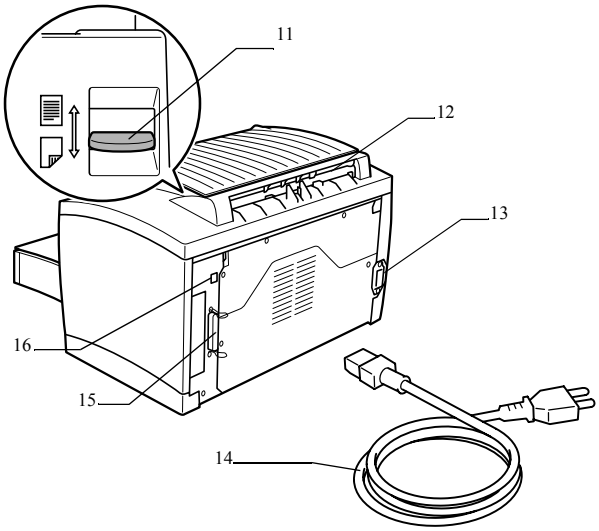
1 Face-up Tray
2 Face-down Tray
3 Manual Feed Tray
4 Multi-purpose Tray
5 Paper Cassette (Option)
6 Second Paper Cassette Unit (Option)
7 Power Switch
8 Top Cover Release Button
9 Drum Cartridge
10 Toner Cartridge

PagePro 1250E shown below



1 Face-up Tray
2 Face-down Tray
3 Manual Feed Tray
4 Multi-purpose Tray
5 Paper Cassette (Option)
6 Second Paper Cassette Unit (Option)
7 Power Switch
8 Top Cover Release Button
9 Drum Cartridge
10 Toner Cartridge

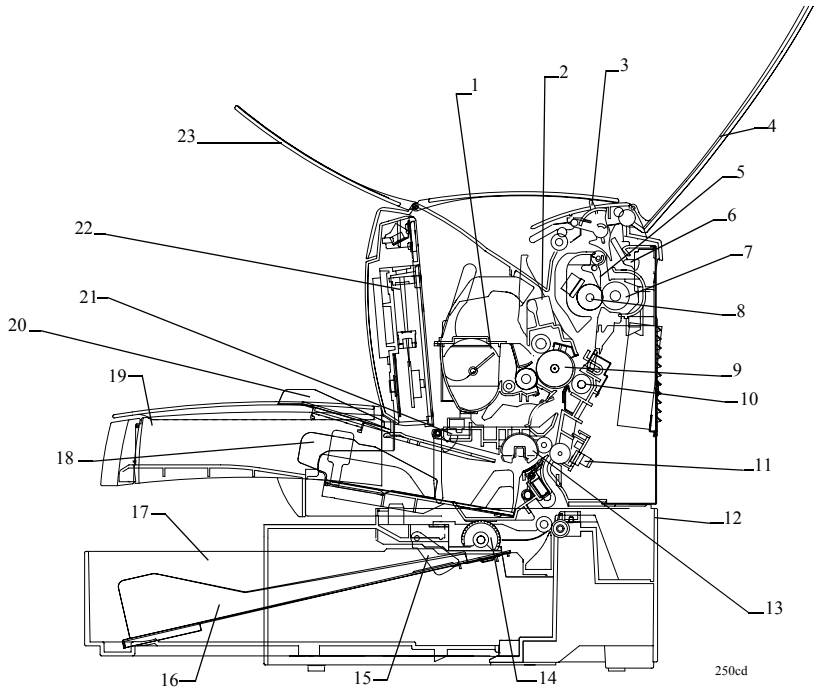
PagePro 1250E shown below



11 Face-up / Face-down Selection Switch
12 Face-up Exit Roller
13 Power Cord Socket
14 Power Cord
15 Parallel Interface Connector
16 USB Interface Connector

3-3. Components Layout

PagePro 1250E shown below.
Note: The PagePro 1200W multipurpose tray has no cover.



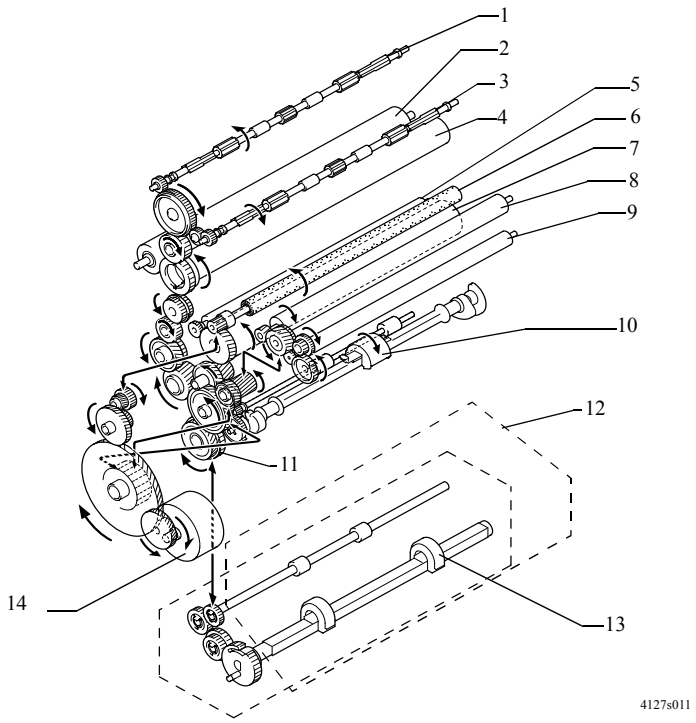
1	Toner Cartridge	13	Paper Take-up Roller
2	Drum Cartridge	14	Second Paper Take-up Roller *
3	Face-up / Face-down Selection Switch	15	Paper Empty Detecting Lever *
4	Face-up Tray *	16	Paper Lift-up Plate *
5	Fusing Separator	17	Paper Cassette *
6	Paper Exit Sensor (PS3)	18	Paper guide
7	Backup Roller	19	Multi-purpose Tray
8	Heat Roller	20	Paper guides for manual feed tray
9	PC Drum	21	Paper Empty Sensor (PE1)
10	Image Transfer Roller	22	Print Head Unit
11	Paper Take-up Sensor (PS1)	23	Face-down Tray
12	Second Paper Cassette Unit *		

* 4, 12, 14, 15, 16, and 17: Options

3-4. Drive Section

(1) Overview

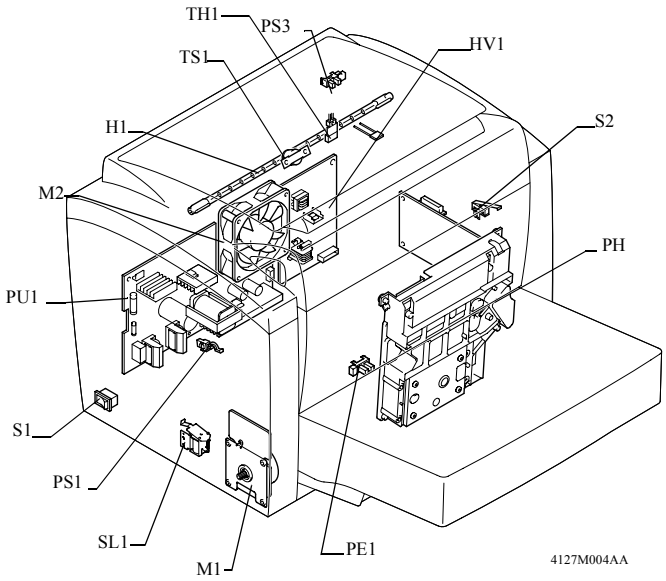
The Main Motor (M1) transmits the drive to the rollers of the printer and the Second Paper Cassette Unit via each gear as shown below.



1	Paper Exit Roller (Face-up)	8	Sleeve Roller
2	Backup Roller	9	Toner Transport Roller
3	Paper Exit Roller (Face-down)	10	Paper Take-up Roller
4	Heat Roller	11	Drive Transmission Gear
5	Image Transfer Roller	12	Second Paper Cassette Unit Section (option)
6	Drum Charge Brush	13	2nd Paper Take-up Roller
7	PC Drum	14	Main Motor (M1)

3-5. Electrical Components Layout

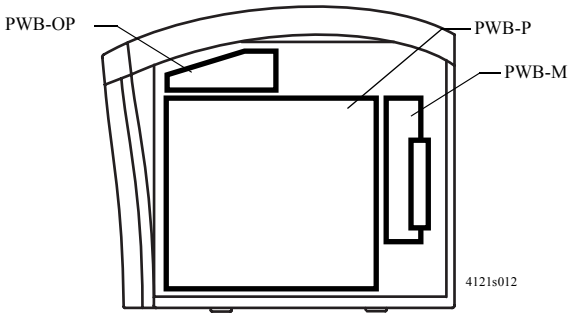
(1) Printer



M1	Main Motor	S2	Interlock Switch
M2	Cooling Fan Motor	PE1	Paper Empty Sensor
H1	Heater Lamp	PS1	Paper Take-up Sensor
TH1	Thermistor	PS3	Paper Exit Sensor
TS1	Thermostat	SL1	Paper Take-up Solenoid
PH	Print Head Unit	PU1	Power Unit
S1	Power Switch	HV1	High Voltage Unit

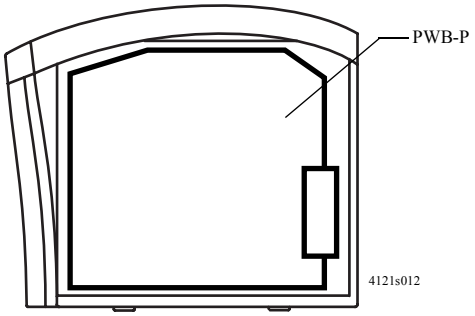
(2) Controller

PagePro 1200W shown below



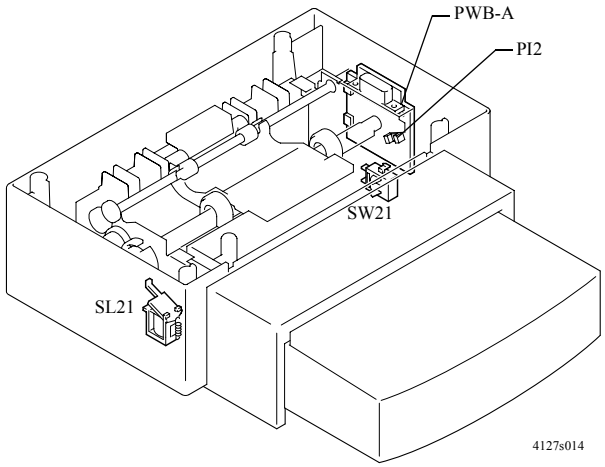
PWB-P	Controller Board
PWB-M	Interface Board
PWB-OP	Operation Panel Board

PagePro 1250E shown below



PWB-P	Controller Board

(3) Second Paper Cassette Unit (option)



PI2	Paper Empty Sensor
PWB-A	Connecting Board
SL21	Paper Take-up Solenoid
SW21	Cassette Type Detecting Switch

3-6. Electrical Parts Function

(1) Printer

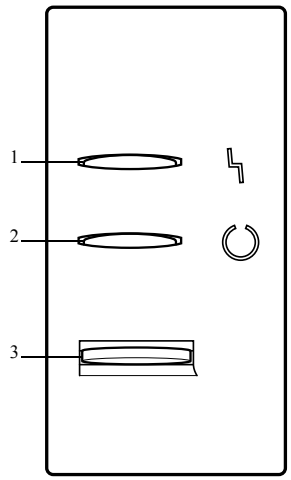
Symbol	Name	Function
H1	Heater Lamp	A halogen lamp that supplies heat to the Fusing Rollers (600 W)
HV1	High Voltage Unit	**Supplies power to the following sections:** - Drum Charge Brush: Charged voltage - Developing Sleeve Roller: Developing bias voltage - Developing Toner Regulation Plate: **Developing blade voltage** - Developing Toner Collecting Plate: Developing **Lower Seal voltage** - Image Transfer Roller: Image transfer voltage
M1	Main Motor	Provides the drive source for the printer.
M2	Cooling Fan Motor	Exhausts heat from the body
M3	Polygon Motor (Inside of the Print Head Unit)	A regular heptagon polygon mirror is installed, and rotates at high speed and makes the laser scan in scanning direction.
PE1	Paper Empty Sensor	Detects that a sheet of paper is taken up. The signal is L when paper is detected.
PS1	Paper Take-up Switch	Detects that a sheet of paper is taken up. **PagePro 1200W:** The signal is L when paper is detected. **PagePro 1250E:** The signal is H when paper is detected.
PS3	Paper Exit Sensor	Detects when the paper is fed out. **PagePro 1200W:** The signal is L when paper is detected. **PagePro 1250E:** The signal is H when paper is detected.
PU1	Power Unit	Converts the power voltage from AC voltage into DC voltage and supplies that to H1.
PWB-P	Controller Board	Communicates with the personal computer and controls all printer operation.
PWB-LD2	Laser Diode Drive Board (Inside of the Print Head Unit)	Detects the start point of printing via the laser diode and SOS sensor, and illuminates the PC Drum with the laser beam according to the image signals.
S1	Power Switch	Turns ON or OFF the printer.
S2	Interlock switch	Detects the opening or closing of the Top Cover. Cuts output voltage (except 5 VDC) when the Top Cover is open.
SL1	Paper Take-up Solenoid	Transmits the drive of the Main Motor to the Paper Take-up Roller.
TH1	Thermistor	Detects the temperature of the Heat Roller, measures the temperature on the surface of the Heat Roller and sends to the Heater control circuit.
TS1	Thermostat	Cuts power to the Heater Lamp (H1) when overheating (215°C) is detected at the Fusing Section.

(2) Second Paper Cassette Unit (option)

Symbol	Name	Function
SL21	Paper Take-up Solenoid	Controls gears and clutches to transmit the drive from the Main Motor to Paper Take-up Rollers. The drive is transmitted when the solenoid is energized.
SW21	Cassette Type Detecting Switch	Triple push switches for detecting the cassette type according to the paper size.
PI2	Paper Empty Sensor (on the PWB-A)	Detects the presence of paper. The signal is L when the paper is detected.
PWB-A	Connecting Board	Sends/receives power and control signals from the printer to/from components in the Second Paper Cassette Unit.

3-7. Explanation of Control Panel

The control panel has two indicator lights (LEDs) and one button.



C4127o006AA

1 Error indicator (orange)
2 Ready indicator (green)
3 Panel button

(1) Indicator Lights

Different combinations of the two indicator lights indicate the current printer status and let the user know what the printer is doing. The details of the current printer status appear on the host computer.

(2) Indicator Status

Ready indicator (green)	Error indicator (orange)	Condition
Off	Off	Printer is off.
On	Off	Printer is ready to print.
Rapid blinking	Off	Printer is warming up.
Blinking	Off	Receiving data
		Processing data
		Printing
On	On	Power on initialize
		Cancelling a print job
		Resetting a counter
Slow blinking	Off	Power save mode
Rapid blinking	Rapid blinking	Reset mode
		PagePro 1250E: Demo page/Configuration page select mode
Blinking	Blinking	Memory overflow or print job is too complex.
Rapid blinking alternately		No paper in paper feed tray specified in printer driver.
		Paper size error
		Waiting for paper to be loaded into Tray 1 during manual duplex printing
		PagePro 1200W: Waiting for the proof to be approved
Off	Slow blinking	Paper empty
Off	Blinking	Paper misfeed
Off	On	Top cover is open
Off*	Rapid blinking	*FATAL ERROR 01 Main Motor error
		*FATAL ERROR 02 Polygon Motor error
		*FATAL ERROR 03 Fuser Fan error
		*FATAL ERROR 04 H.V. error
		*FATAL ERROR 05 Laser error
		*FATAL ERROR 06 Fuser Warmup error
		*FATAL ERROR 07 Fuser Temperture LOW error
		*FATAL ERROR 08 Fuser Overheat error
		*FATAL ERROR 09 Engine I/F error
		*FATAL ERROR 20 Controller Memory error
		*FATAL ERROR 11 Controller SIMM error **(PagePro 1250E)**
		*Fatal Error 21 Controller DIMM Error error **(PagePro 1200W)**

* Displayed in the Status Monitor (within the printer status window box) of the PC.

(3) Control Panel Button Function

The panel button is used to perform the various operations as detailed below according to the status of the printer:

- reset the counter
- cancel a print job
- print out the configuration page (PagePro 1250E only)
- continue a print job after an error message
- reset the printer (PagePro 1250E only)

Function	Explanation
Reset the counter	Use the following procedure whenever you want to reset the counter. 1. Turn off the printer. 2. While holding down the Panel button, turn on the printer. The green "Ready" indicator begins to blink. 3. Keep the Panel button held down, and the "Ready" indicator will start to blink. After the "Ready" indicator has blinked for about 5 seconds, release the Panel button. All two indicators begin to blink. After all the indicators blink, the printer enters the counter reset mode. Refer to P.32.
Job Cancel	Use the following procedure whenever you want to cancel the current job. 1. While data is being processed or printed (When the green "Ready" indicator is blinking), hold down the Panel button for more than 5 seconds. 2. Release the Panel button after both indicators light up. The current print job has now been cancelled.
Print Configuration Page	Use the following procedure whenever you want to configuration for printer. 1. Make sure that: • the orange "Error" indicator is off, and the green "Ready" indicator is on (but not blinking). 2. Briefly press the panel button. All indicators blink rapidly. 3. Press the Panel button. The page that is printed depends on the number of times that the Panel button is pressed. • If the Panel button is pressed two more times, the configuration page is printed. • If the Panel button is pressed three more times, the PCL font list is printed. • If the Panel button is pressed four more times, the PS font list is printed.
Continue a print job after an error message	Continue the print job after correcting the following types of errors: • when the print job is too complex and the memory capacity of the printer is inadequate • when there is no more paper in the feed trays • when paper of a different format to that set in the printer driver was fed into the printer 1. Check that one of the above errors has occurred. 2. Press the panel button in order to operate the page feed. The print job continues.
Reset the printer	Initialize the settings to factory default. 1. Turn OFF the Power Switch. 2. Open the Top Cover and, holding down the panel button, turn ON the Power switch. 3. Keep pressing the panel button for 20 sec. or more. (The two LED indicators flash off and on at a slow pace and then only the Error indicator lights up steadily.) 4. Release the panel button and close the Top Cover.

(4) To Reset the Counter of the Toner Cartridge

Perform the following procedure to reset the toner cartridge counter after you replace the toner cartridge.

1. Turn off the printer.
2. While holding down the panel button, turn on the printer.
   The green “Ready” indicator begins to blink.
3. Keep the panel button held down, and the “Ready” indicator will start to blink. After the “Ready” indicator has blinked for about 5 seconds, release the panel button.
   All two indicators begin to blink.
4. After confirming that all the indicators are blinking, press and hold down the panel button again for at least 5 seconds.
   Both indicators light up for about 5 seconds, and then the two indicators begin to blink.
   The counter for the toner cartridge has now been reset.
5. Turn the printer off and then on again.
   Once the green “Ready” indicator remains on permanently, the printer is again in Standby mode.

(5) To Reset the Counter of the Drum Cartridge

Perform the following procedure to reset the drum cartridge counter after you replace the drum cartridge.

1. Turn off the printer.
2. While holding down the panel button, turn on the printer.
   The green “Ready” indicator begins to blink.
3. Keep the panel button held down, and the “Ready” indicator will start to blink. After the “Ready” indicator has blinked for about 5 seconds, release the panel button.
   All two indicators begin to blink.
4. After confirming that all the indicators are blinking, briefly press the panel button.
   Both indicators light up for about 5 seconds, and then the two indicators begin to blink.
   The counter for the drum cartridge drum cartridge has now been reset.
5. Turn the printer off and then on again.
   Once the green “Ready” indicator remains on permanently, the printer is again in Standby mode.

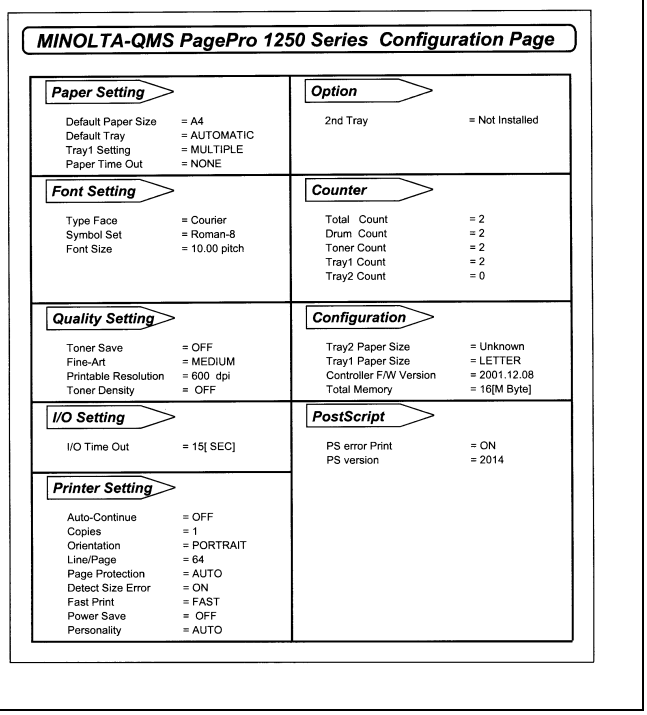
(6) Test Print Function (PagePro 1250E only)

The configuration page should be printed out in order to ensure that the printer is operating correctly.

1. Make sure that:
   the orange "Error" indicator is off, and
   the green "Ready" indicator is on (but not blinking).
2. Briefly press the panel button.
   All indicators blink rapidly.
3. Press the Panel button.
   The page that is printed depends on the number of times that the Panel button is pressed.

- If the Panel button is pressed two more times, the configuration page is printed.
- If the Panel button is pressed three more times, the PCL font list is printed.
- If the Panel button is pressed four more times, the PS font list is printed.

Configuration Page Sample



MINOLTA-QMS PagePro 1250 Series Configuration Page

Paper Setting

Default Paper Size	= A4
Default Tray	= AUTOMATIC
Tray1 Setting	= MULTIPLE
Paper Time Out	= NONE

Option

2nd Tray	= Not Installed

Font Setting

Type Face	= Courier
Symbol Set	= Roman-8
Font Size	= 10.00 pitch

Counter

Total Count	= 2
Drum Count	= 2
Toner Count	= 2
Tray1 Count	= 2
Tray2 Count	= 0

Quality Setting

Toner Save	= OFF
Fine-Art	= MEDIUM
Printable Resolution	= 600 dpi
Toner Density	= OFF

Configuration

Tray2 Paper Size	= Unknown
Tray1 Paper Size	= LETTER
Controller F/W Version	= 2001.12.08
Total Memory	= 16[M Byte]

I/O Setting

I/O Time Out	= 15[SEC]

PostScript

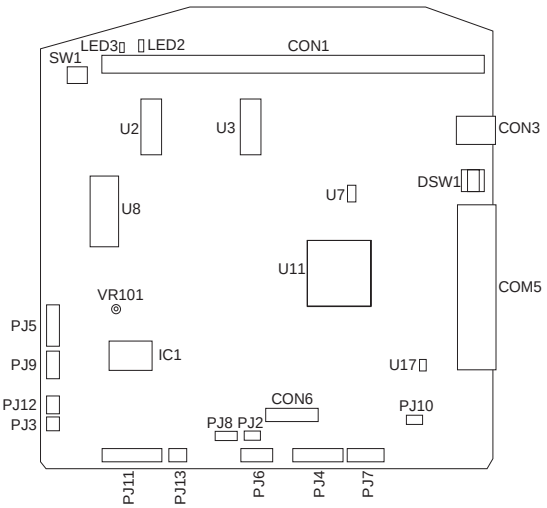
PS error Print	= ON
PS version	= 2014

Printer Setting

Auto-Continue	= OFF
Copies	= 1
Orientation	= PORTRAIT
Line/Page	= 64
Page Protection	= AUTO
Detect Size Error	= ON
Fast Print	= FAST
Power Save	= OFF
Personality	= AUTO

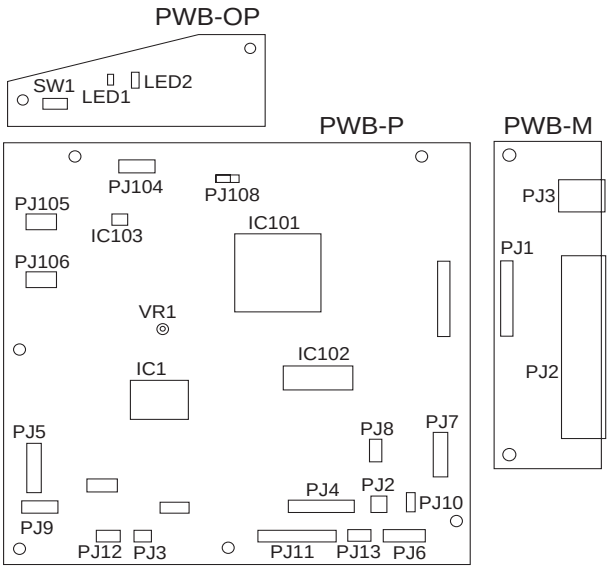
3-8. Electrical Service Parts on P.W.Boards

(1) PagePro 1250E PWB-P (Controller Board)



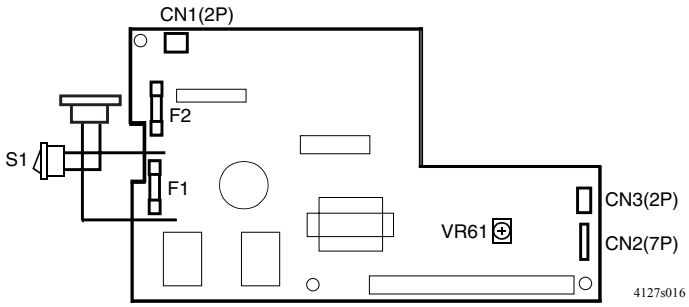
Symbol	Item	Explanation
CON1	Connector	Slot for 168-pin SDRAM-DIMM (max. 128MB)
CON3	Connector	USB (Revision 1.1 compliant)
CON5	Connector	IEEE 1284 Parallel (Compatible/Nibble/ECP)
LED2	LED	Orange LED
LED3	LED	Green LED
IC1	CPU	M38079EFFS
U11	ASIC	Destiny ASIC D8401A
U17	EEPROM	Serial EEPROM
U2	SDRAM	8MB (1M x 16bit CMOS) SDRAM
U3	SDRAM	8MB (1M x 16bit CMOS) SDRAM
U8	ROM	Firmware ROM
DSW1	DIP switch	1. ON: Letter, OFF:A4 2. Factory Use Only (Normally ON) 3. Factory Use Only (Normally ON)
VR101	Volume	Adjusts the image registration margin.

(2) PagePro 1200W WB-P (Controller Board)
PWB-M (Interface Board)
PWB-OP (Operation Panel Board)



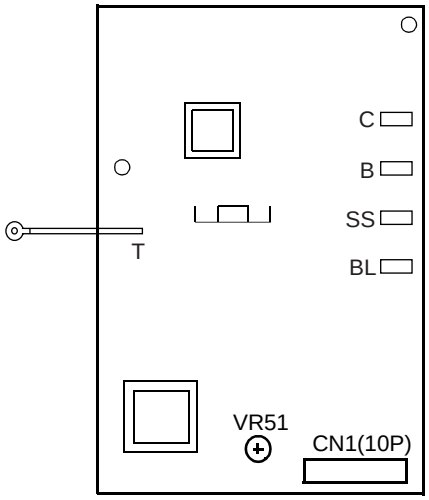
Symbol	Item	Explanation
LED1	LED	Green LED
LED2	LED	Orange LED
PJ1	Connector	Relay connector
PJ2	Connector	IEEE 1284 Parallel (Compatible/Nibble/ECP)
PJ3	Connector	USB (Revision 1.1 compliant)
PJ108	Jumper post	For Parallel Port Setting Left Side: ECP Mode Right Side: Except ECP Mode
IC1	CPU	M38073M4
IC101	ASIC	N1-chip
IC102	SDRAM	8MB SDRAM
IC103	EEPROM	Serial EEPROM
VR1	Volume	Adjust the Image registration margin.

(3) PU1 (Power Unit)



F1	Protection Fuse (100-120 V area: 5 A, 125 V), (220-240 V area: 4 A, 250 V)
F2	Protection Fuse (100-120 V area: 12 A, 250 V), (220-240 V area: 6.3 A, 250V)
VR61	For factory setting only **[Do not touch]**

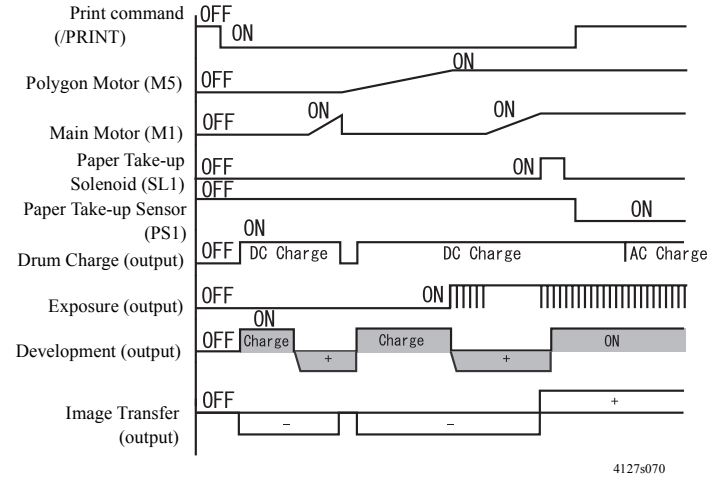
(4) HV1 (High Voltage Unit)



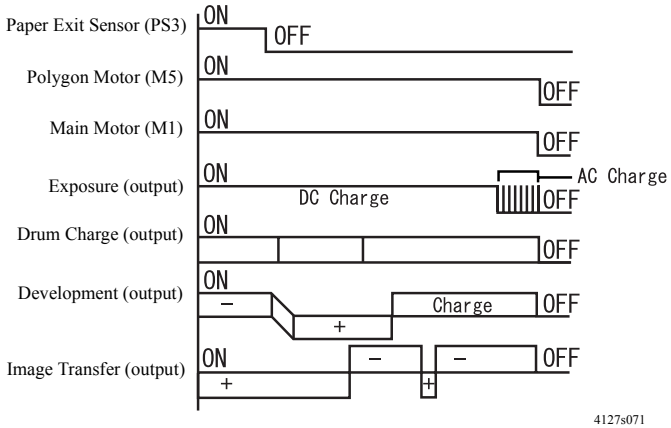
C	Drum Charging Voltage terminal (DC-1400 V max)
B	Developing Voltage terminal (DC-400 V max))
SS	Developing Lower Seal Voltage terminal (DC-400 V max)
BL	Developing Toner Blade Voltage terminal (DC-700 V max)
T	Image Transfer terminal (DC4300 V max/ DC-600 V max.)
VR51	For factory setting only **[Do not touch]**

3-9. Timing Chart

(1) Print Starting



(2) Print Ending

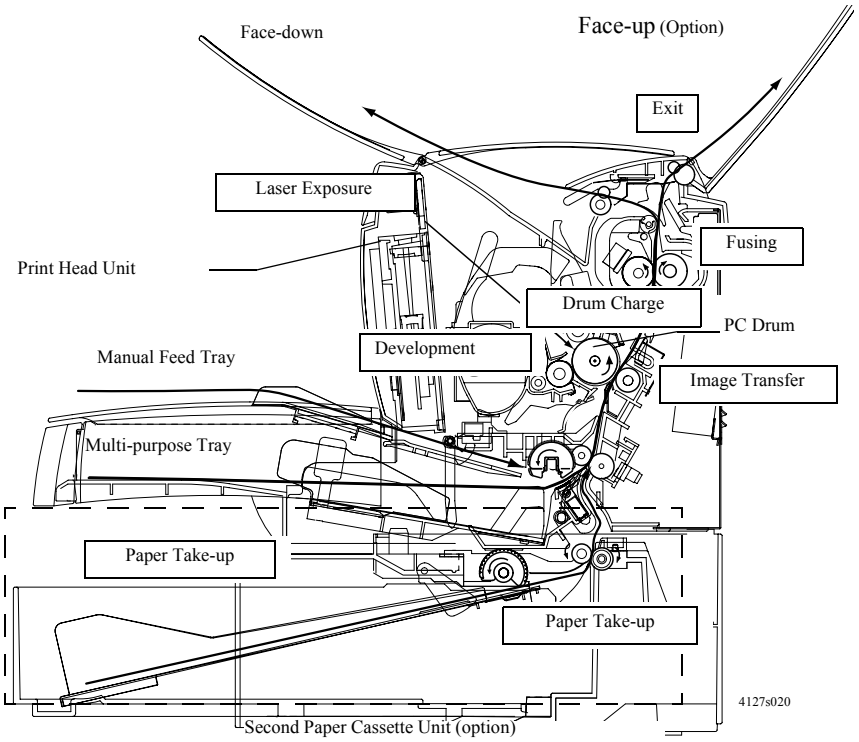


4. Mechanical/Electrical

4-1. Paper Path

Paper can be fed into the printer either from the Multi-purpose Tray (PagePro 1200W: 150 sheets; PagePro 1250E 200 sheets) or Manual Feed Tray.
The paper feed system can be extended to a 3-way system by Installing the Second Paper Cassette Unit (500 sheets).
The paper fed by the Paper Take-up Roller is transported to the Image Transfer Roller, Fusing Roller and then Paper Exit Roller. After this, the paper is fed out onto the Print Tray

PagePro 1250E shown below.

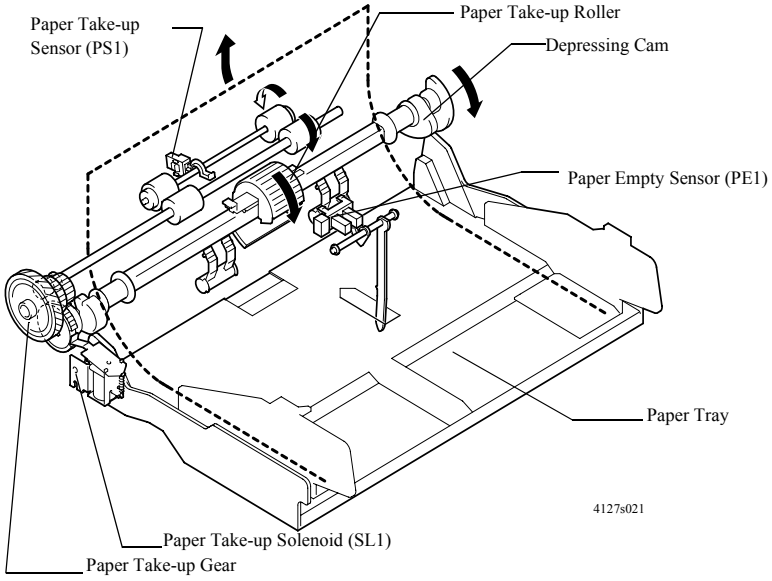


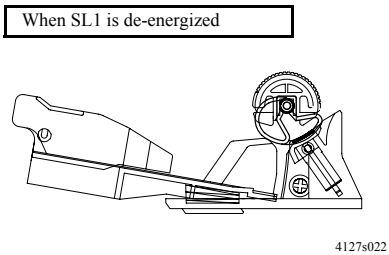
4-2. Paper Take-up Section

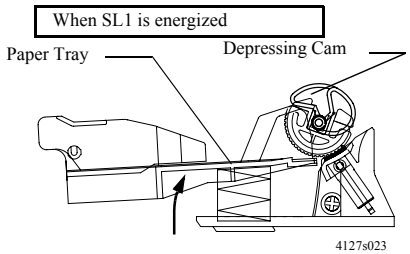
(1) Multi-purpose Tray

Mechanism

- When the Paper Take-up Solenoid is energized, the drive of the Main Motor is transmitted to the Paper Take-up Roller via the Paper Take-up Gear (one-way clutch) to turn the Paper Take-up Roller one revolution.
- At the same time, the Depressing Cam turns and lifts the Paper Lifting Plate, and the first (top) sheet of paper on the tray is fed to the printer.
- The Fixed Separating Pad is used for the paper separation system. It prevents the second and subsequent sheets of paper from being fed together with the top sheet.
- The actual length of the paper is detected using the period of time through which the Paper Take-up Sensor remains energized (or through which the paper moves past the sensor) and it is determined whether the actual length matches the paper length specified by the controller.



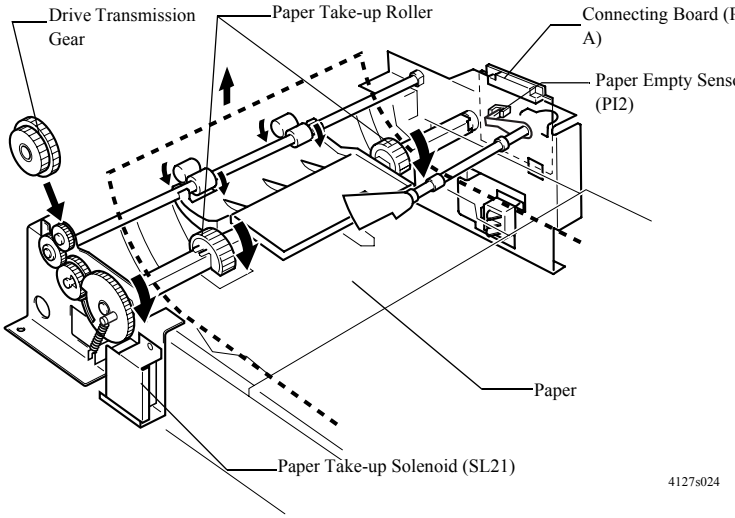




Paper Empty Detection
There is a Paper Empty Sensor provided on the upper side of the Multi-purpose Tray. It functions to detect a paper-empty condition in the Multi-purpose Tray and the Manual Feed Tray.
When there is paper, the actuator is raised and thus the sensor light is blocked.
When paper runs out, the actuator drops into a cutout in the tray, thus unblocking the sensor light.

(2) Second Paper Cassette Unit (option)

Mechanism
- Since a drive motor is not installed in this unit, the drive of M1 is transmitted to the paper take-up and transport sections in the unit via the Drive Transmission Gear.
- Although the feeding method is the same as the Multi-purpose Tray in the printer, the corner separation system is employed in this unit as the paper separating method.
- Paper is separated at the corner by the paper separation finger in the paper cassette and the strength of paper itself (corner separation system). One sheet of paper is fed for each paper take-up cycle.
- The Paper Take-up Solenoid (SL21) in the unit is controlled by the printer via PWB-A in the unit.



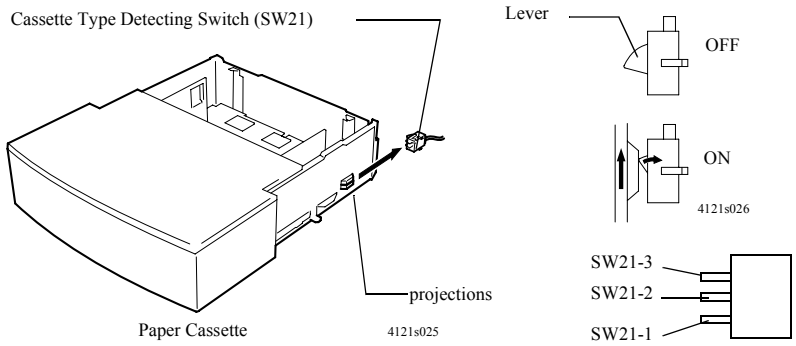
Paper Empty Detection
There is a Paper Empty Sensor provided on the Connecting Board, detecting a paper-empty condition in the Second Paper Cassette Unit.
When there is paper, the actuator is raised and thus the sensor light is blocked.
When paper runs out, the actuator drops into a cutout in the Paper Lifting Plate, thus unblocking the sensor light.

Cassette Type Detection

The Second Paper Cassette Unit is provided with a Cassette Type Detecting Switch that comes with a lever.

When the paper cassette is slid into position, the projections on the right-hand side of the cassette push the lever according to the size of the paper loaded in the cassette, thus turning off or on the Cassette Type Detecting Switch.

The Cassette Type Detecting Switch consists of three subswitches. The combination, in which these subswitches are turned on and off, allows the printer to determine the cassette type (or the paper size).



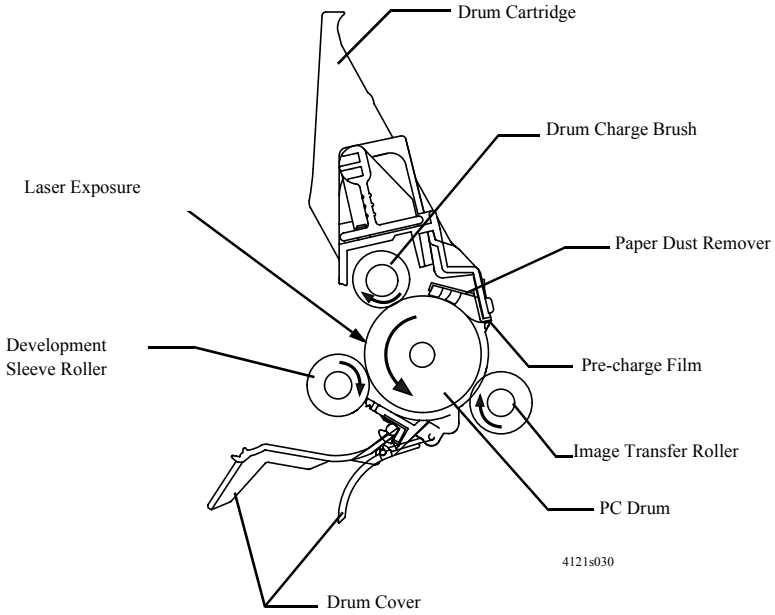
SW21settings for paper sizes

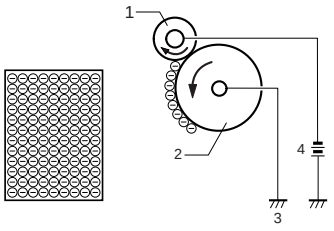
Cassette Type	SW21-1	SW21-2	SW21-3
A4	OFF	OFF	ON
B5	ON	ON	OFF
Letter	OFF	ON	OFF
Legal	ON	OFF	OFF
Executive	OFF	ON	ON
No Cassette (Undefined)	OFF	OFF	OFF
	ON	ON	ON
	ON	OFF	ON

4-3. Drum Charge

(1) Overview

- The PC Drum is charged with static electricity before laser exposure.
- The Drum Charge Brush and the Pre-charge Film are used for the charging method.
- The Drum Charge Brush and Pre-charge Film charging generate little ozone in the printer. Because the charge is directly applied to the PC Drum, the PC Drum can be charged by low voltage. At the same time, the PC Drum can be charged stably and evenly.
- The Pre-charge Film supplies the charge to the PC Drum before being charged by the Drum Charge Brush to improve the charging efficiency.
- The Drum Charge Brush is turned by the drive of the Main Motor (M1) via a gear.
- The electric potential on the surface of the charged PC Drum is approximately-800 V.



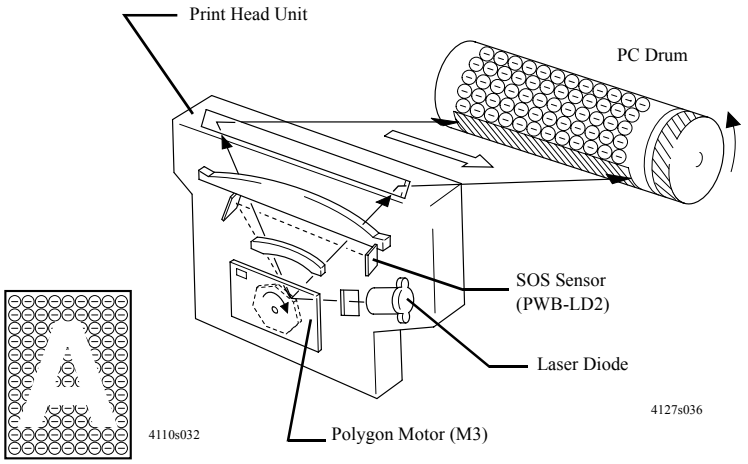


1. Drum Charge Brush
2. PC Drum
3. Earth
4. Drum Charge Brush voltage

4110s031

4-4. Laser Exposure

Laser exposure is the process of creating an invisible static charge image on the PC Drum by the laser beam emitted from the Print Head Unit.
This process is controlled as follows in order to appropriately time image printing.



In the sub-scanning direction (vertical direction)

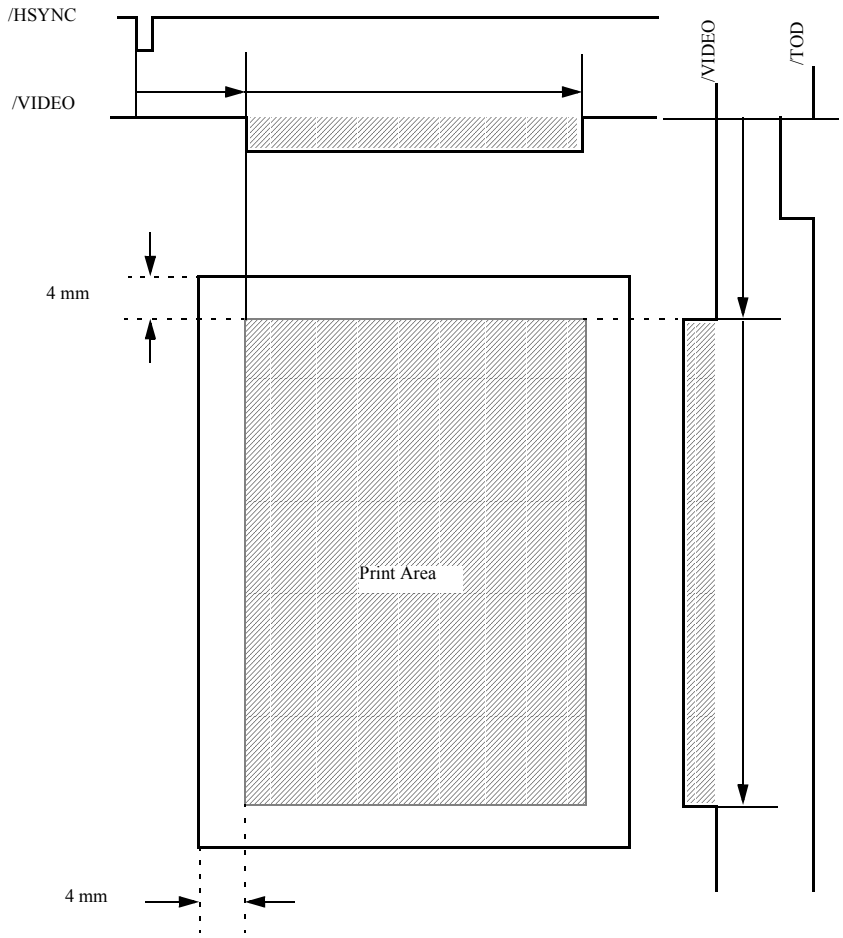
- When the printer receives the PRINT signal, the Polygon Motor and the Main Motor rotate and the paper is fed into the printer.
- The printing in the sub-scanning direction is started when the Controller Board sends the VIDEO signal to the Print Head a certain time after the leading edge of the paper activates the Paper Sensor (TOD signal).
- The print starting position for the 2nd line is decided by delaying the VIDEO signal sending timing.

In the scanning direction (horizontal direction)

- The SOS Sensor is installed on the Laser Diode Control Board to unify the laser emission timing for each scan line.

PRINTING AREA

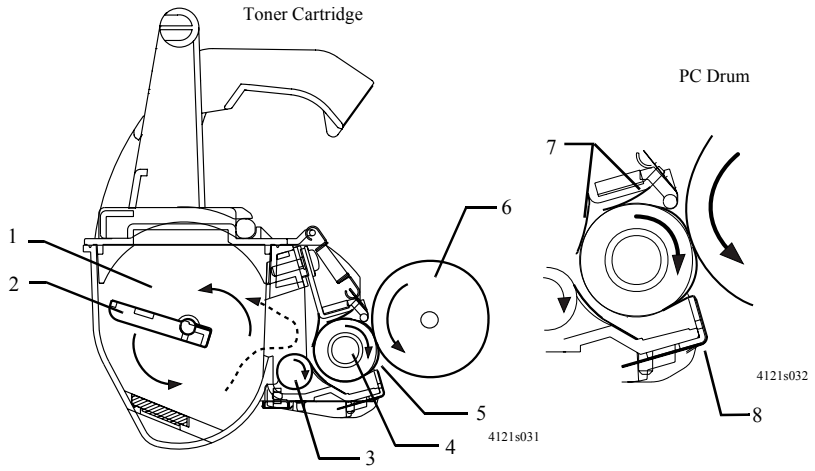
- The controller sends the VIDEO signal at the appropriate paper size to the engine (Controller Board).
- The controller determines the start point of printing according to the TOD signal (sub-scanning direction) sent from the engine (Controller Board) and the HSYNC signal.
- Laser exposure is started when the print head receives the VIDEO signal.

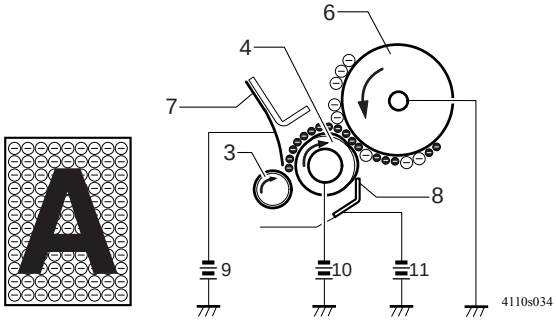


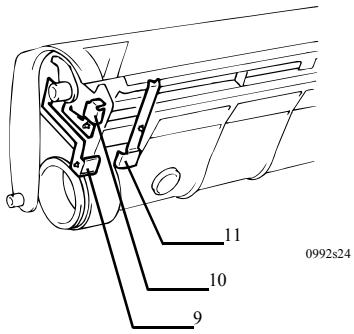
4-5. Development

(1) Overview

Toner is applied to the invisible static image on the PC Drum and a toner image (developed image) is created on the drum surface







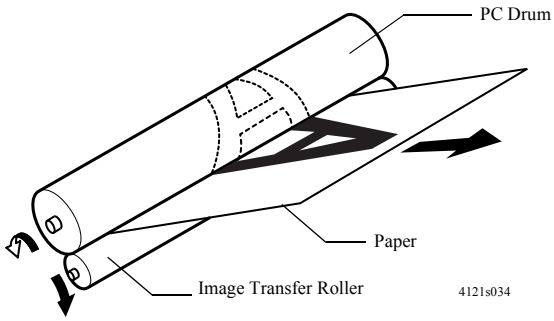
(2) Explanation of Each Part

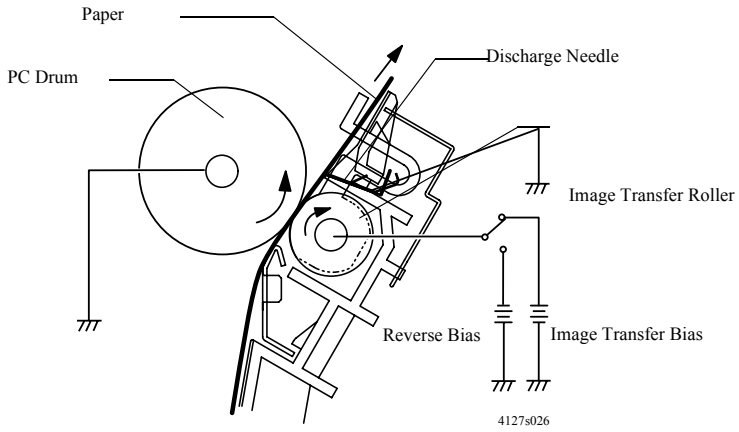
No.	Name	Description
1	Toner Hopper	Contains toner.
2	Toner Agitating Screw	Agitates the toner in the Toner Hopper and sends the toner to the Toner Transport Roller.
3	Toner Transport Roller	Transports the toner to the Sleeve Roller.
4	Sleeve Roller	Turns the Resin Sleeve.
5	Resin Sleeve	Carries the toner to the PC Drum surface for development.
6	PC Drum	Exposed to laser to create an invisible image and rotates to carry the developed image to the paper surface.
7	Toner Blade	Spreads a thin, even coat of toner over the Resin Sleeve. The toner is negatively charged when passing between this Blade and the Resin Sleeve.
8	Bias Seal	Separates toner, which has not been attracted to the PC Drum, from the Resin Sleeve and returns it back to the Buffer Section.
9	Developing Blade Voltage terminal (VBL)	DC-550V (DC-700 V max.)
10	Developing Voltage terminal (VB)	DC-300V (DC-400 V max.)
11	Developing Lower Seal Voltage terminal (VSS)	DC-300V (DC-400 V max.)

4-6. Image Transfer

(1) Overview

- Image transfer is the process of transferring the toner image created on the PC Drum in the developing process to paper.
- Roller image transfer is used instead of corona image transfer as the image transfer method.
- In roller image transfer, there is little generation of ozone due to corona discharge. Also, there is no blur of toner because the paper is always pressed by the PC Drum and the Image Transfer Roller.
- When cleaning the Image Transfer Roller and before printing, reverse bias is applied.
- The residual electric potential on the paper is dissipated via a discharge needle.

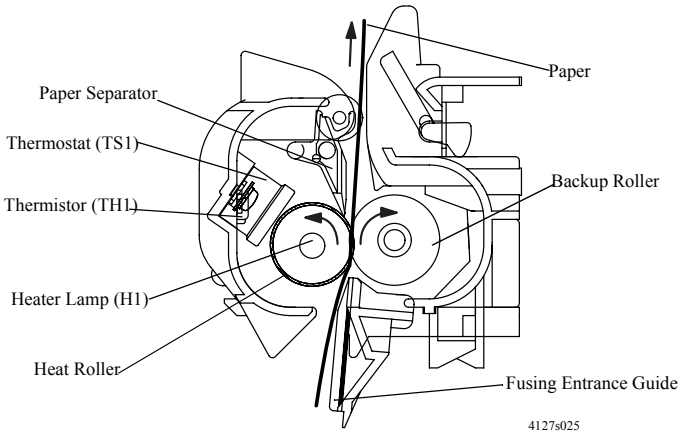




4-7. Fusing

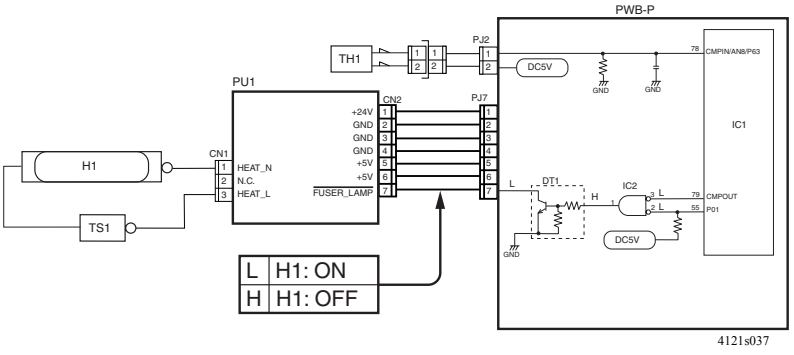
(1) Overview

- The toner image transferred onto the paper is securely fixed to the paper.
- A heat roller system is used as the fusing system. The toner image is fused by the Heat Roller heated by the Heater Lamp, and securely fixed by the pressure between the Heat Roller and Backup Roller.



(2) Fusing Temperature Control Circuit

- The Thermistor detects the surface temperature of the Heat Roller and inputs that analog voltage into IC1. Corresponding to this data, the Heater Lamp ON/OFF signal is output from IC1A-55, causing the Heater Lamp to turn ON or OFF to control the fusing temperature.
- When the Heater Lamp is not turned OFF even if the Thermistor detects a high temperature malfunction (if the surface temperature of the Heat Roller exceeds 230°C), the signal from IC1-79 changes from L to H to turn OFF the Heater Lamp forcibly.



At 600 dpi

The printer is initialized upon power supply. The printer then starts warming up and the Heater Lamp turns on. The temperature is controlled as follows.

Mode 1

The temperature is controlled to maintain 125°C (PagePro 1250E) or 115°C (PagePro 1200W) during standby and 200°C during printing. If this mode continues for 300 seconds (PagePro 1250E) or 90 seconds (PagePro 1200W), the control will shift to mode 2.

Mode 2

The temperature of the Heat Roller falls gradually to about 190°C from about 200°C.
If this mode continues for 208 seconds, the control will shift to mode 3.

Mode 3

The temperature is controlled to maintain 125°C (PagePro 1250E) or 115°C (PagePro 1200W) during standby and 190°C during printing. Unless an error occurs or the control is opened, this mode is maintained.

At 1200 dpi

When the printer completes the initialization sequence after it has been turned ON, it starts warming up and the Heater Lamp turns ON. The Heater Lamp remains ON until the temperature of the Heat Roller becomes about 160°C, providing the following temperature control.

Mode 1

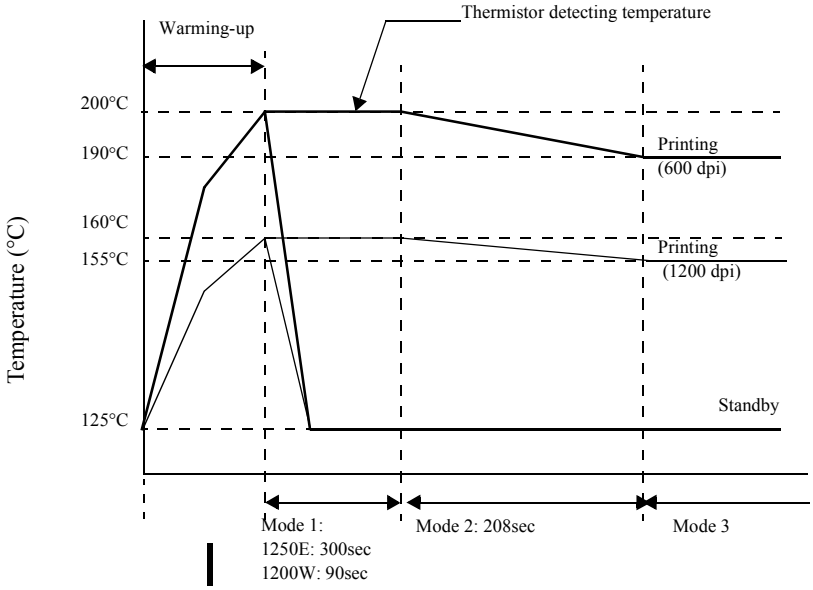
The temperature is controlled to maintain about 160°C during printing and about 125°C (PagePro 1250E) or 115°C (PagePro 1200W) during standby. This mode lasts 300 seconds (PagePro 1250E) or 90 seconds (PagePro 1200W) seconds before the control shifts to mode 2.

Mode 2

This mode lasts for 208 seconds before the control shifts to mode 3.
The temperature of the Heat Roller gradually falls from about 160°C to about 155°C.

Mode 3

The temperature is controlled to maintain at about 155°C during printing and at about 125°C (PagePro 1250E) or 115°C (PagePro 1200W) during standby. This mode is maintained unless an error occurs or the Top Cover is opened.

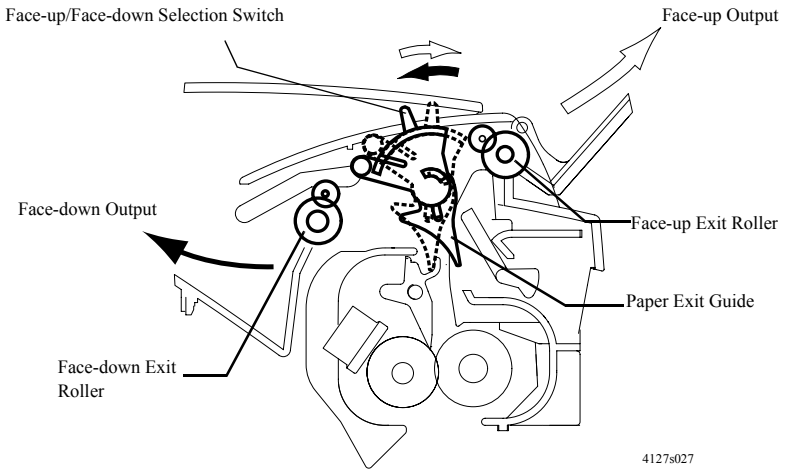


	Temperature immediately after temperature control starts		
The state before discontinuation of temperature control	less than 50°C	50°C or more, less than 125°C (PagePro 1250E) or 115°C (PagePro 1200W)	125°C (PagePro 1250E) or 115°C (PagePro 1200W) or more
Mode 1, warming-up	Mode 1		
Mode 2, 3 or Power OFF	Mode 1	Mode 2	Mode 3

4-8. Paper Exit

(1) Face-up/Face-down Selection Mechanism

After fusing, the paper is ejected onto the Face-down Tray or the Face-up Tray by the Face-up/Face-down Selection Mechanism. An optional Face-up Tray can also be selected. Switching the paper exit to use the Face-up Tray is done with the Face-up/Face-down Selection Switch.



Face-down output
It is ejected to the Face-down Tray at the top of the printer.

Face-up output
It is ejected onto the optional Face-up Tray.
Even when there is no Face-up Tray, face-up output is possible.

Tray Capacity (Ordinary Plain Paper)	
Face-down Tray	Max. 100 sheets
Face-up Tray	Max. 20 sheets

5. Precautions for Maintenance/Disassembly

5-1. Precautions for Disassembly

(1) Observe the following precautions whenever servicing the printer.

- Be sure to unplug the printer from the outlet before attempting to service the printer.
- To reassemble the printer, reverse the order of disassembly unless otherwise specified.
- Generally, do not operate the printer anytime during disassembly. If it is absolutely necessary to run the printer with its covers removed, use care not to allow your clothing to be caught in revolving parts such as the gears, rollers and motor.
- Never touch the terminals of electrical parts or high-voltage parts such as the High Voltage Unit.
- Be sure to handle the Fusing Unit carefully as the unit is still hot for a while after the printer is stopped.
- Always unplug connectors by holding the connector housing.
- Be sure to use the fuse of the specified rating.
- Do not forget to install the ground wire or ground plate to ensure positive conduction. Install the screw with a toothed washer in the right position at reassembly.

(2) Parts not to be touched

The following parts must not be removed, disassembled or adjusted.

- The parts where the mounting screws are painted red.
- Print Head Unit

(3) Instructions for Handling the PWBs with MOS ICs

The following precautions must be observed when handling circuit boards with MOS (Metal Oxide Semiconductor) ICs.

- During transportation or when in storage, new circuit boards must not be indiscriminately removed from their protective conductive bags.
- Do not store or place circuit boards in a location exposed to direct sunlight.
- 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.

(4) During Replacement the PWBs with MOS ICs:

- Before unplugging connectors from the circuit boards, make sure that the power cord has been unplugged from the power outlet.
- When removing a board from its conductive bag or 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.
- Before plugging connectors into the board, make sure that the power cord has been unplugged from the power outlet.

(5) During Inspection the PWBs with MOS ICs:

- 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.
- Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.

(6) During Transportation/Storage the Drum Cartridge:

- Use the specified carton whenever moving or storing the Imaging Cartridge.
- The storage temperature is in the range between -20°C and +40°C.

(7) Handling the Drum Cartridge:

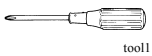
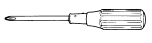
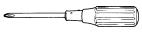
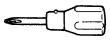
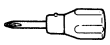
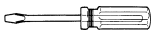
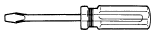
- The PC Drum is extremely sensitive to light shock and takes long time to recover sensitivity. Never open the protection cover or expose the PC Drum to direct sunlight for long periods of time.
- Do not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.

5-2. Maintenance Schedule List

Part name	Cleaning cycle	Replacement cycle (Multi-page printing)	Replacement cycle (Single-page printing)
Drum cartridge	none	Approx. 20,000 prints	Approx. 16,000 prints
Toner cartridge (After)	none	Approx. 6,000 prints	Approx. 4,800 prints
Toner cartridge (Initial)	none	Approx. 1,500 prints	Approx. 1,200 prints
Image transfer roller	none	Approx. 50,000 prints	
Fusing unit	none	Approx. 50,000 prints	
Paper take-up roller	Cleaning at the time of trouble due to wear.	Replaced at the time of trouble due to wear.	
Paper take-up roller (optional second paper cassette unit)			

*The Toner Cartridge and Drum Cartridge are user replaceable items.

5-3. Required Service Tools

Tools			
Phillips Screwdriver (No. 1)	Phillips Screwdriver (No. 2)	Stubby Screwdriver (Phillips)	Flat screwdriver
 tool1  tool1	 tool1  tool1	 tool3  tool3	 tool9  tool9

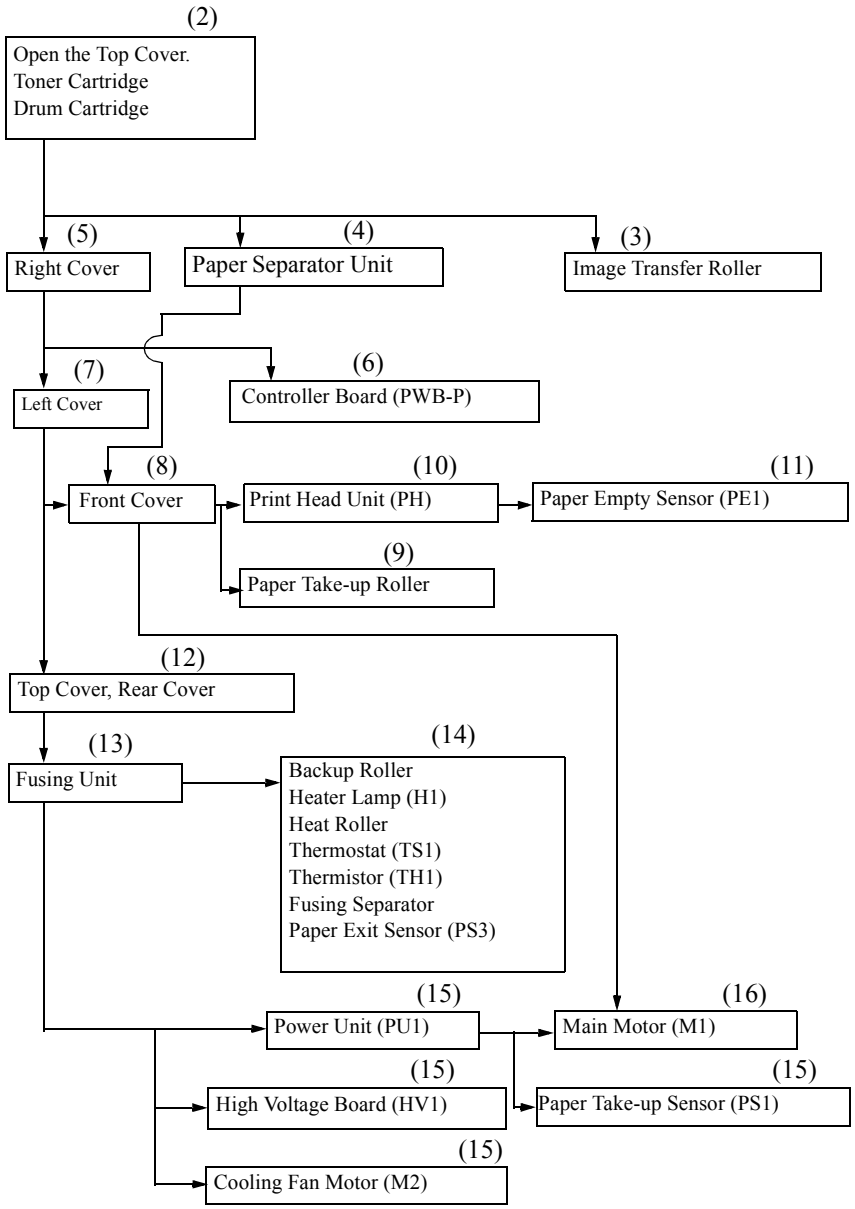
5-4. Screws

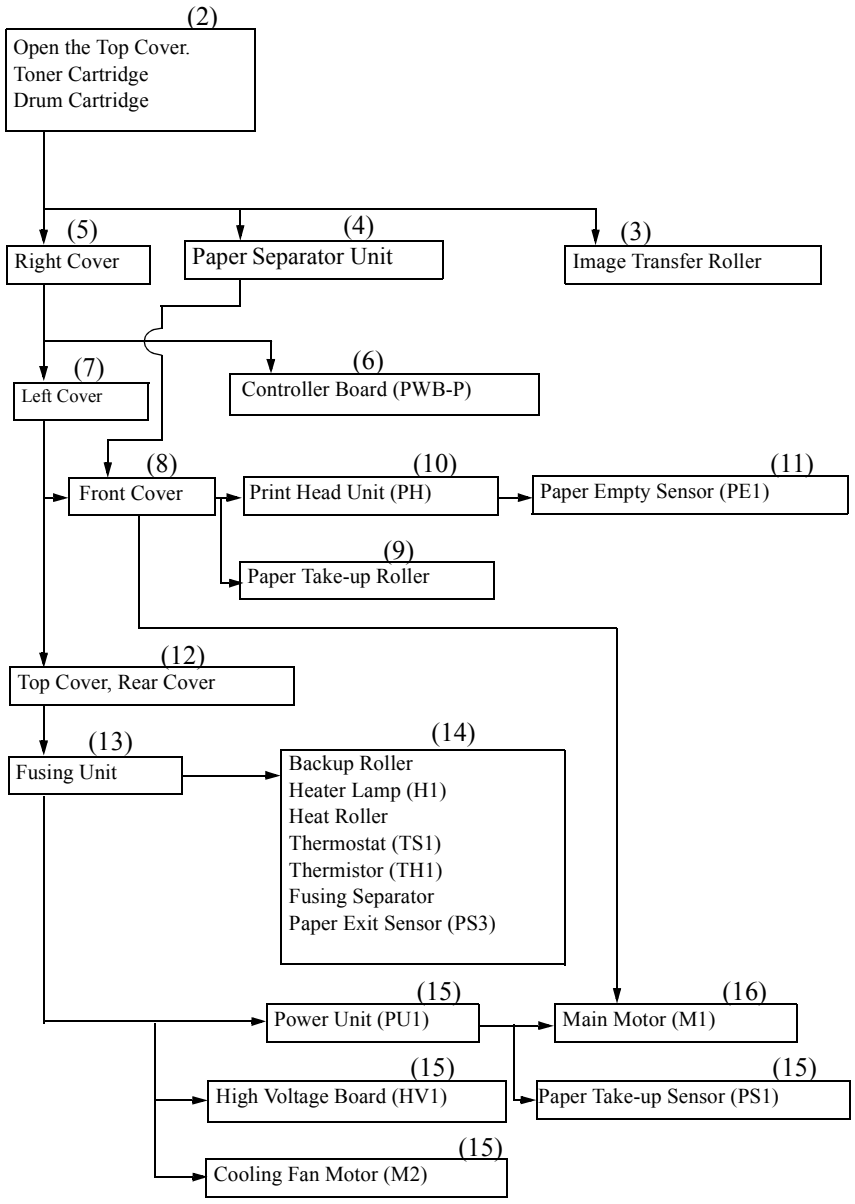
Illust	No.	D x L (mm)	Illust	No.	D x L (mm)
 9646  9646	1305 1318	Screw (with spring washer)	 9739  9739	3704 3727	Tapping screw

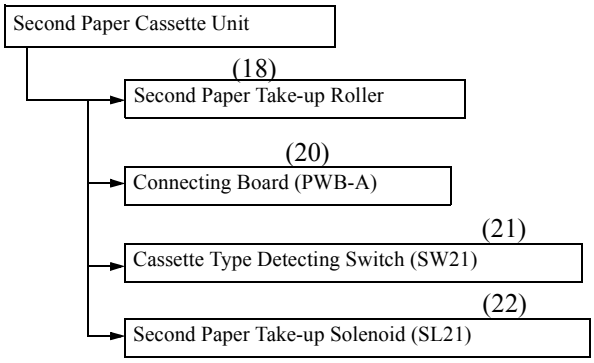
Illust	No.	D x L (mm)	Illust	No.	D x L (mm)
 9735  9735	3501 3504 3505 3541 3544	Tapping screw	 9742  9742	3923	Tapping screw

5-5. Disassembly Procedures

(1) Disassembly Procedure Chart




(2)
Open the Top Cover.
Toner Cartridge
Drum Cartridge
(5)
Right Cover
(4)
Paper Separator Unit
(3)
Image Transfer Roller
(7)
Left Cover
(6)
Controller Board (PWB-P)
(8)
Front Cover
(10)
Print Head Unit (PH)
(11)
Paper Empty Sensor (PE1)
(9)
Paper Take-up Roller
(12)
Top Cover, Rear Cover
(13)
Fusing Unit
(14)
Backup Roller
Heater Lamp (H1)
Heat Roller
Thermostat (TS1)
Thermistor (TH1)
Fusing Separator
Paper Exit Sensor (PS3)
(15)
Power Unit (PU1)
(16)
Main Motor (M1)
(15)
High Voltage Board (HV1)
(15)
Paper Take-up Sensor (PS1)
(15)
Cooling Fan Motor (M2)


Second Paper Cassette Unit
(18)
Second Paper Take-up Roller
(20)
Connecting Board (PWB-A)
(21)
Cassette Type Detecting Switch (SW21)
(22)
Second Paper Take-up Solenoid (SL21)

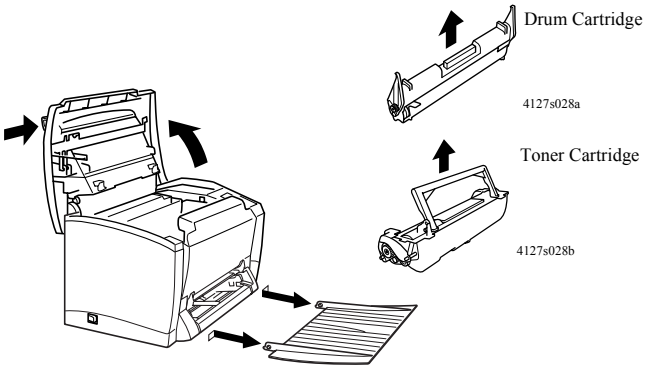
(2) Before Disassembly Procedure

Before disassembling the machine, remove the following components:

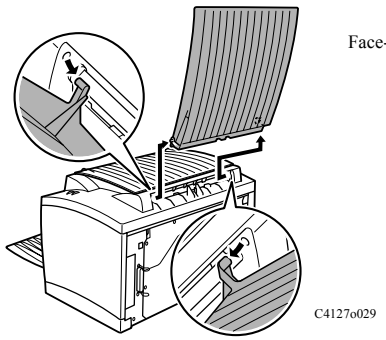
- Toner Cartridge
- Drum Cartridge
- Multi-purpose Tray
- Face-up Tray (Option)

1. Push the Top Cover Release Button and fully open the Top Cover.
2. Remove the Toner Cartridge.
3. Remove the Drum Cartridge.

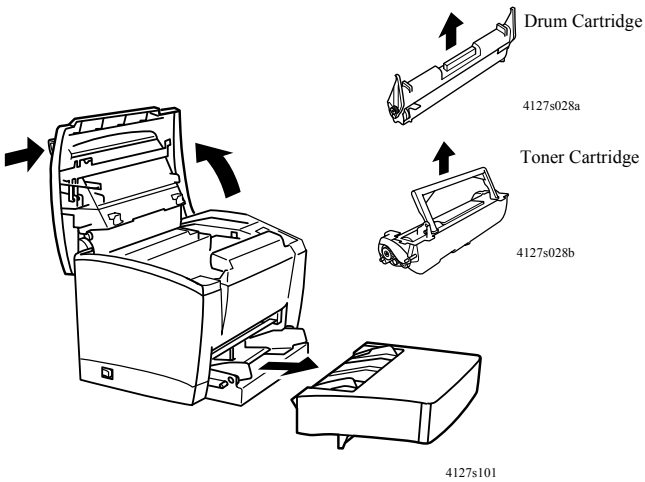
PagePro 1200W shown below

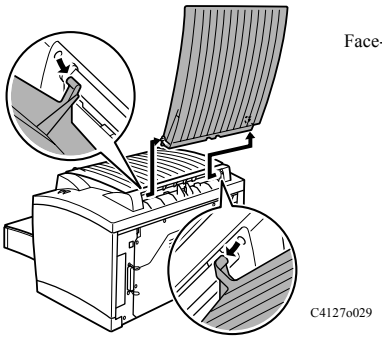


4127s101



PagePro 1250E shown below



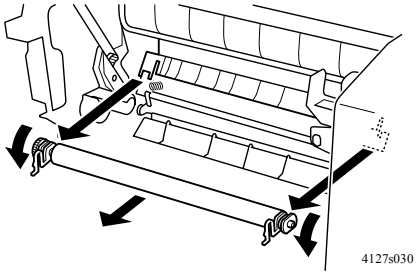


(3) Replacing the Image Transfer Roller

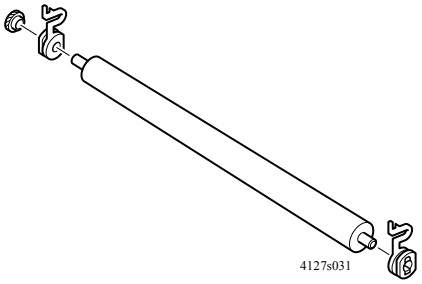
1. Swing down to the front the levers of the right and left bushings (white) on the Image Transfer Roller and remove the Image Transfer Roller from the Image Transfer Roller Holder.

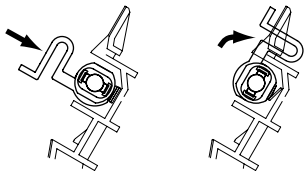
NOTES

- *Never touch the surface of the Image Transfer Roller or contaminate it with chemicals or toner. A depression or contamination on the roller will adversely affect print quality.*
- *When handling the Image Transfer Roller, hold it by the shaft or bushings.*



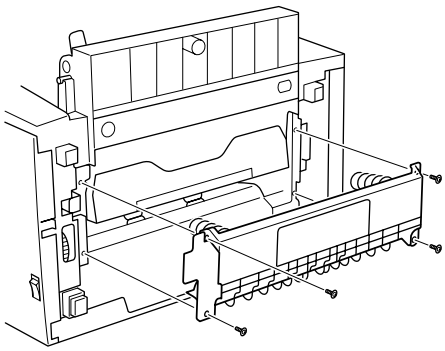
2. Remove the bushings and gears from both ends of the Image Transfer Roller and fit them to the new Image Transfer Roller.
3. Insert the Image Transfer Roller in the Image Transfer Roller Holder and swing the levers of the bushings up to the rear.





(4) Removal of the Paper Separator Unit

1. Place the printer with its backside down and remove the Paper Separator Unit (four screws).

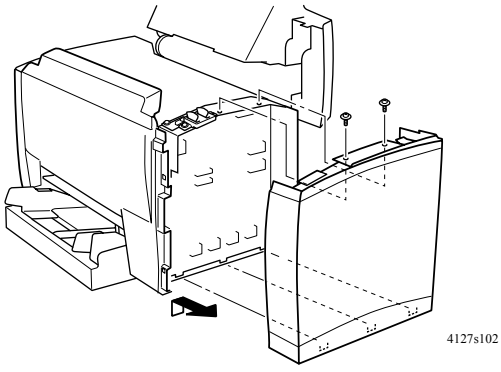


(5) Removal of the Right Cover

1. Remove the Right Cover (two screws and tabs at three places).

NOTE

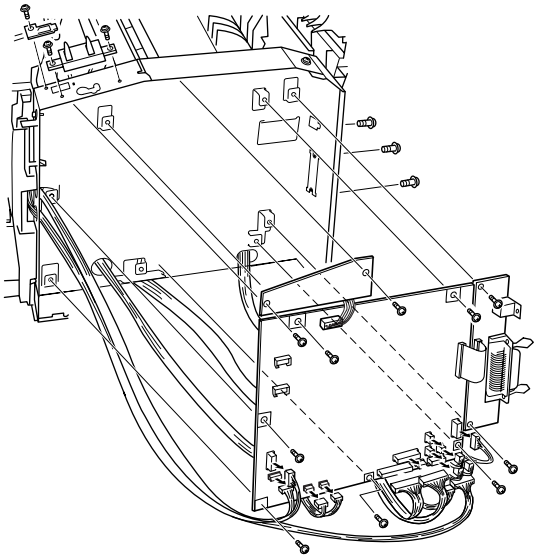
- *When reinstalling the Right Cover, first fit tabs (at three places) of the Right Cover into the frame of the printer.*



(6) Removal of the Controller Board (PWB-P)

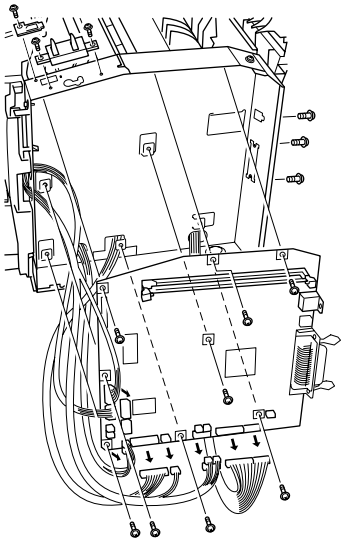
1. Remove the panel and panel button (three screws).
2. Unplug all connectors (1200W: 12; 1250E: 11) from the Controller Board (PWB-P) and remove the Controller Board (PWB-P) (1200W: 11; 1250E: 11 screws).

PagePro 1200W shown below



4127s103

PagePro 1205E shown below



4127s103

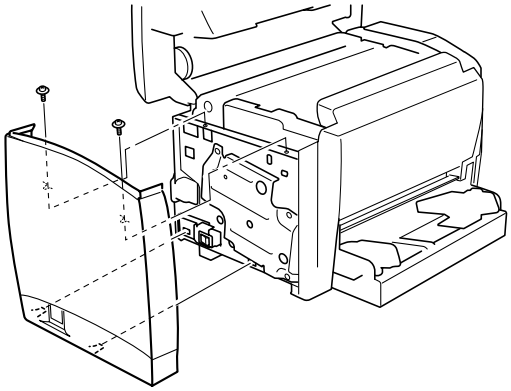
(7) Removal of the Left Cover

1. Remove the Left Cover (two screws and tabs at two places).

NOTE

- *When reinstalling the Left Cover, first fit tabs (at two places on the bottom) of the Left Cover into the frame of the printer.*

PagePro 1250E shown below

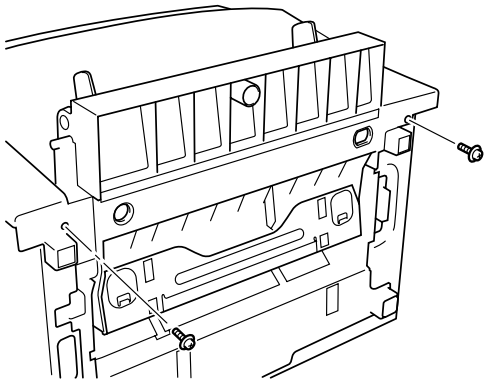


4127s104

(8) Removal of the Front Cover

1. Remove the Right Cover, Left Cover, and Paper Separator Unit.
2. Place the printer with its backside down and remove two screws.

PagePro 1250E shown below

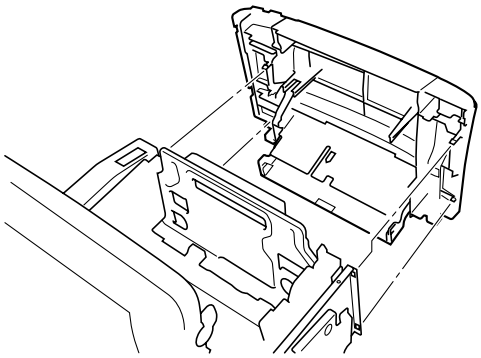


4127s038

3. Place the printer in the normal position and remove the Front Cover (tabs at four places).

NOTE

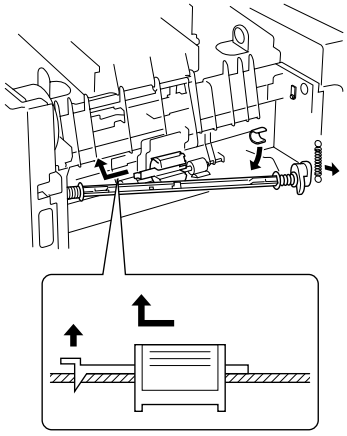
- *When reinstalling the Front Cover, first fit tabs (at two places on the bottom) of the Front Cover into the frame of the printer.*



4127s039

(9) Replacement of the Paper Take-up Roller

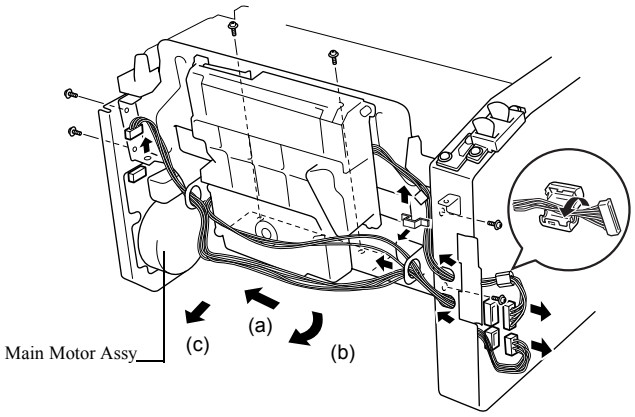
1. Remove the Right Cover, Left Cover, Paper Separator Unit, and Front Cover.
2. Place the printer with its backside down.
3. Unhook the spring and remove the right-hand side of the Paper Take-up Roller shaft from its bushing.
4. Remove the Paper Take-up Roller.



4127s040

(10) Removal of the Print Head unit

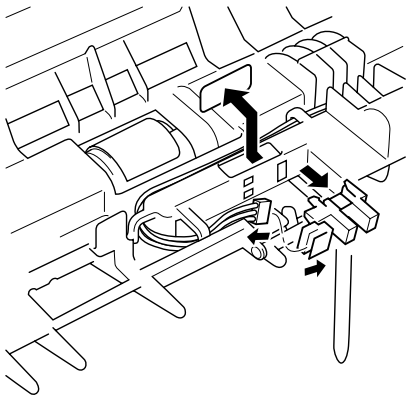
1. Remove the Right Cover, Left Cover, Paper Separator Unit, and Front Cover.
2. Unplug the connector (CN1) from the Main Motor Assy and remove the harness from the cord holder.
3. Unplug the connectors (PJ5, PJ6, and PJ9) from PWB-P and remove the harness from the cord holder.
   Special note for the PagePro 1250E: When removing PJ6, first remove the core, and then remove the harness from the cord holder.
4. Remove the Print Head Unit (PH) (six screws).



4127s105

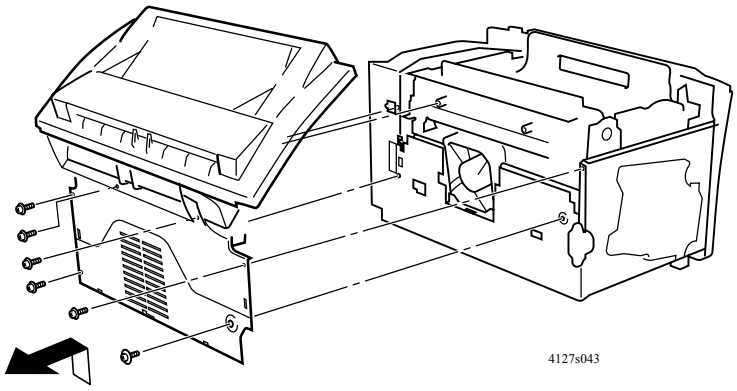
(11) Removal of the Paper Empty Sensor (PE1)

1. Remove the Right Cover, Left Cover, Paper Separator Unit, Front Cover, and Print Head Unit.
2. Remove the sensor fixing bracket and remove the Paper Empty Sensor (one connector).



(12) Removal of the Top Cover and Rear Cover

1. Remove the Right Cover and Left Cover.
2. Remove the Top Cover and Rear Cover (six screws).

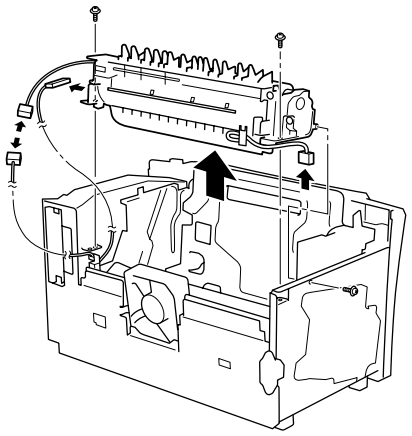


(13) Removal of the Fusing Unit

1. Remove the Right Cover, Left Cover, Top Cover, and Rear Cover.
2. Remove the Fusing Unit (three screws and three connectors).

NOTE

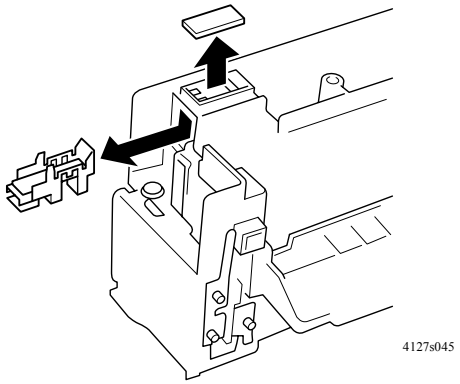
- *The Fusing Unit is to be replaced as a unit at about every 50,000 printed pages.*



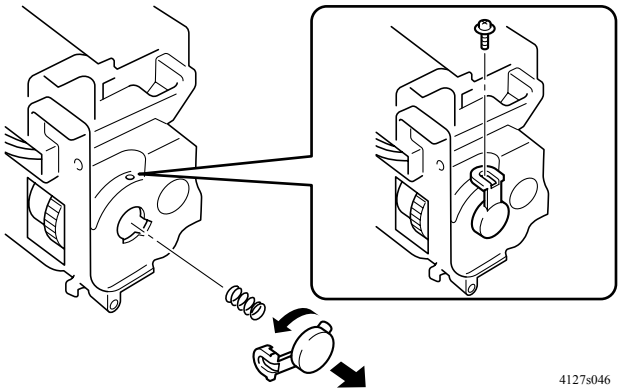
✻ Use the following procedure when a part comprising the Fusing Unit is to be replaced individually to correct an image problem or the defective part.

(14) Disassembly the Fusing Unit

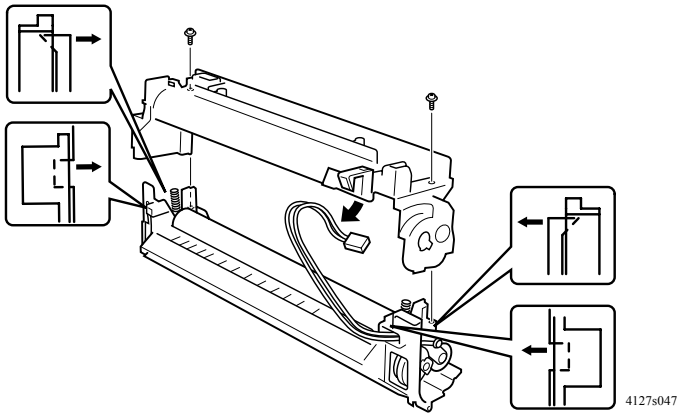
1. Remove the sensor fixing bracket and the Paper Exit Sensor.



2. Remove the Heater Lamp holding cover (one screw and one spring).

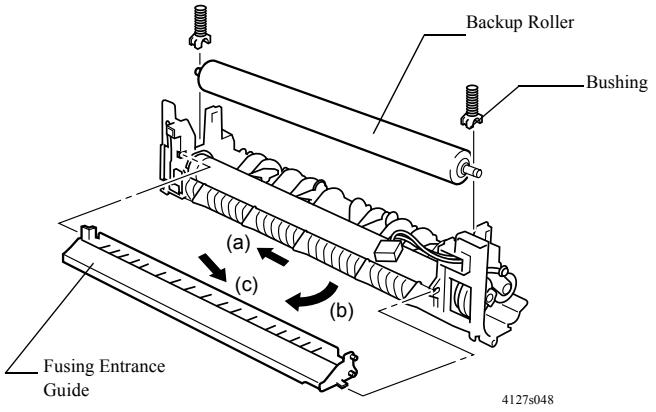


3. Remove the two mounting screws.
4. Pressing the right and left tabs (at two places), separate the upper half of the Fusing Unit from the lower half.



5. Remove the bushings and the Backup Roller.
6. Remove the Fusing Entrance Guide.

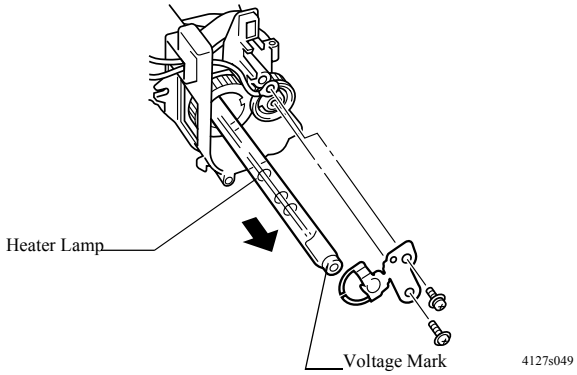
(a) Push the Fusing Entrance Guide to the left.
(b) Pull out the right end of the Fusing Entrance Guide.
(c) Pull out the left end of the Fusing Entrance Guide.



7. Remove the lamp holder (two screws).
8. Pull out the Heater Lamp.

NOTES

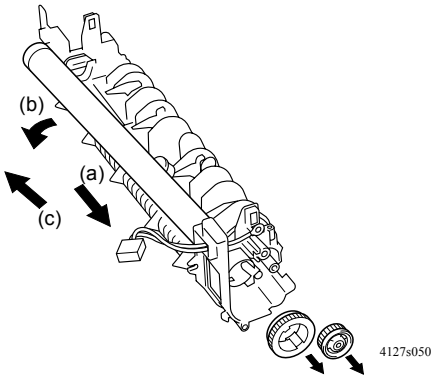
- *Use care not to touch the lamp surface with bare hands.*
- *Position the voltage mark on the gear side when reinstalling the lamp.*



9. Remove the drive gear from the Heat Roller.
10. Slide the Heat Roller to the right (a), swing out the left end (b), and then slide the roller in the direction of (c) and pull it out.

NOTE

- *To prevent the surface of the Heat Roller from being scratched by the Fusing Separators, lift the separators when removing and reinstalling the roller. Use utmost care not to damage the surface of the roller.*



11. Remove the Fusing Paper Separators (at four places).
12. Remove the Thermistor (one screw).

NOTE

- *Route the harness as shown in Fig. 1 when reinstalling the Thermistor.*

13. Remove the Thermostat (two screws).

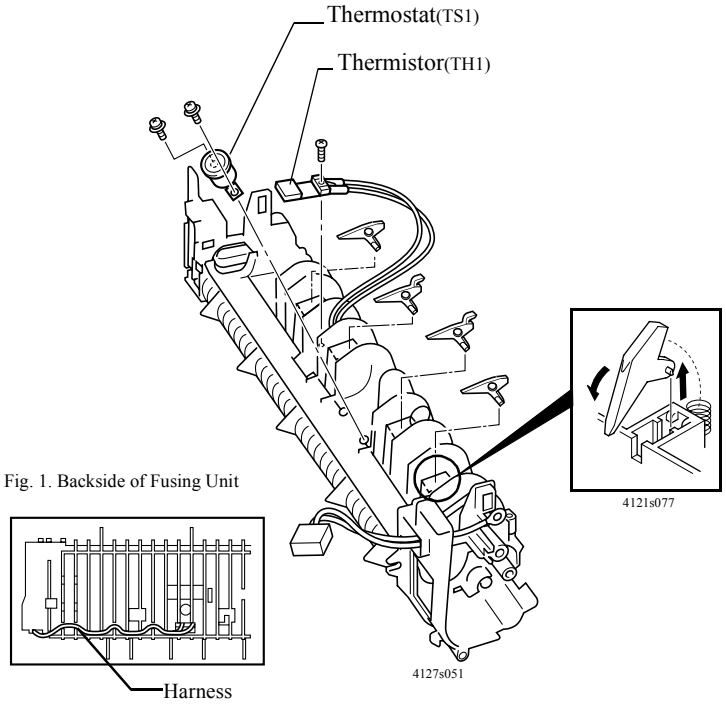
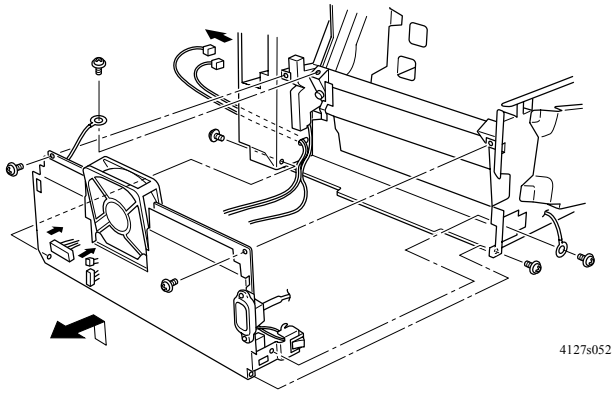


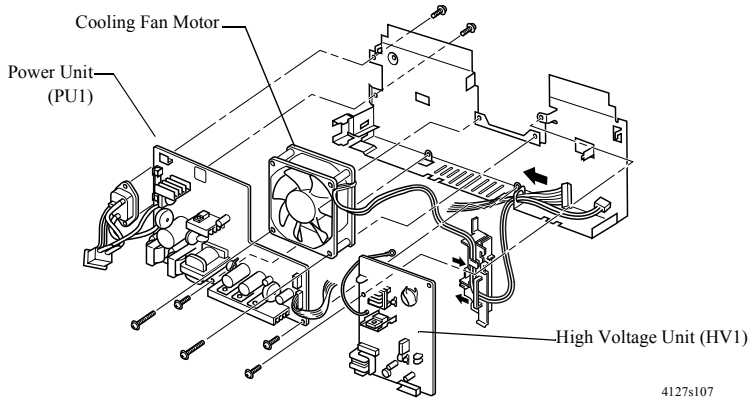
Fig. 1. Backside of Fusing Unit

(15) Removal of the Power Unit and High Voltage Board

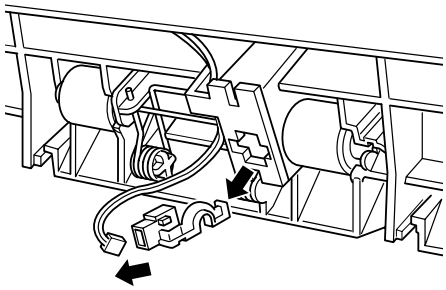
1. Remove the Right Cover, Left Cover, Top Cover, Rear Cover, and Fusing Unit.
2. Unplug the connectors (PJ7 and PJ13) from the Controller Board and remove the harness from the cord holder.
3. Remove the Power Unit Assy (six screws).
4. Unplug the connectors (CN1 and CN3) from the Power Unit Assy and remove the harness from the cord holder.



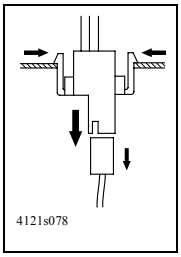
5. Remove the Power Unit (four screws).
6. Remove the High Voltage Unit (one screw).
7. Remove the Cooling Fan Motor (two screws).



8. Remove the Paper Take-up Sensor (one connector).



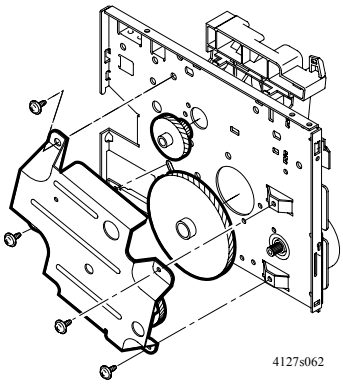
4127s055



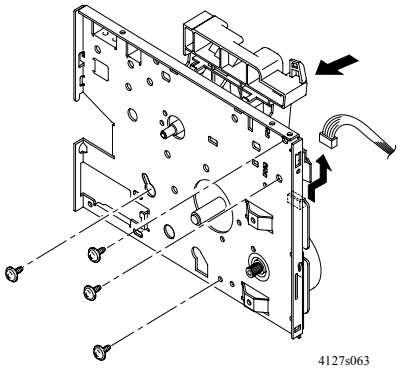
4121s078

(16) Removal of the Main Motor Assy

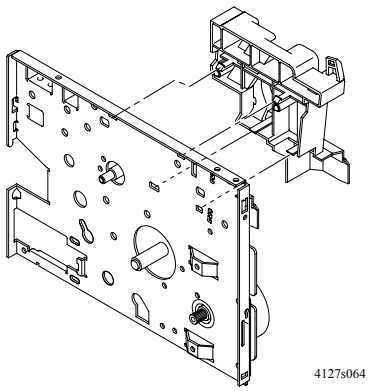
1. Remove the Right Cover, Left Cover, Paper Separator Unit, Front Cover, Top Cover, Rear Cover, Fusing Unit, and Power Unit Assy.
2. Remove the gear plate (four screws).
3. Remove two gears.



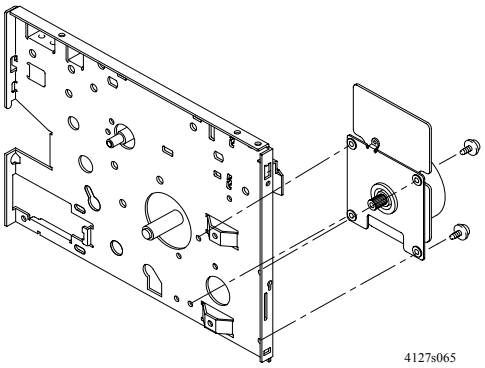
4. Remove the left side plate (four screws and one connector).



5. Remove the cartridge positioning plate (tabs at four places).



6. Remove the Main Motor Assy (four screws).



(17) Replacement of the Second Paper Take-up Roller

1. Separate the printer and Second Paper Cassette Unit.
2. As shown in Fig. 1, remove Paper Take-up Rollers.
(a) Pull up on the lever of the roller.
(b) Pull it to the right.
(c) Lift out the roller.
3. Install a new Paper Take-up Rollers in the opposite way.

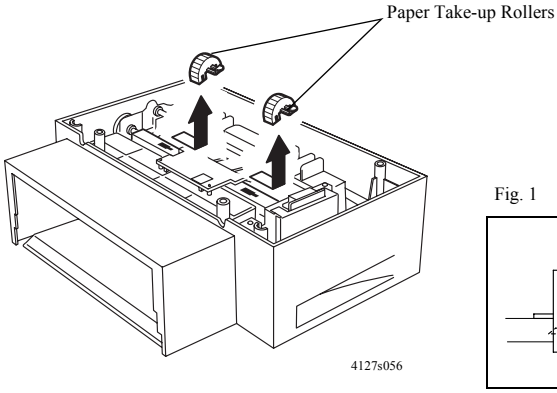
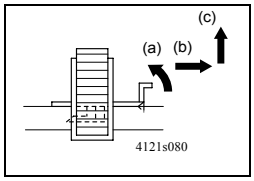
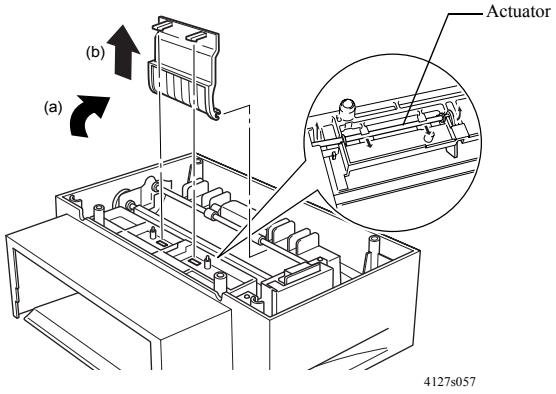


Fig. 1

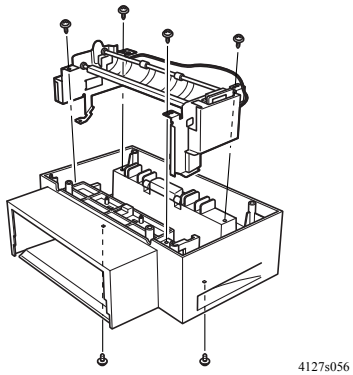


(18) Removal of the Second Paper Take-up Roller

1. Remove the cover (tabs at two places).
2. Remove the actuator.

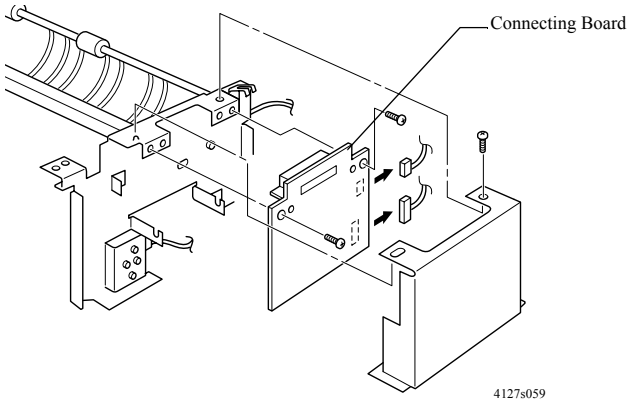


3. Remove the Second Paper Take-up Unit (six screws).



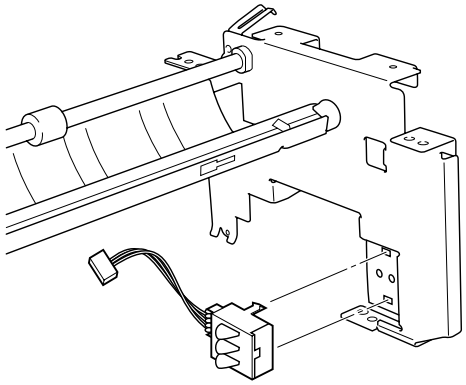
(19) Removal of the Connecting Board (PWB-A)

1. Remove the cover (one screw and two connectors)
2. Remove the Connecting Board (PWB-A) (two screws).



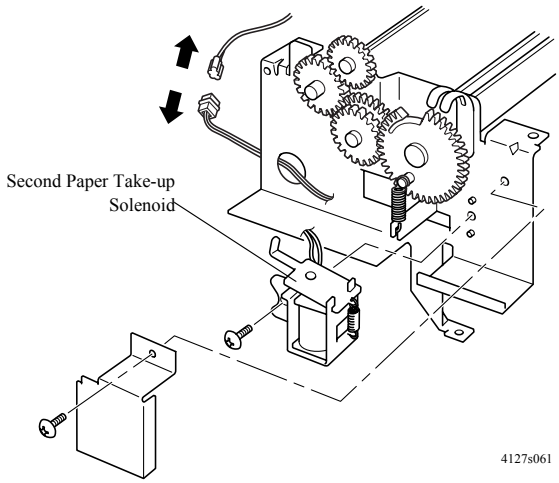
(20) Removal of the Cassette Type Detecting Switch (SW21)

1. Remove the Cassette Type Detecting Switch.



(21) Removal of the Second Paper Take-up Solenoid (SL21)

1. Remove the Cover (one screw)
2. Second Paper Take-up Solenoid (SL21)(one screw and one connector)



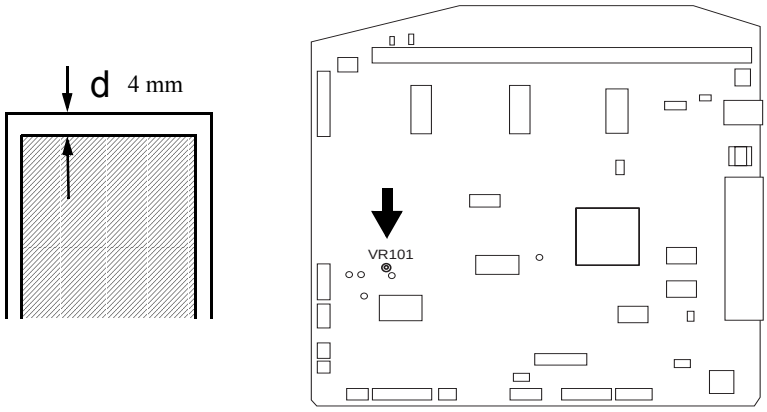
6. Adjustment

6-1. Adjustment of Image Registration

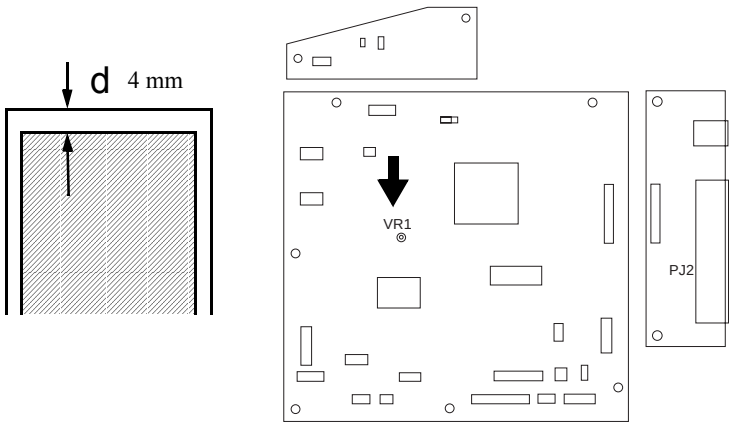
After Mechanical Control Board (Controller Board) is replaced, be sure to make a print of an image sample.
If the starting position of the image (registration gap (d)=4mm) in the sub-scanning direction is not suitable, adjust the gap by following the procedure described below.

1. Remove the Right Cover so that the variable resistor (PagePro 1250E: VR101, or PagePro 1200W: VR1) on the Controller Board can be adjusted.
2. Turn the variable resistor on the Controller Board so that d measures 4 mm.

PagePro 1250E shown below:



PagePro 1200W shown below:



7. Troubleshooting

7-1. Paper Misfeed Detection

(1) Overview

The printer determines if paper is left inside itself by detecting the status (H or L) of the signal output from the Paper Take-up Sensor (PS1) and the Paper Exit Sensor (PS3).

A paper misfeed while paper is being transported is detected by monitoring the timing at which the signal from the Paper Take-up Sensor (PS1) or the Paper Exit Sensor (PS3) rises or falls.
When a paper misfeed is detected, the drive for all elements is stopped.

• During multi printing:
If there is paper being transported through the printer when condition 2 listed below is detected, all elements but the Heater Lamp (H1) will be stopped after the paper has been fed out of the printer.

• During single printing:
When only condition 2 listed below is detected, all elements but the Heater Lamp (H1) will be stopped.

(2) PagePro 1250E Paper Misfeed Detecting Conditions

1. The Paper Take-up Sensor (PS1) is activated within about 0.2 sec. (within about 0.4 sec. at 1200 dpi) after the paper take-up sequence has been started in the Multi-purpose Tray (Paper Take-up Solenoid is energized, causing the Paper Take-up Roller to start turning) or within about 0.45 sec. (within about 0.9 sec. at 1200 dpi) after the paper take-up sequence has been started in the Second Paper Cassette Unit.
2. The Paper Take-up Sensor (PS1) is not activated within about 0.2 sec. to 1.15 sec. (within about 0.4 sec. to 2.30 sec. at 1200 dpi) after the paper take-up sequence has been started in the Multi-purpose Tray (Paper Take-up Solenoid is energized, causing the Paper Take-up Roller to start turning) or within about 0.45 sec. to 1.53 sec. (within about 0.9 sec. to 3.06 sec. at 1200 dpi) after the paper take-up sequence has been started in the Second Paper Cassette Unit.
3. The Paper Take-up Sensor (PS1) is not deactivated within about 1.30 sec. to about 4.09 sec. (within about 2.60 sec. to 8.18 sec. at 1200 dpi) after the leading edge of the paper has reached the Paper Take-up Sensor (PS1) (PS1: activated).
4. The Paper Exit Sensor (PS3) is not activated within about 1.40 sec. to about 1.82 sec. (within about 2.80 sec. to 3.64 sec. at 1200 dpi) after the leading edge of the paper has reached the Paper Take-up Sensor (PS1) (PS1: activated).
5. The Paper Exit Sensor (PS3) is not deactivated within about 1.38 sec. to about 1.86 sec. (within about 2.76 sec. to 3.72 sec. at 1200 dpi) after the trailing edge of the paper has moved past the Paper Take-up Sensor (PS1) (PS1: deactivated).
6. The Paper Take-up Sensor (PS1) is in the activated state when the Power Switch (S1) is turned ON or the cover is closed.
7. The Paper Exit Sensor (PS3) is in the activated state when the Power Switch (S1) is turned ON or the cover is closed.

(3) PagePro 1200W Paper Misfeed Detecting Conditions

1. The Paper Take-up Sensor (PS1) is activated within about 0.2 sec. (within about 0.4 sec. at 1200 dpi) after the paper take-up sequence has been started in the Multi-purpose Tray (Paper Take-up Solenoid is energized, causing the Paper Take-up Roller to start turning) or within about 0.45 sec. (within about 0.9 sec. at 1200 dpi) after the paper take-up sequence has been started in the Second Paper Cassette Unit.
2. The Paper Take-up Sensor (PS1) is not activated within about 0.2 sec. to 1.48 sec. (within about 0.4 sec. to 2.96 sec. at 1200 dpi) after the paper take-up sequence has been started in the Multi-

purpose Tray (Paper Take-up Solenoid is energized, causing the Paper Take-up Roller to start turning) or within about 0.45 sec. to 1.97 sec. (within about 0.9 sec. to 3.94 sec. at 1200 dpi) after the paper take-up sequence has been started in the Second Paper Cassette Unit.

3. The Paper Take-up Sensor (PS1) is not deactivated within about 1.66 sec. to about 5.25 sec. (within about 3.32 sec. to 10.5 sec. at 1200 dpi) after the leading edge of the paper has reached the Paper Take-up Sensor (PS1) (PS1: activated).
4. The Paper Exit Sensor (PS3) is not activated within about 1.79 sec. to about 2.34 sec. (within about3.58 sec. to 4.68 sec. at 1200 dpi) after the leading edge of the paper has reached the Paper Take-up Sensor (PS1) (PS1: activated).
5. The Paper Exit Sensor (PS3) is not deactivated within about 1.77 sec. to about 2.39 sec. (within about 3.54 sec. to 4.78 sec. at 1200 dpi) after the trailing edge of the paper has moved past the Paper Take-up Sensor (PS1) (PS1: deactivated).
6. The Paper Take-up Sensor (PS1) is in the activated state when the Power Switch (S1) is turned ON or the cover is closed.
7. The Paper Exit Sensor (PS3) is in the activated state when the Power Switch (S1) is turned ON or the cover is closed.

(4) How to Reset a Paper Misfeed

Close the Top Cover after the misfed sheet of paper has been cleared.

7-2. PagePro 1250E Malfunction Detection

When any of the following malfunctions is detected, the drive for all elements is turned OFF and the hardware error is displayed on the control panel and the Status Monitor installed in the PC.

(1) SOS malfunction

1. No -S_SCAN signals are detected within 0.5 sec. after the laser has been turned ON.
2. The -S_SCAN signal is turned OFF after the laser has been turned ON.

(2) Polygon Motor malfunction

1. No POLYGON_LOCK signals are detected for a continuous 0.5-sec. period at any time 6 sec. after the Polygon Motor has been energized.
2. The POLYGON_LOCK signal is detected for a continuous 5-sec. period when the Polygon Motor is deenergized.
3. No POLYGON_LOCK signals are detected within 3 sec. after the lapse of 1 sec. after the Polygon Motor has been energized.
4. No POLYGON_LOCK signals are detected within 1 sec. after the first POLYGON_LOCK signal has been detected after the Polygon Motor was energized.

(3) Main Motor malfunction

1. No -Motor_Lock signals are detected within 1 sec. after the Main Motor has been energized.
2. The -Motor_Lock signal remains OFF for a continuous 0.1-sec. period.

(4) Fusing Malfunction

1. An abnormally high fusing temperature results if the temperature detected by the Thermistor exceeds 235°C for 0.05 sec. while the fusing temperature is being controlled.
2. The Thermistor is considered to be faulty if the temperature detected by the Thermistor is less than the specified value for 0.05 sec. at any time for a 9-sec. period after 5 sec. after the warm-up cycle has been started (only if the temperature detected by the Thermistor is 80°C or less).
3. A warm-up failure results if the temperature detected by the Thermistor does not increase for the period of 3 sec. or more during the period of time from 0.7 sec. after the Heater Lamp (H1) is turned ON to the time when the Heater Lamp (H1) is turned OFF (except during printing).
4. A warm-up failure results if the Heater Lamp (H1) remains ON for 30 sec. or more (except while the Main Motor remains energized).
5. An abnormally low fusing temperature results if the temperature detected by the Thermistor remains below the set temperature for a continuous 50-msec. period in any mode (the set temperature is 140°C at 600 dpi and 110°C at 1200 dpi during printing, and 70°C during standby).

(5) Cooling Fan Motor malfunction

The FAN_LOCK signal remains HIGH or LOW for a continuous 2-sec. period while the Cooling Fan Motor (M2) is turning.

(6) High voltage malfunction

1. The drum charge monitor voltage (C_MON) falls outside the specified range at any time 0.5 sec. after the power has been turned ON.
2. The image transfer monitor voltage (T_MON_V, T_MON_I) signal falls outside the specified range.

7-3. PagePro 1200W Malfunction Detection

When any of the following malfunctions is detected, the drive for all elements is turned OFF and the hardware error is displayed on the control panel and the Status Monitor installed in the PC.

(1) Laser malfunction

The laser diode is forced to turn ON for power adjustment immediately after the Polygon Motor (M3) has been energized.

(2) Polygon Motor malfunction

1. No -S_SCAN signals are detected within 0.8 sec. after the Polygon Motor has been energized.
2. The number of Polygon Motor rotations has not stabilized within ±0.5% by 6 sec. after the Motor is energized.
3. The number of Polygon Motor rotations has exceeded ±3% for more than 0.5 after the Motor is energized and the rotation number stabilizes within ±0.5%.

(3) Main Motor malfunction

1. No -Motor_Lock signals are detected within 1 sec. after the Main Motor has been energized.
2. The -Motor_Lock signal remains OFF for a continuous 0.1-sec. period.

(4) Fusing Malfunction

1. An abnormally high fusing temperature results if the temperature detected by the Thermistor exceeds 230°C for 0.05 sec. while the fusing temperature is being controlled.
2. The Thermistor is considered to be faulty if the temperature detected by the Thermistor is less than the specified value for 0.05 sec. at any time for a 9-sec. period after 5 sec. after the warm-up cycle has been started (only if the temperature detected by the Thermistor is 80°C or less).
3. A warm-up failure results if the temperature detected by the Thermistor does not increase for the period of 3 sec. or more during the period of time from 0.7 sec. after the Heater Lamp (H1) is turned ON to the time when the Heater Lamp (H1) is turned OFF (except during printing).
4. A warm-up failure results if the Heater Lamp (H1) remains ON for 30 sec.
5. An abnormally low fusing temperature results if the temperature detected by the Thermistor remains below the set temperature for a continuous 0.05 sec. period in any mode (the set temperature is 140°C at 600 dpi and 110°C at 1200 dpi during printing, and 70°C during standby).

(5) Cooling Fan Motor malfunction

A Cooling Fan Motor Lock signal (FAN_LOCK) is detected for a continuous 2-sec. period or more while the Cooling Fan Motor (M2) is being energized.

(6) High voltage malfunction

1. The drum charge monitor voltage (C_MON) falls outside the specified range at any time 0.5 sec. after the power has been turned ON.
2. The image transfer monitor voltage (T_MON_V, T_MON_I) signal falls outside the specified range

7-4. Troubleshooting for Paper Misfeeds

(1) Paper misfeed occurred when the Power switch is turned ON

Check		Remedy
Is paper left in machine? ↓No	→ Yes	Remove the paper.
Do the Paper Take-up Sensor and Paper Exit Sensor lever move correctly?	→ No	Correct the Sensor lever movement.
	→ Yes	Replace PS1. Replace PS3. Replace the Controller Board.

(2) Paper misfeed occurred at the paper take-up section

Check		Remedy
Does the Paper Take-up Roller of the Multi-purpose Tray and Second Cassette Unit turn? ↓Yes	→ No	Replace SL1. Replace SL21.
Does the paper being used conform to the product specifications? ↓Yes	→ No	Instruct the user to use the paper that conforms to the product specifications.
Is the paper curled, waved, or damp? ↓No	→ Yes	Change the paper. Instruct the user to store the paper properly.
Are the Paper Take-up Roller and 2nd Paper Take-up Roller deformed, worn, or dirty with paper dust? ↓No	→ Yes	Replace the Paper Take-up Roller. Replace the 2nd Paper Take-up Roller.
Does the Paper Take-up Sensor lever move correctly?	→ No	Correct the Sensor lever movement.
	→ Yes	Replace PS1. Replace the Controller Board.

(3) Paper misfeed occurred at the paper exit section

Check		Remedy
Is the leading edge out of the Exit Roller? ↓No	→ Yes	Replace PS1.
Is the Image Transfer Roller deformed, worn, or dirty with paper dust? ↓No	→ Yes	Replace the Image Transfer Roller.
Does the Paper Exit Roller rotate? ↓Yes	→ No	Replace the Top Cover Assy.
Does the Paper Exit Sensor (PS3) lever move correctly?	→ No	Replace PS3.
	→ Yes	Replace the Controller Board.

7-5. Troubleshooting For Malfunctions

(1) No power

Check		Remedy
Has the power cord been securely plugged into the power outlet? ↓Yes	→ No	Plug the power cord into the power outlet.
Has the power cord been securely connected to the printer? ↓Yes	→ No	Plug in the power cord.
Has the Power Switch (S1) been turned ON? ↓Yes	→ No	Turn ON the Power Switch.
Has the fuse (F1 or F2) in the Power Unit (PU1) blown?	→ No	Replace PU1 or Controller Board.
	→ Yes	Replace the fuse (F1 or F2).

Cause	Remedy
Laser diode malfunction SOS Sensor malfunction	Replace the Print Head Unit. Replace the Controller Board.

(2) FATAL ERROR 02: Polygon Motor

Cause	Remedy
Polygon Motor malfunction	Replace the Print Head Unit. Replace the Controller Board.

(3) FATAL ERROR 01: Main Motor

Cause		Remedy
Does the Main Motor (M1) turn when the Power Switch is turned ON?	→ No	Replace the Main Motor (M1). Replace the Controller Board.

(4) FATAL ERROR 07: Fuser Temperature low/ FATAL ERROR 06: Fuser Warm up/ FATAL ERROR 08: Fuser Overheat

Cause		Remedy
Does the error message appear after the printer has completed warming up? ↓No	→ Yes	Replace the Thermistor (TH1) or Fusing Unit. Replace the Controller Board.
Is the Fusing Unit warm? ↓No	→ Yes	Replace the Thermistor (TH1) or Fusing Unit. Replace the Controller Board.

Cause		Remedy
Is there electrical conduction across connectors 1 and 3 of the Fusing Unit?	→ No	Replace the Fusing Unit.Or, replace the Heater Lamp (H1) or Thermostat (TS1).
	→ Yes	Replace the Power Unit (PU1) or Controller Board.

Cause		Remedy
Does the error message appear after the printer has completed warming up?	→ Yes	Replace the Thermistor (TH1) or Fusing Unit. Replace the Controller Board.
↓No		
Is the Fusing Unit warm?	→ Yes	Replace the Thermistor (TH1) or Fusing Unit. Replace the Controller Board.
↓No		
Is there electrical conduction across connectors 1 and 3 of the Fusing Unit?	→ No	Replace the Fusing Unit.Or, replace the Heater Lamp (H1) or Thermostat (TS1).
	→ Yes	Replace the Power Unit (PU1) or Controller Board.

(5) FATAL ERROR 03: Fuser Fan

Cause	Remedy
Does the Cooling Fan Motor (M2) turn during a print cycle?	Replace the Cooling Fan Motor (M2). Replace the Controller Board.

(6) FATAL ERROR 04: H.V

Cause	Remedy
High voltage malfunction	Replace the High Voltage Unit (HV1) replace the Controller Board.

(7) FATAL ERROR 09: Engine I/F

FATAL Error	Remedy
Engine I/F	Replace the Controller Board.

(8) FATAL ERROR 20: Controller Memory Error

FATAL Error	Remedy
Controller Memory Error	Replace the Controller Board.

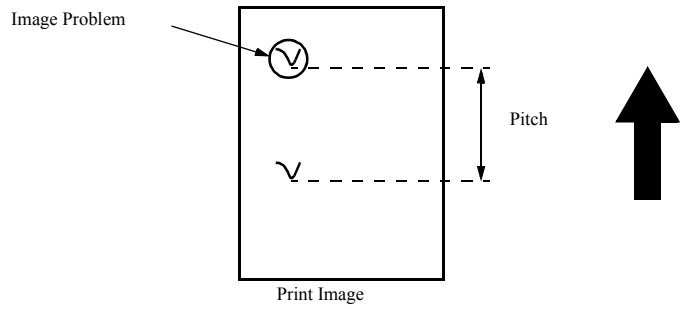
(9) FATAL ERROR 21: Controller SIMM Error / FATAL ERROR 21: Controller DIMM Error

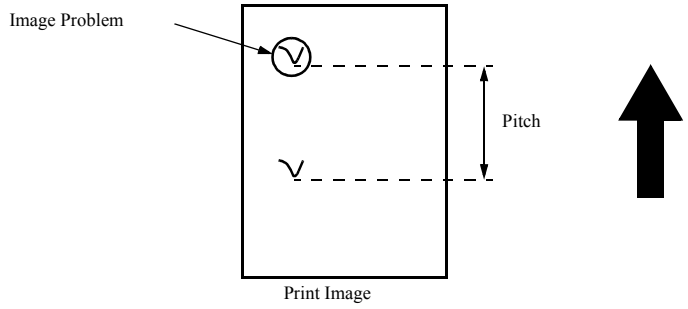
FATAL Error	Remedy
Controller SIMM/DIMM Error	Replace the Controller Board.

7-6. Image Quality Troubleshooting

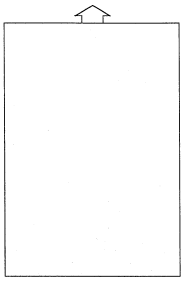
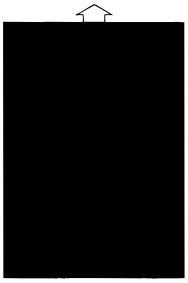
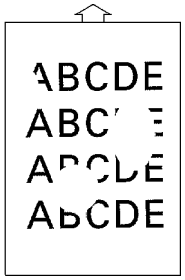
When an image problem occurs, exchange the Toner Cartridge and/or Drum Cartridge for a new one and determine whether the cause of the problem is due to one of the cartridges or something else in the printer.

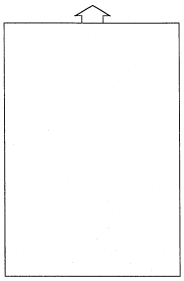
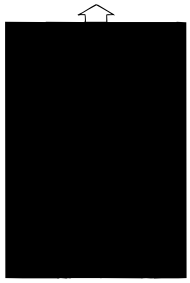
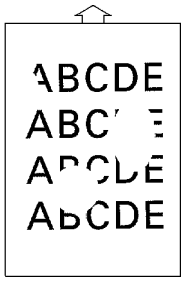
If an image quality problem occurs with the printer, first replace the Toner Cartridge or Drum Cartridge.
If the problem still occurs, please use the following chart to help determine the defective unit.

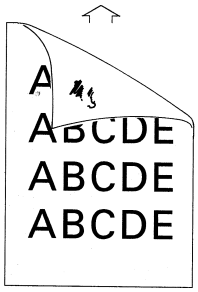
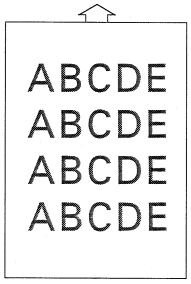
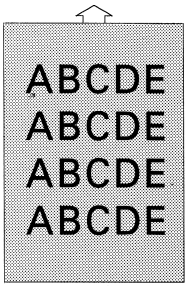


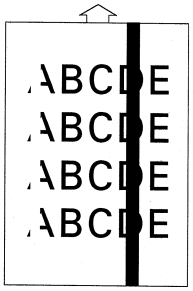
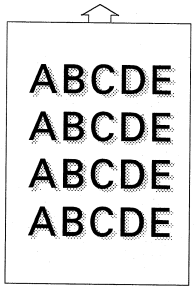


Pitch	Defective Part (diameter)	Defective Unit (parts)
28 mm	Sleeve Roller (ϕ 15.7 mm)	Toner Cartridge
94.2 mm	PC Drum (ϕ 30 mm)	Drum Cartridge
50.3 mm	Image Transfer Roller (ϕ 16 mm)	Image Transfer Roller
62.8 mm	Heat Roller (ϕ 20 mm)	Fusing Unit
75.36 mm	Back-up Roller (ϕ 24 mm)	

Symptom	Possible Cause	Remedy
Blank print  0951o211	No Toner Cartridge	Install a Toner Cartridge.
	Toner empty	Replace the Toner Cartridge.
	No Drum Cartridge	Install a Drum Cartridge.
	Defective PC Drum (end of life)	Replace the Drum Cartridge.
	Improper laser exposure	Replace Print Head Unit.
		Replace the High Voltage Unit (HV1).
		Replace the Controller Board.
	Developing bias fault	Replace the High Voltage Unit (HV1).
		Replace the Controller Board.
	Print Head shutter not opening	Replace Print Head Unit.
Black print  0951o213	Improper laser exposure	Replace Print Head Unit. Replace the Controller Board.
	Improper charging	Replace the High Voltage Unit (HV1).
		Replace the Controller Board.
White spots  0951o220	The paper may have absorbed some moisture due to high humidity.	Replace the paper.
	Poor image transfer	Replace Image Transfer Roller.
		Replace the High Voltage Unit (HV1).
		Replace the Controller Board.

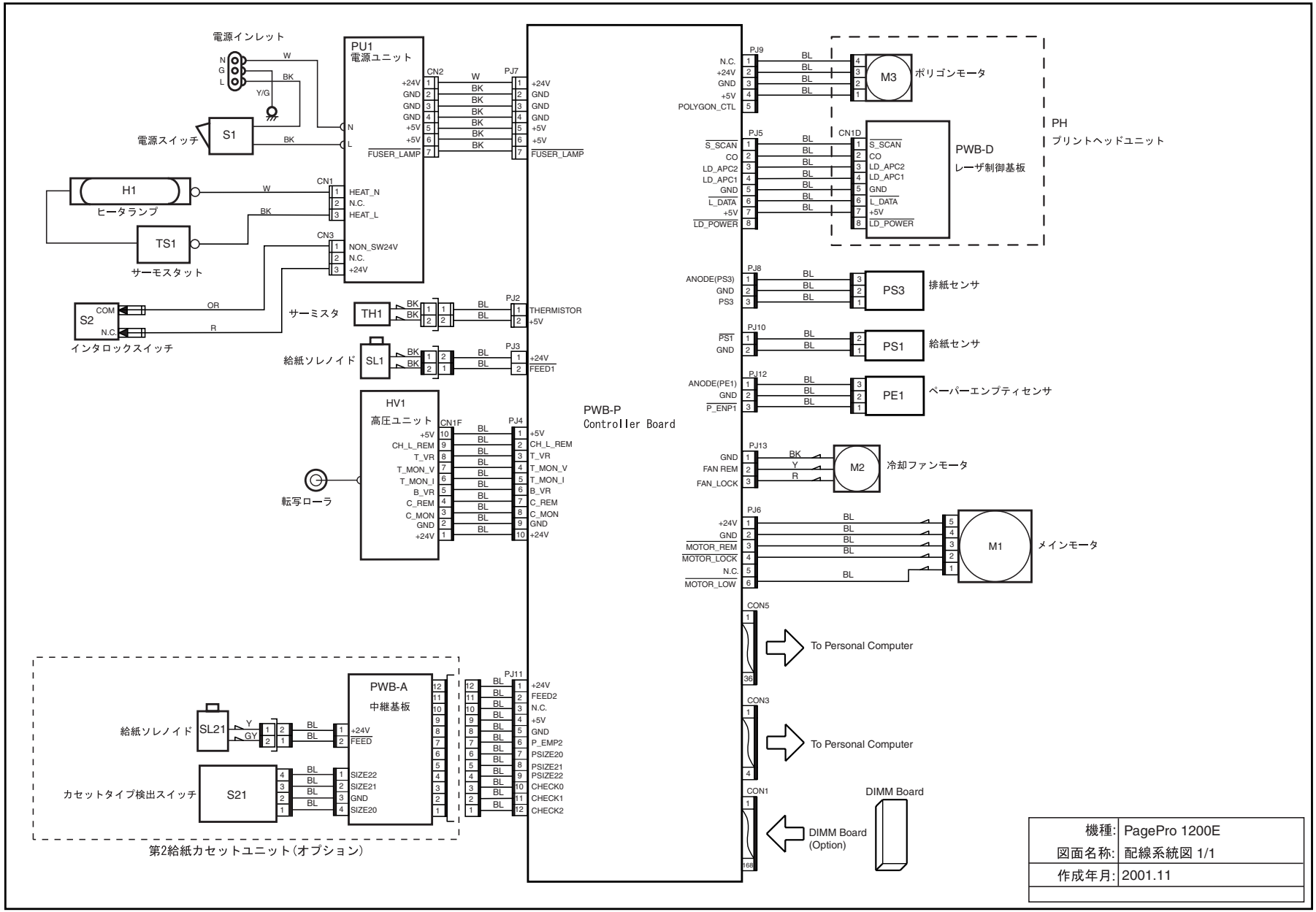
Symptom	Possible Cause	Remedy
Blank print  0951o211	No Toner Cartridge	Install a Toner Cartridge.
	Toner empty	Replace the Toner Cartridge.
	No Drum Cartridge	Install a Drum Cartridge.
	Defective PC Drum (end of life)	Replace the Drum Cartridge.
	Improper laser exposure	Replace Print Head Unit.
		Replace the High Voltage Unit (HV1).
		Replace the Controller Board.
	Developing bias fault	Replace the High Voltage Unit (HV1).
		Replace the Controller Board.
Black print  0951o213	Improper laser exposure	Replace Print Head Unit. Replace the Controller Board.
	Improper charging	Replace the High Voltage Unit (HV1).
		Replace the Controller Board.
White spots  0951o220	The paper may have absorbed some moisture due to high humidity.	Replace the paper.
	Poor image transfer	Replace Image Transfer Roller.
		Replace the High Voltage Unit (HV1).
		Replace the Controller Board.

Symptom	Possible Cause	Remedy
Toner smudges on backside  0951o226	Dust or damage on the Fusing Roller.	Replace the Fusing Unit or the Fusing Roller.
	Dust or damage on the Image Transfer Roller.	Replace the Image Transfer Roller.
	Toner on paper path.	Clean the paper path inside of the printer.
Low image density  0951o214	Toner empty	Replace the Toner Cartridge.
	Defective PC Drum (end of life)	Replace the Drum Cartridge.
	Poor development	Replace the High Voltage Unit (HV1).
		Replace the Controller Board.
	Image transfer fault	Replace the Image Transfer Roller.
		Replace the High Voltage Unit (HV1).
		Replace the Controller Board.
Foggy background  0951o218	Poor development	Replace the High Voltage Unit (HV1).
		Replace the Controller Board.
	Defective PC Drum (end of life)	Replace the Drum Cartridge.

Symptom	Possible Cause	Remedy
White/black lines and bands  0951o222	Scratch on the PC Drum	Replace the Drum Cartridge.
	Defective Print Head unit	Replace the Print Head Unit.
		Replace the Controller Board.
Offset image  0951o219	Defective Fusing Roller	Replace the Fusing Unit or the Fusing Roller.
	Defective Image Transfer Roller	Replace the Image Transfer Roller.

8. Wiring Diagrams

8-1. PagePro 1250E Wiring Diagram



8-2. PagePro 1200W Wiring Diagram