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magicolor 2300 Series



Service Manual



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SAFETY

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.



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



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



Used to call the service technician 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.
 <ul style="list-style-type: none">• 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.
 <ul style="list-style-type: none">• 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. Licking the imaging cartridge or ingesting its contents 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.
Hävittä käytetty paristo valmistajan ohjeiden mukaisesti.

WARNING

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

Norway

ADVARSEL

Ekspløsjonsfare 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 “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 copier from the outlet before attempting to service the copier.
- The basic rule is not to operate the copier anytime during disassembly. If it is absolutely necessary to run the copier with its covers removed, use care not to allow your clothing to be caught in revolving parts such as the timing belt and gears.
- Before attempting to replace parts and unplug connectors, make sure that the power cord of the copier has been unplugged from the wall outlet.
- Be sure to use the Interlock Switch Actuating Jig whenever it is necessary to actuate the Interlock Switch with the covers left open or removed.
- While the product is energized, do not unplug or plug connectors into the circuit boards or harnesses.
- Never use flammable sprays near the copier.
- A used battery should be disposed of according to the local regulations and never be discarded casually or left unattended at the user's premises.
- When reassembling parts, make sure that the correct screws (size, type) and toothed washer are used in the correct places.

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

- During transportation or when in storage, new P.W. Boards must not be indiscriminately removed from their protective conductive bags.
- Do not store or place P.W. Boards in a location exposed to direct sunlight and high temperature.
- When it becomes absolutely necessary to remove a Board from its conductive bag or case, always place it on its conductive mat in an area as free as possible from static electricity.
- Do not touch the pins of the ICs with your bare hands.
- Protect the PWBs from any external force so that they are not bent or damaged.

During Inspection/Replacement

- Avoid checking the IC directly with a multimeter; use connectors on the Board.
- Never create a closed circuit across IC pins with a metal tool.
- Before unplugging connectors from the P.W. Boards, make sure that the power cord has been unplugged from the outlet.
- When removing a Board from its conductive bag or conductive case, do not touch the pins of the ICs or the printed pattern. Place it in position by holding only the edges of the Board.
- When touching the PWB, wear a wrist strap and connect its cord to a securely grounded place whenever possible. If you cannot wear a wrist strap, touch a metal part to discharge static electricity before touching the PWB.
- Note that replacement of a PWB may call for readjustments or resetting of particular items.

7. Handling of Other Parts

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

8. Handling of the PC Drum

* Only for Products Not Employing an Imaging Cartridge.

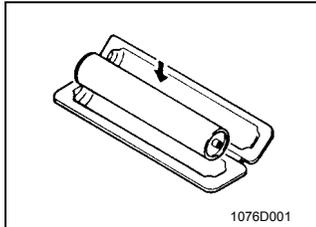
During Transportation/Storage

- Use the specified carton whenever moving or storing the PC Drum.
- The storage temperature is in the range between -20°C and $+40^{\circ}\text{C}$.
- In summer, avoid leaving the PC Drum in a car for a long time.

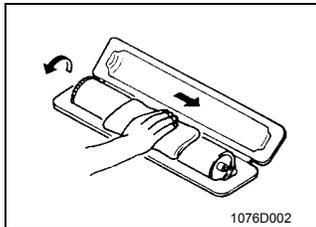
Handling

- Ensure that the correct PC Drum is used.
- Whenever the PC Drum has been removed from the copier, store it in its carton or protect it with a Drum Cloth.
- The PC Drum exhibits greatest light fatigue after being exposed to strong light over an extended period of time. Never, therefore, expose it to direct sunlight.
- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not apply chemicals to the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

If, however, the surface is contaminated with fingerprints, clean it using the following procedure.



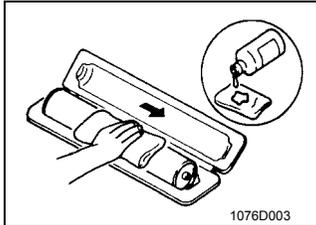
A. Place the PC Drum into one half of its carton.



B. Gently wipe the residual toner off the surface of the PC Drum with a dry, Dust-Free Cotton Pad.

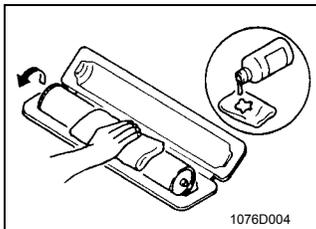
- Turn the PC Drum so that the area of its surface on which the line of toner left by the Cleaning Blade is present is facing straight up. Wipe the surface in one continuous movement from the rear edge of the PC Drum to the front edge and off the surface of the PC Drum.
- Turn the PC Drum slightly and wipe the newly exposed surface area with a CLEAN face of the Dust-Free Cotton Pad. Repeat this procedure until the entire surface of the PC Drum has been thoroughly cleaned.

* At this time, always use a CLEAN face of the dry Dust-Free Cotton Pad until no toner is evident on the face of the Pad after wiping.



C. Soak a small amount of either ethyl alcohol or isopropyl alcohol into a clean, unused Dust-Free Cotton Pad which has been folded over into quarters. Now, wipe the surface of the PC Drum in one continuous movement from its rear edge to its front edge and off its surface one to two times.

* Never move the Pad back and forth.



D. Using the SAME face of the Pad, repeat the procedure explained in the latter half of step 3 until the entire surface of the PC Drum has been wiped. Always OVERLAP the areas when wiping. Two complete turns of the PC Drum would be appropriate for cleaning.

NOTES

- Even when the PC Drum is only locally dirtied, wipe the entire surface.
- Do not expose the PC Drum to direct sunlight. Clean it as quickly as possible even under interior illumination.
- If dirt remains after cleaning, repeat the entire procedure from the beginning one more time.

9. Handling of the Imaging Cartridge

* Only for Products Employing an Imaging Cartridge.

During Transportation/Storage

- The storage temperature is in the range between -20°C and $+40^{\circ}\text{C}$.
- In summer, avoid leaving the Imaging Cartridge in a car for a long time.

Handling

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

Precautionary Information on the PC Drum Inside the Imaging Cartridge

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

1-6. Safety information

(1) Laser Safety

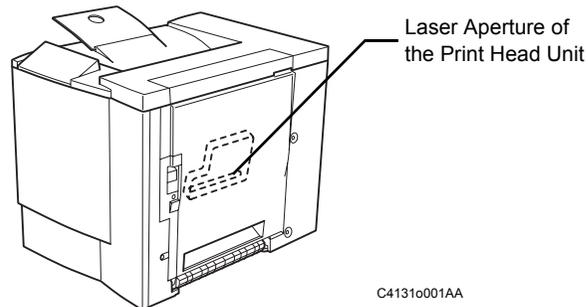
- This is a digital machine certified as a class 1 laser product. There is no possibility of danger from a laser, provided the machine is serviced according to the instruction in this manual.

(2) Internal Laser Radiation

semiconductor laser	
Maximum average radiation power(*)	4.68 μ W
Wavelength	770-795 nm

*:Laser power in surface of the PC Drum

- 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.



C4131o001AA

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.

CAUTION

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

semiconductor laser	
Maximum power of the laser diode	5 mW
Wavelength	770-795 nm

All Areas

CAUTION

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

semiconductor laser	
Maximum power of the laser diode	5 mW
Wavelength	770-795 nm

Denmark

ADVARSEL

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

halvlederlaser	
Laserdiodens højeste styrke	5 mW
bølgelængden	770-795 nm

Finland, Sweden

LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

VAROITUS!

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

puolijohdelaser	
Laserdiodin suurin teho	5 mW
aallonpituus	770-795 nm

VARNING!

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

halvledarlaser	
Den maximala effekten för laserdioden	5 mW
våglängden	770-795 nm

VARO!

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

VARNING!

Osynlig laserstrålning när denna del är öppen och spärren är urkopplad. Betrakta ej strålen.

Norway

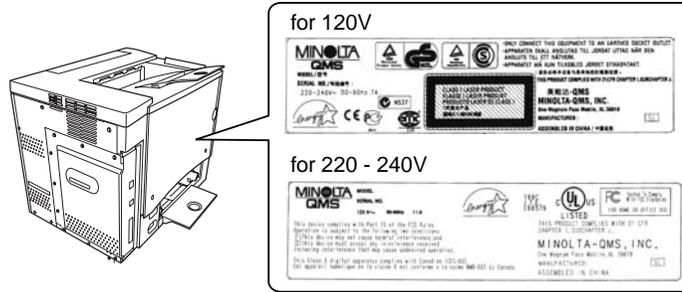
ADVERSEL

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

halvleder laser	
Maksimal effekt till laserdiode	5 mW
bølgelengde	770-795 nm

1-7. Laser Safety Label

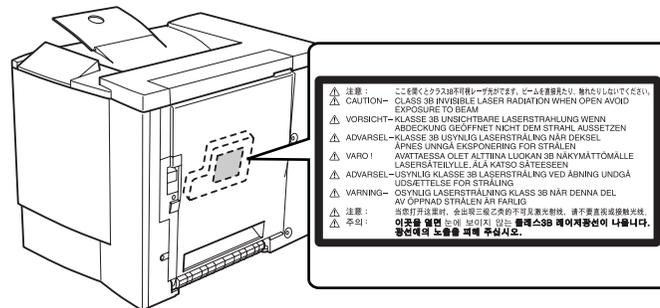
- A laser safety label is attached to the outside of the machine as shown below.



4131003AA

1-8. Laser Caution Label

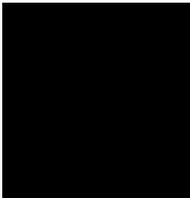
- A laser caution label is attached to the inside of the machine as shown below.



C4131s005AA

1-9. PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
- When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the printer OFF.
- If the job requires that the printer be left ON, take off your watch and ring and wear laser protective goggles.
- A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.



GENERAL

1. Product Specifications

(1) Printer

Type	Desktop full-color laser beam printer
Printing method	Electrophotographic (two-part imaging cartridge)
Exposure method	Laser diode and polygon mirror scanning
Print resolution	600 dpi (dots/inch)
Media sizes	A5T, B5T, A4, Letter, Legal
Media types	Plain paper (60-90 g/m ²), recycled paper, overhead projector transparencies, letterheads, envelopes (Monarch, Com-10, DL, C5, C6, Youkei -0, Youkei -1, Youkei -4, Youkei -6), label sheets, thick paper (91-163 g/m ²), government-standard postcards, postcard sheets, and return postcards
First-page print time	Black-and-white printing: 14 sec. Color printing: 25 sec.
Multi-page print speed	Black-and-white printing: 16 pages/min. (for A4- or Letter-size pages) Color printing: 4 pages/min. (for A4- or Letter-size pages)
Warm-up time	Within 180 seconds (at a room temperature of 23 °C and at the rated voltage)
System speed	101.78 mm/sec.
Paper feed-in method	1-way system (maximum 2-way)*1 Manual feed tray (200 sheets of plain paper) 2nd paper cassette (500 sheets of plain paper) *1Expandable to 2-way system by installing the optional 2nd paper cassette
Paper feed-out method	Face-down (tray capacity: 200 sheets)
Drum-charging method	Comb electrode scorotron charger
Developing method	Single-element developing system
Image transfer method	Transport image transfer system
PC drum	OPC (Organic Photoconductor)
PC drum cleaning method	Blade system
Paper separation method	Curvature separation + charge-neutralizing system
Fusing method	Heated roller fusing system
Dimensions	356 mm (W) x 500 mm (D) x 392 mm (H)
Weight	25 kg (without drum cartridge and toner cartridges)
Weight (consumables)	2.8 kg (drum cartridge and toner cartridges)
Rated power supply voltage	100 V / 120V / 220-240 V
Frequency	50/60 Hz
Maximum power consumption	1100 W or less (100/120 V) 1100 W or less (220-240 V)
Operating noise	During stand-by: 39 dB (A) or less During printing: 54 dB (A) or less (color printing) 54 dB (A) or less (black-and-white printing)
Operating environment	10-35 °C 15 - 85%

Drum cartridge life	45,000 pages (black/white ratio=5%)
Toner cartridge life (purchased separately)	4,500 pages (black/white ratio=5%)
	1,500 pages (black/white ratio=5%)
Toner cartridge life (enclosed cartridge)	Black: 1,500 pages (black/white ratio=5%)
	Color: 1,500 pages (color/white ratio for each color=5%)
Options	Second paper cassette
	Duplex unit

(2) Second paper cassette (Option)

Name	Second paper cassette
Paper	Plain paper (16 to 24 lbs.; 60-90 g/m ²), recycled paper (16 to 24 lbs., 60-90 g/m ²)
Media sizes	A4, Letter
Paper cassette capacity	500 sheets
Paper separation mechanism	Paper separator system
Power source	Supplied by main unit (DC24 V ±10%)
Drive source	Supplied by main unit
Dimensions	380 mm (W) x 511 mm (D) x 176 mm (H) (including the height of the right-side door)
Weight	5.3 kg

(3) Duplex unit

Name	Duplex unit
Paper	Plain paper (16 to 24 lbs.; 60-90 g/m ²)
Media sizes	A4, Letter
Print speed (double-sided printing)	Color printing: 2.0 pages/min. (A4- or Letter-size pages)
	Black-and-white printing: 5.0 pages/min. (A4- or Letter-size pages)
Document feeding capacity	A4/LetterT: 2 pages (including the paper path of the paper feed-out section)
Paper transfer baseline	Center baseline
Power source	Supplied by main unit (DC24 V ±10%)
Drive source	Supplied by main unit
Dimensions	97 mm (W) x 340 mm (D) x 330 mm (H) (including the height of the right-side door)
Weight	2.0 kg

(4) Controller (PWB-P)

CPU	D8405 200MHz
Memory configuration	Standard ROM: 4MB
	Standard RAM: 32MB
Standard I/F	Ethernet (10/100BASE-TX, RJ-45)
	IEEE1284 (Compatible/Nibble/ECP/EPP)
	USB Type B connector
Network protocol	TCP/IP
	DHCP, ARP/ICMP, BOOTP, SLP, IPP, HTTP, SNMP, LPR
Network print service	RAW Port Printing (9100)
	IPP1.0 (http://Printer IP address/ipp.cgi)
	LPD (Queue Name: lp, LP, default, DEFAULT)
Resolution	600 x 600 dpi, 1200 x 600 dpi, 2400 x 600 dpi
Printer Driver	OS: Windows 95/98/Me, Windows NT4.0, Windows 2000, Windows XP
Compatible clients:	
PC	IBM PC or compatible
CPU	CPU clock of 300 MHz or more recommended
Hard disk free space	Minimum 36 MB
	20 MB: Printer drive/Status display
	16 MB: Image processing area
RAM	At least 16 MB (Windows 95/98/NT4.0)
	At least 32 MB (Windows Me)
	At least 64 MB (Windows 2000 Professional)
	At least 128 MB (Windows XP Home Edition/Professional)
browser	Either of the following browsers is required to use PageScope Light.
	Netscape Navigator Ver. 4.7 or later
	Internet Explorer ver5.0

2. Installation Precautions

2-1. Installation environment

To ensure safety and prevent possible malfunctions, install the unit in a location that meets the following requirements.

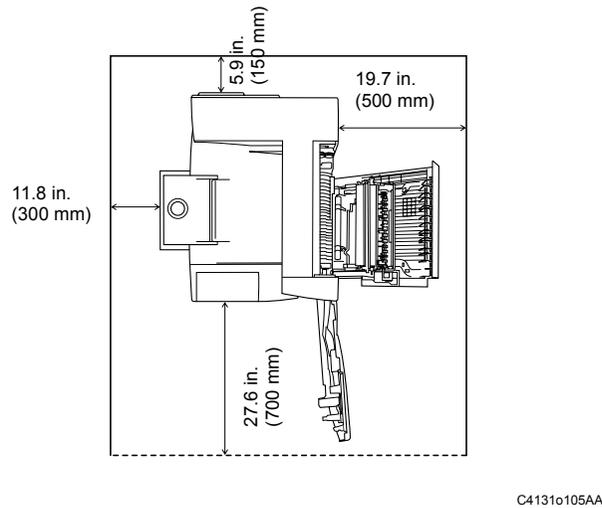
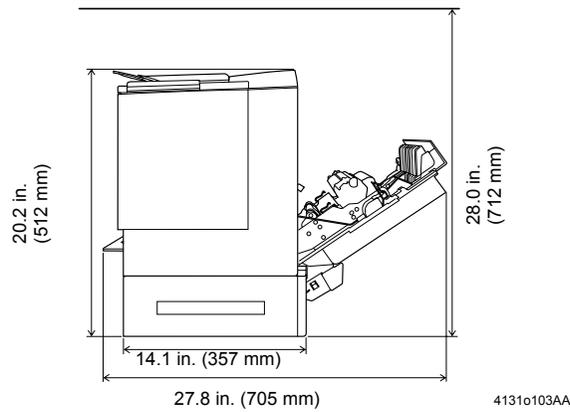
- A location that is not exposed to extremely high or low temperatures and not exposed to extremely high or low humidity.
- A location that is not exposed to extreme changes in temperature or humidity.
- A location that is not exposed to direct sunlight.
- A location out of the direct airflow of an air conditioner, heater or ventilation opening.
- A well-ventilated location that is not extremely dusty.
- A stable and level location that is not subjected to undue vibrations.
- A location that is not near room heaters or any other heat-generating appliances.
- A location away from volatile, combustible material (such as paint thinner or gasoline).
- A location that is not exposed to water or other liquids and where a short circuit of the unit is not likely.
- A location that does not put people in the direct airflow of exhaust from the unit.
- A location where ammonia gases are not generated.

2-2. Installation power supply

- If other electrical equipment are plugged into the same electrical outlet, make sure that the current capacity is not exceeded.
- Use a power source with as little voltage fluctuations as possible.
- Only use an outlet expander or a table tap; never use extension cords.
- Be careful that the unit does not pinch or is not placed on top of power or transmission cords of other electrical equipment.
- Periodically check that the following conditions are met.
 - * The power supply plug does not feel unusually warm.
 - * The power supply cord is free of cracks and scratches.
 - * The power supply plug is securely inserted into the electrical outlet.
 - * Pressure is not applied to the power supply cord.

2-3. Space requirements

- In order to reduce the risk of electric shock in the event of a short circuit, the ground wire must be connected.
- Attach the ground wire to the ground terminal of the electrical outlet or to a ground connection that complies with local electrical standards.
- Never connect the ground wire to a gas pipe, a telephone ground connection, a lightning rod or a water pipe, otherwise a fire or electric shock may occur.



3. Operation Precautions

3-1. Ensuring the optimum performance of this unit

- Never place heavy objects on the unit or subject it to shocks.
- Make sure that the power supply plug is securely inserted into the electrical outlet.
- Never remove secured panels or open doors of the unit while it is printing.
- Never turn off the unit while it is printing.
- Always provide good ventilation when using the unit for a long period of time within a confined area.
- Never use combustible sprays near the unit.
- If the unit becomes unusually warm or generates an unusual noise, immediately turn it off, and then unplug the power supply cord.
- Never turn on the unit at the same time that the power supply cord is being plugged in.
- When unplugging the power supply cord, always grasp the plug, not the cord.
- Never bring magnetized objects near the unit.
- Never place vases or other containers filled with water on the unit.
- Be sure to turn off the unit if it is not to be used for a long period of time or if a power outage occurs.
- Never allow metal objects such as paper clips or staples to fall into the unit or any of its openings.

3-2. Operating environment

In order to ensure proper operation of the unit, make sure that the operating environment meets the following conditions.

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

3-3. Power supply requirements

In order to ensure proper operation of the unit, make sure that the power supply meets the following conditions.

- Voltage fluctuation ± 10 % of the specified voltage
- Frequency fluctuation ± 3 Hz%

3-4. Other precautions

When servicing a machine equipped with a laser beam, observe the following precautions.

- When servicing parts in the path of the laser beam (near the print head or PC drum), be sure to first unplug the power supply cord of the unit.
 - When you are required to service the unit with the power supply cord plugged in, be sure to strictly observe the following precautions.
1. Before performing any service procedures, be sure to remove any reflective accessories such as watches and rings, and wear laser protective goggles.
 2. Be sure that nobody is nearby while you perform the service operations.
 3. Do not bring highly reflective tools into the path of the laser beam.