FaxCentre F116/F116L

SERVICE MANUAL

XEROX®

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Service Documentation

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NOTICE

While every care has been taken in the preparation of this manual, no liability will be accepted by Xerox Europe arising out of any inaccuracies or omissions.

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Introduction

1. Service Call Procedures

2. Repair Analysis Procedures

3. Image Quality

4. Repairs/Adjustments

5. Parts List

6. General Procedures/Information

7. Wiring Data

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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.

Warnings

⚠ WARNING

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.

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

Toner and drum cartridge caution.

- Do not throw the drum cartridge or toner cartridge into a fire. Toner expelled from the fire may cause burns.

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.

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.

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.

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.

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 fuser roll 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

Maintain a grounded connection at all times.

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

Do not modify the product.

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

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.

Cautions

⚠ CAUTION

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

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.

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.

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.

Precautions for the Laser Beam.

- 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."

Precautions for storing the toner or drum cartridge.

- Be sure to keep the toner or drum cartridge out of the reach of children. Licking the imaging cartridge or ingesting its contents is harmful to your health.

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.

Other Precautions

- When handling circuit boards, observe the “HANDLING of PWBs”.
- The PC Drum is a very delicate component. Observe the precautions given in “HANDLING OF THE PC DRUM” because mishandling may result in serious image problems.
- Note that replacement of a circuit board may call for readjustments or resetting of particular items, or software installation.

Precautions for Service

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

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

Precautions Before Service

- When the user is using a word processor or personal computer from a wall outlet of the same line, take necessary steps to prevent the circuit breaker from opening due to overloads.
- Never disturb the LAN by breaking or making a network connection, altering termination, installing or removing networking hardware or software, or shutting down networked devices without the knowledge and express permission of the network administrator or the shop supervisor.

How to Use this Book

DIS/REASSEMBLY, ADJUSTMENT

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

TROUBLESHOOTING

- If a component on a PWB or any other functional unit including a motor is defective, the text only instructs you to replace the whole PWB or functional unit and does not give troubleshooting procedures applicable within the defective unit.
- All troubleshooting procedures contained herein assume that there are no breaks in the harnesses and cords and all connectors are plugged into the right positions.
- The procedures preclude possible malfunctions due to noise and other external causes.

Precautions for Service

- 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 use an air gun or vacuum cleaner for cleaning the ATDC Sensor and other sensors, as they can cause electrostatic destruction. Use a blower brush and cloth. If a unit containing these sensors is to be cleaned, first remove the sensors from the unit.

Precautions for Dis/Reassembly

- Be sure to unplug the machine from the outlet before attempting to service the machine.
- The basic rule is not to operate the machine anytime during disassembly. If it is absolutely necessary to run the machine 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 machine 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 machine.
- 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.

Precautions for Circuit Inspection

- Never create a closed circuit across connector pins except those specified in the text and on the printed circuit.
- When creating a closed circuit and measuring a voltage across connector pins specified in the text, be sure to use the GND wire.

Handling of PWBs

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

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

Handling of Other Parts

- The magnetic roll in the toner cartridge generates a strong magnetic field. Do not bring it near a watch, floppy disk, magnetic card, or CRT tube.

Handling of the Drum Cartridge

During Transportation/Storage

- The storage temperature is in the range between -4 F and +104 F (-20 °C and +40 °C).
- In summer, avoid leaving the Drum Cartridge in a car for a long time.

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

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

Safety Information

Laser Safety

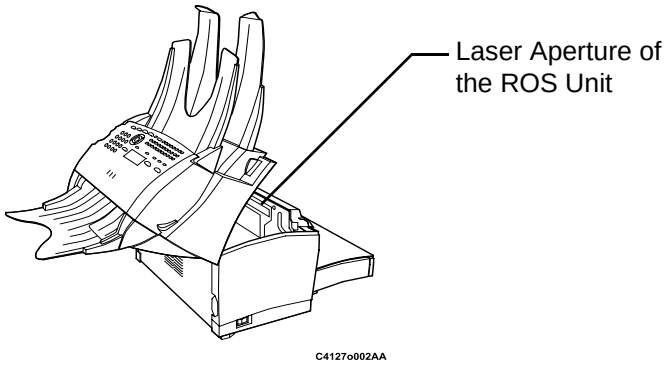
- This is a digital machine certified as a class 1 laser product. There is no possibility of danger from a laser, provided the machine is serviced according to the instruction in this manual.

Internal Laser Radiation

semiconductor laser	
Maximum average radiation power(*)	35 µW
Wavelength	770-795 nm

*Laser Aperture of the ROS 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 ROS unit is NOT A FIELD SERVICE ITEM. Therefore, the ROS unit should not be opened under any circumstances.



This figure shows the view inside the Top Cover with the Toner Cartridge and the Drum Cartridge removed.

Figure 1.

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 on page xv indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

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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 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	770-795 nm

Laser Safety Label

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

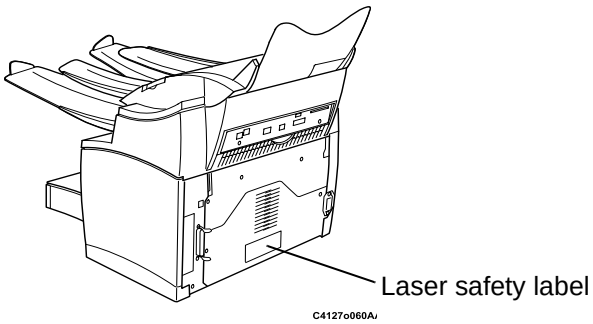

Figure 2.

Laser Caution Label

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

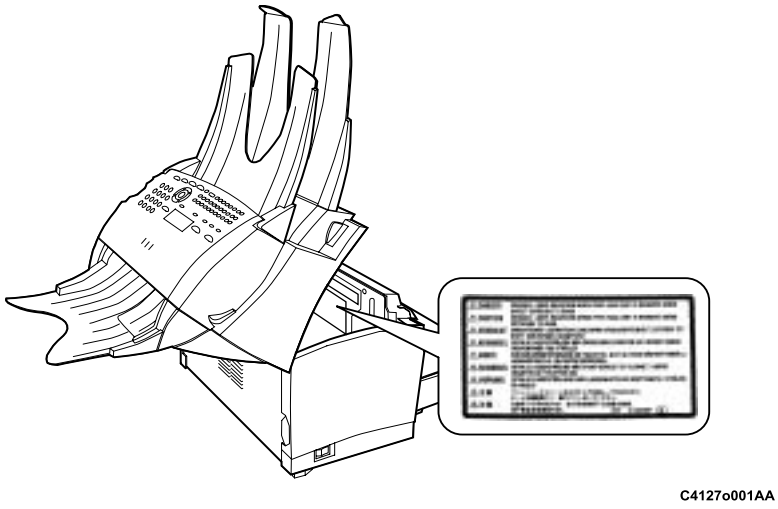

Figure 3.

Precaution 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 ROS and Drum, be sure first to turn the machine OFF.
- If the job requires that the machine 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.

Health and Safety Incident Reporting

I. Summary

This section defines requirements for notification of health and safety incidents involving Xerox products (equipment and materials) at customer locations.

II. Scope

Xerox Corporation and subsidiaries worldwide.

III. Objective

To enable prompt resolution of health and safety incidents involving Xerox products and to ensure Xerox regulatory compliance.

IV. Definitions

Incident:

An event or condition occurring in a customer account that has resulted in injury, illness or property damage. Examples of incidents include machine fires, smoke generation, physical injury to an operator or service representative. Alleged events and product conditions are included in this definition.

V. Requirements

Initial Report:

1. Xerox organisations shall establish a process for individuals to report product incidents to Xerox Environment Health & Safety within 24 hours of becoming aware of the event.
2. The information to be provided at the time of reporting is contained in Appendix A (Health and Safety Incident Report involving a Xerox product).
3. The initial notification may be made by any of the following methods:
   - For incidents in North America and Developing Markets West (Brazil, Mexico, Latin American North and Latin American South):
     - Phone* Xerox EH&S at: 1-800-828-6571.
     - Electronic mail Xerox EH&S at: Doris.Bush@usa.xerox.com.
     - Fax Xerox EH&S at: 1-585-422-6449 [intelnet 8*222 6449].
   - For incidents in Europe and Developing Markets East (Middle East, Africa, India, China and Hong Kong):
     - Phone* Xerox EH&S at: +44 (0) 1707 353434.
     - Electronic mail Xerox EH&S at: Elaine.Grange@GBR.xerox.com.
     - Fax Xerox EH&S at: +44 (0) 1707 353914 [intelnet 8*668 3914].

   *Initial notification made by phone must be followed within 24 hours by a completed incident report and sent to the indicated electronic mail address or fax number.

   NOTE: If sending a fax, please also send the original via internal mail.

Responsibilities for Resolution:

1. Business Groups/Product Design Teams responsible for the product involved in the incident shall:
   a. Manage field bulletins, customer correspondence, product recalls, safety retrofits.
   b. Fund all field retrofits.
2. Field Service Operations shall:
   a. Preserve the Xerox product involved and the scene of the incident inclusive of any associated equipment located in the vicinity of the incident.
   b. Return any affected equipment/part(s) to the location designated by Xerox EH&S and/or the Business Division.
   c. Implement all safety retrofits.
3. Xerox EH&S shall:
   a. Manage and report all incident investigation activities.
   b. Review and approve proposed product corrective actions and retrofits, if necessary.
   c. Manage all communications and correspondence with government agencies.
   d. Define actions to correct confirmed incidents.

VI. Appendices

The Health and Safety Incident Report involving a Xerox Product (Form # EH&S-700) is available at the end of the manual.

1. Service Call Procedures

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SCP 1 Preventive Maintenance

1. Scanner and Communication

To maintain the machine in good working order, it is recommended to periodically perform the following operations:

- Cleaning the document transport rollers (document loader, feed rollers, idler rollers).
- Cleaning the retard pad.
- Cleaning the CIS window.
- Cleaning the control panel keys and the machine covers.
- Printer engine maintenance (2. Laser Printer Engine).
- To clean the machine, use a soft cloth. Never use abrasives or detergents.

Document transport rollers

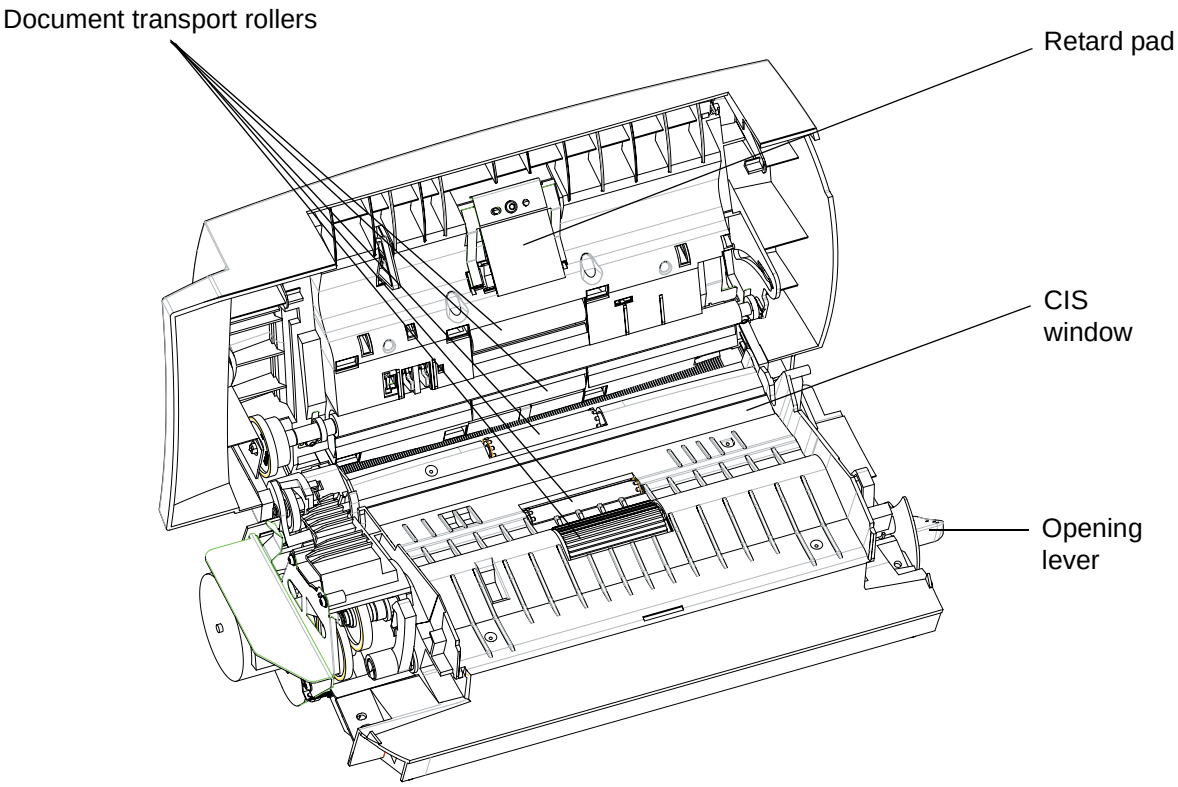

Figure 1.

- Set the on/off switch to “O” (off).
- Open the control panel/scanner by actuating the opening lever located on the left of the machine.

Caution - The opening is limited to approx. 60° by stops: do not try to force the panel any further.

Clean the rollers of the document loader and feed shafts, and also the two idler rollers located on the mobile part of the scanner, with a lint-free cloth moistened in water.

To clean them, rotate them in the same direction as during document transport.

Recommended interval: 2 to 6 months, depending on utilization.

Document separator module

See illustration in § 1.1.1

- Set the on/off switch to “O” (off).
- Open the control panel/scanner by actuating the opening lever located on the left of the machine.

Caution - The opening is limited to approx. 60° by stops: do not try to force the panel any further.

Wipe the elements of the paper separator module with a lint-free cloth moistened with water.

Recommended interval: 2 to 6 months, depending on utilization.

CIS window

See illustration in § 1.1.1

- Set the on/off switch to “O” (off).
- Open the control panel/scanner by actuating the opening lever located on the left of the machine.

Caution - The opening is limited to approx. 60° by stops: do not try to force the panel any further.

- Wipe the scanner window with a lint-free cloth moistened with water, or with antistatic paper tissues as used for cleaning optical glass.

Recommended interval: to be defined depending on utilization. After cleaning, is advised to make a local copy to check the cleanliness of the window.

Control panel keys and covers

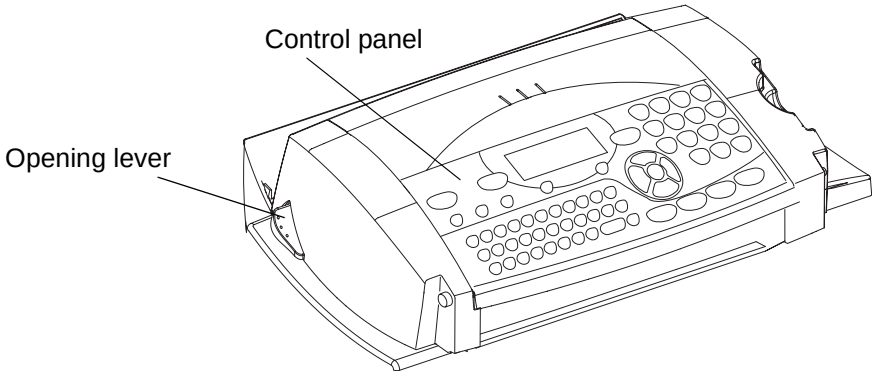

Figure 2.

Cleaning the control panel keys

- Set the on/off switch to “O” (off).
- Clean the top of the control panel and the keys with a lint-free cloth moistened with water or formula A.

Recommended interval: to be defined depending on utilization***.***

Cleaning the covers

It is advisable to clean all covers during a maintenance visit.

2. Laser Printer Engine

Periodic maintenance

Refer to SCP 2 Maintenance Schedule List.

Error messages and corrective measures

Refer to GP 21 Scanning and communication error codes and Repairs Analysis Procedures

Repair

Refer to Repairs and Adjustments.

Disassembly/assembly worksheets

Refer to REP 1 Disassembly Procedure Chart.

SCP 2 Maintenance Schedule List

Table 1: Maintenance schedule list

Part name	Cleaning cycle	Replacement cycle (Multi-page printing)
*Drum cartridge	None	Approx. 20,000 prints
Drum cartridge (Starter)	None	Approx. 4,000 prints
*Toner cartridge	None	Approx. 6,000 prints (at 5% area coverage)
Toner cartridge (Starter)	None	Approx. 2,000 prints (at 5% area coverage)
Bias transfer roller	None	Approx. 50,000 prints
Fuser Assembly	None	Approx. 50,000 prints
Paper Feed Roll	Cleaning at the time of trouble due to wear.	Replace the 2nd Paper Tray Module, PL 1 item 9, when necessary.
Paper Feed Roll (optional second paper cassette unit)		

*The Toner Cartridge and Drum Cartridge are customer replaceable units. Refer to Table 2.

Table 2: Drum and toner cartridge part numbers

Part name	Part No. (110V)	Part No. (240V)
Drum cartridge (20K)	113R00655	113R00655
Toner cartridge (6K)	006R01218	106R00685

2. Repair Analysis Procedures

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1. Troubleshooting for Paper Misfeeds RAP

Paper misfeed occurred when the Power switch is turned ON

Check		Remedy
Is paper left in machine? ↓No	→ Yes	Remove the paper.
Does the Paper Feed Sensor and Paper Exit Sensor Actuator move correctly?	→ No	Correct the Sensor Actuator movement.
	→ Yes	Replace PS1, P/O PL 10 item 3. Replace PS3, P/O PL 9 item 1. Replace the Print Engine Board, PL 11 item 5.

Paper misfeed occurred at the paper feed section

Check		Remedy
Does the Paper Feed Roll of the Main Paper Tray/Multi-purpose Tray and Second Cassette Unit turn? ↓Yes	→ No	Replace SL1, PL 8 item 8. Replace the 2nd Paper Tray Module, PL 1 item 9.
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 Feed Roll and 2nd Paper Feed Roll deformed, worn, or dirty with paper dust? ↓No	→ Yes	Replace the Paper Feed Roll, PL 8 item 5. Replace the 2nd Paper Tray Module, PL 1 item 9.
Does the Paper Feed Sensor Actuator move correctly?	→ No	Correct the Sensor Actuator movement.
	→ Yes	Replace PS1, P/O PL 10 item 3. Replace the Print Engine Board, PL 11 item 5.

Paper misfeed occurred at the paper exit section

Check		Remedy
Is the leading edge out of the Exit Roller?	→ Yes	Replace PS1, P/O PL 10 item 3.
↓No		
Is the Bias Transfer Roller deformed, worn, or dirty with paper dust?	→ Yes	Replace the Bias Transfer Roller, PL10, item 5.
↓No		
Does the Paper Exit Roller rotate?	→ No	Replace the Top Cover Assy, PL 7, item A.
↓Yes		
Does the Paper Exit Sensor (PS3) actuator move correctly?	→ No	Replace PS3, P/O PL 9 item 1.
	→ Yes	Replace the Print Engine Board, PL 11 item 5.

2. Troubleshooting For Malfunctions RAP

No Power

Check		Remedy
Has the power cord been securely plugged into the power outlet?	→ No	Plug the power cord into the power outlet.
↓Yes		
Has the power cord been securely connected to the machine?	→ No	Plug in the power cord.
↓Yes		
Has the Power Switch (S1) been turned ON?	→ No	Turn ON the Power Switch.
↓Yes		
Has the fuse (F1 or F2) in the LVPS blown?	→ No	Replace the LVPS, PL 11, item 3 Replace the Print Engine Board, PL 11 item 5.
	→ Yes	Replace the fuse (F1 or F2), P/O PL 11 item 3.

Malfunction of the Laser

Cause	Remedy
Laser diode malfunction SOS Sensor malfunction	Replace the ROS Unit, PL 11, item 4. Replace the Print Engine Board, PL 11 item 5.

Malfunction of the Polygon Motor

Cause	Remedy
Polygon Motor malfunction	Replace the ROS Unit, PL 11, item 4. Replace the Print Engine Board, PL 11 item 5.

Malfunction of the Main Drive Motor

Cause		Remedy
Does the Main Dive Motor (M1) turn when the Power Switch is turned ON?	→ No	Replace the Main Drive Motor (M1), PL 10 item 4. Replace the Print Engine Board, PL 11 item 5.

Malfunction of the Fuser Temperature low/ Malfunction of the Fuser Warm up/ Malfunction of the Fuser Overheat

Cause		Remedy
Does the error message appear after the machine has completed warming up?	→ Yes	Replace the Fuser Assy, PL 9, item 1. Replace the Print Engine Board, PL 11 item 5.
↓No		
Is the Fuser Assy warm?	→ Yes	Replace the Fuser Assy, PL 9, item 1. Replace the Print Engine Board, PL 11 item 5.
↓No		
Is there electrical conduction across connectors 1 and 3 of the Fuser Assy?	→ No	Replace the Fuser Assy, PL 9, item 1.
	→ Yes	Replace the LVPS, PL 11, item 3 Replace the Print Engine Board, PL 11 item 5.

Malfunction of the Fuser Fan

Cause		Remedy
Does the Fuser Fan (M2) turn during the print cycle?	→ No	Replace the Fuser Fan (M2), PL 11, item 2. Replace the Print Engine Board, PL 11 item 5.

Malfunction of the H.V.P.S.

Cause	Remedy
High voltage malfunction	Replace the HVPS, PL 11, item 1 Replace the Print Engine Board, PL 11 item 5.

Malfunction of the Engine I/F

FATAL Error	Remedy
Engine I/F	Replace the Print Engine Board, PL 11 item 5.

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3. Image Quality

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IQ 1 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 machine.

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

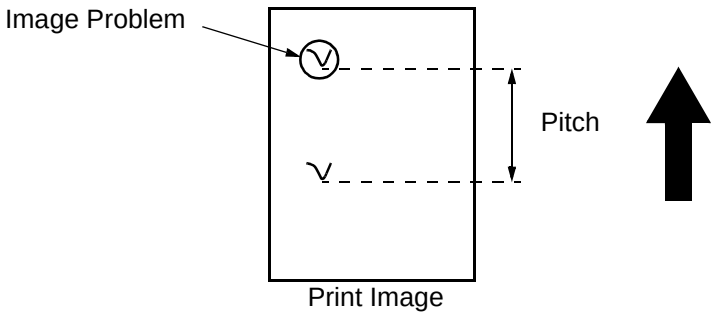
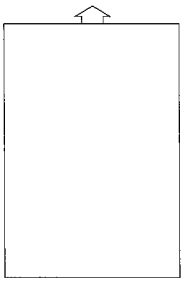
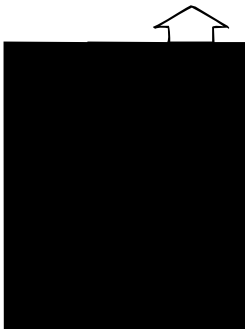
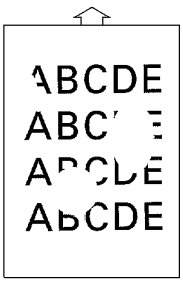
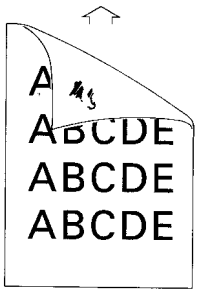
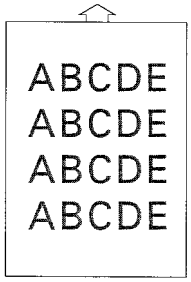
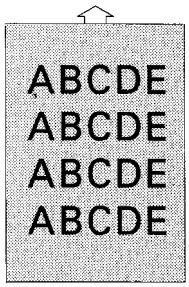


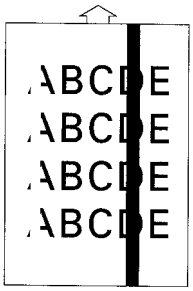
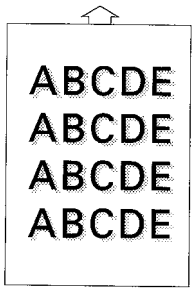
Figure 1.

Pitch	Defective Part (diameter)	Defective Unit (parts)
28 mm	Magnetic Roll (ϕ 15.7 mm)	Toner Cartridge
94.2 mm	Drum (ϕ 30 mm)	Drum Cartridge
50.3 mm	Bias Transfer Roller (ϕ 16 mm)	Bias Transfer Roller, PL10, item 5.
62.8 mm	Fuser Roll (ϕ 20 mm)	Fuser Assy, PL 9, item 1
75.36 mm	Pressure Roll (ϕ 24 mm)	

IQ 2 Image Quality Defects

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 Drum (end of life)	Replace the Drum Cartridge.
	Improper laser exposure	Replace ROS Unit, PL 11, item 4.
		Replace the HVPS, PL 11, item 1.
		Replace the Print Engine Board, PL 11 item 5.
	Developing bias fault	Replace the HVPS, PL 11, item 1.
		Replace the Print Engine Board, PL 11 item 5.
	ROS shutter not opening	Replace ROS Unit, PL 11, item 4.
Black print  0951o213	Improper laser exposure	Replace ROS Unit, PL 11, item 4. Replace the Print Engine Board, PL 11 item 5.
	Improper charging	Replace the HVPS, PL 11, item 1.
		Replace the Print Engine Board, PL 11 item 5.
White spots  0951o220	The paper may have absorbed some moisture due to high humidity.	Replace the paper.
	Poor image transfer	Replace Bias Transfer Roller, PL10, item 5.
		Replace the HVPS, PL 11, item 1.
		Replace the Print Engine Board, PL 11 item 5.

Symptom	Possible Cause	Remedy
Toner smudges on back-side  0951o226	Dust or damage on the Fuser Roll.	Replace the Fuser Assy, PL 9, item 1.
	Dust or damage on the Bias Transfer Roller.	Replace the Bias Transfer Roller, PL10, item 5.
	Toner on paper path.	Clean the paper path inside of the machine.
Low image density  0951o214	Toner empty	Replace the Toner Cartridge.
	Defective Drum (end of life)	Replace the Drum Cartridge.
	Poor development	Replace the HVPS, PL 11, item 1.
		Replace the Print Engine Board, PL 11 item 5.
	Image transfer fault	Replace the Bias Transfer Roller, PL10, item 5.
		Replace the HVPS, PL 11, item 1.
		Replace the Print Engine Board, PL 11 item 5.
Foggy background  0951o218	Poor development	Replace the HVPS, PL 11, item 1.
		Replace the Print Engine Board, PL 11 item 5.
	Defective Drum (end of life)	Replace the Drum Cartridge.

Symptom	Possible Cause	Remedy
White/black lines and bands  0951o222	Scratch on the Drum	Replace the Drum Cartridge.
	Defective ROS unit	Replace the ROS Unit, PL 11, item 4.
		Replace the Print Engine Board, PL 11 item 5.
Offset image  0951o219	Defective Fuser Roll	Replace the Fuser Assy, PL 9, item 1.
	Defective Bias Transfer Roller	Replace the Bias Transfer Roller, PL10, item 5.

4. Repairs/Adjustments

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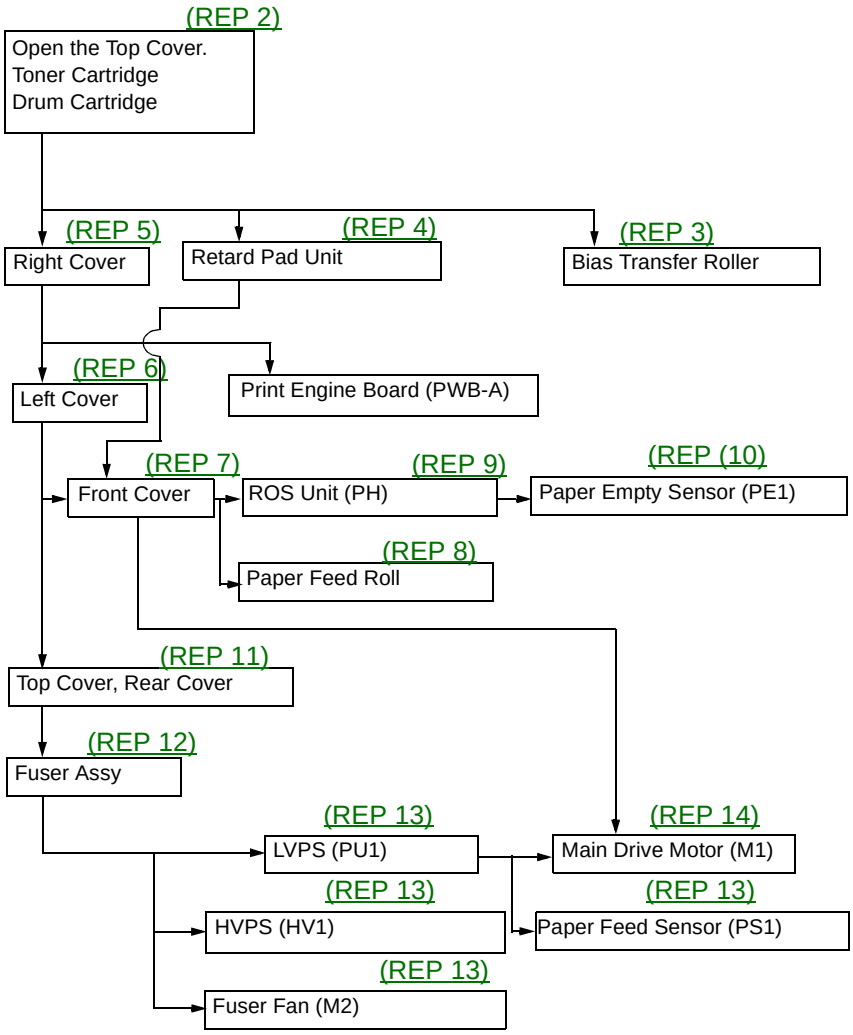
REP 1 Disassembly Procedure Chart

Note(s) : Before any disassembly or assembly operations, the machine must be switched off and all leads on the back of the fax must be disconnected (phone line, LAN, USB cable and power cord).
Remove the document trays and the paper feed tray.

Tools

- Phillips screwdriver
- Flat screwdriver (medium size)



REP 2 Toner Cartridge, Drum Cartridge

Before disassembling the machine, the following units need to be removed.
- Toner Cartridge
- Drum Cartridge
- Main Paper Tray/Multi-purpose Tray

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

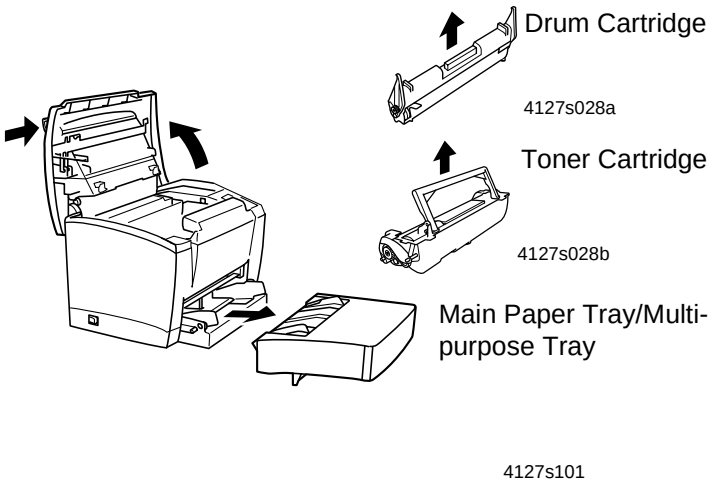


Figure 1.

REP 3 Replacing the Bias Transfer Roller (BTR)

Parts List on PL 10.

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

NOTES

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

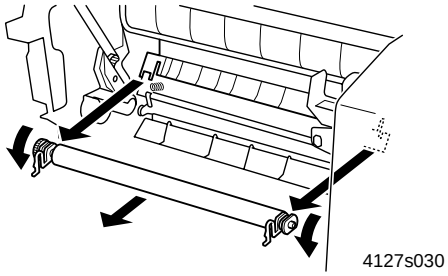


Figure 1.

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

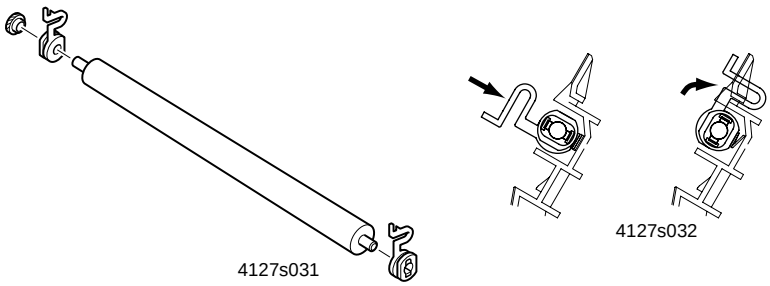


Figure 2.

REP 4 Removal of the Retard Unit

Parts List on PL 8.

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

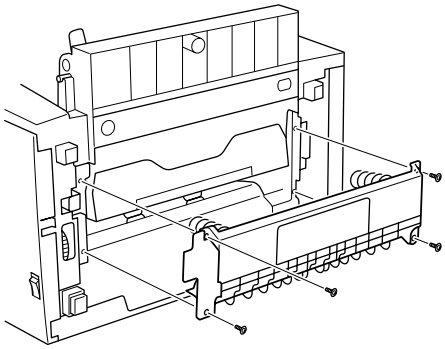


Figure 1.

REP 5 Removal of the Right Cover

Parts List on PL 7.

1. Open the Control Panel/Scanner Chassis Assembly.
2. Remove screw A, refer to Figure 1.
3. Move the Stop Bracket to get access to screw B.
4. Remove screw B.
5. Remove the Right Cover (two screws and tabs at three places).

NOTE

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

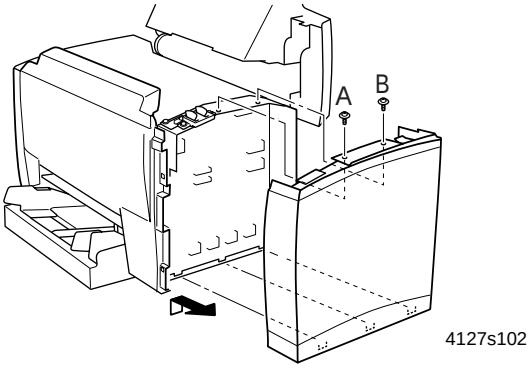


Figure 1.

REP 6 Removal of the Left Cover

Parts List on PL 7.

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

NOTE

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

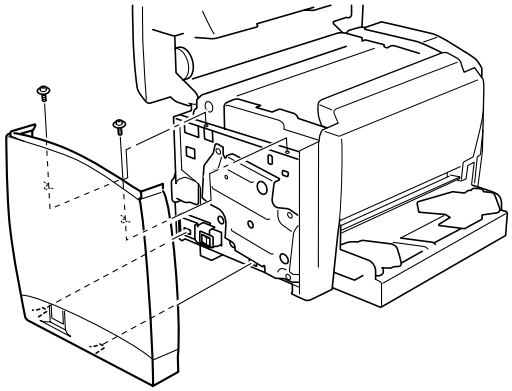


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Figure 1.

REP 7 Removal of the Front Cover

Parts List on PL 7

1. Remove the Right Cover, REP 5.
2. Remove the Left Cover, REP 6.
3. Place the machine with its backside down and remove two screws.

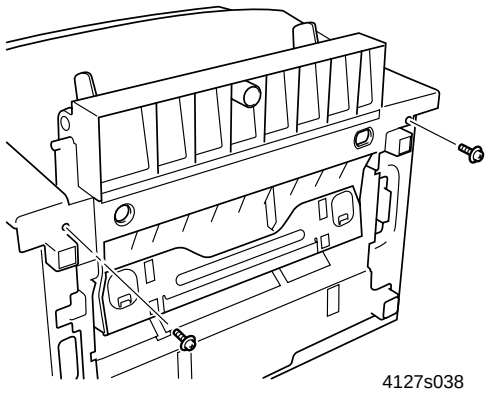


Figure 1.

4. Remove the Paper Retard Unit, REP 4.
5. Place the machine in the normal position and remove the Front Cover (tabs at four places).

NOTE

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

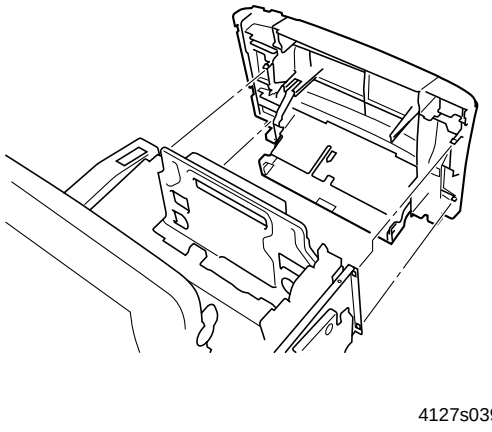


Figure 2.

REP 8 Replacement of the Paper Feed Roll

Parts List on PL 7

1. Remove the Front Cover, REP 7.
2. Place the machine with its backside down.
3. Unhook the spring and remove the right-hand side of the Paper Feed Roll shaft from its bushing.
4. Remove the Paper Feed Roll.

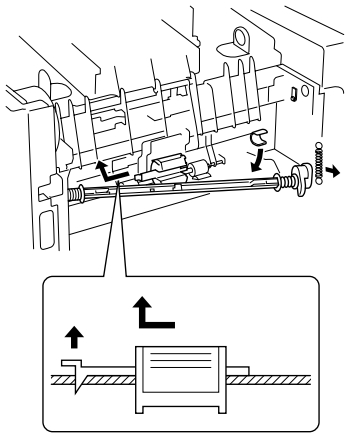


Figure 1.

REP 9 Removal of the ROS Unit

Parts List on PL 11

1. Remove the Front Cover, REP 7.
2. Unplug the connector (CN1) from the Main Drive Motor and remove the harness from the cord holder.
3. Unplug the connectors (PJ5 and PJ9) from the Print Engine Board and remove the harness from the cord holder.
4. Remove the Toner Cartridge.
5. Remove the ROS Unit (six screws).

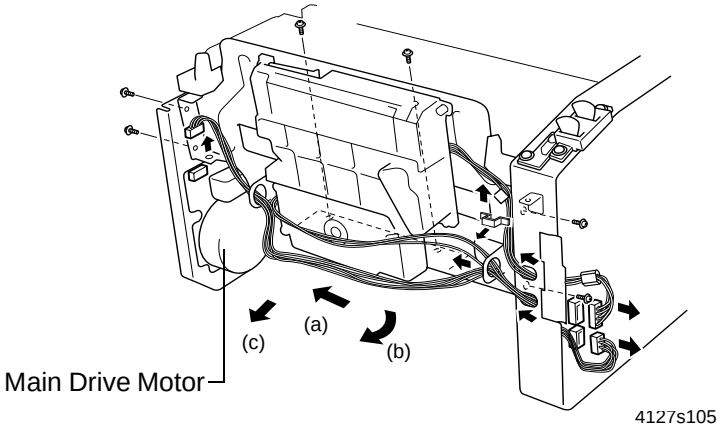


Figure 1.

REP 10 Removal of the Paper Empty Sensor (PE1)

Parts List on PL 8.

1. Remove the ROS Unit, REP 9.
2. Remove the sensor fixing bracket and remove the Paper Empty Sensor (one connector).

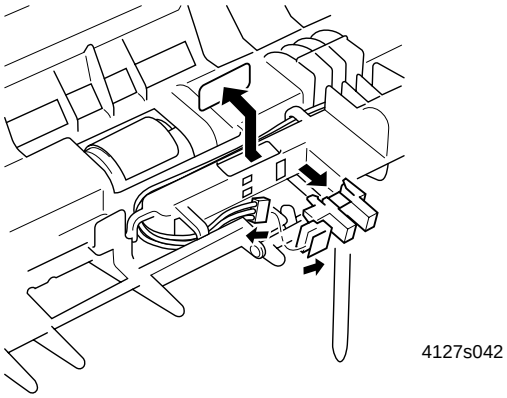


Figure 1.

REP 11 Removal of the Top Cover and Rear Cover

Parts List on PL 7 and PL 11.

1. Remove the Right Cover, REP 5.
2. Remove the Left Cover, REP 6.
3. Remove the Top Cover and Rear Cover (six screws).

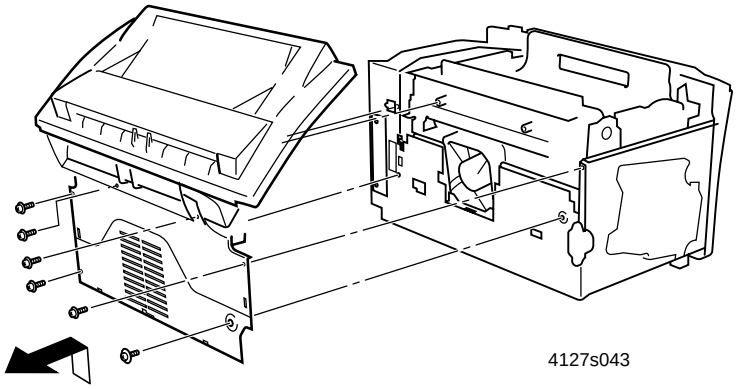


Figure 1.

REP 12 Removal of the Fuser Assembly

Parts List on PL 9

1. Remove the Right Cover, REP 5.
2. Remove the Left Cover, REP 6.
3. Remove the Top Cover and Rear Cover, REP 11.
4. Remove the Fuser Assembly (three screws and three connectors).

NOTE

• *The Fuser Assembly is to be replaced as a unit at about every 50,000 printed pages.*

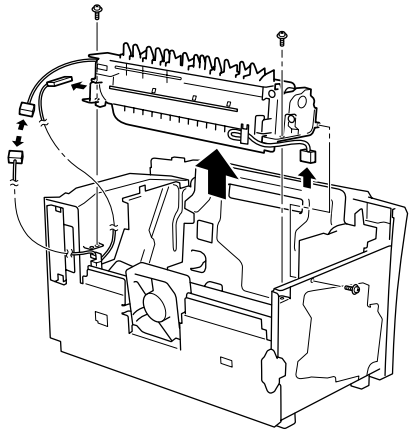


Figure 1.

*Replace as complete assembly only.

REP 13 Removal of the LVPS, HVPS and Paper Feed Sensor

Parts List on PL 11

1. Remove the Fuser Assembly, REP 12.
2. Unplug the connectors (PJ7 and PJ13) from the Print Engine Board and remove the harness from the cord holder.
3. Remove the HVPS/LVPS assembly (six screws).
4. Unplug the connectors (CN1 and CN3) from the LVPS and remove the harness from the cord holder.

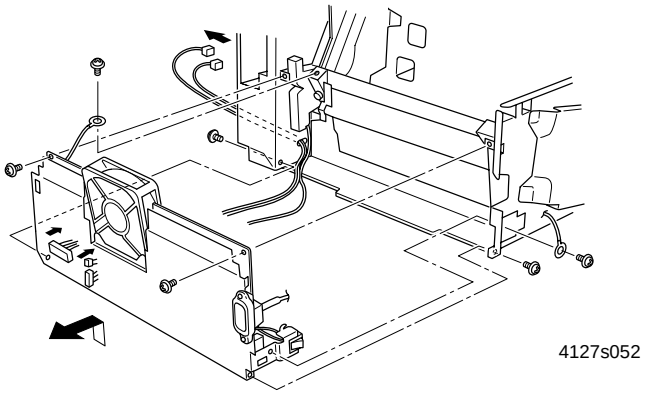


Figure 1.

5. Remove the LVPS (four screws).
6. Remove the HVPS (one screw).
7. Remove the Fuser Fan (two screws).

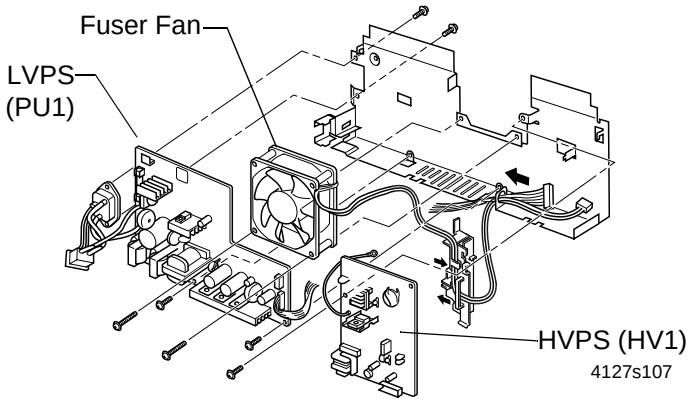
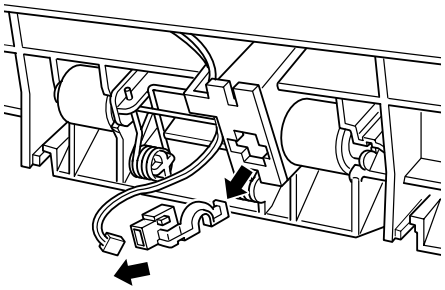


Figure 2.

8. Remove the Paper Feed Sensor (one connector).



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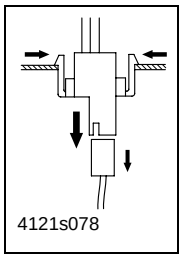

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Figure 3.

REP 14 Removal of the Main Drive Motor

Parts List on PL 10

1. Remove the LVPS, REP 13.
2. Remove the gear plate (four screws).
3. Remove two gears.

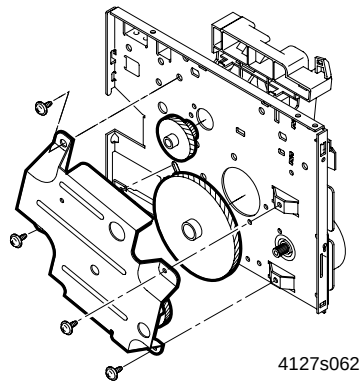

Figure 1.

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

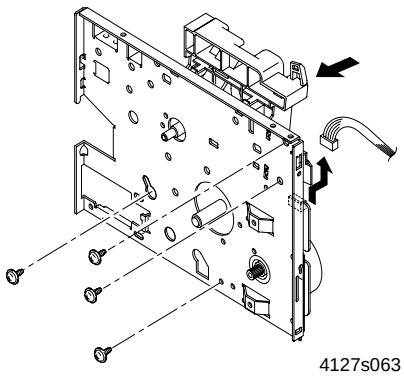

Figure 2.

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

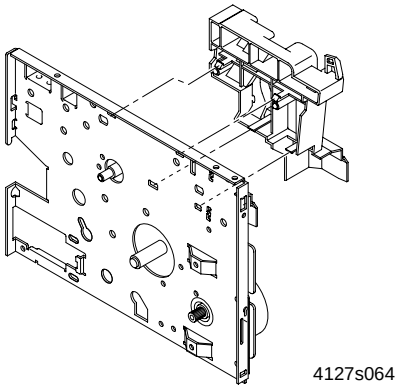

Figure 3.

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

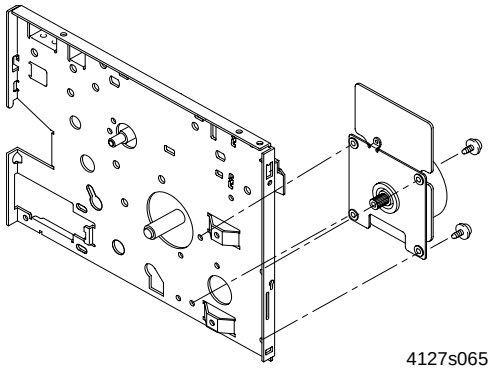

Figure 4.

REP 15 White Roller

Parts List on PL 3

Tools

- None.

Preliminary Steps

- None.

Disassembly

- Stand at the back of the machine.

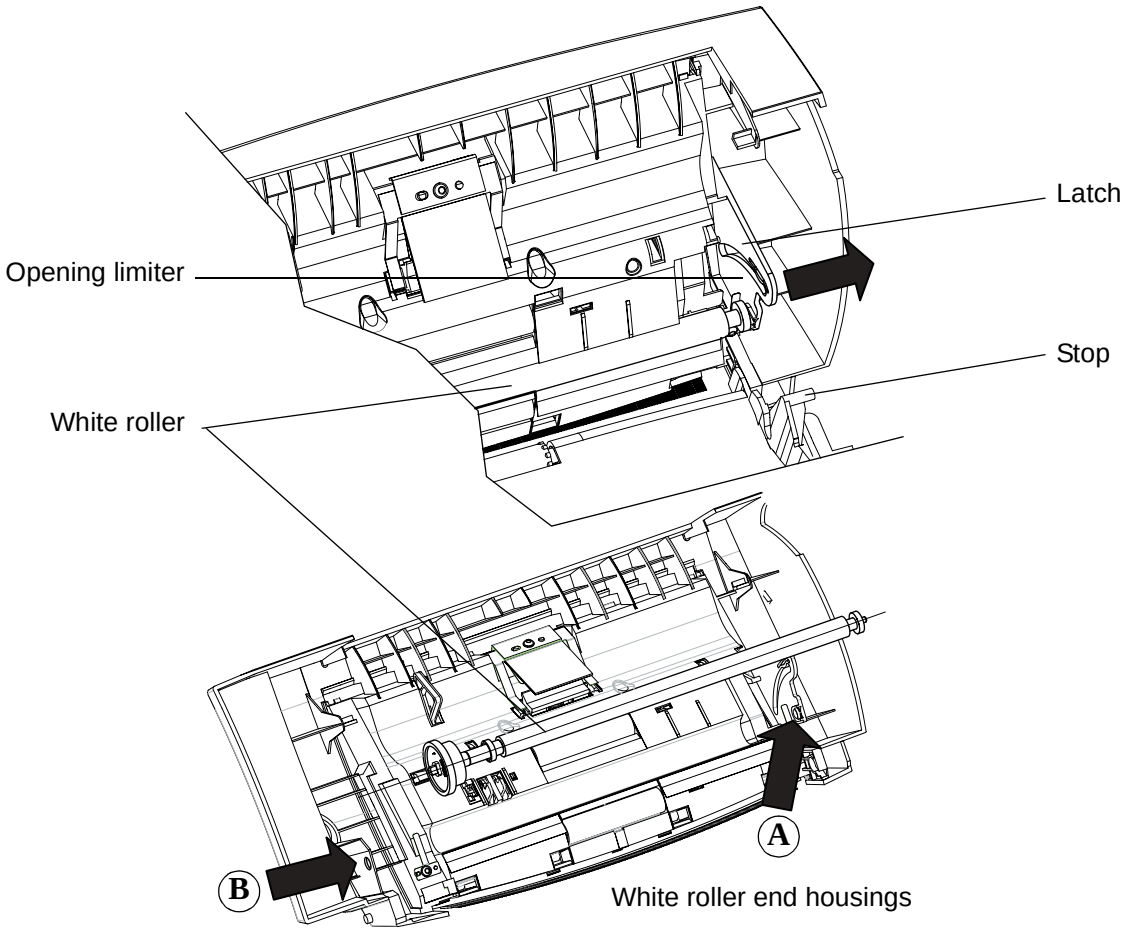

Figure 1.

- Press the control panel opening lever.
- Press outwards on the latch and release the stop.
- Press outwards on the latch, hold and extract the white roller.
- Remove and keep the pinion and the bearings.

Assembly

- Unpack the new white roller and inspect it visually. Fit the bearings and pinion on the new roller.
- Place the new white roller assembly in end housing B, oriented the same way as during disassembly.
- Press on the latch and place the other end of the white roller in end housing A.
- Press on the latch and close the control panel, letting the stop lock behind the latch.

REP 16 Paper Separator

Parts List on PL 3

Tools

- Phillips screwdriver.

Preliminary Steps

- None.

Disassembly

- Stand at the back of the machine.

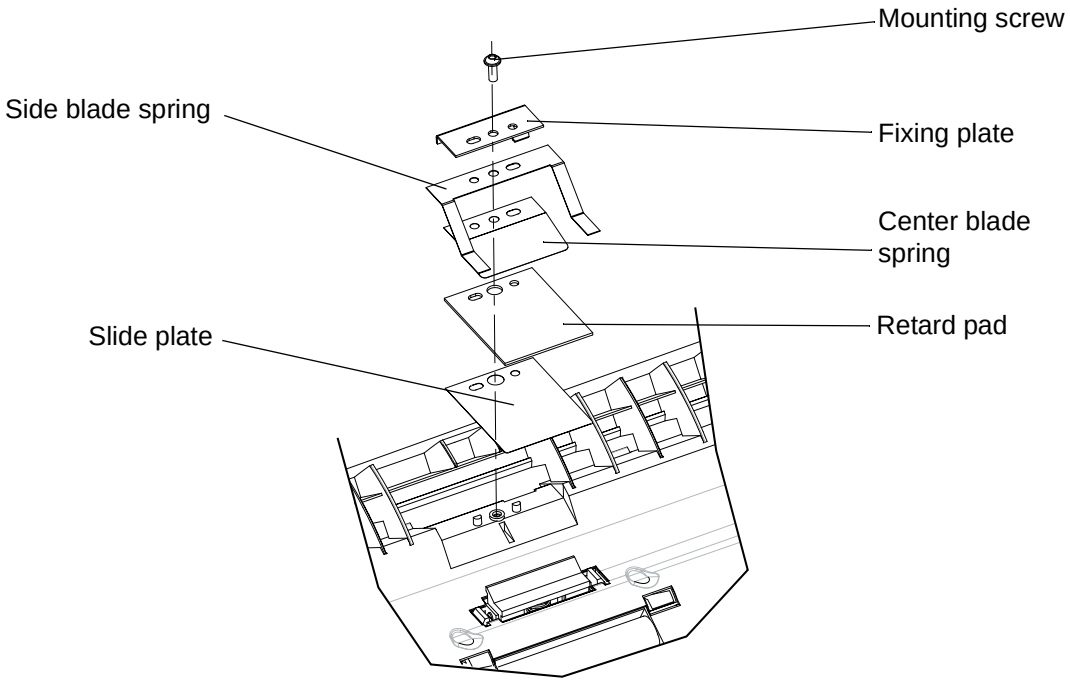

Figure 1.

- Press the control panel opening lever.
- Press outwards on the latch and release the stop.
- Hold the retard pad assembly while removing the mounting screw. Remove the assembly.

Assembly

- Visually inspect the new parts.
- Put the new parts in place on the control panel in the following order: slide plate, retard pad, center blade spring, side blade spring and fixing plate. Make sure the parts are oriented correctly. Insert the mounting screw, screw it in and tighten it.
- Press on the latch (see REP 15) and close the control panel, letting the stop lock behind the latch.

REP 17 Control Panel, Circuit Board, Key Pad, Display, Glass, Top Cover

Parts List on PL 2 and PL 4

Tools

- Phillips screwdriver (small size).
- Flat screwdriver.

Preliminary Steps

Caution - The active surface of the CIS is fragile and light-sensitive. Take care to protect it and to expose it to light as little as possible during the operation.

Disassembly

- Stand at the back of the machine.
- Press the control panel opening lever.

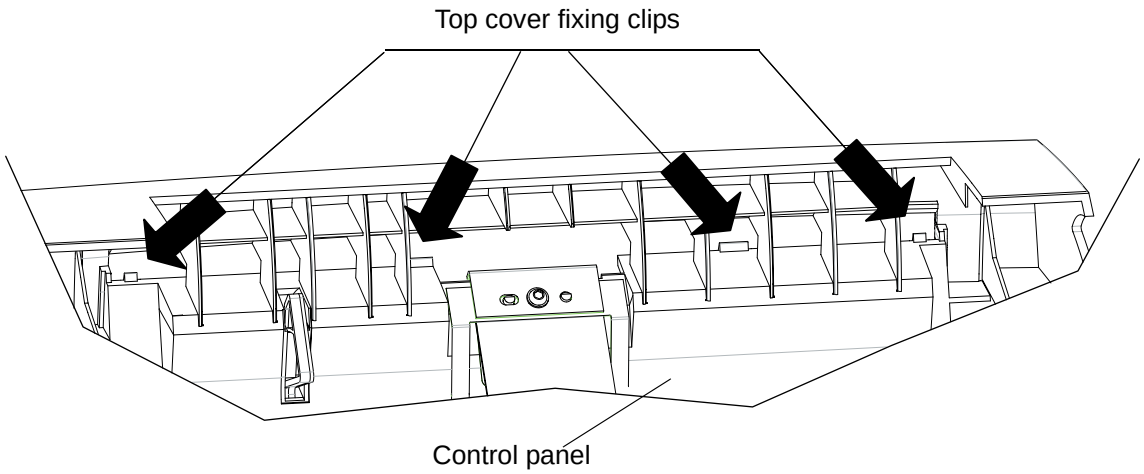

Figure 1.

- Use a flat screwdriver as a lever at the four locations shown on the figure above to unclip and remove the top cover of the control panel, then close the chassis again.

- Stand in front of the machine.

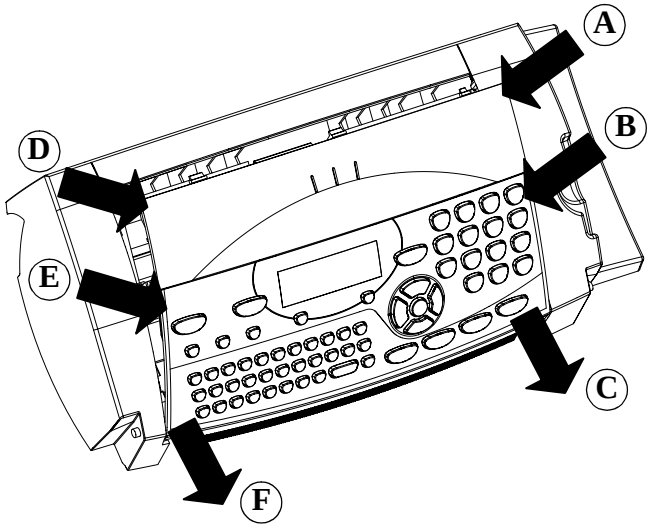

Figure 2.

- Lift the control panel at its upper right-hand corner (A), hold it and apply a medium amount of pressure halfway down its side (B). First free the right-hand side of the control panel by pushing downwards (C).
- Lift the control panel at its upper left-hand corner (D), hold it and apply a medium amount of pressure halfway down its side (E), then free the left-hand side of the control panel by pushing downwards (F). Disconnect the control panel flat cable and remove the control panel.
- Disconnect the flat cable of the display, and the loudspeaker connector.
- Remove the eight mounting screws of the control panel board. Remove the control panel board, the key pad, the display, the glass and the equipped top cover.

Assembly

- Unpack and visually inspect the new parts.
- Put the new parts in place on the equipped top cover in the following order: glass, display, key pad and control panel circuit board. Screw in and tighten the eight mounting screws.
- Connect the connectors of the loudspeaker and of the display.
- Connect the CIS flat cable to the connector on the control panel board.

- Position the lower part of the control panel on the chassis and clip it in place. Press down on the upper part of the control panel to complete the assembly.

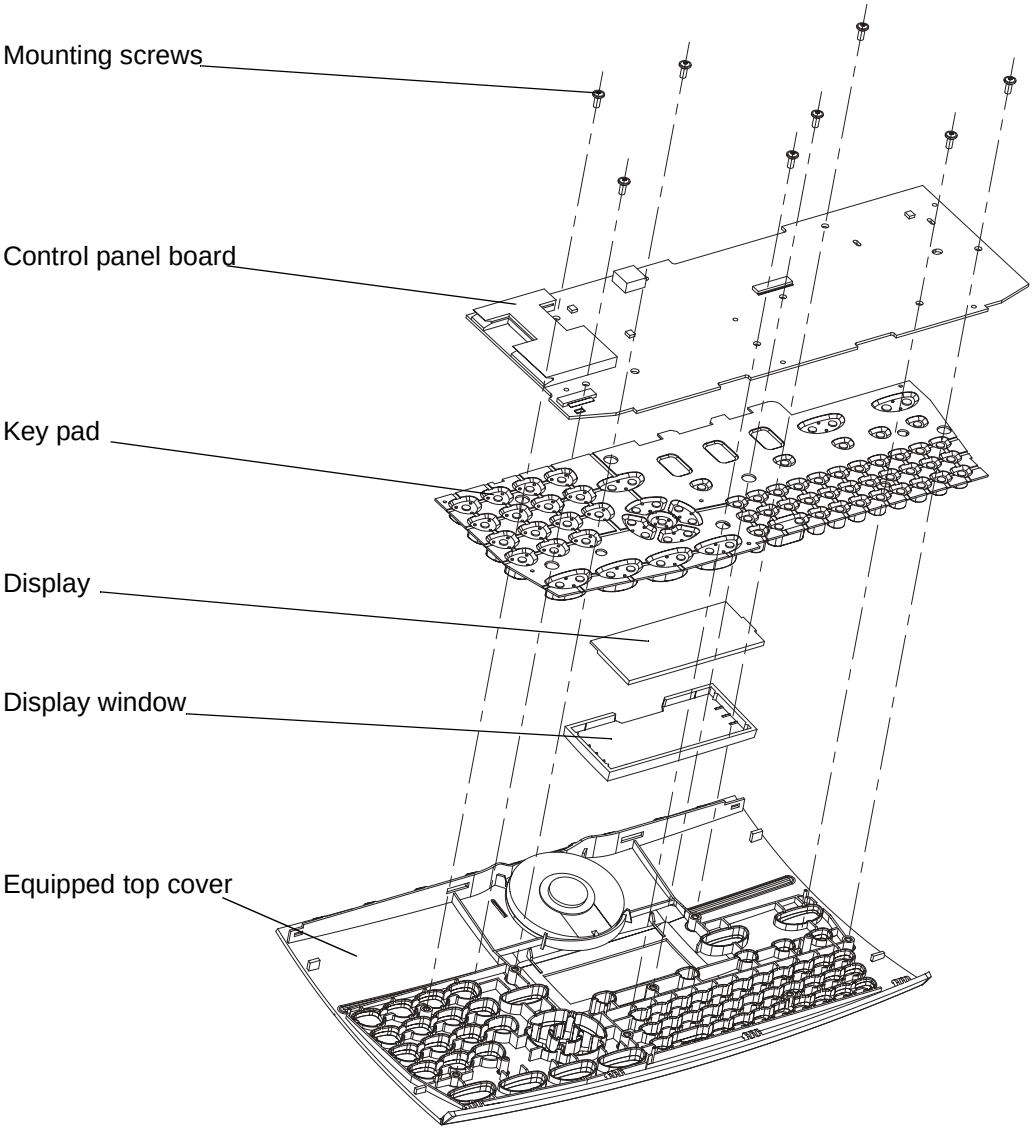

Figure 3.

REP 18 Rack - CPU Board

Parts List on PL 5

Tools

- Phillips screwdriver.

Preliminary Steps

Caution - Refer to replacing the CPU Board, REP 23.

Disassembly

- Remove the two mounting screws of the rack.

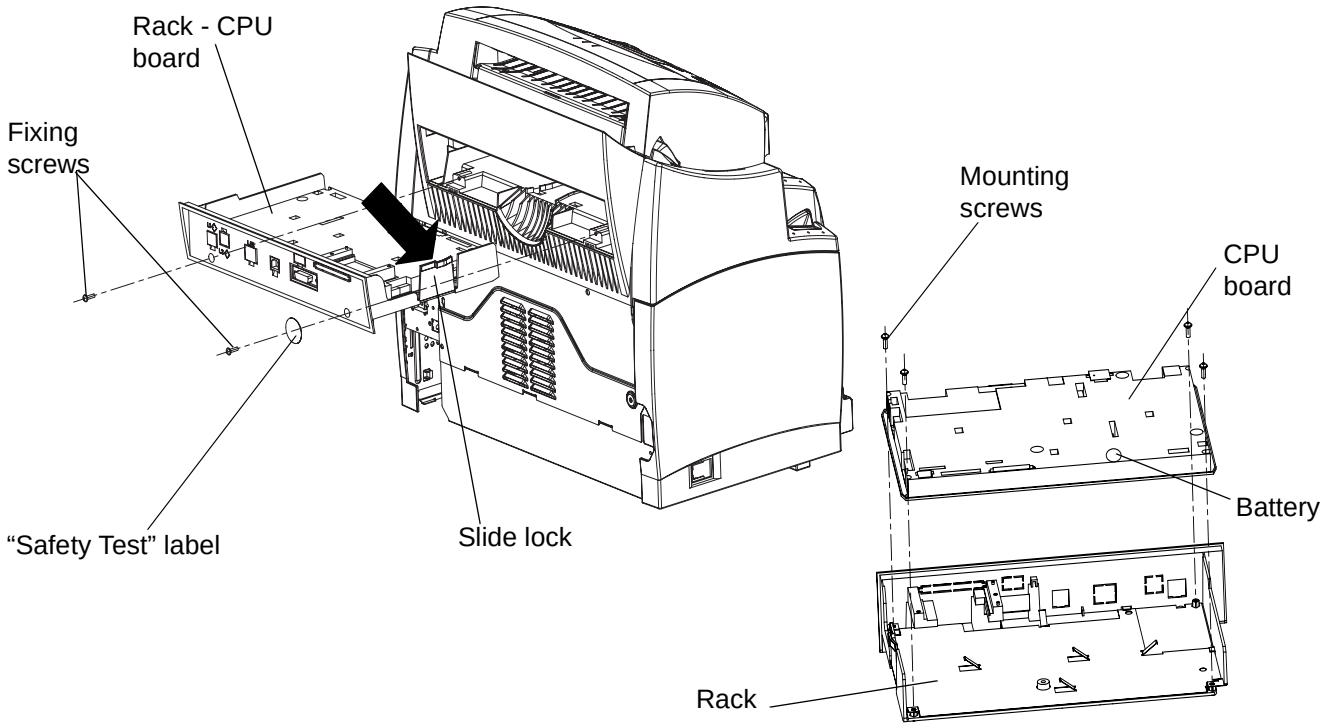

Figure 1.

- Disconnect the printer cable, CIS motor cable and the second line cable if it is installed.
- Push the slide lock towards the inside of the rack, pull out the rack, hold it and disconnect the control panel and CIS flat cables, then remove the rack.
- Completely remove the warranty label and clean its location with solvent.
- Remove the four mounting screws and remove the CPU board.

- Remove the dual line daughter board if it is installed.

Assembly

- Unpack and visually inspect the new parts.
- Position the CPU board in the rack, screw in and tighten the four mounting screws.
- If applicable, install the dual line daughter board.
- Hold the rack ready to insert it into the rails and reconnect the CIS and control panel flat cables.
- Insert the rack into the rails up to the slide lock, reconnect the CIS motor and the printer cable. Completely push in the rack.
- Screw in and tighten the two mounting screws.

REP 19 Control Panel / Scanner Chassis - Printer

Parts List on PL 2

Tools

- Phillips screwdriver.
- Flat screwdriver.

Preliminary Steps

- Remove the rack with the CPU board, REP 18.

Disassembly

- Open the control panel by means of its lever, remove the two mounting screws.

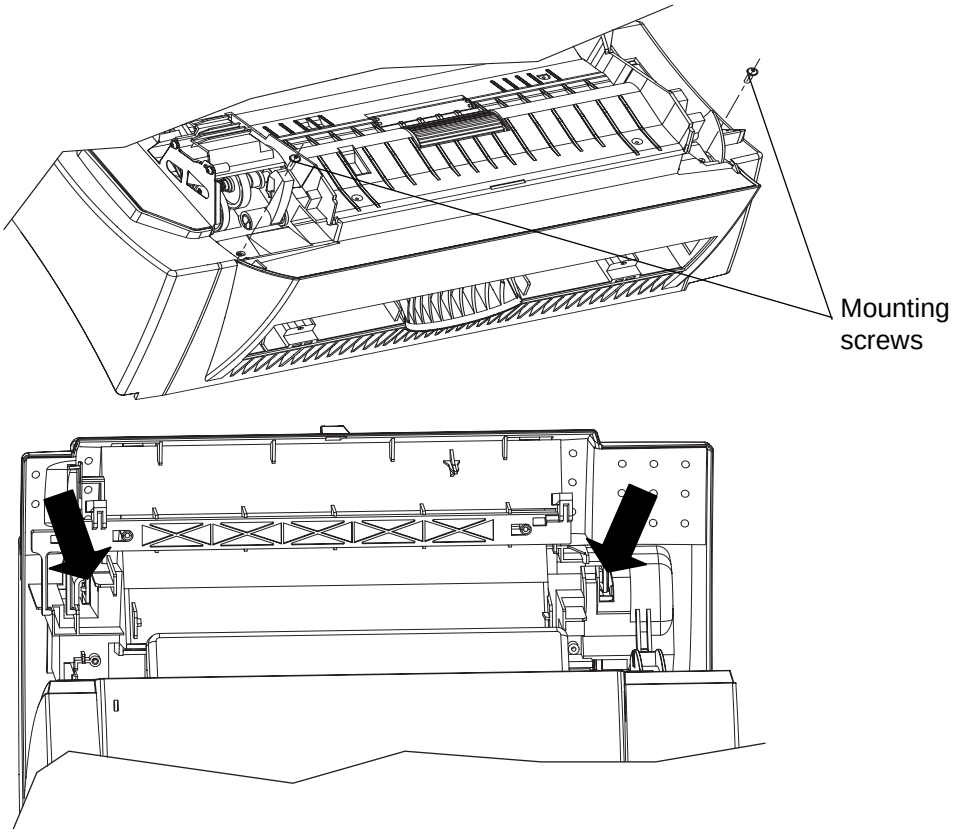

Figure 1.

- Close the control panel and open the scanner chassis by means of its lever. Hold the scanner chassis/control panel, and use a flat screwdriver as a lever in the two notches indicated by the arrows in the figure above to loosen the mounting clips and remove the scanner chassis/control panel.

Assembly

- Unpack and visually inspect the new parts.
- Put the control panel chassis in place. Open the control panel by means of its lever.
- Screw in and tighten the two mounting screws. Close the control panel.
- Refer to REP 18 for the connection of the flat cables and the CIS motor supply.

REP 20 CIS Support - CIS Flat Cable

Parts List on PL 6

Tools

- Phillips screwdriver.

Preliminary Steps

Caution - The active surface of the CIS is fragile and light-sensitive. Take care to protect it and to expose it to light as little as possible during the operation.

- Remove the control panel / scanner chassis - printer, REP 19.

Disassembly

- Free the control panel flat cable from the cable guide.
- Remove the four mounting screws. Remove the CIS support while releasing the control panel flat cable.

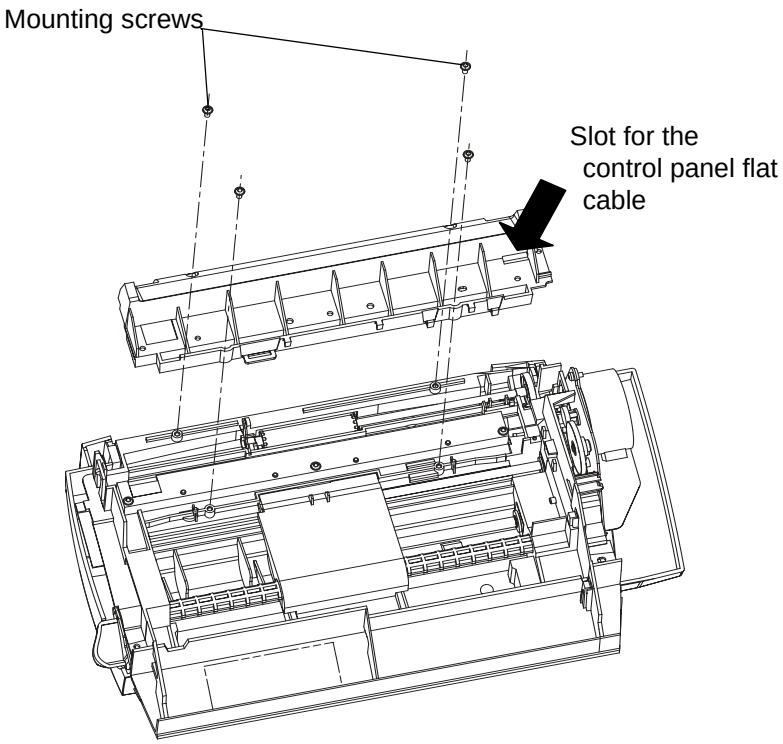

Figure 1.

- Disconnect the CIS flat cable and its connector. Remove the CIS flat cable.

Assembly

- Unpack and visually check the new parts.
- Attach the flat cable to the CIS support. Pass the control panel flat cable into the corresponding slot (see Figure 1).
- Put the CIS support in place, screw in and tighten the four mounting screws.
- Pass the control panel flat cable into its cable guide. Pass the control panel and CIS flat cables under the control panel unlocking shaft.

REP 21 CIS Motor

Parts List on PL 6

Tools

- Phillips screwdriver.

Preliminary Steps

- Remove the control panel / scanner chassis - printer, REP 19.

Disassembly

- Free the wires that supply the CIS motor from their cable guide.
- Remove the two mounting screws. Disconnect the grounding lug.
- Remove the CIS motor. Remove and keep the 44/18 pinion gear.

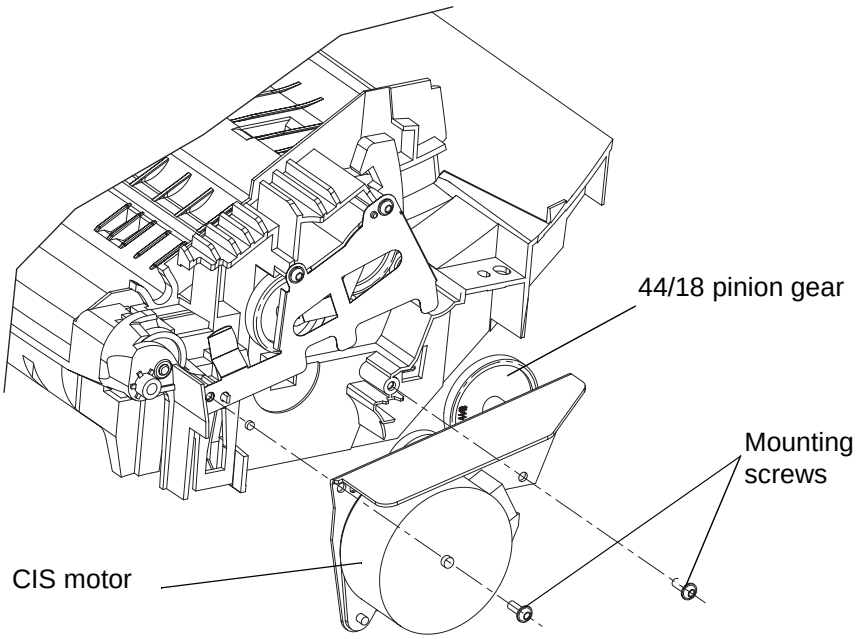

Figure 1.

Assembly

- Unpack and visually inspect the new parts.
- Mount the 44/18 pinion gear on the CIS motor.
- Pass the wires in the wire guide. Connect the grounding lug in the original location.
- Screw in and tighten the two mounting screws.

REP 22 Control Panel - Equipped Control Panel - Control Panel Flat Cable - Chassis

Parts List on PL 3

Tools

- Phillips screwdriver.

Preliminary Steps

- Remove the top cover, REP 17 and the control panel/chassis - printer REP 19.

Disassembly

- Disconnect the grounding lugs located under the top cover.
- Press the control panel opening lever.
- Press outwards on the latch and release the stop.
- Free the control panel flat cable.
- With the control panel assembly placed on a work surface, take hold of the control panel and lift the chassis towards the right to free the left-hand joint, then push it forward to free the right-hand joint. Disconnect the control panel grounding wire and remove the chassis.

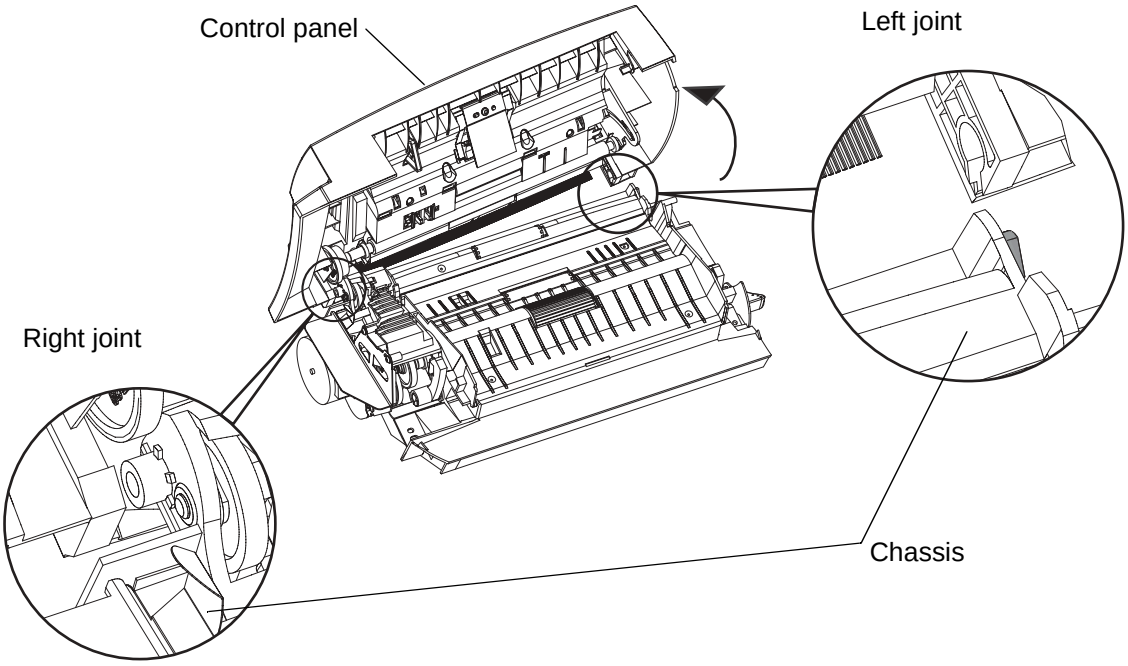

Figure 1.

- Free the control panel flat cable from the cable guide and remove it.

Assembly

- Unpack and visually inspect the new parts.
- Connect the grounding wire to the control panel. Join the control panel and chassis at the right-hand joint, then position them at right angles to each other, and join them at the left-hand joint.
- Press on the latch and close the control panel, letting the stop lock behind the latch.

REP 23 Replacing the CPU Board

Parts List on PL 5

Perform the following procedure:

- Save the directory and the parameters on an EEPROM card (**MENU * 5**). Refer to GP 6.
- Replace the CPU board and reinstall the EEPROM memory from the old CPU board on the new board, refer to REP 18. Ensure that the EEPROM is reinstalled correctly, refer to PL 5 item 7.
- Restore directory and parameters from the EEPROM card (**MENU * 9**).
- Perform print parameters (**MENU * 1**).
- Perform a shading calibration (**MENU 8 0**).

Caution - It is essential that the EEPROM memory “stays” with the machine, because this memory contains:
- the consumables counters,
- the counters of the number of printed pages,
- the remote readout counters,
- the network option (kit LAN).

REP 24 Replacing the Scanner (IIT)

Parts List on PL 3

Preliminary Steps

- Perform a remote readout (if the function has been enabled). Refer to GP 7.
- Save the directory and the parameters on an EEPROM card (**MENU * 5**). Refer to GP 6.

Disassembly

- Remove the scanner from the control panel assembly, refer to REP 22.

Assembly

- Replace the scanner.
- Restore directory and parameters from the EEPROM card (**MENU * 9**).
- Perform a remote readout (if the function has been enabled).
- Perform a scanner calibration (**MENU 8 0).**

ADJ 1 Adjustments

Supply voltages: connections between power supply board and CPU board

CPU board pin	Value	Function
17	+ 5 V	5 V supply
18	GND	Ground
19	+ 5 V	5 V supply
20	+ 24 V	24 V supply

Note(s) :

- The power input of the power supply is protected by a fuse.

Adjustment of scanner chassis

No adjustment required.

Shading adjustment

First calibrate the machine. To do so, use the following procedure:

- Place a blank A4 or letter sheet of paper in the input tray of the document feeder.
- Enter the key sequence **MENU**, *****, **a**, and validate by pressing **OK**.
- Wait until the machine restarts.

Make some copies with the CIS and check that the quality of the copies is satisfactory.

In the case of a scanner problem, repeat the calibration procedure above.

In the case of a printer problem (the result remains unsatisfactory after scanner calibration):

- Print the logs to check the print engine component of the machine.
- Check the consumable.

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5. Parts List

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Using the Part List Tables

Table columns

- ITEM NUMBER column: number of the item illustrated on the corresponding figure.
  Note 1: An item number preceded by a hyphen "-" is a non-illustrated item.
  Note 2: An item may be illustrated in a figure without being listed in the corresponding part list: such an article cannot be replaced other than by replacing the subassembly of which it is part.
- REFERENCE column : Xerox part number.
- DESCRIPTION column: description of the item.
- QTY column : quantity.

PL 1 - F116 Assembly and Trays

ITEM No.	PART No.	DESCRIPTION	QTY
1	Not Spared	Basic FaxCentre unit FaxCentre de base	1
2	050N00447	Document feed tray Chargeur du document à analyser	1
3	050N00446	Document output tray Réceptacle de sortie scanner	1
4	050N00448	Paper output tray Réceptacle de sortie imprimante	1
5	002N02323	Paper feed tray Bac papier imprimante	1
6	117N01660	AC Power cord Cordon d’alimentation secteur	1
7	117N01661	Telephone line cord Cordon ligne téléphonique	1
8	497N00174	EEPROM card (Directory card)	1
9	097N01440	2nd Paper Tray Module (Not shown in illustration)	1

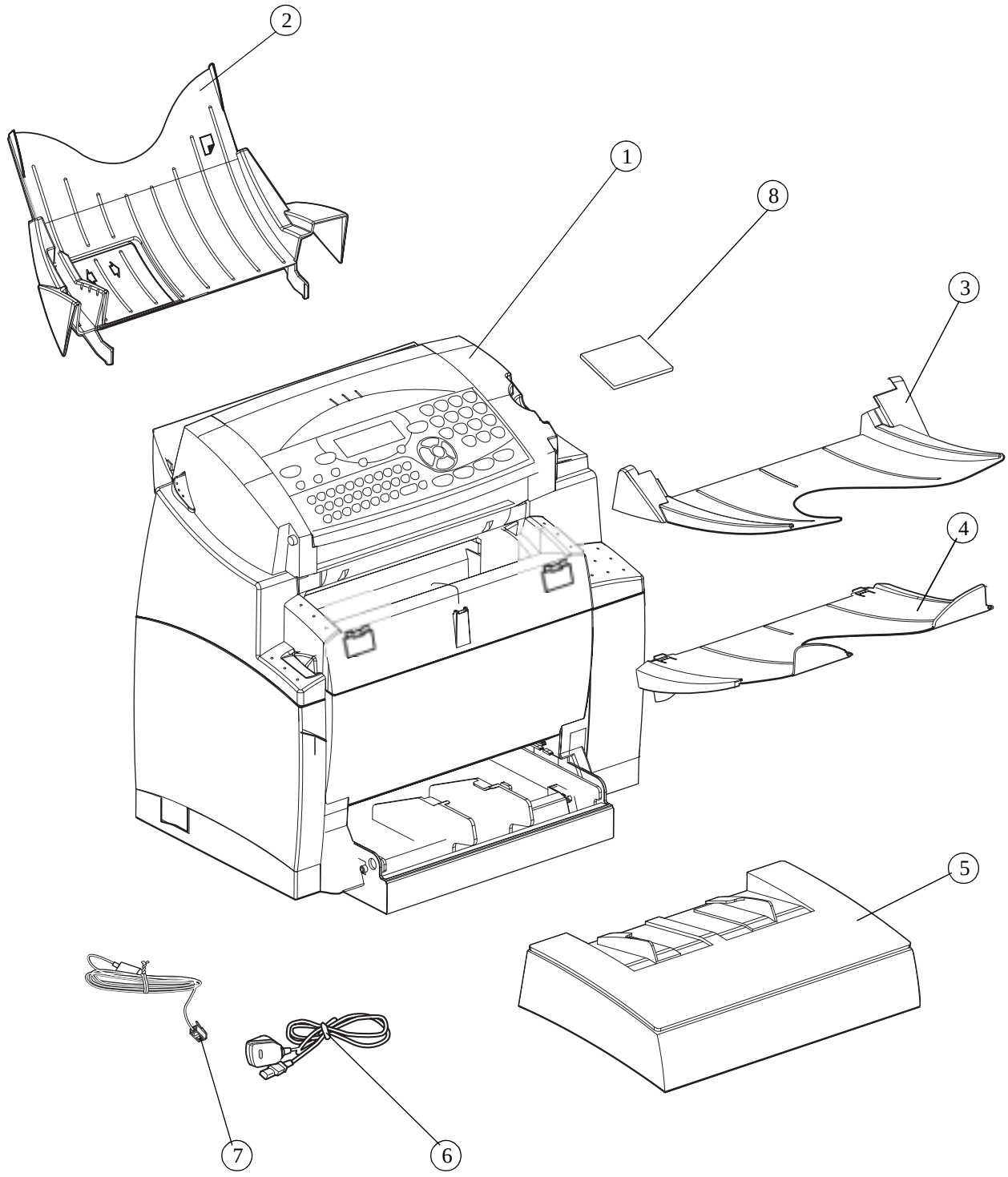


Figure 1 / Planche 1

PL 2 - Control Panel - Scanner Chassis Assembly and Printer

ITEM No.	PART No.	DESCRIPTION	QTY
1	Not Spared	Control panel/scanner chassis assembly, (REP 17 and REP 19) Ensemble pupitre-châssis scanner	1
2	Not Spared	Mounting screws for printer / control panel - scanner Vis de fixation imprimante pupitre-scanner	2

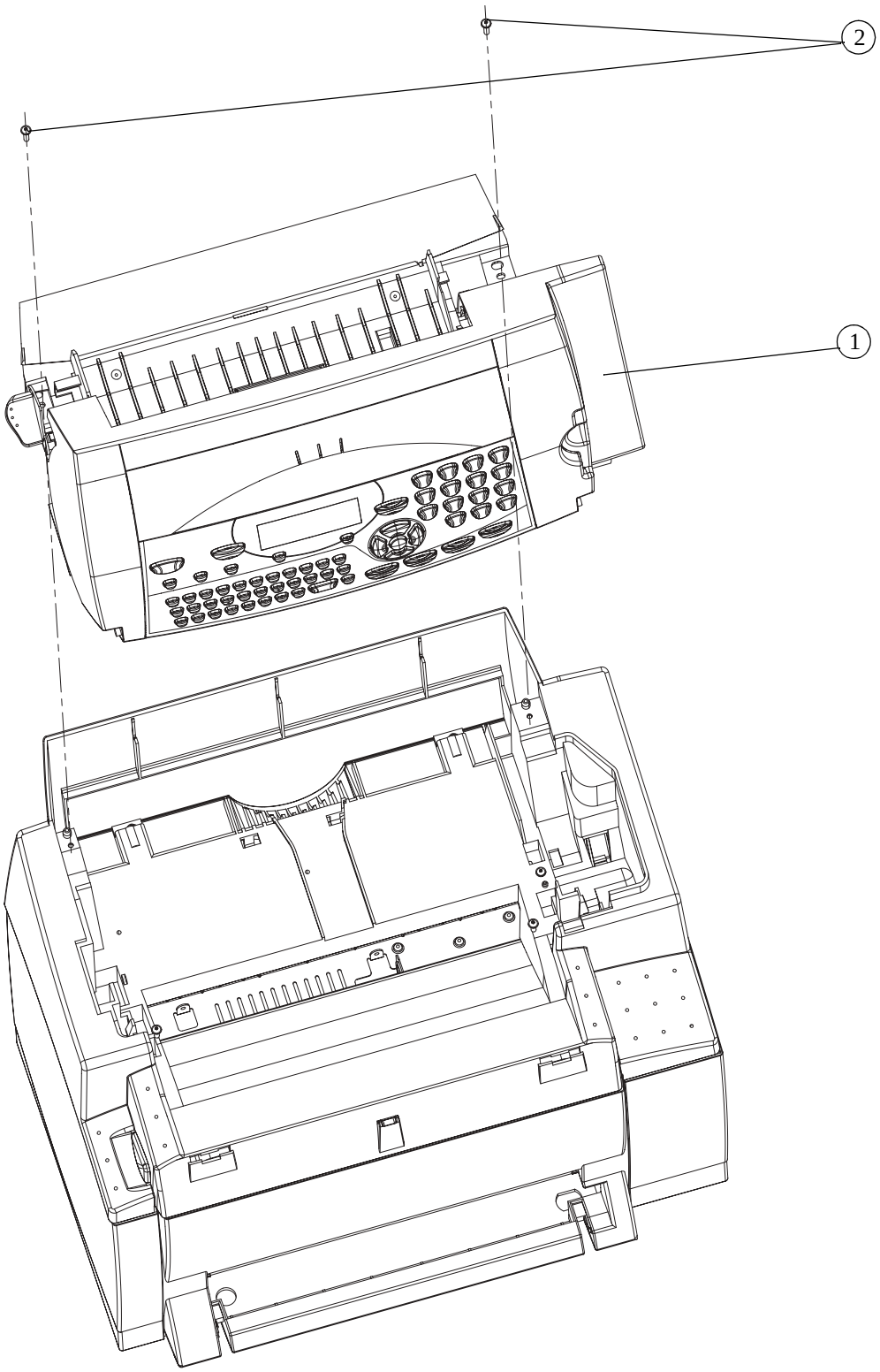


Figure 2 / Planche 2

PL 3 - Retard Pad and White Roller Assemblies

ITEM No.	PART No.	DESCRIPTION	QTY
1	101N01370	Control panel assembly, (REP 22) Ensemble pupitre	1
2	014N00443	Retard pad assembly, (REP 16) Kit déliasseur	1
3	101N01369	Scanner chassis assembly, (REP 24) Ensemble châssis scanner	1
4	007N01275	37/29 pinion gear, (REP 15) Pignon 37/29	1
5	013N13815	Bearing, (REP 15) Palier	1
6	022N02089	White roller, (REP 15) Rouleau blanc	1
7	013N13816	Bearing Palier	1

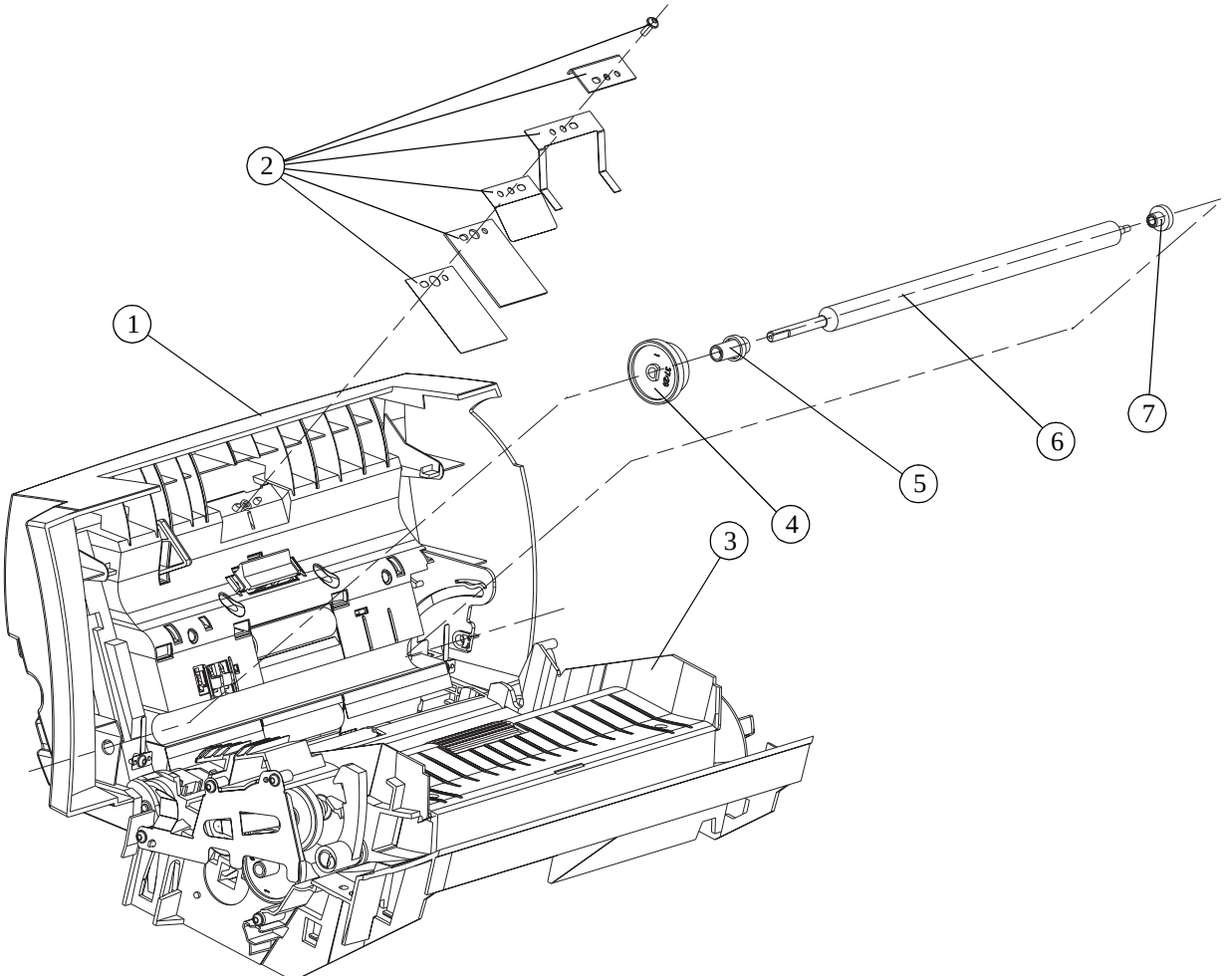


Figure 3 / Planche 3

PL 4 - Control Panel Assembly

ITEM No.	PART No.	DESCRIPTION	QTY
1	091N80212	Control panel label (F116L) Etiquette plastron (F116L)	1
	091N80222	Control panel label (F116) Etiquette plastron (F116)	1
2	101N01371	Control panel top cover, (REP 17) Plastron	1
3	118N00505	Display glass, (REP 17) Vitre afficheur	1
4	123N00234	LCD display, (REP 17) Afficheur LCD	1
5	019N00808	Key pad, (REP 17) Elastomère	1
6	140N62928	Control panel board, (REP 17) Cartre pupitre	1
7	Not Spared	Mounting screws for control panel board Vis de fixation carte pupitre	8
8	152N11570	Control panel flat cable Nappe pupitre	1

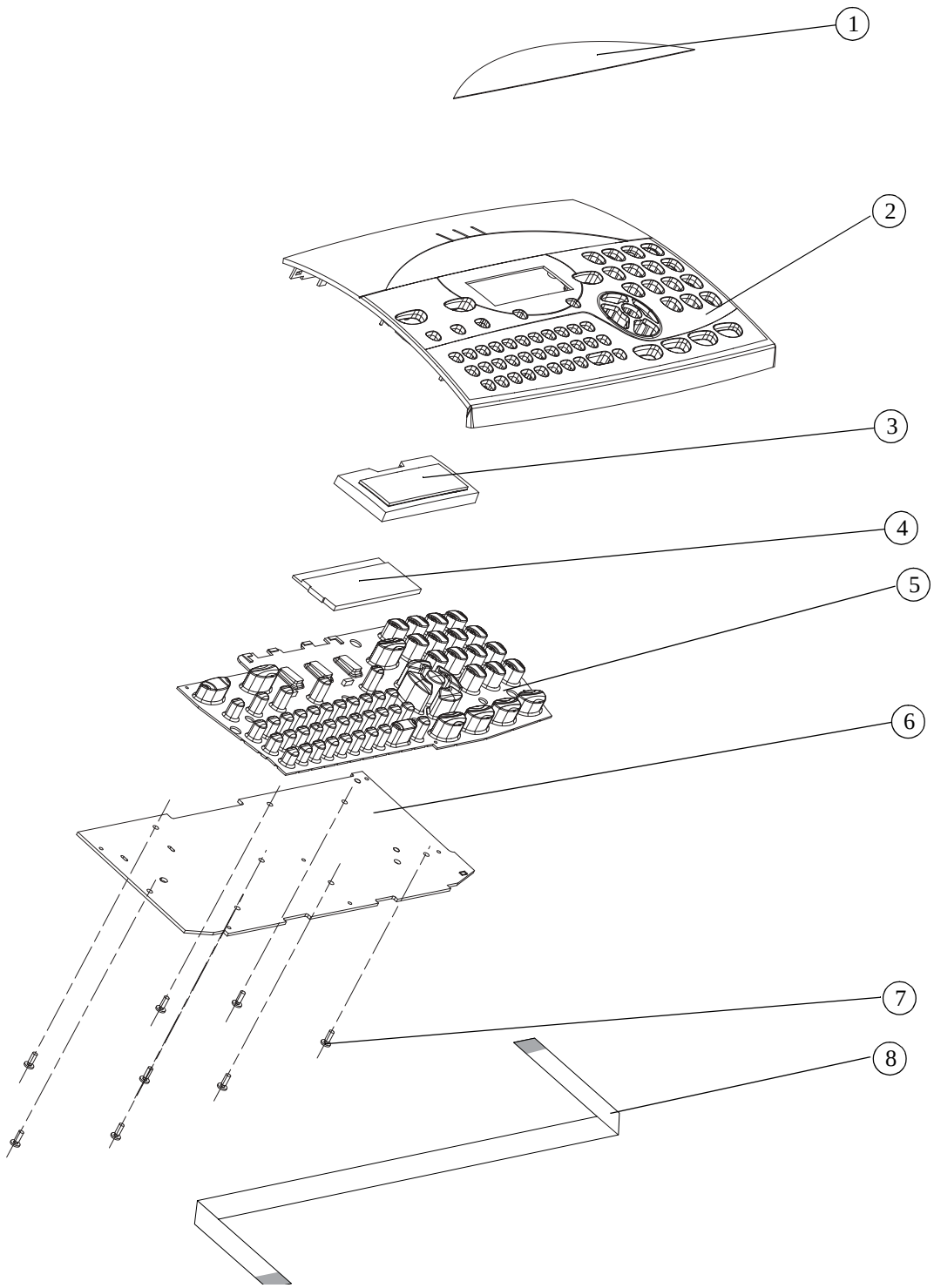


Figure 4 / Planche 4

PL 5 - RACK - CPU Board Assembly

ITEM No.	PART No.	DESCRIPTION	QTY
1	Not Spared	Mounting screws for CPU rack Vis de fixation du tiroir UC	2
2	Not Spared	"Safety Test" label Etiquette "Safety Test"	1
3	140N62929	CPU board, REP 18 and REP 23 Carte UC	1
4	140N62936	Dual line board (F116L) Carte biligne (F116L)	1
5	002N02329	Rack Tiroir	1
6	Not Spared	Mounting screws for CPU board Vis de fixation carte UC	4
7	537N00169	EEPROM EEPROM	1
8	140N62935	CPU board and Dual Line Board Assembly (F116L), REP 18 and REP 23 Kit Carte UC + Carte Biligne (F116L)	1

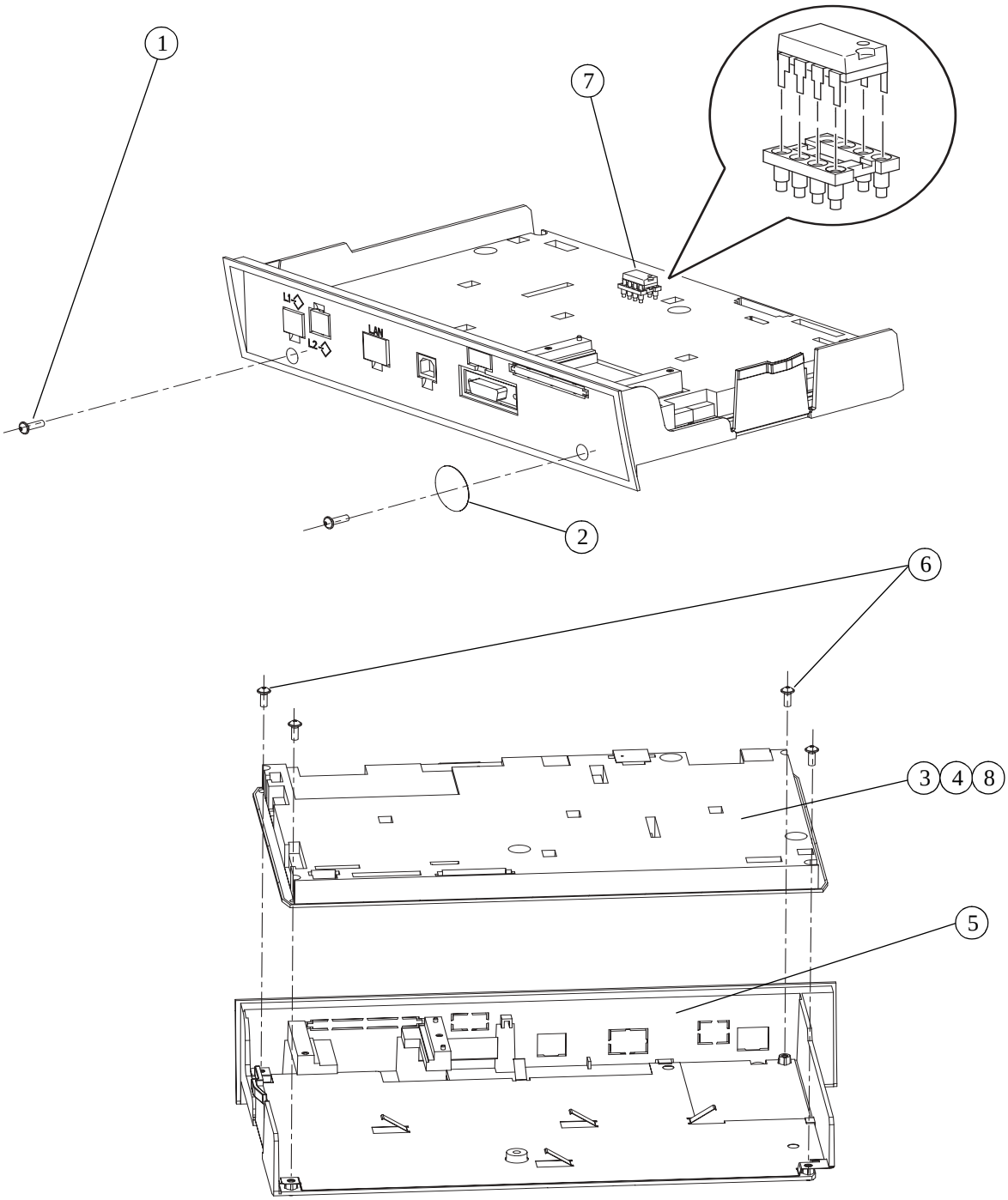


Figure 5 / Planche 5

PL 6 - CIS Support and CIS Motor Assemblies

ITEM No.	PART No.	DESCRIPTION	QTY
1	030N00697	CIS support, (REP 20) Support CIS	1
2	Not Spared	Mounting screws for CIS support Vis de fixation support CIS	4
3	152N11571	CIS flat cable, (REP 20) Nappe CIS	1
4	007N01276	CIS motor, (REP 21) Motorisation	1
5	007N01277	44/18 pinion gear Pignon 44/18	1
6	Not Spared	Mounting screws for CIS motor Vis de fixation motorisation	2
7	117N01663	Grounding wire Fil de masse	1

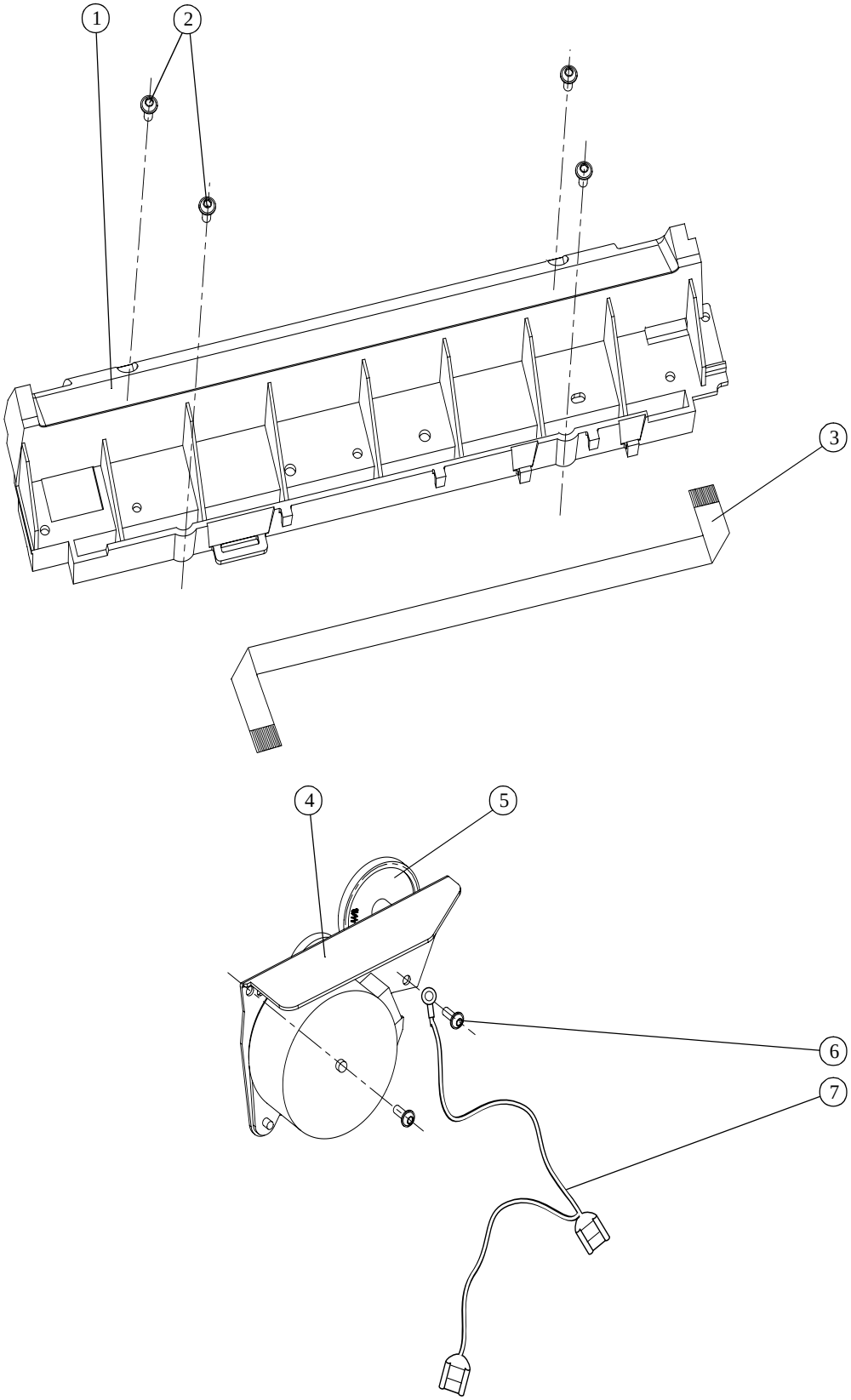


Figure 6 / Planche 6

PL 7 - Printer Rack (1)

ITEM No.	PART No.	DESCRIPTION	QTY
A	002N02321	Top cover assembly, (REP 11) Kit capot supérieur assemblé	1
1	101N01372	Cover, (REP 5) Couvercle	1
2	050N00450	Paper Output Tray Tiroir	1
3	032N00422	Guide Guide	1
4	022N02090	Roller Rouleau	1
5	007N01272	Gear assy Engrenage	1
6	101N01373	Cover, (REP 6) Couvercle	1
7	015N00536	Regulating plate assy Plateau assemblé	1
B	002N02323	Paper tray assembly Kit bac papier assemblé	1
C	002N02322	Front cover assembly, (REP 7) Kit capot avant assemblé	1

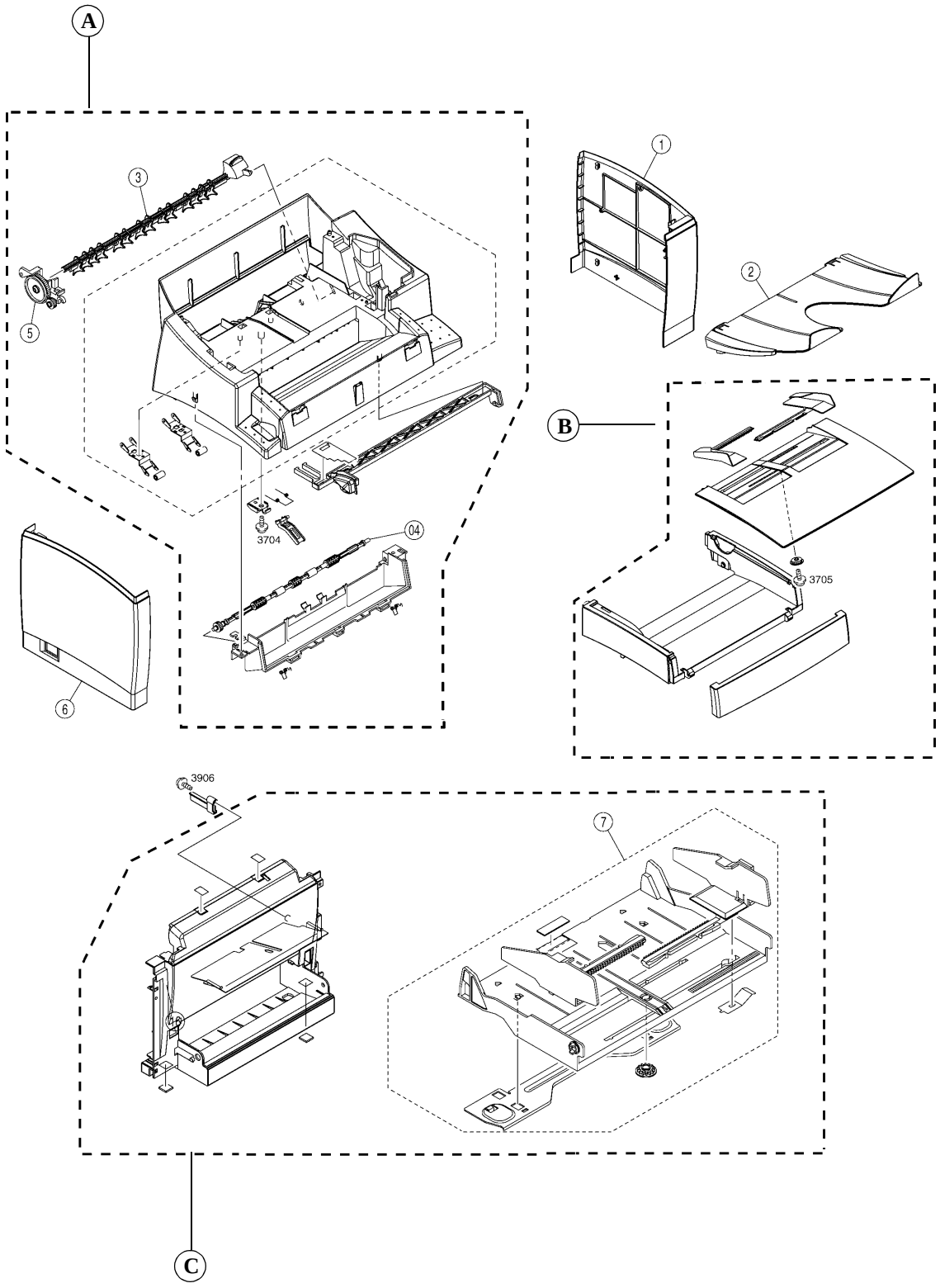


Figure 7 / Planche 7

PL 8 - Printer Rack (2)

ITEM No.	PART No.	DESCRIPTION	QTY
A	130N01361	Paper take-up unit, (REP 4) Kit unité de prise papier	1
1	009N01780	Tension spring Ressort de tension	1
2	008N01746	Cam Câme	1
3	008N01747	Cam Câme	1
4	008N01748	Cam Câme	1
5	022N02086	Feed roll, (REP 8) Rouleau	1
6	022N02091	Transport roll Rouleau	1
7	007N01273	Gear Engrenage	1
8	121N01076	Solenoid Solénoïde	1
9	120N00450	Paper out actuator Doigt de fonctionnement	1
10	120N00451	Paper out sensor, (REP 10) Interrupteur photo	1
11	007N01278	Roller gear Pignon chargeur	1
B	038N00447	Separator guide assembly Kit guide déliasseur assemblé	1
12	009N01486	Pressure spring Ressort de pression	1
13	009N01481	Tension spring Ressort de tension	1
14	019N00803	Separator Pad Déliasseur	1

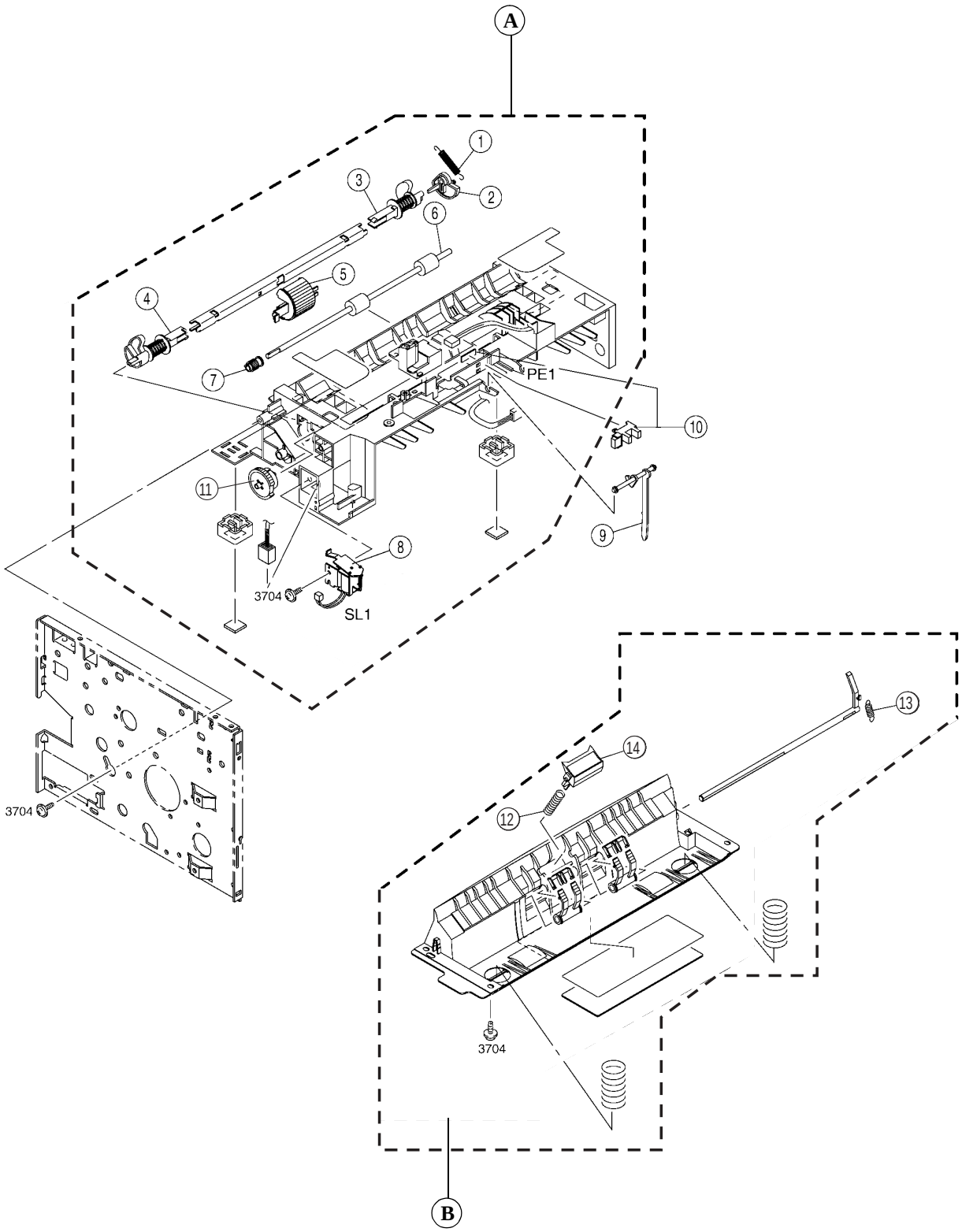


Figure 8 / Planche 8

PL 9 - Fusing Unit

ITEM No.	PART No.	DESCRIPTION	QTY
1	126N00231	Fuser assembly, (REP 12) Unité four	1

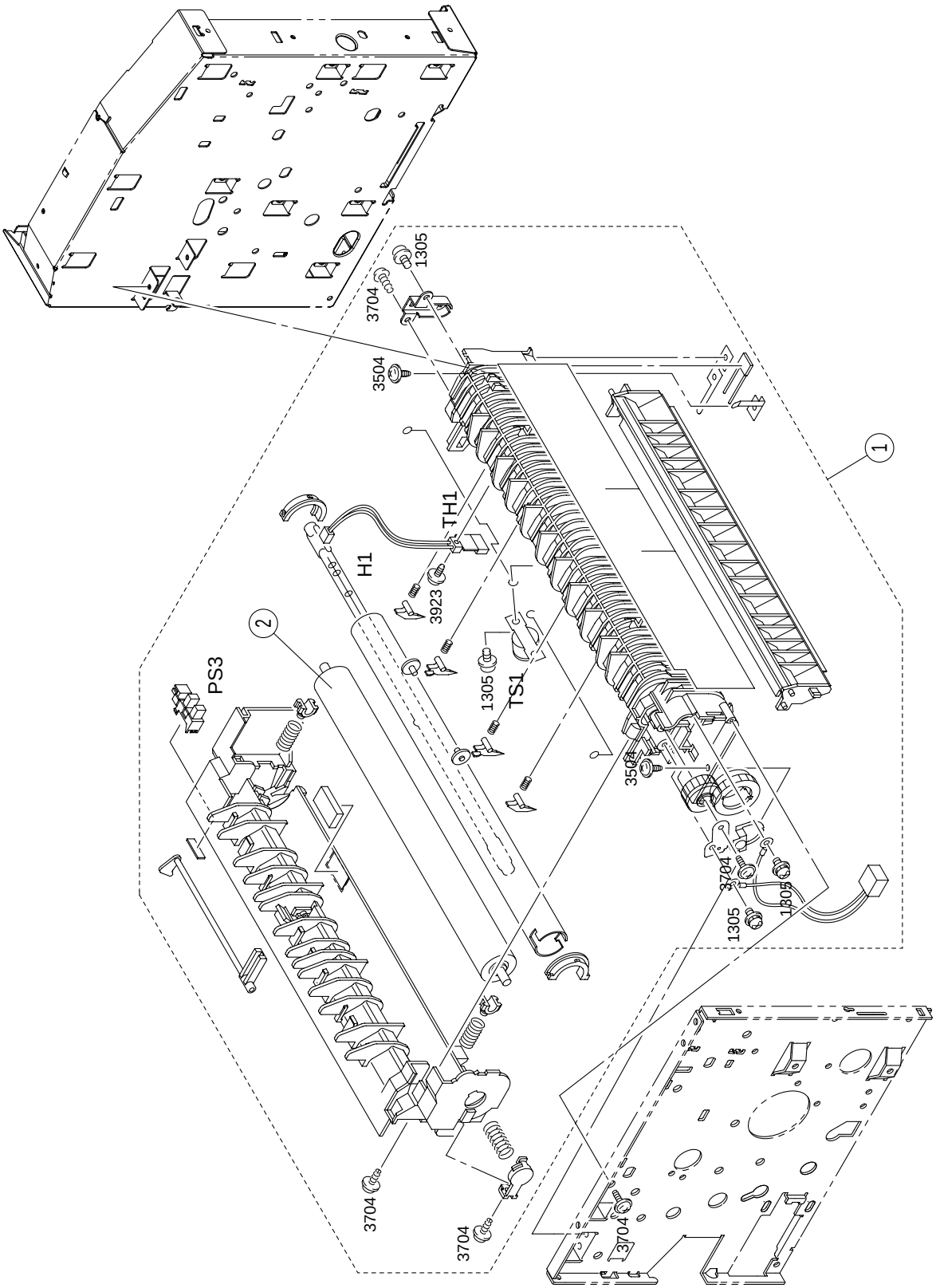


Figure 9 / Planche 9

PL 10 - Drive/Transfer Unit

ITEM No.	PART No.	DESCRIPTION	QTY
1	038N00446	Guide assembly Guide assemblé	1
2	007N01274	Drive gear assembly Engrenage d’entraînement assemblé	1
3	038N00445	Transfer guide assembly Guide transfert assemblé	1
4	127N07332	Main drive motor, (REP 14) Moteur	1
5	022N02095	Transfer roller, (REP 3) Rouleau transfert	1

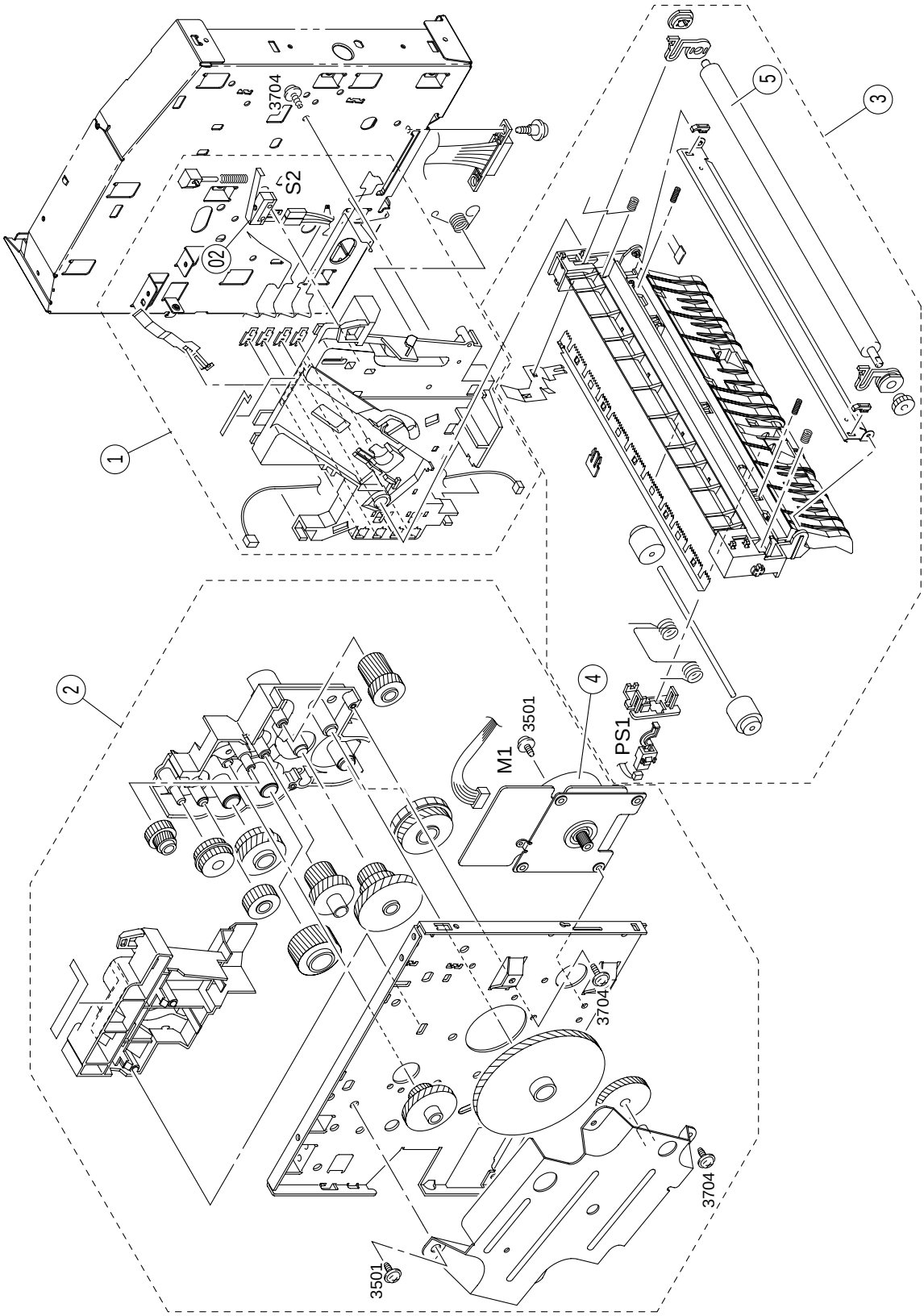


Figure 10 / Planche 10

PL 11 - Electrical Components

ITEM No.	PART No.	DESCRIPTION	QTY
1	105N02040	HVPS, (REP 13) Transformateur haut voltage	1
2	127N07329	Fuser Fan, (REP 13) Ventilateur	1
3	105N02042	LVPS, (REP 13) Alimentation	1
4	500N00110	ROS assembly, (REP 9) Tête d’impression assemblé	1
5	140N62937	Print engine board PNB assemblé	1

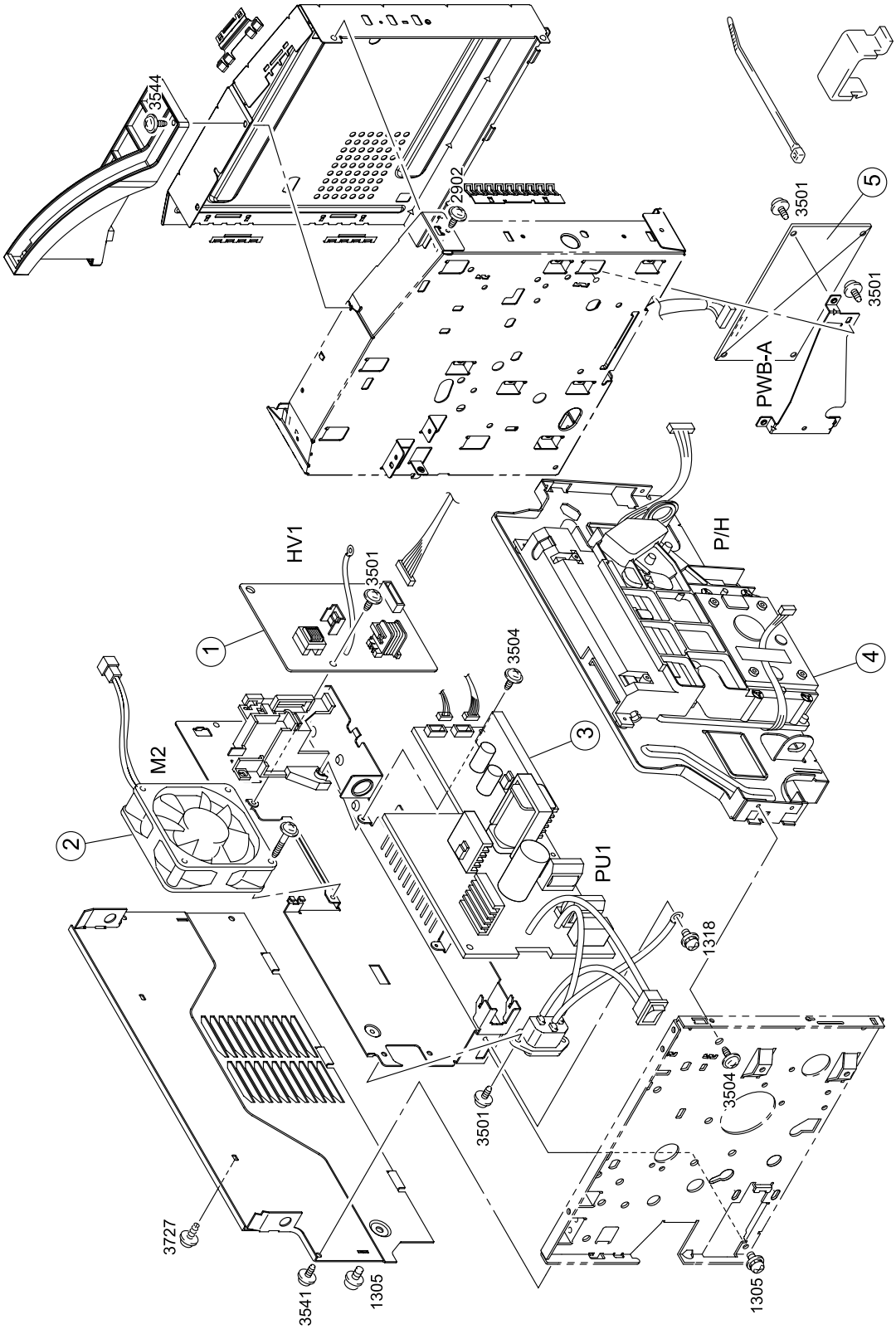
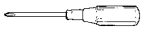
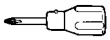
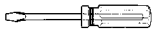


Figure 11 / Planche 11

PL 12 - Required Service Tools/Screws

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

Illust	No.	D x L (mm)	Illust	No.	D x L (mm)
 9646	1305 1318	Screw (with spring washer)	 9739	3704 3727	Tapping screw
 9735	3501 3504 3505 3541 3544	Tapping screw	 9742	3923	Tapping screw

6. General Procedures/Information

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GP 1 Machine Specifications

Operating Specifications

Environment

- Operating:
  - The machine should not be exposed to direct sunlight.
  - Supply: 110-127 V - 50/60 Hz.
  - Power consumption, standby: ≤ 15 W.
  - Power consumption, printing: 850 W max.
  - Temperature: 40 to 95 F (10 to 35 °C).
  - Temperature changes: ≤ 10 °C/hour.
  - Humidity: 20 % to 80 % (RH non-condensing).
  - Humidity changes: ≤ 20 %/hour.
  - Altitude: 0 to 8,200 Feet (0 to 2,500 meters) (above sea level).
  - Ambient light: ≤ 3000 lux.

Storage

machine:

- Temperature: 32 to 104 F (0 to 40 °C).
- Temperature changes: ≤ 10 °C/hour.
- Humidity: 20 % to 80 % (RH non-condensing).
- Humidity changes: ≤ 20 %/hour.
- Altitude: from 0 to 8,200 Feet (0 to 2,500 meters) (above sea level).

consumables (drum and toner cartridge):

- Normal temperature: 32 to 95 F (0 to 35 °C).
- Extreme temperatures: - 40 to 32 F (- 10 to 0 °C) and 95 to 104 F (35 to 40 °C) (less than 10 % of the storage time).
- Humidity: 20 % to 90 % (RH non-condensing).

Maximum storage time: 18 months

General technical characteristics

	F116
Equipment	
Dimensions (width x depth x height, without trays)	15.30 x 18.10 x 15.35 inch 389 x 460 x 390 mm
Weight	24.25 lbs - 11 kg
Consumables	
Reference Paper (RP)	
Type	Letter: 20 lbs/m^2 - 75 g/m^2

	F116
Reference Document (RD)	
Type	ITU #1 - A4
Black/white ratio	3 %
Resolution	Normal mode (200 x 100 dpi)
Scanner	
Type	Color CIS
Resolution in dpi	300
Grey scale	256 levels
Paper size	Letter: 8.5 x 11 inch 216 x 279 mm Legal: 8.5 x 14 inch 216 x 356 mm A4: 8.3 x 11.75 inch 210 x 297 mm
• Maximum width	8.5 inch / 216 mm
• Minimum width	Guided: $8^{1/4}$ inch / 209 mm Not guided: 7 inch / 180 mm
• Maximum length	39.5 inch - 1 000 mm
Paper weight	16 to 24 lbs/m^2 - 60 to 90 g/m^2
Capacity of document loading tray	35 pages
Scan speed for black and white document:	
• Normal (200 x 100 dpi)	1.8 sec.
• Fine (200 x 200 dpi)	3.6 sec.
• Super fine (200 x 400 dpi)	5.4 sec.
• Photo (200 x 200 dpi)	3.6 sec.
• 300 dpi (300 x 300 dpi)	5.4 sec.
Scan speed for color document:	
• 300 x 300 dpi	16 sec.
Zoom in steps of 1 %	25 % to 400 %
Contrast	7 levels
Brightness	7 levels
Margin adjustment in steps of 0.5 mm.	7 levels

	F116
Printer engine	
Type	B/w laser
Resolution in dpi	600 x 600
Paper size	Letter: 8.5 x 11 inch 216 x 279 mm Legal: 8.5 x 14 inch 216 x 356 mm A4: 8.3 x 11.75 inch 210 x 297 mm
Capacity of the paper feed tray in pages	250
• Paper weight	16 to 24 lbs/m^2 - 60 to 90 g/m^2
Manual paper feed (single sheet bypass):	
• Paper (RP)	16 to 24 lbs/m^2 - 60 to 90 g/m^2
• Heavy paper	24 to 36 lbs/m^2 - 90 to 163 g/m^2
• Transparencies (laser printer compatible)	Yes
Capacity of the output tray in pages	100
Printing speed	16.5 ppm
Print area	Letter: 8.25 x 10.75 inch 210 x 273 mm Legal: 8.25 x 13.75 inch 210 x 350 mm A4: 8.05 x 11.5 inch 204 x 293 mm
Number of jobs in the print queue	500
Consumables:	
• Maximum drum cartridge life (in A4/ letter pages)	20,000
• Maximum starter drum cartridge life (in A4/ letter pages)	4,000
• Maximum toner cartridge life (in A4/letter pages at 5% area coverage)	6,000
• Maximum starter toner cartridge life (in A4/ letter pages at 5% area coverage)	2,000
Consumables management	By smart card
Weight of drum	0.66 lbs - 300 g
Weight of toner cartridge	1.1 lbs - 500 g

	F116
Fax-Modem	
Type	PSTN-G3
Maximum speed in bps (V34Fax)	33,600
V34Fax capacity in bps	33,600 to 2,400
• Incrementation in bps	2,400
V17 capacity in bps	14,400/12,000/9,600/7,200
V29 capacity in bps	9,600/7,200
V27ter capacity in bps	4,800/2,400
Data-Modem	
Type	PSTN-V90
Maximum speed in bps (V90)	56,000
V90 capacity in bps	56,000 to 28,000
• Incrementation in bps	1,333
V34plus capacity in bps	33,600 to 2,400
• Incrementation in bps	2,400
V32bis capacity in bps	14,400/12,000/9,600/7,200
V32 capacity in bps	9,600/4,800
V22bis capacity in bps	2,400
V22 capacity in bps	1,200/600
Fax communication	
Type	PSTN, ITU T30, G3
Maximum speed in bps (V34Fax)	33,600
Coding	MH, MR, MMR
ECM	T30 ECM
Time to transmit	2.5 sec.
Type of transmission	From memory and immediate
Max. send delay	24 hours
PSTN redial	10
Internet access	
Type	PSTN-V90
Maximum speed in bps (V90)	56,000
Modem error correction mode	V42
Data compression	V42bis
ISP subscriptions	1 to 6 only 1 active
ISP access protocol	PPP
• ISP access security	PAP & CHAP-MD5C
Internet protocol	TCP/IP

	F116
LAN access	
Type	Ethernet 10/100 base-T
Plug and Play configuration	DHCP & BOOTP
Internet protocol	TCP/IP
DNS	2 DNS servers access
E-mail and fax communication	
Compatibility	ITU T37
Mail protocol : sending	SMTP
Mail protocol : polling	POP3
Mail format	MIME
• Charset	US-ASCII
• Encoding	7 bits, base 64, quoted-printable
Keyboard and screen	
Keyboard	64 keys QWERTY
Screen	2 lines of 16 characters + 7 icons
Address list	
Capacity	500
Type	Name/PSTN number/e-mail
Transmission list	32
Transmission list capacity	499
Import/export directory	E-mail (CSV format)
Copier	
Type	Black-and-white
Input resolution (optical) in dpi	300 x 200 (fast) or 300 x 300 (quality)
Output resolution in dpi	600 x 600
Paper size	Letter: 8.5 x 11 inch 216 x 279 mm Legal: 8.5 x 14 inch 216 x 356 mm A4: 8.3 x 11.75 inch 210 x 297 mm
Maximum speed with resolution 300 x 200 (fast)	16.5 ppm
Multicopy	1 to 99
Zoom	25 % to 400 %
Zoom steps	1 %

General characteristics of consumables

For each consumable (toner cartridge and drum) a counter maintained on the EEPROM on the CPU board contains the current number of pages that can still be printed.

For a new toner and drum cartridge the counter is initialized to the capacity of the consumable, expressed in number of pages, as specified by the manufacturer.

The displayed percentage is calculated by means of this counter, relative to the initial capacity of the consumable (from 100 % to 1 %).

The values of the consumable counters are updated regularly in the flash memory. At each start-up of the machine the counters are read from the flash memory.

Furthermore, it is essential to initialize the change of consumables, by means of the smart card supplied with the product (refer to the User Guide).

GP 2 Machine Components

F116 Front and back view

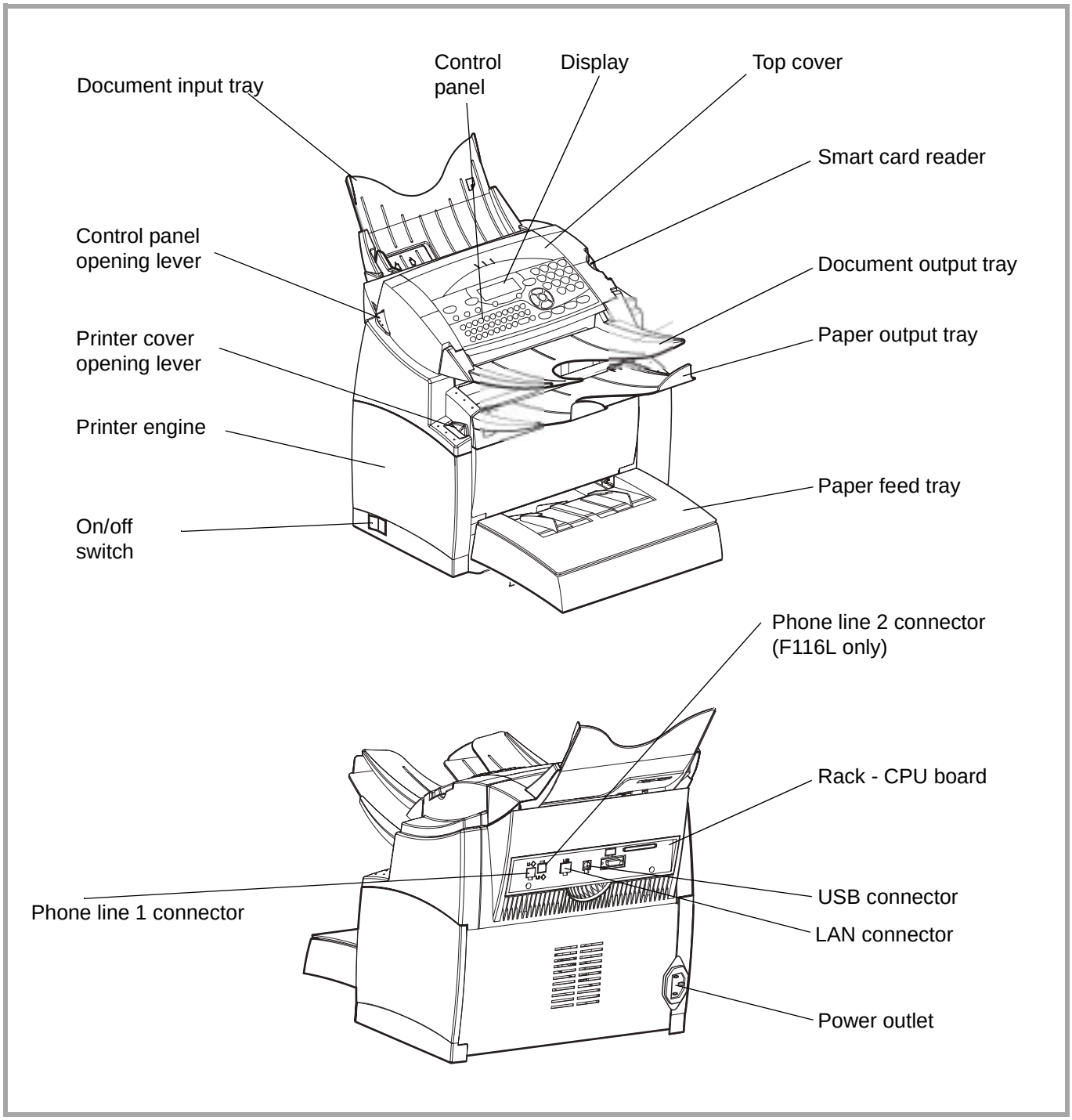


Figure 1.

General description

The F116/F116L is a Multifunction Office Machine.

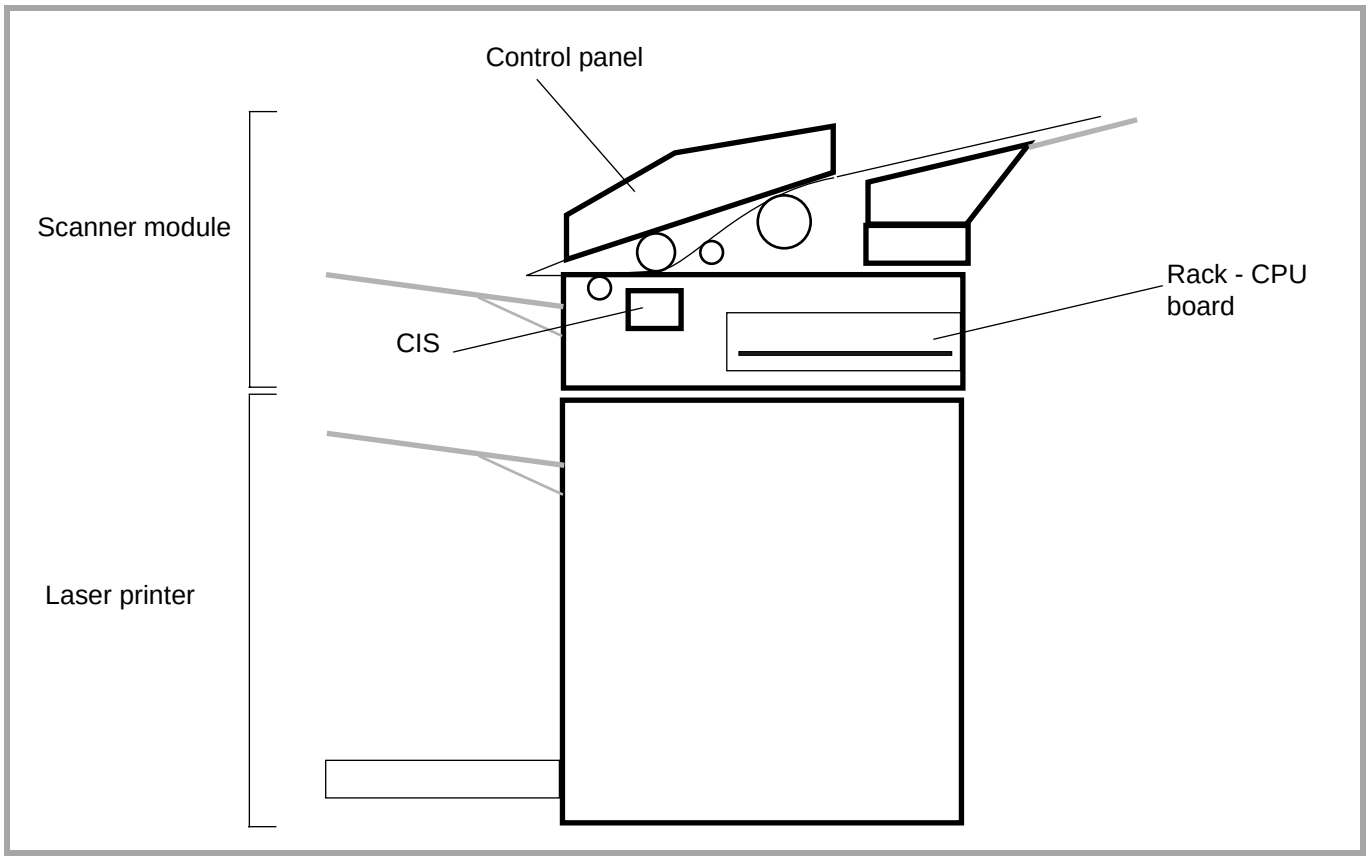


Figure 2.

The product consists of a color scanner with a resolution of 300 dpi and a black-and-white laser printer engine with a resolution of 600 dpi. These two components are combined in a single unit.

The documents to be processed are read by means of a sheet feeder scanner using CIS (Contact Image Sensor) technology.

The control panel comprises:

- An alphanumeric keyboard and function keys used to control the unit,
- A display with 2 lines of 16 characters and a line of icons, to display control messages and alerts to the user,
- A smart card reader used to initialize the consumables. It can also be used to store user functions (directory and user parameter).

When replacing all or part of the consumables, perform the installation procedure for the new consumable item(s) (refer to the User Guide).

GP 3 Installation requirements

Machine dimensions

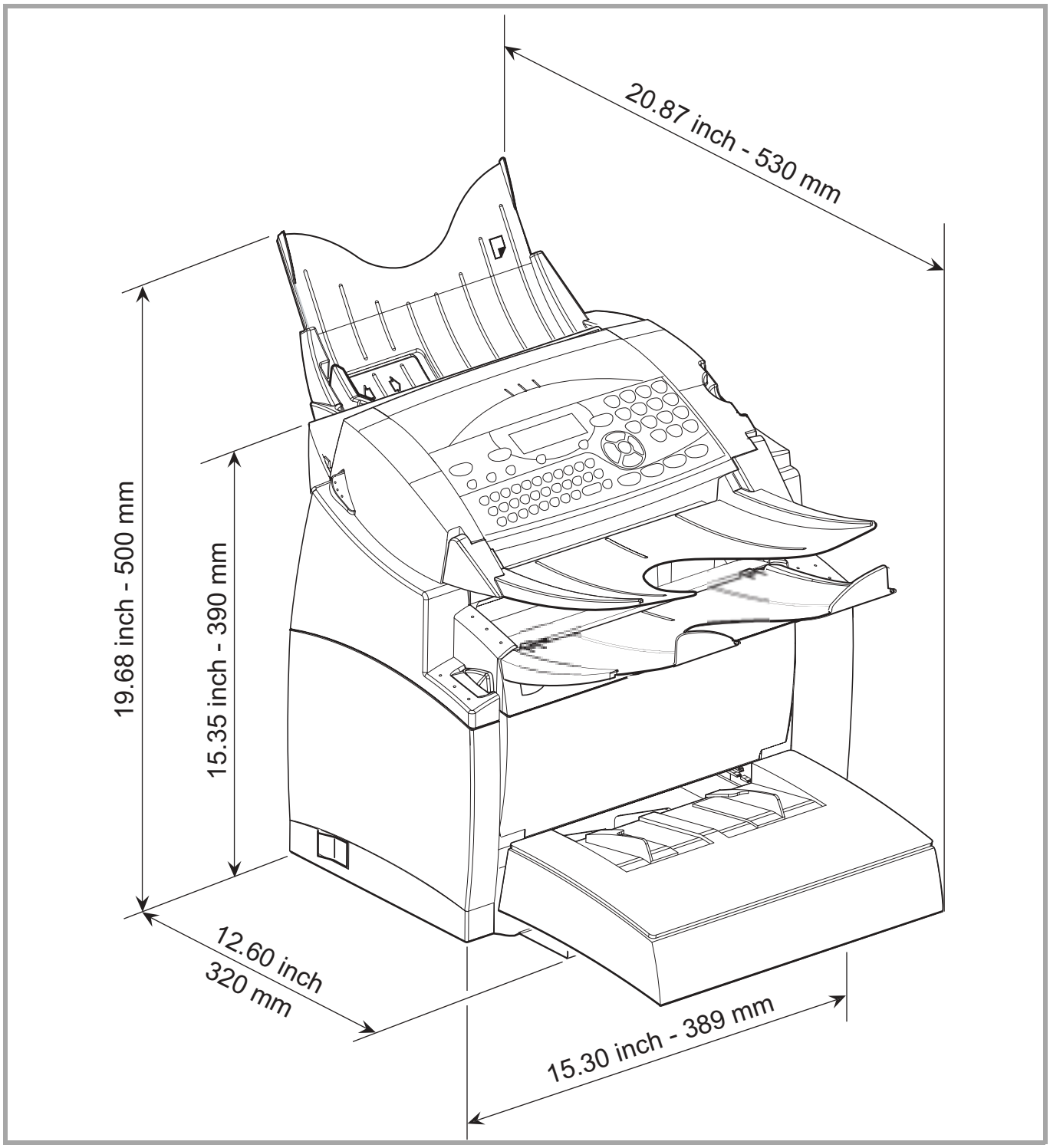


Figure 1.

Figure 1 shows the overall dimensions of the machine, optional accessories not included.

Electrical requirements

Power

Single-phase AC supply with ground, in conformance with the information on the label on the back of your machine.

Note(s) : The input power of the machine conforms to the **overvoltage** safety level.

Telephone line

The telephone line is equipped with a standardized telephone connector and should be connected to the switched telephone network (private exchange (PABX) or public exchange).

Note(s) : The telephone line input conforms to the **TNV-3** safety level.

Environmental conditions

When selecting a location for the machine, the following points should be taken into account:

- The telephone socket should be located at no more than 2 meters (6 feet).
- A standard single-phase power socket with ground (rated in conformance with the information on the label on the back of the machine) should be located at no more than 2 meters (6 feet).
- For easy access to the machine, leave a space of about 10 cm (4 inches). at the sides and the back. Also leave sufficient space in front of the machine.
- If the machine is installed close to a wall, make sure the distance between the wall and the upper edge of the tray is at least 10 inches (25 centimeters). This will allow for easier opening of the upper cover.
- Do not install the machine in direct sunlight, near heating radiators or near air conditioning outlets (see GP 1).
- The room should be adequately ventilated.
- Avoid locations where frequent vibrations occur.
- Avoid locations where water or other products might be splashed on the machine.
- The machine should not be installed directly on the floor.
- Place the machine on a flat horizontal support.

Package contents

- Multifunction machine
- Document output tray
- Paper output tray
- Paper feed tray
- Power cord
- Telephone cord(s)
- Document input tray
- UG (User Guide)

Connections

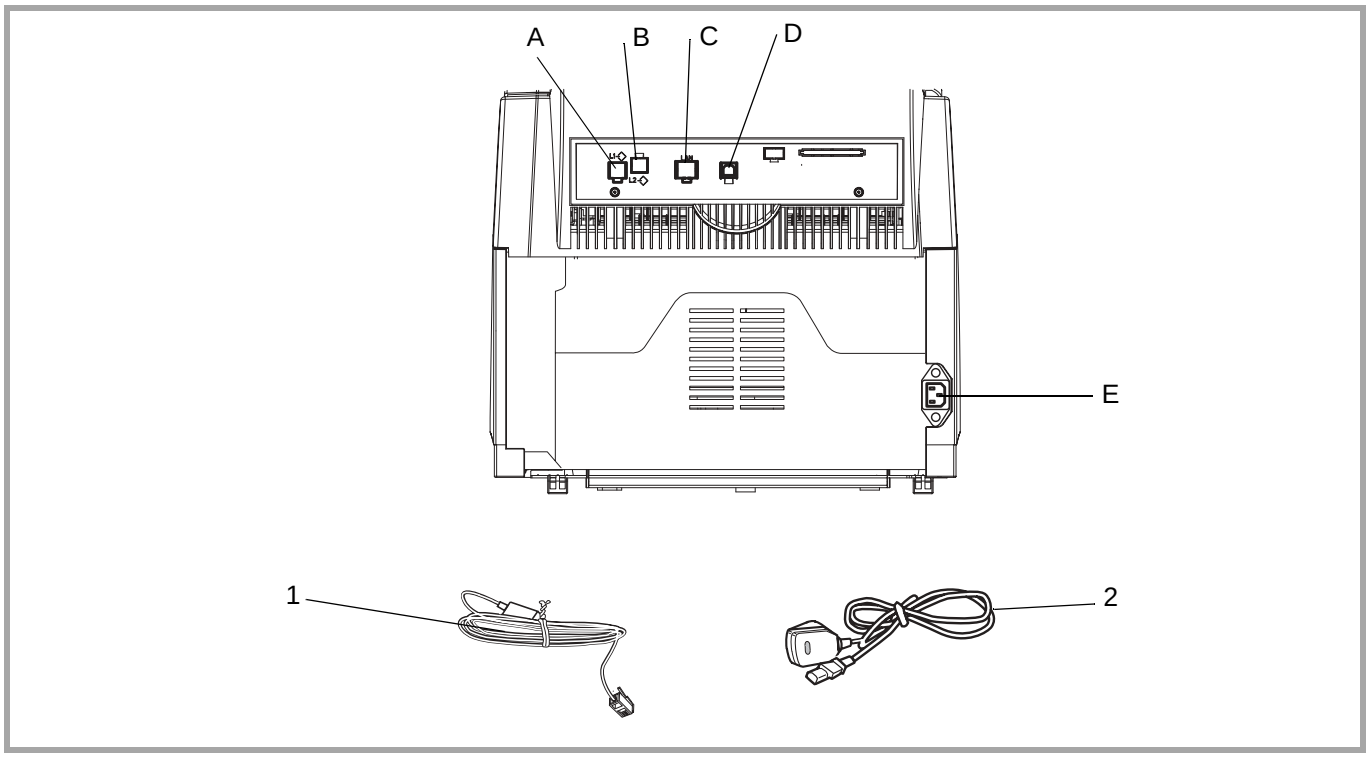


Figure 2.

Connecting the telephone line and LAN

- Plug one end of the telephone lead (1) into socket (A) of the machine and the other end into the telephone wall socket (the types of connector may vary depending on the country).
- If the machine is equipped with a second telephone socket (depending on the model), plug one end of the telephone lead (1) into socket (B) of the machine and the other end

into the telephone wall socket (the types of connector may vary depending on the country).

- If the machine is equipped with a LAN connection (depending on the model), plug one end of the LAN cable (supplied by your network administrator) into socket (C) of the machine and the other end into the local area network socket allocated to your machine.

Powering up the machine

ATTENTION -REFER TO THE SAFETY REGULATIONS IN THE INTRODUCTION.

- Plug one end of the power cord (2) into the machine connector (E) and the other end into the wall outlet (the types of connector may vary depending on the country).
- Set the on/off switch to the <I> position (On).

After a few seconds, as soon as the warm-up of the machine is finished, the date and the time are displayed.

Connecting the PC

- Connect one end of the USB cable to the PC connector (D) located at the back of your machine.
- Connect the other end of the USB cable to the USB port of your PC.

Paper supply

Installing the machine paper tray

Using the left and right notches of the machine as a guide, carefully push in the tray until it stops (as shown in Figure 3).

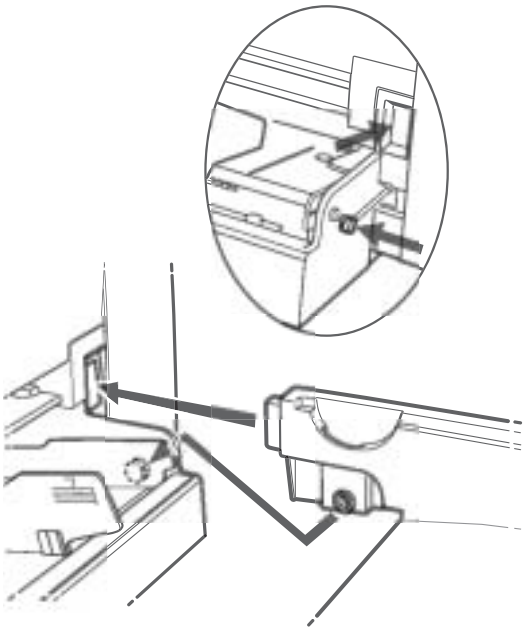


Figure 3.

Put the tray cover in place.

Installing an additional paper tray (option)

Refer to the User Guide.

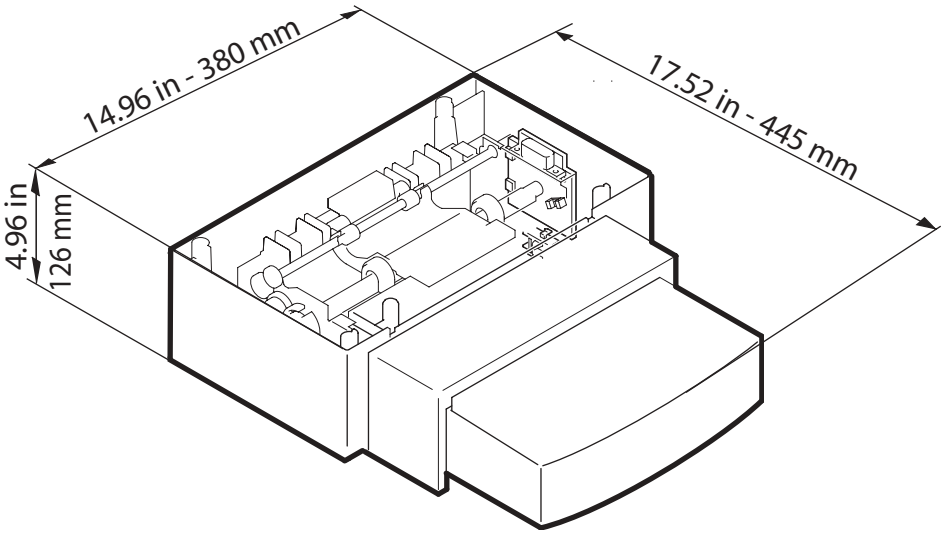


Figure 4.

Installing the Trays

Document input tray

Install the tray by clipping the two lugs in the corresponding openings at the back of the machine.

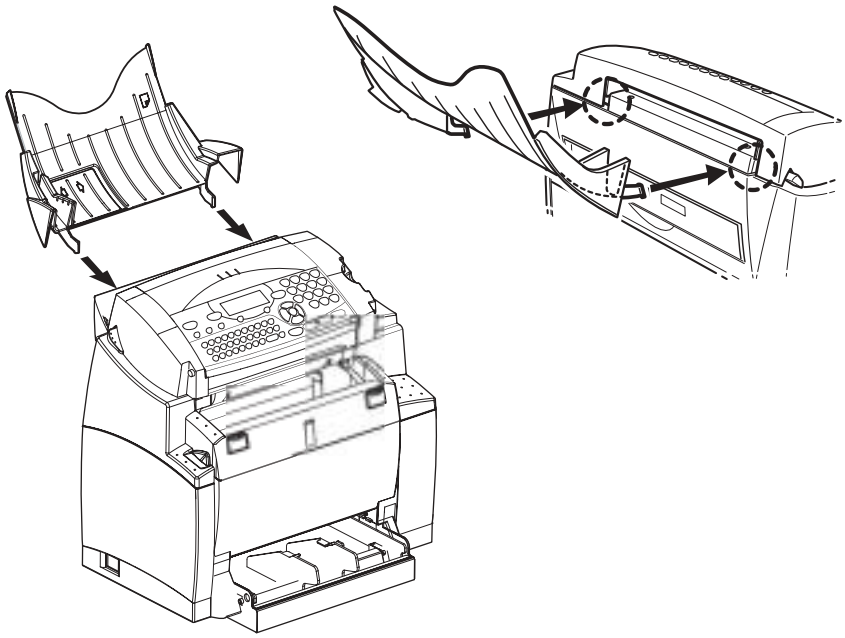


Figure 5.

Document output tray

Install the tray by clipping the two lugs in the corresponding openings at the front near the top of the machine.

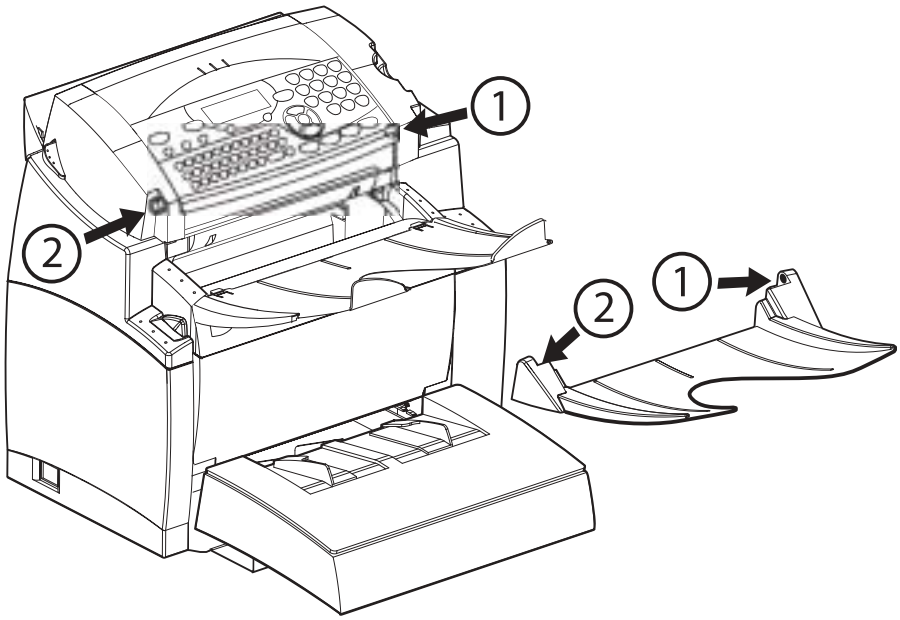


Figure 6.

Paper output tray

With both hands, slightly bend the center part of the tray upwards, so that you can insert its clips into the notches located near the top of the machine. Release the tray so that it resumes its initial shape. If necessary, push against the tray at its base and in the middle so that it clips into place behind notch (A).

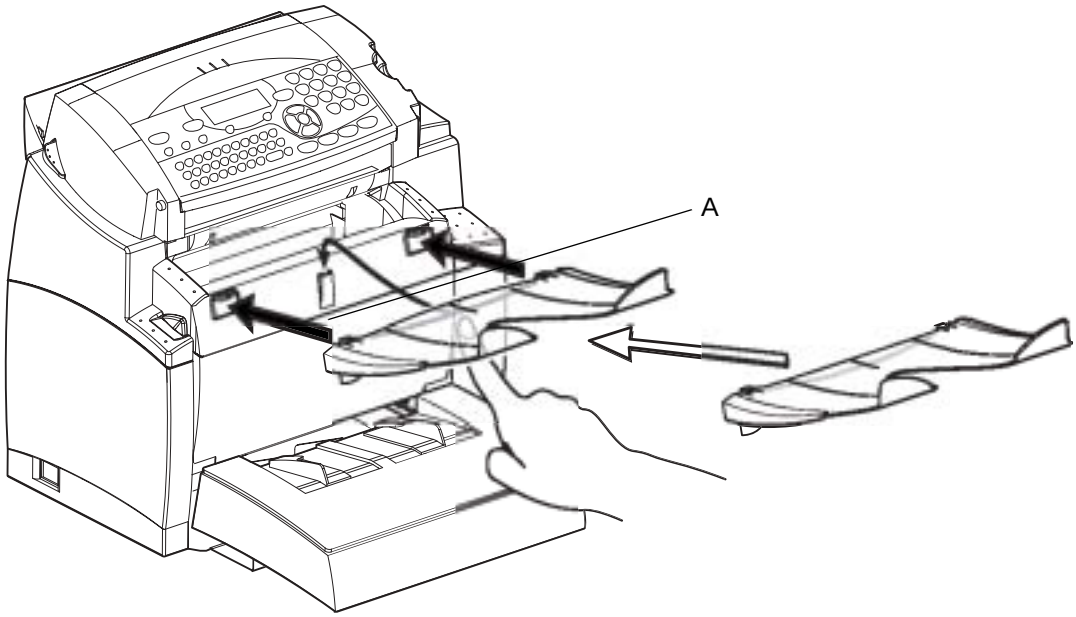


Figure 7.

Installing the consumables

Refer to the User Guide.

GP 4 Start-up and software configuration

A few seconds after switching on, as soon as the warm-up of the machine is finished, the date and the time are displayed.

User parameters

Refer to the User Guide.

Installation parameters

The purpose of these parameters is to adapt the machine to specific user requirements and to the telecommunication standards of the country where the machine is to be installed.
At delivery, each machine is programmed with the factory test configurations. The installer can obtain a printed listing of these parameters (key sequence **MENU**, **5**, **4**, **OK**).

Note(s) : It is advised to keep a copy of the list of these parameters at delivery.

The access to these parameters is only authorized to maintenance and/or installation technicians.

The machine is equipped with a set of logic blocks referred to as SOS (SOft Switches). Each block consists of 8 bits called bit 1 to 8. Each bit can take a value of either 0 or 1. On the display, a block (from bit 1 to bit 8) is read from right to left. When a configuration is first selected, the blinking cursor is always placed on bit 8 (the bit at the left).

When the display shows the date and the time, you can access the configuration bytes by means of the key sequence:

MENU * #

The description of these parameters can be found below. They are modified in the same manner as all other parameters.

Position of the bits on display:

Bit 8							Bit 1
X	X	X	X	X	X	X	X

List of configurations (SW)

Soft-switch 1: Ringing and Automatic Printing

Bit	Default Value	Naming
1	1	Reserved
2	0	Reserved
3	0	SOS-DURPAUSE: Long/short pause while dialing Values: # 0 (Short 2sec.) or 1 (Long 6sec.)
4	0	Reserved
5	0	Reserved
6	1	SOS-IMPAUTO: Automatic log print Values: 0 (No) or 1 (Yes)
7	0	SOS-IMPT30: Automatic printing of T30 trace after comm error. Values: # 0 (No)1 (Yes)
8	0	SOS-IMPTRA: Trace printing/PC download enable/erase mode access Values: # 0 (No)1 (Yes)

Soft-switch 2: Scanner / Printer Engine Configuration

Bit	Default Value	Naming
1	0	Reserved
2	0	Reserved
3	0	Keyboard beep on/off Values: # 0 (Beep on)1 (no beep)
4	1	Reserved
5	0	Reserved
6	0	Reserved
7	0	SOS-COPLOC: Restriction on local copies Values: # 0 (No)1 (Yes)
8	0	SOS-TIMKONIKA : Timed memorizing of photocopier resolution/contrast/settings Values: # 0 enabled1 disabled

Soft-switch 3: Line Configuration

Bit	Default Value	Naming
1	1	SOS-NIVEMI: Transmission level Values: 00 = 0 dBm 0000 = -1 dBm ... 1001 = -9 dBm ... 1111 = -15 dBm
2	0	
3	0	
4	1	
5	0	Reserved
6	0	SOS-SEUILREC: Reception threshold 1 Values: # 0 (-43 dB)1 (-47 dB)
7	0	SOS - EPTV29: Use Echo Protect Tone with V29 Values: #0: (No) 1: (Yes)
8	0	SOS - ECHO: Echo cancelling Values: #0: (No) 1: (Yes)

Soft-switch 4: Fax Protocol Configuration

Bit	Default Value	Naming
1	1	SOS-MODPRIV: Communication in private mode Values: 0 (No)# 1 (Yes)
2	0	SOS-DIS-COURT: Restricted DIS size Values: # 0 (long DIS (complete))1 (Short DIS)
3	0	SOS-TCF: TCF accept criterion Values: # 0 (Normal) refused if there has not been 1 continuous second. 1 (Special) 1 discontinuous second in the TCF, then accepted systematically at 2 400 b/s
4	0	SOS-RTN: Page accept criterion Values: # 0 (10 percent) 1 (15 percent) 2 (20 percent) 3 (no check)
5	0	
6	1	SOS-DISINF: Unlimited DIS length Values: 0 (No)# 1 (Yes)
7	0	SOS-LGINF: Maximum length of scan, printing, communication Values: # 0 (1 meters)1 (3 meters)
8	1	SOS-ECM: On/Off ECM Values: 0 (No)# 1 (Yes)

Soft-switch 5: Voice/Loudspeaker Configuration

Bit	Default Value	Naming
1	1	Reserved
2	0	Reserved
3	0	Reserved
4	0	Reserved
5	0	SOS-HP: Speacker line monitoring during fax comm. Values: # 0 (No)1 (Yes)
6	1	Reserved
7	1	Reserved
8	0	Reserved

Soft-switch 6: Line Adjustment

Bit	Default Value	Naming
1	0	Reserved
2	0	Reserved
3	0	Reserved
4	0	Reserved
5	0	Reserved
6	0	Reserved
7	0	Reserved
8	0	Reserved

Soft-switch 7: Reserved

Bit	Default Value	Naming
1	1	Reserved
2	1	Reserved
3	1	Reserved
4	0	Reserved
5	0	Reserved
6	0	Reserved
7	0	Reserved
8	1	Reserved

Soft-switch 8: Remote Readout/Internal Answering Machine / Modem

Bit	Default Value	Naming
1	0	Reserved
2	1	Reserved
3	1	Reserved
4	0	Reserved
5	1	Reserved
6	1	Reserved
7	0	Reserved
8	1	Reserved

Soft-switch 9: Approval + Communication Applications

Bit	Default Value	Naming
1	0	Reserved
2	0	Reserved
3	0	Reserved
4	1	SOS-REPERR: Redialing from page fault Values: 0 (No) # 1 (Yes)
5	1	SOS-NOTREMIS: Printing of first page on transmission report Values: 0 (No) # 1 (Yes)
6	1	SOS-GRILLAGE: Burn phone numbers Values: # 0 (No) 1 (Yes)
7	1	SOS-LIGNE5S: Lines of 5 sec.during reception Values: # 0 (Length of lines not limited to 5 sec./line) 1 (Maximum length of a line: 5 seconds)
8	1	Reserved

Soft-switch 10: Communications: Locks/Miscellaneous

Bit	Default Value	Naming
1	0	SOS-AFFVIT: Communication rate display Values: # 0 (No) the page number is displayed 1 (Yes) the comm. rate is displayed.
2	1	SOS-BTYPNUM: Access to impulse/DTMF parameter Values: 0 (Yes) Reserved # 1 (No)
3	0	Reserved
4	1	Reserved

Bit	Default Value	Naming
5	1	Reserved
6	0	Reserved
7	1	SOS-SONREA: Access to redialing parameters (screen /printer) Values: # 0 (No access)1 (With access)
8	0	Reserved

Soft-switch 11: Retransmissions/Logs

Bit	Default Value	Naming
1	0	Reserved
2	0	Reserved
3	0	Reserved
4	0	Reserved
5	1	Reserved
6	1	Reserved
7	0	Reserved
8	1	Reserved

Soft-switch 12: Reserved

Bit	Default Value	Naming
1	1	Reserved
2	0	Reserved
3	0	Reserved
4	1	Reserved
5	1	Reserved
6	0	Reserved
7	0	Reserved
8	0	Reserved

Soft-switch 13: Internet

Bit	Default Value	Naming
1	0	Reserved
2	1	SOS-ACKNORECNET: Send "message not received" reply on reception of corrupted messages Values: 0 (No) # 1 (Yes)
3	1	SOS-EFFMSGNOK: Delete corrupted messages Values: 0 (No) # 1 (Yes)
4	1	SOS-PROMONET: Auto directory enrichment (Internet promotion) Values: 0 (No automatic enrichment of directory) #1 (automatic enrichment of directory enabled)
5	0	SOS-VIDEMBOX: Delete first message in the mailbox Values: # 0 (No) 1 (Systematically delete first document)

Bit	Default Value	Naming
6	0	SOS-VIDEALLMBOX: Delete entire mailbox Values: # 0 (No) 1 (Systematically empty mailbox)
7	0	Reserved
8	1	Reserved

Soft-switch 14: Internet

Bit	Default Value	Naming
1	0	SOS-CODNET: Document encoding type for Internet Comm. Values: # 00 (MH encoding) 01 (MR encoding) 10 (MMR encoding)
2	0	
3	0	SOS-BRIDINET: Internet functional restrictions Values: # 0 (No restriction) 1 (Internet functions restricted (no access to the menu))
4	1	SOS-CHAP: CHAP restrictions, password encoding Values: 0 (CHAP not used) # 1 (Use CHAP)
5	0	SOS-DNS: Restricted dynamic DNS, static DNS only Values: # 0 (No dynamic DNS server addresses) 1 (Fixed DNS server addresses)
6	0	SOS-REEMINFINI: Unlimited transmission/reception (Internet relay transmission) Values: # 0 (No)1 (Yes)
7	0	Reserved
8	0	SOS-T2CMPI: Save Internet passwords on i2c card Values: # 0 (No) 1 (Yes)

Soft-switch 15: Internet

Bit	Default Value	Naming
1	1	SOS-CMPHPPP: PPP header compression: address/control field Values: 0 (No Compression) # 1 (Compression enabled)
2	1	SOS-AUTHENT: PPP authentification Values: 0 (No authentification) # 1 (With authentification)
3	1	SOS-CMPHPPP2: PPP header compression: protocol field Values: 0 (No compression) 1 (compression enabled)
4	0	SOS-REPSMTP: Wait for 2 packets after HELO command in SMTP Values: # 0 (Normal, wait for single rely packet) 1 (Wait for a second packet if the first one is empty)
5	0	Reserved
6	0	Reserved
7	0	Reserved
8	1	Reserved

Soft-switch 16: Internet

Bit	Default Value	Naming
1	0	SOS-ACKNORECNET2: Send a "message not understood" reply on reception of TIFF attchment Values: # 0 (Send message) 1 (Do not send message)
2	0	SOS-MAILSWIMP: Printout when rerouting mailswitch Values: # 0 (Printout) 1 (No printout)
3	0	Reserved
4	0	Reserved
5	0	SOS-ACTREEM: Enable/disable rerouting Values: # 0 (Rerouting disabled) 1 (Rerouting/transfer enabled)
6	0	Reserved
7	1	Reserved
8	0	Reserved

Soft-switch 17: Internet

Bit	Default Value	Naming
1	1	SOS-LAN-ACTIF: Detection of LAN chip (read-only) Valeurs:0 (No) - Default value for model without LAN fct # 1 (Yes) - Default value for model with LAN fct
2	0	SOS - REPERTOIRE-IMPORT: Enable directory import by e-mail Values: # 0 (Unauthorised) 1 (Authorised)
3	0	Reserved
4	0	Reserved
5	0	SOS-NO-TRT-FCERROR: Retry after modem high speed data detection problem Values:# 0 (Yes) 1 (No)
6	0	Reserved
7	0	SOS-IMP-AVISDEPOT: "Delivery notice" report printout Values: # 00 (no) 01 (yes) 10 (systematically) 11 (only in case of error)
8	0	

Soft-switch 18: Coding/UART Rate

Bit	Default Value	Naming
1	1	SOS-CODMEM: Stored document encoding type Values: 00 (RL encoding) 01 (MH encoding) 10 (MR encoding) #11 (MMR encoding)
2	1	
3	1	SOS-CODCOM: COM negotiated encoding type Values: 01 (MH encoding) 10 (MR encoding) #11 (MMR encoding)
4	1	

Bit	Default Value	Naming
5	0	SOS-VITUART: Baud rate of serial link to modem Values: # 00 (115 200 bauds) 01 (57 600 bauds) 10 (38 400 bauds)
6	0	
7	0	SOS-AFF_VIT_REELLE: Show/hide real communication rates Values: # 0 show reduced rates 1 show real rates
8	0	Reserved

Soft-switch 19: Miscellaneous Software Functions

Bit	Default Value	Naming
1	0	Reserved
2	1	Reserved
3	0	SOS-GROUPE: Restriction on groups (or distribution list) Values: # 0 (No groups)1 (Groups accepted)
4	0	SOS-REGULREC: T30 reception control inhibited Values: # 0 (No) 1 (Yes)
5	0	Reserved
6	1	SOS-MENUCLAVIER: Hide keyboard menus and force QWERTY keyboard Values: 0 (Shows) # 1 (Hide)
7	1	SOS-ONETOUCH: Enable "One touche" functions Values: # 0 (No) 1 (Yes)
8	0	SOS-TLC: Accept software download via STN Values: # 0 (No) 1 (Yes)

Soft-switch 20: Reserved

Bit	Default Value	Naming
1	0	Reserved
2	0	Reserved
3	0	Reserved
4	1	Reserved
5	1	Reserved
6	1	Reserved
7	1	Reserved
8	1	Reserved

Soft-switch 21: T4 Decodeur/Debug

Bit	Default Value	Naming
1	1	SOS-TRAITLIGERR: T4 decoding line copying mode Values: 0 (For each line with an error) # 1 (Only once, then destroy)
2	0	Reserved
3	0	Reserved
4	0	Reserved
5	1	SOS-GARBAGE-FLASH: Flash memory garbage collection method Values: 0 (garbage collection when application terminates) # 1 (garbage collection as background task) ATTENTION : taken into account only after reboot of the CPU

Bit	Default Value	Naming
6	0	Reserved
7	0	SOS-DETECT OCCUP: Blaind dialling enabled Values: # 0 (No)1 (Yes)
8	0	Reserved

Soft-switch 22: Miscellaneous

Bit	Default Value	Naming
1	1	SOS-DUREE-2100: Transmission time of the 2100 modified for V34 reception Values: # 00 (5 seconds) 01 (4.5 seconds) 10 (4 seconds) 11 (3.5 seconds)
2	1	
3	0	SOS-SORTIMP: Printing at the end of fax or Internet communications Values: # 0 (Printing during comm.)1 (Print after comm.)
4	0	SOS-MTU-TCP: MTU-TCP size restriction for compatibility with ADSL router Values: # 0 (MTU of 1514 octets)1 (MTU of 1466 octets)
5	0	SOS - WEB- ACCES: Access Mode to embedded Web server Values: # 0 (Unprotected access) 1 (Password protected access)
6	1	SOS-AUTO-GDFID: Enable periodic self-identification Values: # 0 (no)1 (Yes)
7	0	SOS-AUTO-GDFSTS: Enable status automatic transmission to the F@x manager Values: # 0 (No)1 (Yes)
8	0	SOS-AUTO-GDFTLR: Enable remote readout automatic transmission to the F@x manager

Soft-switch 23: Miscellaneous

Bit	Default Value	Naming
1	1	SOS-JBIG: SUPER G3 capability to execute communication with JBIG encoding Values: 0 (No SUPER G3) 1 (negotiated SUPER G3)
2	0	SOS-BRID-LAN: Restriction on LAN function Values: # 0 (No)1 (Yes)
3	0	SOS-FSI-NOCOVER: Inhibition of generation of cover pages Values: # 0 (FSI V6 cover page) 1 (FSI V7 cover page) SAGEM Only
4	1	SOS-COMPACTE-RL: Compacting of run length (for fax server ELLIPSE) Values: # 0 (No compacting)1 (Compacting run length of no length)
5	0	SOS-DEBRIDAGE-JAUGE: Acceptation of EEPROM cards at any moment Values: # 0 (No) 1 (Yes) Return to 0 after removing the card
6	0	Reserved
7	0	SOS-POINT-FINAL-SEUL: Final DATA_SMTP point on its own in the TCP frame ("Peltex" problem) Values: # 0 (Disabled)1 (Enabled)
8	1	Reserved

Soft-switch 24: IEEE Address, SMS (Country depending)

Bit	Default Value	Naming
1	0	SOS-AOP-IEEE: Modification of the IEEE address by the AOP Values: # 0 (Modification impossible)1 (Modification possible)
2	0	SOS-FAXSWITCH: Activation of fax switch Values: # 0 (No)1 (Yes)
3	0	SOS-SMS PROTOCOLE: Type of protocol for SMS V23 Values: # 0 (protocol according to the country)1 (Protocol 1)
4	0	SOS-SMSSWITCH: Activation of the SMS SWITCH function Values: # 0 (Disabled)1 (Enabled)
5	0	SOS-SMSSWITCH2: Activation of SMS SWITCH2 the function Values: # 0 (Disabled)1 (Enabled)
6	0	Reserved
7	0	SOS-SMSRECV23: Activation of the SMS V23 reception function Values: # 0 (No SMS V23 reception) 1 (With SMS V23 reception)
8	1	SOS-SMSV23: Activation of the SMS V23 reception function Values: # 0 (SMS V23 enabled)1 (SMS Internet enabled)

Soft-switch 25: SMS (Country depending)

Bit	Default Value	Naming
1	0	SOS-TIMSMSSWITCH: Waiting time before transmitting a RING after the first buzzer preceding the CLIP # 00 = 2 seconds 01 = 1 x 200 ms 02 = 2 x 200 ms 03 = 3 x 200 ms 04 = 4 x 200 ms 05 = 5 x 200 ms 06 = 6 x 200 ms ..... 0F = 15 x 200 ms
2	0	
3	0	
4	0	
5	0	SOS-NORXSMSTORXFAX: Switch to FAX reception after faulty SMS reception. # 0: Switches to FAX reception 1: No FAX reception
6	0	SOS-TXADTERMINAL: Transmit the terminal address in the server number # 0: No 1: Yes
7	0	SOS-RXADTERMINAL: Receive the terminal address in the server number # 0: No 1: Yes
8	0	SOS-EXPBITPDF: Export the attached file format field (Image/PDF) when exporting the directory via e-mail. # 0: No 1: Yes ATTENTION: If the directory is exported to a machine which does not support this format, the machine (receiver) will loose its current directory, and won't be able to restore the new one.

Soft-switch 26: Miscellaneous

Bit	Default Value	Naming
1	0	Display the SMS type #0: No default SMS type menu 1: With SMS type menu
2	0	LOGIN authentification activation #0: LOGIN authentification enabled 1: LOGIN authentification disabled
3	0	Reserved
4	0	Restriction on USB function #0: No 1: Yes
5	0	With or without duplication of on page passage threshold #0: No duplication: NBI_SUP_B (1cm) 1: Duplication: NBI_SUP_B * 2 (2 cm)
6	0	RR/RNR regulation limitation to 4 in T30 #0: No limitation 1: With limitation
7	1	Double alternation optocoupler use #0: Optocoupleur mono alternation 1: Optocoupleur double alternation
8	0	Reserved

Soft-switch 27: Miscellaneous

Bit	Default Value	Naming
1	0	Size of remote readout serial number #1000: 9 digits remote readout serial number 1111: 15 digits remote readout serial number (only for EGT for now)
2	0	
3	0	
4	1	
5	0	Waiting time before validation of unexpected modulation in comparison with expected modulation. (~/driver/m_lucent/sms_m_dp2v/src/dpmain.c) # 00 = 60 + 0*30 ms= 60 ms 01 = 60 + 1*30 ms = 90 ms 02 = 60 + 2*30 ms = 120 ms 03 = 60 + 3*30 ms = 150 ms 04 = 60 + 4*30 ms = 180 ms 05 = 60 + 5*30 ms = 210 ms 06 = 60 + 6*30 ms = 240 ms ..... 0F = 60 + 15*30 ms = 510 ms
6	0	
7	0	
8	0	

Soft-switch 28: Miscellaneous

Bit	Default Value	Naming
1	0	Reserved
2	0	Reserved
3	0	Disable the 1 second timer before the hanging up #0: Enabled 1: Disabled

Bit	Default Value	Naming
4	0	Reserved
5	0	Number of bits at the end of frame #0: 18 mark bits (1-10) 1: 6 mark bits
6	0	Reserved
7	0	Reserved
8	0	Recall protection #0: With 1: Without

Soft-switch 29: Miscellaneous

Bit	Default Value	Naming
1	0	Numbers of SMS centres menus #0: Present 1: Missing
2	0	Activation of the Notification menu #0: Enabled 1: Disabled
3	0	Activation of the validated menu #0: Enabled 1: Disabled
4	0	Force the V29 modulation for 9600 and 7200 rates #0: Enabled 1: Disabled
5	0	Reserved
6	0	Reserved
7	0	Reserved
8	0	Reserved

Soft-switch 30: Miscellaneous

Bit	Default Value	Naming
1	0	Reserved
2	0	Reserved
3	0	Reserved
4	0	Reserved
5	0	Reserved
6	0	Reserved
7	0	Reserved
8	0	Reserved

GP 5 Software Download

Two methods can be used to update the machine software:

- by means of a USB link to a laptop.
- by means of a local network.

The main software (that runs on the CPU board), the boot software and the **PCL/SG Script** font files can be downloaded independently.

Download via PC Link

This procedure requires a laptop running under DOS or Windows and a USB cable. Perform the following:

- Print the Machine Parameters. Press key sequence **M, *, 1**. The report will be used after the upgrade.
- Change soft switch bit number 8. Press key sequence **M, *, #.** Select **OK** on SOS1. Change bit number 8 (the far left) from 0 to 1. Press **C** to exit.
- Connect the USB cable from the laptop to the machine.
- Switch the machine to Upload mode. Press key sequence **M, *, 4**.
- Download the F116/F116L upgrade tool from the CD-ROM to the laptop or PC.
- Use the upgrade tool to browse for the firmware update. When the relevant file is located, select **Upload**.
- A pop up window will appear if the upload is successful. Select **OK** to close the window. Close the upgrade tool. Disconnect the USB cable.
- After 15-20 seconds the machine will reboot.
- After the machines has rebooted, a Scanner Calibration must be performed. Press key sequence **M, 8, 0.** Select OK. Follow the instruction on the UI to perform the procedure.

  Note: The machine will produce black prints if this procedure is not performed.

- Change soft switch bit number 8. Press key sequence **M, *, #.** Select **OK** on SOS1. Change bit number 8 (the far left) from 1 to 0. Press **C** to exit.
- Print the Machine Parameters. Press key sequence **M, *, 1**. Ensure the firmware level is correct, refer to the last page of the report. Also, verify that SOS1 bit number 8 (the first number) is 0. Refer to the top of the last page.
- The machine is now ready for use.

Downloading via Local Network

This procedure requires an Ethernet cable and a PC equipped with a LAN card and the Outlook express software.

- Create an Outlook Express account:
  - Launch Outlook Express.
  - In the **Tools** menu, select **Accounts**. The window **Internet Accounts** appears.
  - Click on the **Add** button and select **Mail**.
  - Type "toto" in the **Display Name** field and click on **Next**.
  - Type "toto@toto" in the **Email Address** field and click on **Next**.
  - Type the address "169.254.0.1" in the **Incoming Mail Server** field and **Outgoing Mail Server** field and click on **Next**.
  - Type "toto" in the **Account Name** field and click on **Next** and **Finish**.
- Check the account connection:
  - Select the newly create account in the Internet accounts list and click on the **Properties**.
  - In the **Connection** tab, tick the **Connect using my local area network (LAN)** "Local Network" checkbox and click on **OK**.
- Connect the PC and the machine to the Ethernet cable.
- Perform the downloading process following the steps bellow:
  - Modify the terminal IP address following the steps bellow:
    - Go to the menu: ▼, 2, 5, 3, 2 then OK.
    - Type 169 254 000 001 then OK and STOP.
  - Position the SOS Softswitch bit 8 at 1: ▼, *, #, OK, 1, OK, STOP.
  - Switch to the download mode: ▼, *, T. The machine displays the WAITING @ LOAD message.
  - Create a message (using Outlook Express) on the PC addressed to "toto@toto" and attach to it the file containing the software to download to the terminal. Send the message.
    The machine LCD screen displays the TELELOADING message.
    At the end of download, the machine reboots.
  - Check that the download was successful by typing the following sequence on the machine keyboard: ▼, *, V.
    The machine display shows the software version and the checksum.

GP 6 Saving data on EEPROM card (Directory card)

The control panel is equipped with a reader that can read and write on EEPROM cards in I2C format (“directory card”).

The machine consumables life state is stored in EEPROM memory (on the CPU board) and can be seen by **MENU 8 6** (in percent) regarding the number of pages initial values.

The print counters are saved in EEPROM memory too (on the CPU board). These absolute counters show the global use of the machine regardless of consumables: number of printed pages, number of scanned pages, number of transmitted/received pages.
They can be seen by **MENU 8 2** and printed with **MENU * 1** (parameters printout)

The directory cards can be used to save the entire directory (with the e-mail addresses) and optionally the technical parameters.

- Archiving/restoring of the directory only: **MENU 16**.
- Archiving of the directory and the parameters: **MENU * 5**.
- Restoring of the directory and the parameters: **MENU * 9**.

Simplified List of the Parameters Saved on a Directory Card

- General Parameters
  - Soft switches
  - Fax number of the machine
  - Name of the machine
  - Index number of the rerouting address list
  - Delayed send transmission
  - Dialing prefix
  - Passwords for keyboard and direct dialing locks
  - Standby mode programming + **technical parameters 76 / 90 / 91 / 92 / 93 of User Guide Chapter 3.**
- Scan/print Parameters
  - Default scan mode
  - Number of copies to print
  - CIS/Scanner/printer settings
  - Management modes of the paper trays
  - Enabling of fax answering secure mode
- Fax Communication Parameters
  - Type of STN network
  - Transmission mode
  - Transmission report printout mode
  - Fax transmission/reception rate

  - Number of rings
  - Header (LIC) transmission and printing
- Internet/LAN Communication Parameters
  - Data rate
  - Internet provider
  - Time period of connection to the Internet
  - Fixed times for Internet access
  - Prohibited time period for periodic connection
  - Internet connection/transmission modes
  - Internet rerouting mode
  - LAN configuration mode (manual/automatic)
  - Internet provider connection/mail service/servers/**authentication** parameters des providers internet
  - LAN mail service/server**/authentication** parameters.

GP 7 Packing and transport of the machine

When you need to transport the machine, always use the original packing material. If you do not pack the machine correctly, you risk invalidating the warranty.

1 - Set the power switch of the machine to “O” (Off).
2 - Disconnect the power cord from the wall outlet, then disconnect all cables connected to the machine.
3 - Remove all the document and paper trays, including the paper feed tray. If your machine has the optional second paper feed tray installed, remove it and keep it.
4 - Pack the document and paper trays in their original plastic bags and packing boxes. Pack the machine in its original plastic cover and place it in the original packing box together with the accessories (trays, documentation, etc.).
5 - Seal the packing box with adhesive tape.

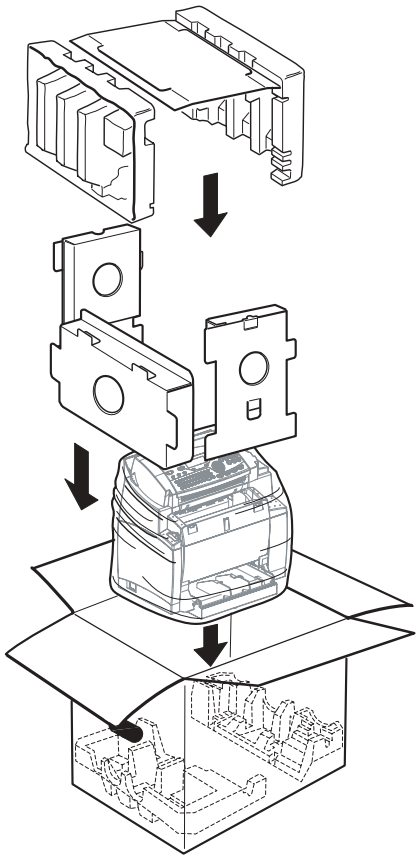


Figure 1.

GP 8 Functions of the service provider

Initializing and erasing the memories

First set the installation parameter **CONFIGURATION** SOS 1 bit 8 to 1.

- Reset to default configuration (factory configuration) of all parameters (user and installer (or technical)):

MENU # 0

- Erase directory:

MENU # 1

- Erase logs:

MENU # 2

- Erase printer counters:

Caution - This procedure erases all counters. New consumables with smart cards must be installed.

MENU # 3

- Use menu 85 to display consumables:

Caution - This procedure erases the optional kit LAN.

MENU # 4

To see the initialization message, switch the machine off, then on.

- Re-initialize the flash memory data (complete erase): open the scanner cover, then:

MENU # 5

- Erase mailboxes (internal) only:

MENU # 6

- Erase all, including the e-mail addresses stored in the directory, except for the other data in the directory.
  Reset to default configuration (combination of functions 0, 2, 6, 8):

MENU # 7

- Erase all documents in memory (documents to be transmitted, received documents and deposited documents):

MENU # 8

- Complete reset of the machine (combination of functions 0, 1, 2, 6, 8):

MENU # 9

- Erase first element of printing queue:

MENU * I

- Re-initialize the fixing unit counter:

MENU # K

Other functions

For these functions, bit 8 of configuration 1 of the installation parameters must first have been set to 1.

- Printout of all parameters (including installation and technical parameters):

MENU * 1

- Switch to forced standby mode, independently of the clock:

MENU * 2

- Switch to “software download by phone” mode:

MENU * 3

- Switch to “software download by PC link” mode:

MENU * 4

For this function, bit 8 of configuration 1 of the installation parameters must first have been set to 1.

- Save the directory and the parameters on an EEPROM card via the smart card reader:

MENU * 5

- Restore directory and parameters from an EEPROM card via the smart card reader:

MENU * 9

- Start feeder scanner calibration:

MENU * A

- Display main software version:

MENU * V

- Display modem type:

MENU * M

- Display boot software version:

MENU * B

- Enter 9 digit serial number:

MENU * N

- Display LAN rate:

MENU * P

- Manually reboot the machine (with SOS 1 bit 8 set to 1):

MENU * R

- Display PCL/SG Script fonts checksum:

MENU * F

- Retransmission of faxes to print to rerouting mail:

MENU * G

- Activation of dump RAM server:

MENU * K

- Accept soft download via internet or Intranet:

MENU * T

GP 9 Mechanical/Electrical

Paper Path

Paper can be fed into the printer engine either from the Main Paper Tray/Multi-purpose Tray (250 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 Feed Roller is transported to the Image Transfer Roller, Fusing Roller and then Paper Exit Roller. After this, the paper is fed out onto the Paper Output Tray

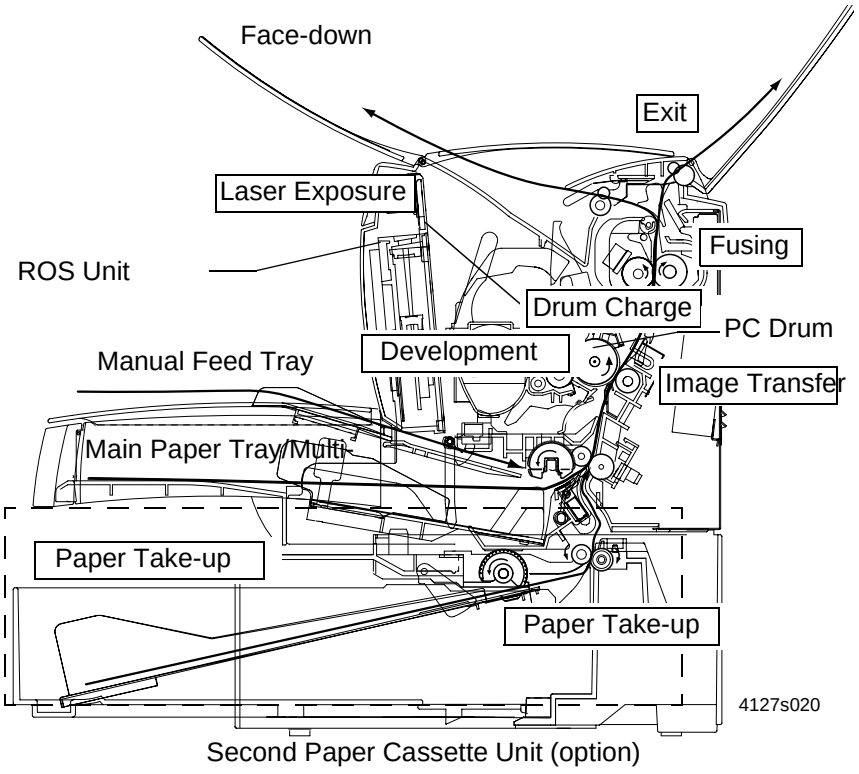


Figure 1.

GP 10 Paper Feed Section

Main Paper Tray/Multi-purpose Tray

Mechanism

- When the Paper Feed Solenoid is energized, the drive of the Main Drive Motor is transmitted to the Paper Feed Roller via the Paper Feed Gear (one-way clutch) to turn the Paper Feed 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.
- The retard 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 Feed 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.

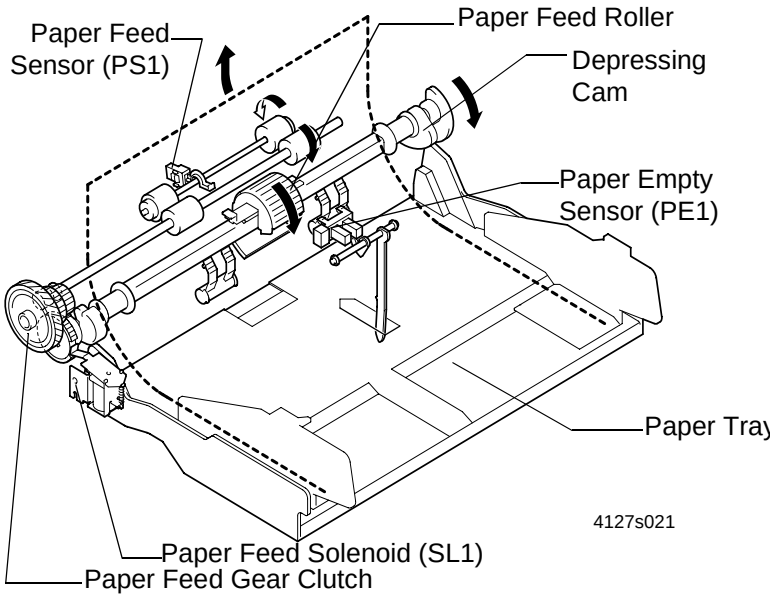


Figure 1.

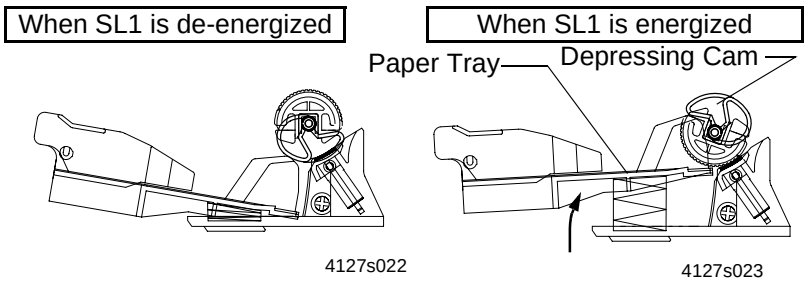


Figure 2.

Paper Empty Detection

There is a Paper Empty Sensor provided on the upper side of the Main Paper Tray/Multi-purpose Tray. It functions to detect a paper-empty condition in the Main Paper Tray/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.

Second Paper Cassette Module (option)

Mechanism

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

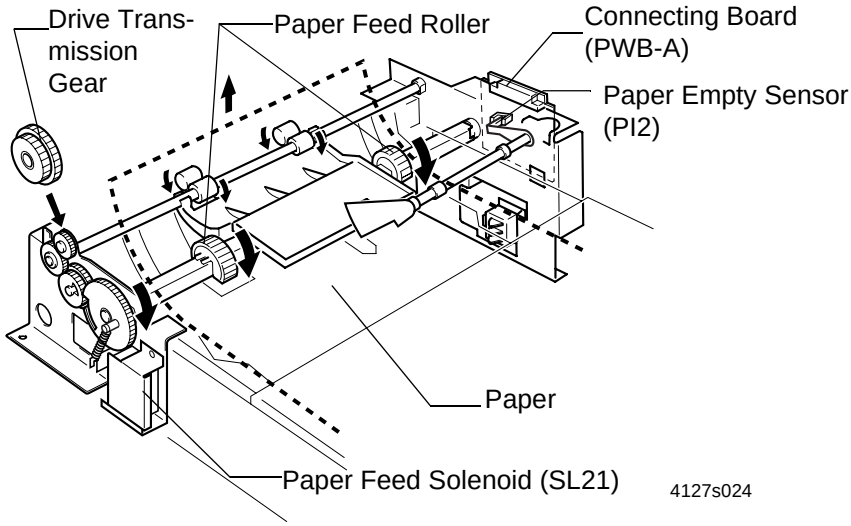


Figure 3.

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.

GP 11 Drum Charge

Overview

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

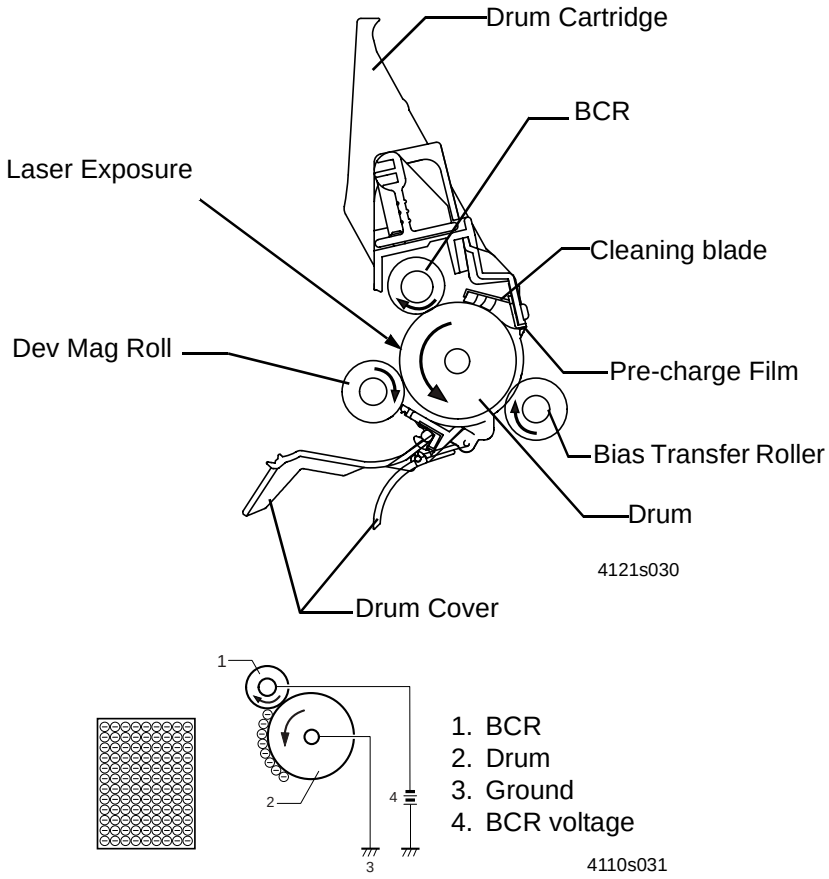


Figure 1.

GP 12 Laser Exposure

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

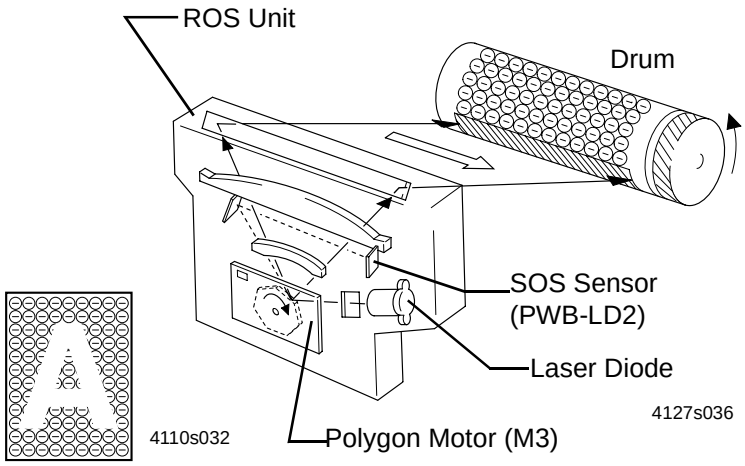


Figure 1.

In the sub-scanning direction (vertical direction)

- When the print engine receives the PRINT signal, the Polygon Motor and the Main Drive Motor rotate and the paper is fed.
- The printing in the sub-scanning direction is started when the Print Engine Board sends the VIDEO signal to the ROS 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 (Print Engine Board).
- The controller determines the start point of printing according to the TOD signal (sub-scanning direction) sent from the engine (Print Engine Board) and the HSYNC signal.
- Laser exposure is started when the print head receives the VIDEO signal.

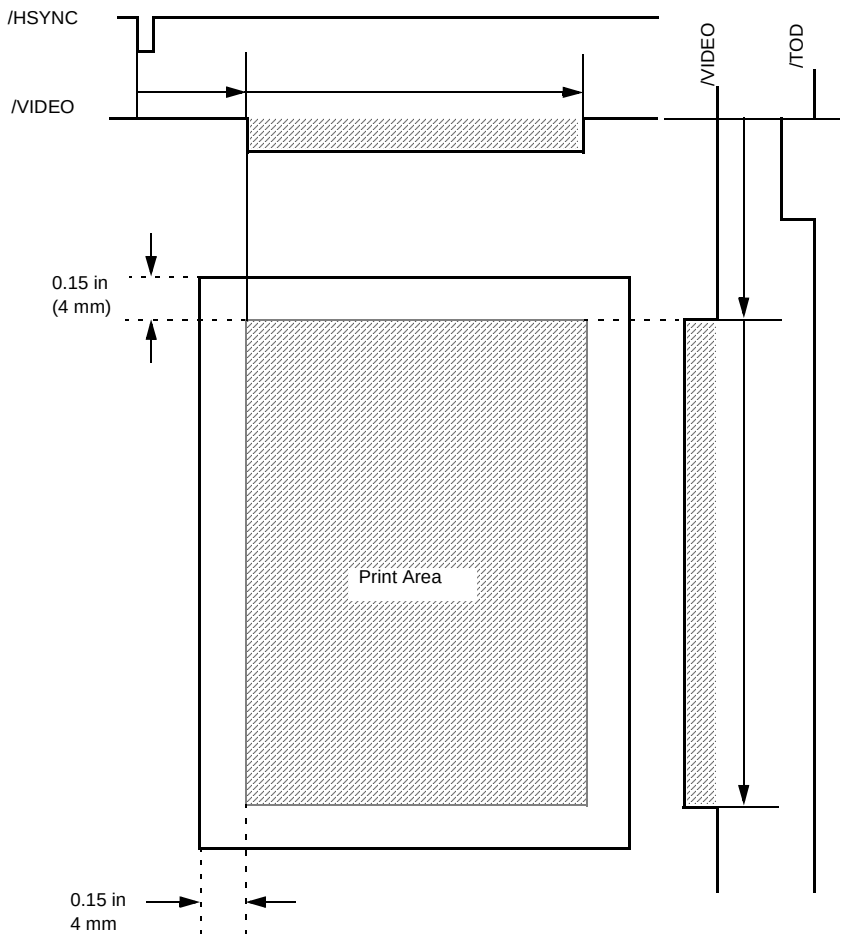


Figure 2.

GP 13 Development

Overview

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

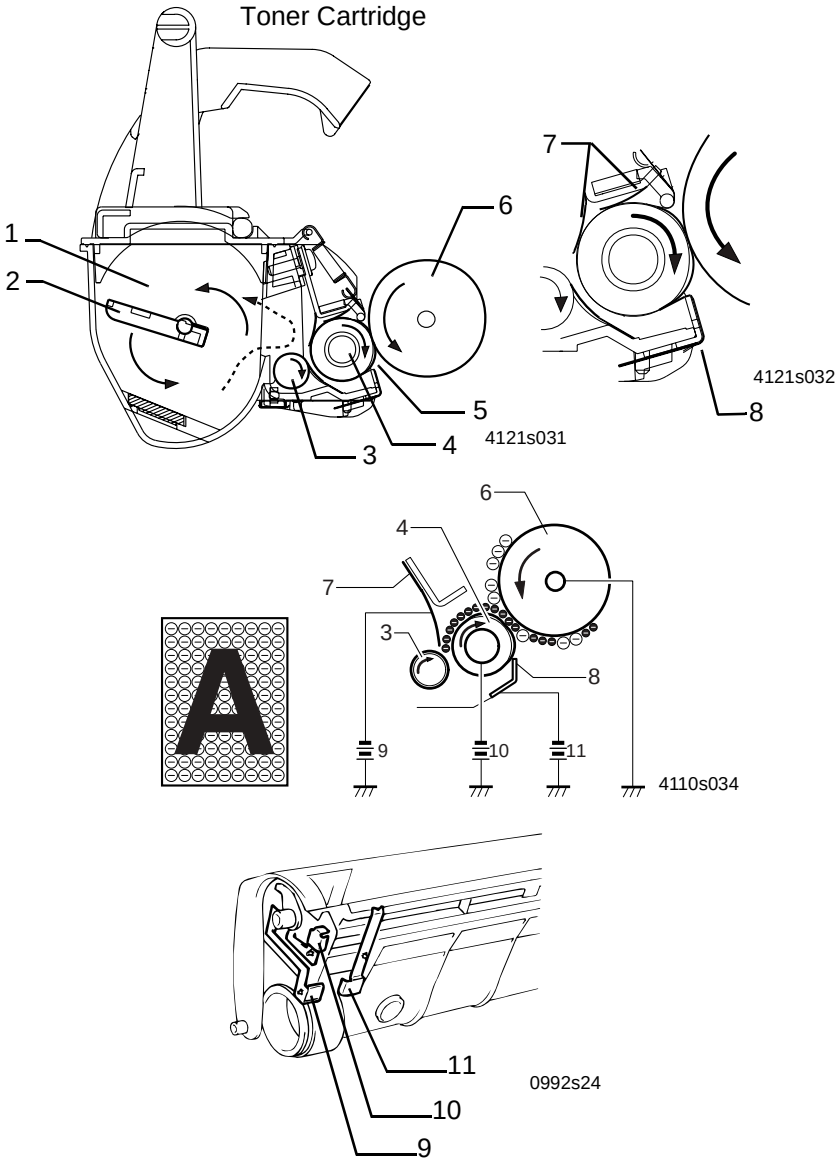


Figure 1.

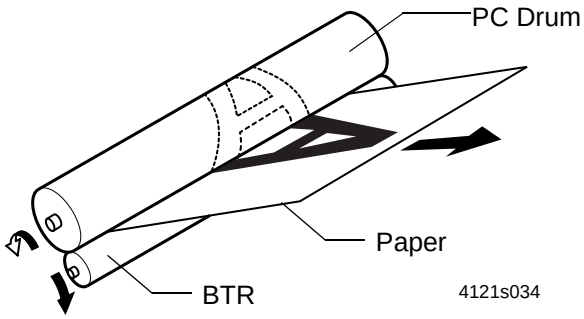
Explanation of Each Part

No.	Name	Description
1	Sump	Contains toner.
2	Toner Auger	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 Mag Roll.
4	Mag Roll	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	Metering 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 sump.
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.)

GP 14 Image Transfer

Overview

- Image transfer is the process of transferring the toner image created on the Drum in the developing process to paper.
- Bias transfer Roll (BTR) is used instead of corona image transfer as the image transfer method.
- In BTR, 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 Drum and the BTR.
- When cleaning the BTR and before printing, reverse bias is applied.
- The residual electric potential on the paper is dissipated via a discharge needle.



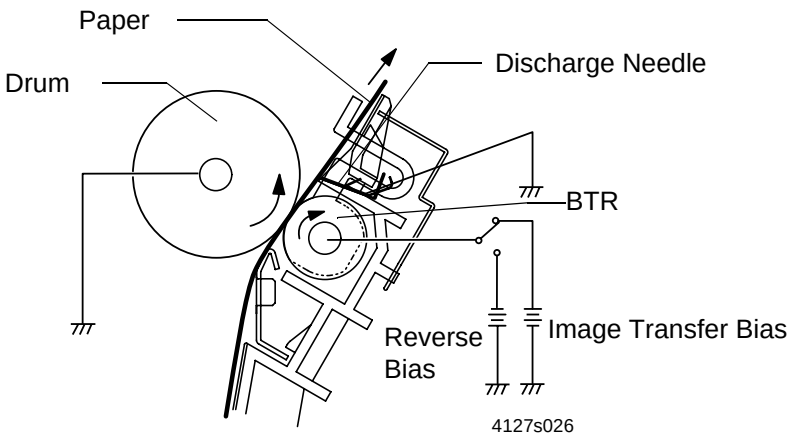


Figure 1.

GP 15 Fusing

Overview

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

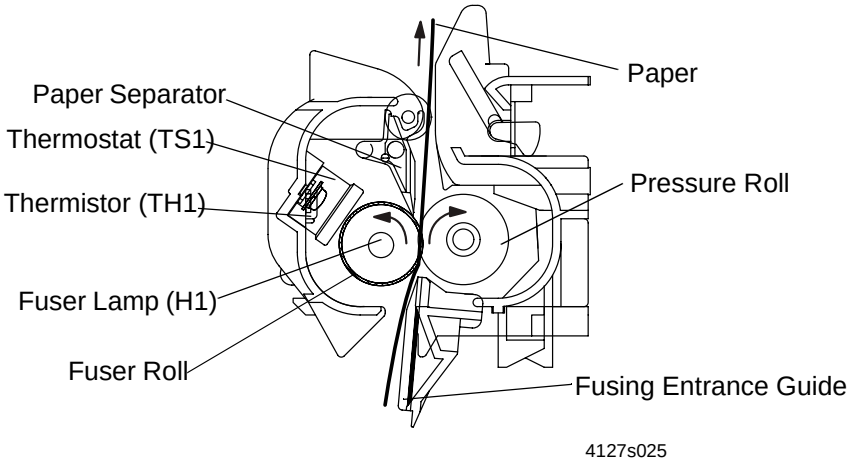


Figure 1.

Fusing Temperature Control Circuit

- The Thermistor detects the surface temperature of the Fuser Roll and inputs that analog voltage into IC1A-78. Corresponding to this data, the Fuser 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 Fuser Lamp is not turned OFF even if the Thermistor detects a high temperature malfunction (if the surface temperature of the Fuser Roll exceeds 230°C), the signal from IC1-79 changes from L to H to turn OFF the Fuser Lamp.

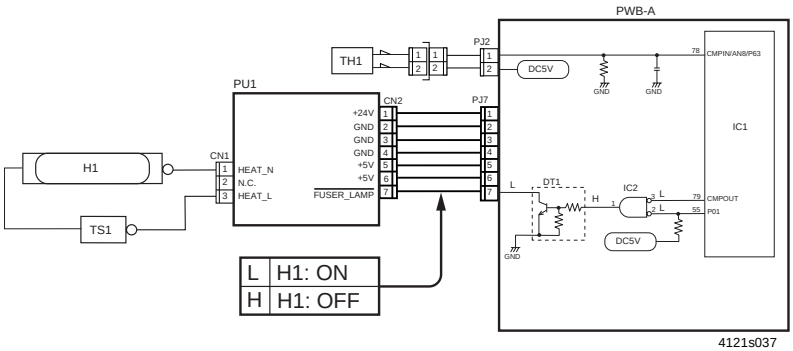


Figure 2.

At 600 dpi

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

Mode 1

The temperature is controlled to maintain 125°C during standby and 200°C during printing. If this mode continues for 300 seconds, the control will shift to mode 2.

Mode 2

The temperature of the Fuser Roll 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 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 machine completes the initialization sequence after it has been turned ON, it starts warming up and the Fuser Lamp turns ON. The Fuser Lamp remains ON until the temperature of the Fuser Roll 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 during standby. This mode lasts for 300 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 during standby. This mode is maintained unless an error occurs or the Top Cover is opened.

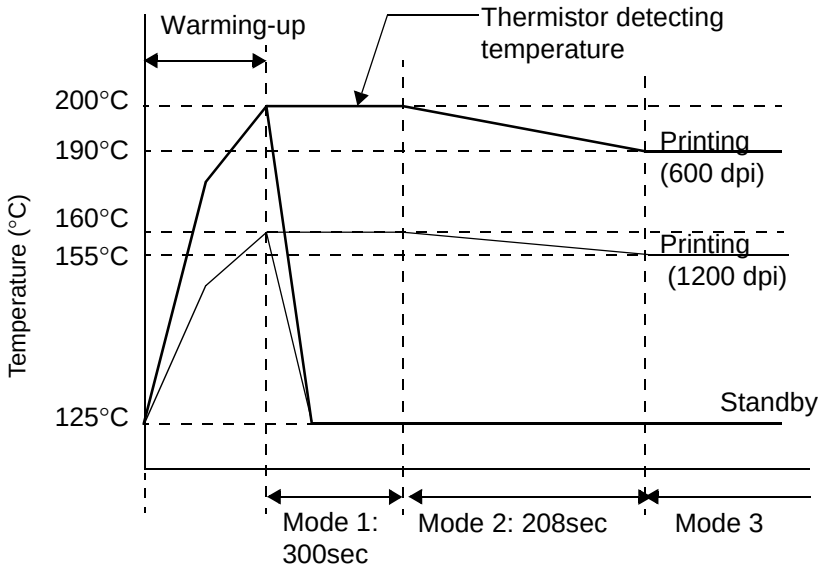


Figure 3.

	Temperature immediately after temperature control starts		
The state before temperature control is stopped	less than 50°C	50°C or more, less than 125 °C	125°C or more
Mode 1, warming-up	Mode 1		
Mode 2, 3 or Power OFF	Mode 1	Mode 2	Mode 3

GP 16 Precautions for Disassembly

Observe the following precautions whenever servicing the machine.

- Be sure to unplug the machine from the outlet before attempting to service the machine.
- To reassemble the machine, reverse the order of disassembly unless otherwise specified.
- The basic rule is not to operate the machine anytime during disassembly. If it is absolutely necessary to run the machine 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 HVPS.
- Be sure to handle the Fuser Assy carefully as the unit is still hot for a while after the machine 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.

Parts not to be touched

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

- The parts where the mounting screws are painted red.
- ROS Unit. There are no adjustments or replaceable parts in the ROS unit. The ROS must be replaced as a complete assembly.

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.

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.

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.

During Transportation/Storage the Drum Cartridge:

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

Handling the Drum Cartridge:

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

GP 17 Specifications

Printer

Type	Desk-Top Laser Beam Printer
Printing System	Electrostatic dry powdered imaging system
Exposure System	Laser diode + Polygon Mirror scanning
Resolution	600 DPI (dot/inch),1200 DPI (dot/inch)
Media Size	A4 (210 x 297 mm) JIS B5 (182 x 257 mm) A5 (148 x 210 mm)*1 Letter (8.5 x 11 in) Legal (8.5 x 14 in) Executive (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: Main Paper Tray/Multi-purpose Tray only
Media Type	Plain paper (16 to 24 lbs; 60-90 g/m^2), recycled paper (16 to 24 lbs; 60-90 g/m^2),transparencies*1,thick paper*1,postcard*1 *1: Main Paper Tray/Multi-purpose Tray only
First Printing Time	At 600 dpi: 15 sec. or less (A4 or Letter) At 1200 dpi: 24 sec. or less (A4 or Letter)
Multi Print Speed	At 600 dpi: 16 prints/min. or more (A4 or Letter) At 1200 dpi: 8 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 power saver mode: within 8 sec. (when the rated voltage is supplied at 23°C)
System Speed	94.886 mm/sec (3.74 in/sec) 47.443 mm/sec (1.87 in/sec) (during half-speed control)

Paper Feeding System	2-way system (Maximum 3-way)*2 Main Paper Tray/Multi-purpose Tray (plain paper: 250 sheets) Manual Feed Tray (1 sheet) Second Paper Cassette Unit (plain paper (A4/Letter only): 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)
Drum Charging System	Bias charge roll (BCR) 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	Bias Transfer Roll 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	Width:15.3 in (389 mm) Depth:17.1 in (435 mm) Height:10.4 in (263 mm) (Closing the Face-down Tray)
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): 370 W or less Standby (fuser off): 15 W or less Standby (fuser on): 75 W or less (average) Standby (sleep): 15 W or less
Acoustic noise	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
Drum Cartridge Life (starter)	4,000 prints
Toner Cartridge Life	6,000 prints (at 5% area coverage)
Toner Cartridge Life (starter)	2,000 prints (at 5% area coverage)
Options	Second Paper Cassette Unit

Second Paper Cassette Unit (Option)

Name	Second Paper Cassette Unit
Paper Cassette	Standard cassette: Letter (for U.S.A), A4 (for Europe)
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 corner snubbers.
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

GP 18 General Information

Installation Environment

When installing the machine, 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 machine will be in direct sunlight.
- Areas near a cooler, heater, ventilation opening or in the direct path of wind.
- Areas near oil stoves or other heat-generating equipment.
- Locations with poor ventilation.
- Areas where water is likely to fall on the equipment or electrical leakage 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.

Usage Environment

In order to make sure the machine functions in good condition, 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

Applying Power to the Machine

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 machine 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 machine.

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

The following items should be checked periodically:
- Make sure the power cord does not feel warm.
- The power cord should be free of cracks and scratches.
- The power cord should be firmly plugged into the power outlet.

Parts Identification

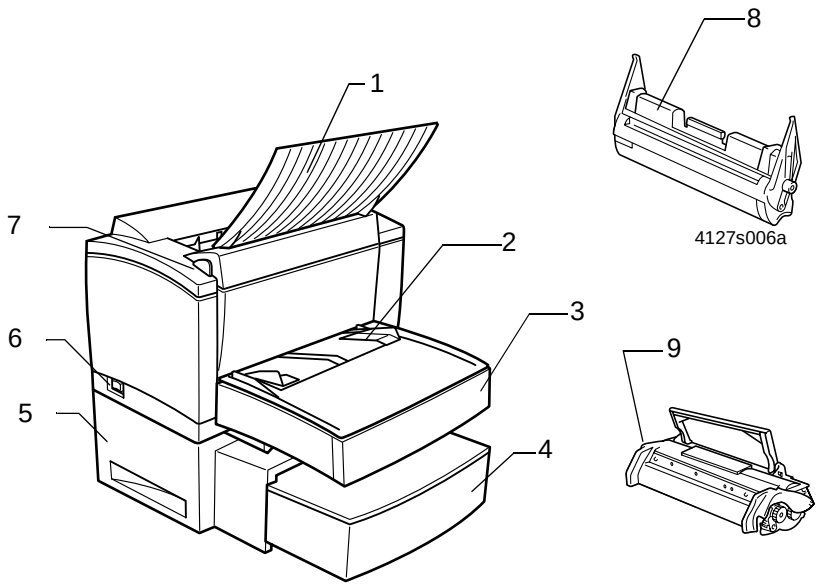


Figure 1.

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

GP 19 Component Location

General

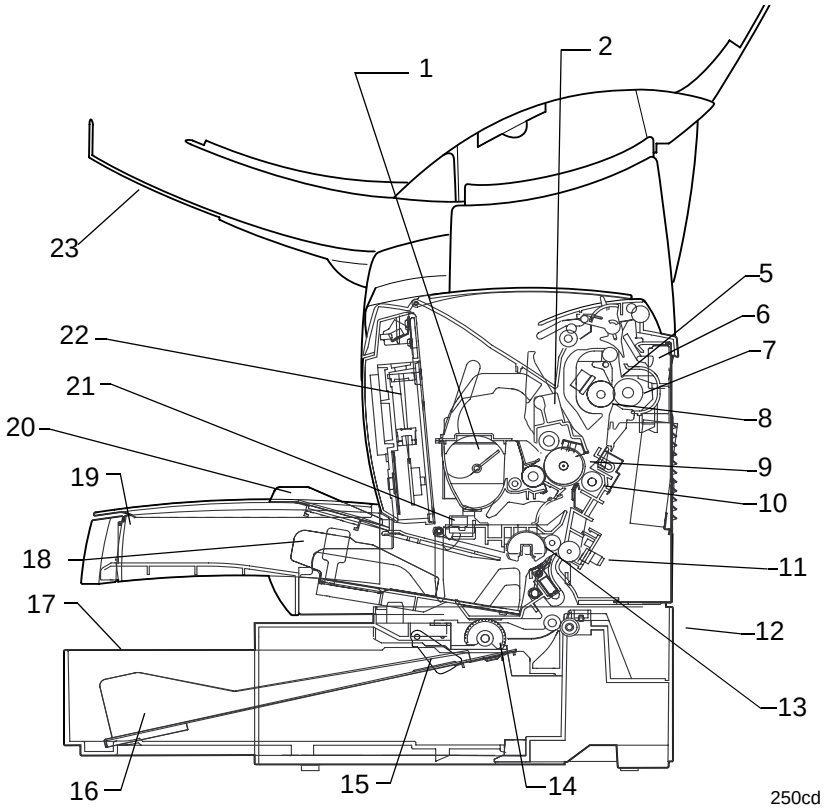


Figure 1.

1	Toner Cartridge	13	Paper Feed Roller
2	Drum Cartridge	14	Second Paper Roller *
3	Not Used	15	Paper Empty Detecting Switch *
4	Not Used	16	Paper Lift-up Plate *
5	Fuser stripper fingers	17	Second Paper Cassette *
6	Paper Exit Sensor (PS3)	18	Paper guide
7	Pressure Roll	19	Main Tray/Multi-purpose Tray
8	Fuser Roll	20	Paper guides for manual feed tray
9	Drum	21	Paper Empty Sensor (PE1)
10	Bias Transfer Roll	22	ROS Unit
11	Paper Feed Sensor (PS1)	23	Document Output Tray
12	Second Paper Tray Module *		* 12, 14, 15, 16, and 17: Options

Drive Section

Overview

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

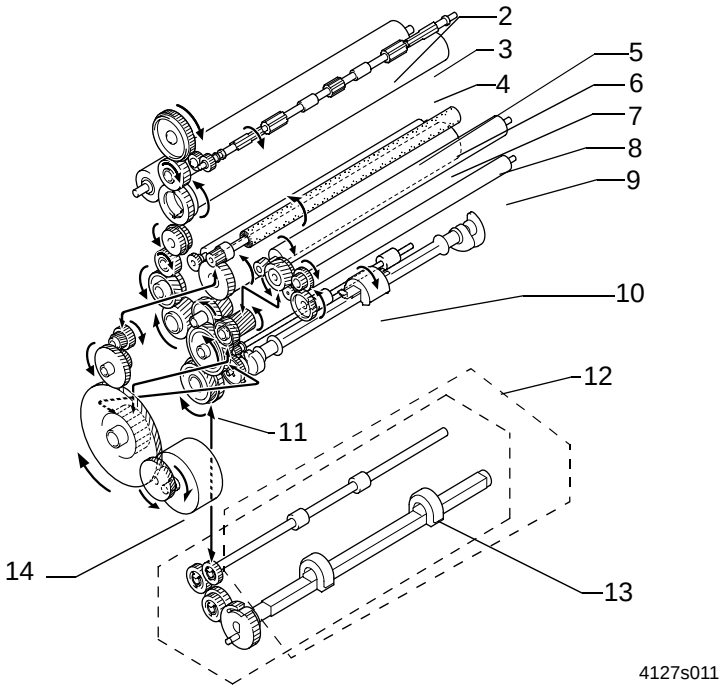


Figure 2.

1	Not Used	8	Mag Roll
2	Backup Roller	9	Toner Transport Roller
3	Paper Exit Roller (Face-down)	10	Paper Feed Roller
4	Fuser Roller	11	Drive Transmission Gear
5	Bias Transfer Roll	12	Second Paper Cassette Module Section (option)
6	BCR	13	2nd Paper Feed Roller
7	Drum	14	Main Drive Motor (M1)

GP 20 Timing Chart

Print Starting

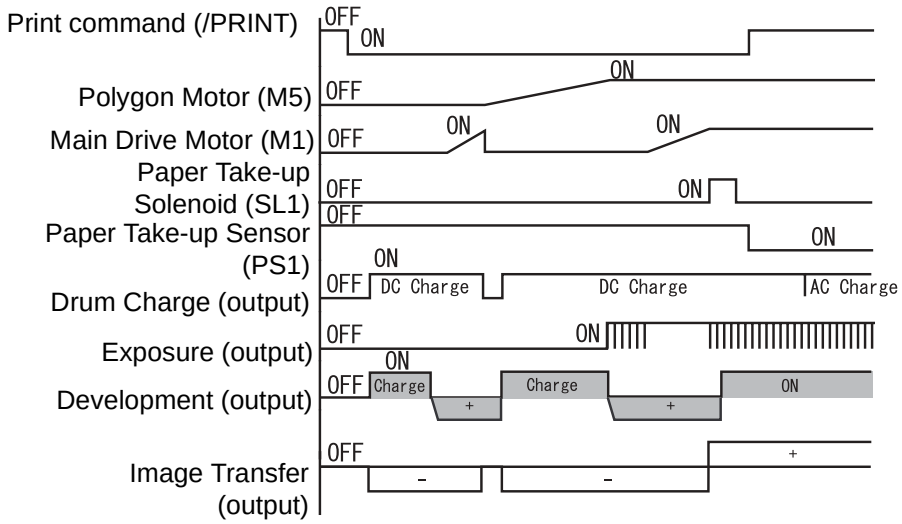


Figure 1.

Print Ending

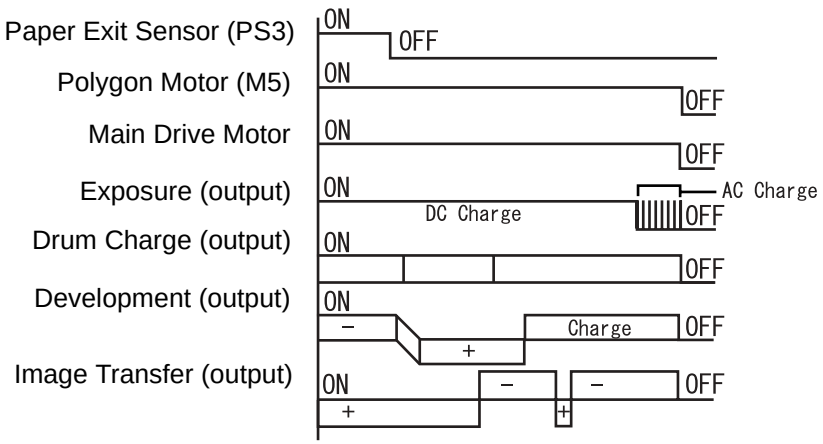


Figure 2.

GP 21 Scanning and communication error codes

Communication error codes.

The communication error codes appear in the logs and in the transmission reports.

General codes

Code 01 - Engaged or no fax tone

This code appears after 6 failed attempts. You will have to restart the transmission at a later time.

Code 03 - Stopped by operator

Communication stopped by the operator by pressing the ⊘ key.

Code 04 - Programmed number invalid

Invalid single-key or quick-dial number: check the number (for example, a delayed transmission has been programmed with a single key and the number corresponding to this key has been deleted).

Code 05 - Scanning fault

An incident has occurred at the location of the document to be transmitted. For example, the document is jammed.

Code 06 - Printer not available

An incident has occurred on the machine: out of paper, paper jam or cover open. In the case of a reception, this incident code only appears if the “reception without paper” parameter is set to **WITHOUT PAPER**.

Code 07 - Disconnect

The communication has been cut (bad connection).

Code 08 - Quality

This code generally indicates line quality problems. The document that you have transmitted has not been received correctly. Contact the sender to check whether it is necessary to retransmit the document: the interference may have occurred in an unimportant area of the document.

Code 0A - No document to recover

You have attempted to recover a document from a sender, but the latter has not prepared (stored) the document or the password that was entered is wrong.

Code 0B - Wrong number of pages

There is a difference between the number of pages indicated when the document was prepared for transmission and the number of pages actually transmitted: check the number of pages of the document.

Code 0C - Received document faulty

Ask the sender who calls you to check the length of his document (it is too long to be received in its entirety).

Code 0D - Document transmission fault

Ask the sender who calls you to retransmit his document.

Code 13 - Memory full

Your machine can no longer receive incoming documents because the memory is full: there are too many documents that have been received but not yet printed, or there are too many documents waiting to be transmitted.
Print the received documents, and delete or transmit in immediate mode the documents waiting to be transmitted.

Code 14 - Memory full

Received document memory full. Restore the machine to working order.

Code 15 - Mailbox number x unknown

You want to deposit a document in a mailbox of a sender, but the mailbox with this number does not exist with this sender.

Code 16 - List number x not retransmitted

You have requested the retransmission of a document by a remote fax, but the latter has not programmed the requested list of recipients.

Code 17 - Mailbox number x unknown

You want to recover a document from a mailbox of a sender but the mailbox with this number does not exist with this sender.

Code 18 - Retransmission impossible

You have requested the retransmission of a document by a machine that does not have a retransmit function.

Code 19 - Stopped by sender

Communication stopped by the sender (for example, a fax attempts to recover a document from your machine, while there is no document waiting for this sender).

Code 1A - Disconnect

Transmission has not started: the phone line is too noisy.

Code 1B - Document transmission fault

In the case of a transmission: restart the transmission.
In the case of a reception: ask your sender to retransmit his document.

Internet codes

Codes 40 and 41 - No reply from provider

The modem cannot connect to the service provider. If this is a systematic error, verify the phone number of the service provider and (if applicable) the dialing prefix associated with the machine.

Code 42 - Connection to service provider impossible

The service provider refuses the connection: the service is momentarily not available. If this is a systematic error, verify the Internet connection parameters (connection identifier, connection password or subscription validity).

Code 43 - Connection to SMPT server impossible

Impossible to connect to the SMPT server to send mail: the service is momentarily not available. If this is a systematic error, verify the Internet e-mail and server settings.

Code 44 - Connection to POP3 server impossible

Impossible to connect to the POP3 server to receive mail: the service is momentarily not available. If this is a systematic error, verify the Internet e-mail and server settings.

Code 45 - Provider disconnect

The service has become momentarily unavailable: try to connect again later.

Code 46 - SMPT server disconnect

Disconnect of the SMPT server to send mail, or mailbox full. The service has become momentarily unavailable: try to connect again later.

Code 47 - POP3 server disconnect

Disconnect of the POP3 server to receive mail. The service has become momentarily unavailable: try to connect again later.

Code 48 - Internet disconnect

The service has become momentarily unavailable: try to connect again later.

Code 49 - Internet connection impossible

Verify the phone number and (if applicable) the dialing prefix associated with the machine.

To verify the Internet parameters, print them out by entering the key sequence **MENU, 9, 4, 5** followed by the **OK** key.

Code 50 - Server Error

Verify the parameters SMS server number or a communication error occurred during data transfer.

GP 22 Paper Misfeed Detection

Overview

The machine determines if paper is left inside itself by detecting the status (H or L) of the signal output from the Paper Feed 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 Feed 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 machine when condition 2 listed below is detected, all elements but the Fuser Lamp (H1) will be stopped after the paper has been fed out of the machine.

During single printing:

When only condition 2 listed below is detected, all elements but the Fuser Lamp (H1) will be stopped.

Paper Misfeed Detecting Conditions

1. The Paper Feed Sensor (PS1) is activated within about 0.2 sec. (within about 0.4 sec. at 1200 dpi) after the paper Feed sequence has been started in the Main Paper Tray/Multi-purpose Tray (Paper Feed Solenoid is energized, causing the Paper Feed Roll to start turning) or within about 0.45 sec. (within about 0.9 sec. at 1200 dpi) after the paper Feed sequence has been started in the Second Paper Cassette Unit.
2. The Paper Feed 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 Feed sequence has been started in the Main Paper Tray/Multi-purpose Tray (Paper Feed Solenoid is energized, causing the Paper Feed Roll 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 Feed sequence has been started in the Second Paper Cassette Unit.
3. The Paper Feed 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 Feed 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 Feed 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 Feed Sensor (PS1) (PS1: deactivated).
6. The Paper Feed 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.

How to Reset a Paper Misfeed

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

GP 23 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.

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.

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 de-energized.
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.

Main Drive Motor malfunction

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

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 Fuser Lamp (H1) is turned ON to the time when the Fuser Lamp (H1) is turned OFF (except during printing).
4. A warm-up failure results if the Fuser Lamp (H1) remains ON for 30 sec. or more (except while the Main Drive 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).

Fuser Fan Malfunction

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

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.

GP 24 Functioning

The equipment is a Group 3 multifunction machine functioning in accordance with the UIT-T T30 recommendation.

It consists of a laser printer, a CIS (Contact Image Sensor) color sheet feeder scanner, a control panel with a 64-key alphanumerical keyboard and an LCD screen with 2 lines of 16 characters.

Its main functions are:

- Fax transmission and reception on the switched telephone network using the V34 protocol (max. 33.6 kbits/s) and the V17 protocol (max. 14.4 kbits/s).
- Internet e-mail transmission and reception on the switched telephone network using the V90 protocol.
- Photocopying.
- Local printing and scanner, via a USB interface.
- Network printing and scanner, via a local area network (LAN).
- E-mail transmission and reception on the local area network.

Note(s) : The machine does not have any facilities for managing an external telephone answering machine connected on the same line (with a stackable plug). More generally, it is not designed to function with any telephone equipment connected in parallel on the same phone line. It is preferable to use a dedicated phone line for the machine: this allows the customer to leave the machine permanently in service and to receive communications without user intervention. The machine is equipped with a standard telephone plug for connection to the switched telephone network.

The electronics of the machine consist of a control panel board and a CPU board. For the printer engine, refer to the printer engine section. Electrical power is supplied by the printer engine.

Note(s) : **(for the attention of the technicians).** The ECP and LAN interfaces conform to the SELV (Safety Extra-Low Voltage, very low safety voltage) safety level. The phone line input conforms to the TNV-3 safety level.

Before performing any service on the CPU electronic circuit board, it is also preferable to:

- Disconnect the phone line
- Set the power switch to the OFF position.
- Disconnect all external interconnect leads (LAN, ECP).
- Disconnect the power cord.

7. Wiring Data

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Control Panel Board

The control panel board manages the keyboard and the LCD screen by means of a micro controller, which communicates with the CPU via a synchronous serial link.

The LCD screen is equipped with its own driver using COG (Chip On Glass) technology.

On this board are also installed: the scanner sensors, the external connector for the smart card and the internal connector for the loudspeaker, these latter elements being managed by the CPU.

Diagram of the connector and sensor locations

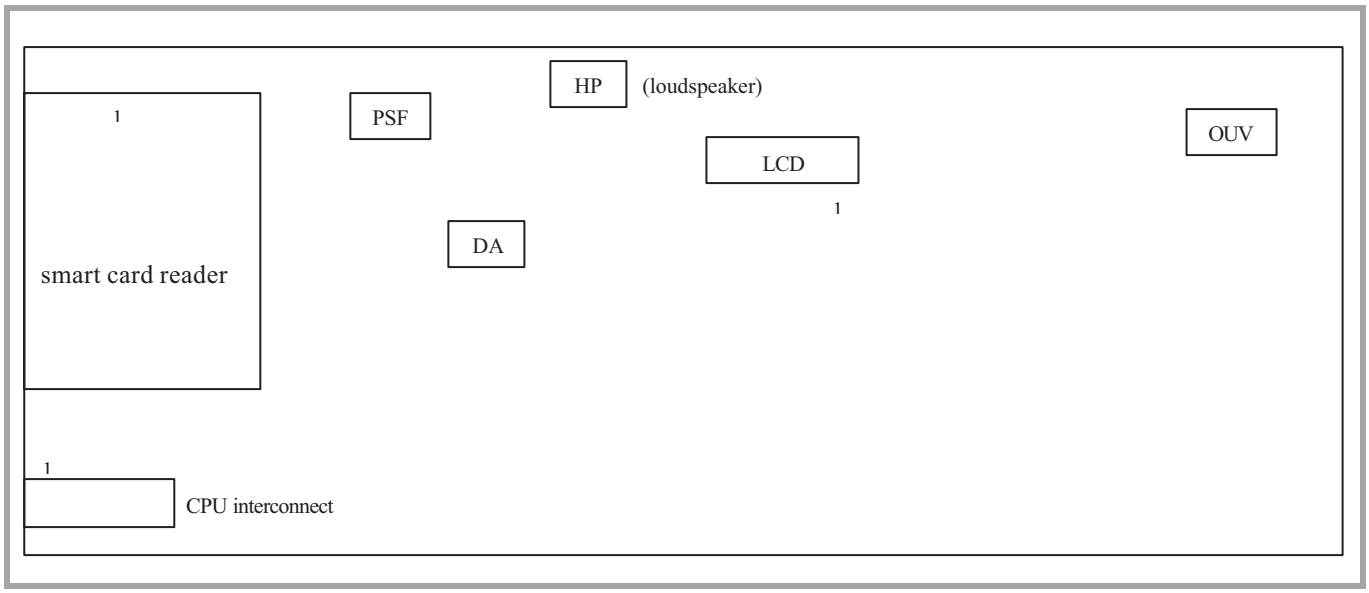

Figure 1.

Sensors:

- PSF: document present, detects the insertion of a document to be scanned.
- DA: start of scan, used to position the document relative to the CIS.
- OUV: cover open, detects the opening of the scanner cover: the motor is then stopped automatically.

List of connectors :

Connector	Location ref.	Number of pins	Male/female	Type
CPU interconnect (“liaison UC”)	P/J4205	22	Female	Elbow, top contact
Loudspeaker (“HP”)	P/J4201	2	Female	Elbow
LCD	P/J5001	24	Female	Elbow, bottom contact
Smart card reader (“carte à puce”)	P/J4002	18	Female	Elbow

- CPU interconnect (“liaison UC”): connections to the CPU board

Pin	Signal	Input/Output	Use
1	IOPUCE	I/O	Smart card serial data
2	GND	-	Ground
3	CLKPUCE	I	Smart card clock
4	RSTPUCE	I	Smart card reset
5	CVCC	I	Smart card supply control
6	FERCAP	O	Smart card present detection
7	SELALIM	I	Smart card supply select
8	GND	-	Ground
9	SCLKPUP	I	Control panel microcontroller synchronous serial link clock
10	TXPUP	I	Serial data to control panel microcontroller
11	RXPUP	O	Serial data from control panel microcontroller
12	CSPUP	I	Microcontroller chip select
13	VEILLE*	O	Not used
14	REVEIL*	I	Not used
15	STSC*	O	Start of scan sensor
16	PSF*	O	Sheet present sensor
17	OUVCAP*	O	Cover open sensor
18	P3V3	-	3.3 V supply
19	VALIM	-	5 V supply
20	ALIMCOUPE	-	5 V supply
21	HPM	I	Differential LF signal to loudspeaker
22	HPP	I	Differential LF signal to loudspeaker

CPU Board Information

The CPU board is based on the Digicolor2 circuit which performs in particular the function of microprocessor.

The executable code is stored in the flash memory Z460.

This flash memory is divided in two zones: a zone reserved for the storage of the code and a zone reserved for the storage of the documents.

The code is loaded from this flash memory into SDRAM, and the microprocessor executes its instructions from the SDRAM.

Before printing, the documents to be printed are stored as bitmaps in SDRAM.

The SDRAM is also used as the working memory for the Digicolor2.

Block diagram of the electronics architecture

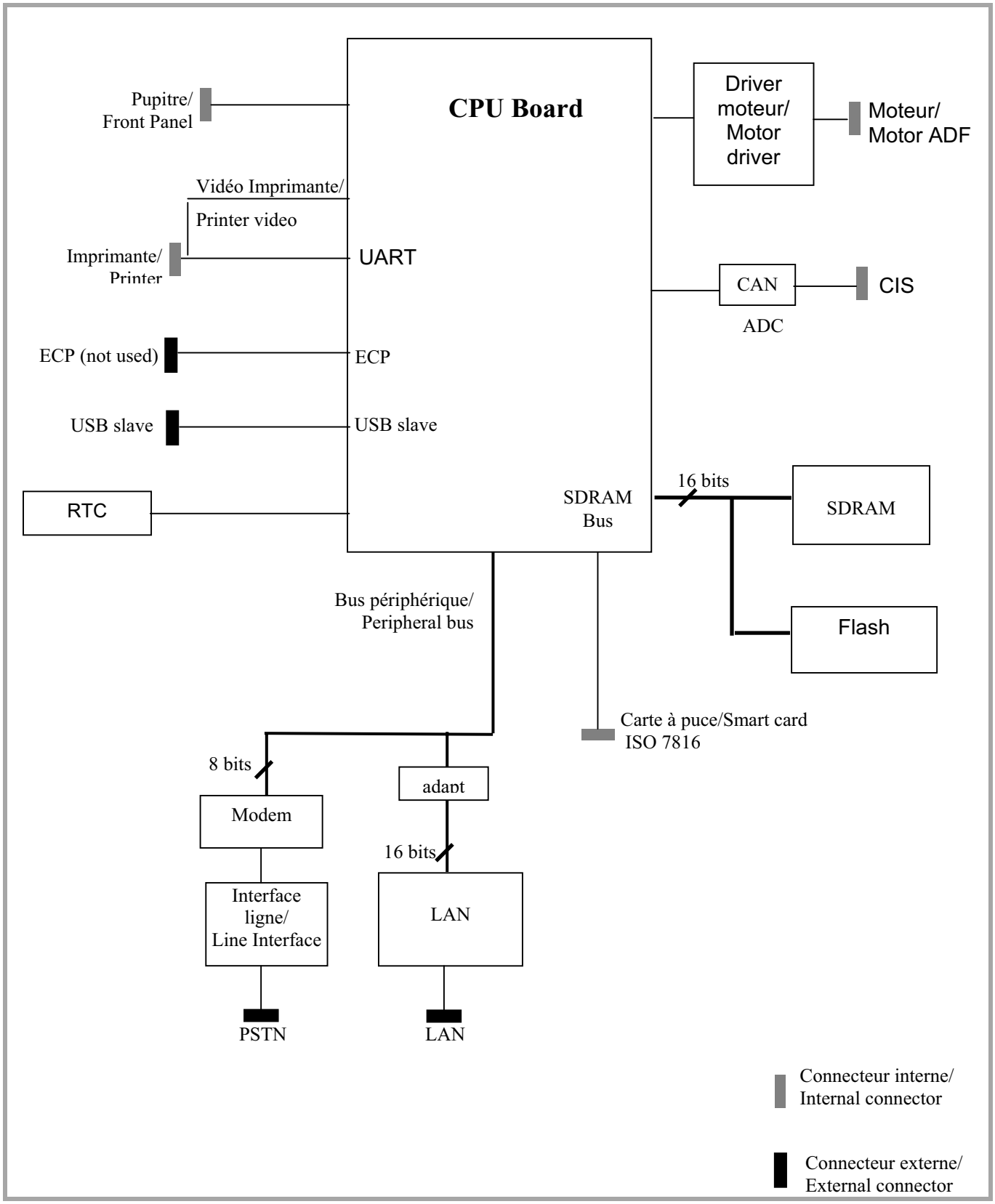

Figure 1.

Connector Locations

Diagram of the connector locations

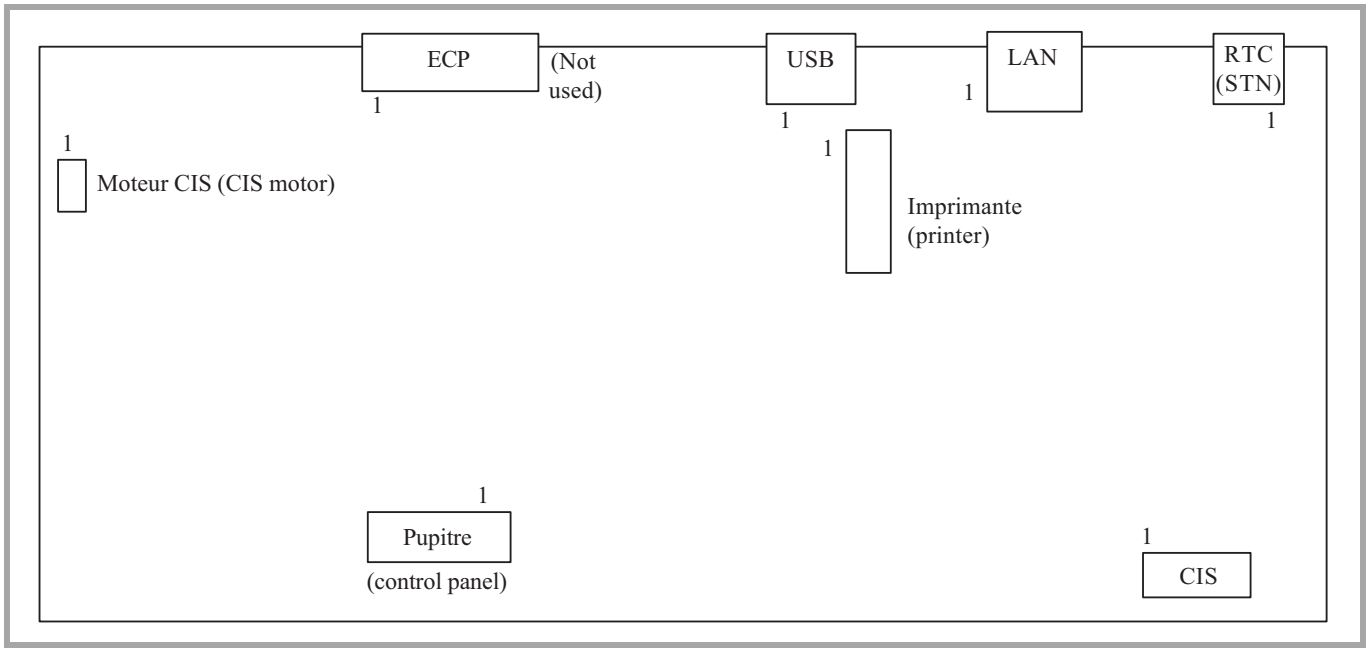

Figure 1.

P/J List of connectors :

Connector	Location ref.	Number of pins	Male/female	Type
Printer (“impri-mante”)	P/J4201	20	Female	Elbow, top contact
CIS	P/J4370	12	Female	Elbow
Control panel (“pupitre”)	P/J4101	22	Female	Elbow, bottom contact
CIS motor (“moteur CIS”)	P/J4501	4	Female	Elbow
ECP	P/J4630	26	External, mini Centronics	
USB (not used)	P/J4901	4	External, USB type B	
LAN	P/J8800	8	External, RJ45	
STN (“RTC”)	P/J4420	6	External, RJ11	

Printer (“imprimante”): connections to the printer

Pin	Signal	Input/Output	Use
1	GND	-	Ground
2	Connected to 4	O	Controller power ready
3	VIDEO	O	Printer video
4	Connected to 2	I	Engine power ready
5	GND	-	Ground
6	READY	I	Printer ready (not used)
7	HSYNC	I	Horizontal sync (line)
8	PRREQ*	O	Printer reset
9	RXIMP	I	Printer status (serial data transmitted by printer)
10	SCLKIMP	O	Printer synchronous serial link clock
11	TXIMP	O	CPU command (serial data transmitted to printer)
12	VSYNC	I	Vertical sync (page)
13	RX6	I	Engine status busy
14	TX6	O	Controller status busy
15	GND	-	Ground
16	Pull-up to 5 V	O	Print* (not used)
17	P5V	-	5 V supply
18	GND	-	Ground
19	P5V	-	5 V supply
20	P24V	-	24V supply

Control panel (“pupitre”): connections to the control panel board

Pin	Signal	Input/Output	Use
1	IOPUCE	I/O	Smart card serial data
2	GND	-	Ground
3	CLKPUCE	O	Smart card clock
4	RSTPUCE	O	Smart card reset
5	CVCC	O	Smart card supply control
6	FERCAP	I	Smart card present detection
7	SELALIM	O	Smart card supply select
8	GND	-	Ground
9	SCLKPUP	O	Control panel microcontroller synchronous serial link clock
10	TXPUP	O	Serial data to control panel microcontroller
11	RXPUP	I	Serial data from control panel microcontroller
12	CSPUP	O	Microcontroller chip select
13	VEILLE*	I	Not used
14	REVEIL*	O	Not used
15	STSC*	I	Start of scan sensor
16	PSF*	I	Sheet present sensor
17	OUVCAP*	I	Cover open sensor
18	P3V3	-	3.3 V supply
19	VALIM	-	5 V supply
20	ALIMCOUPE	-	5 V supply
21	HPM	O	Differential LF signal to loudspeaker
22	HPP	O	Differential LF signal to loudspeaker

CIS: connections to the CIS

Pin	Signal	Input/Output	Use
1	VIDCIS	I	CIS video
2	MODE	O	Ground
3	VIDEOGND	-	Ground
4	ALIMCIS	-	5 V supply
5	VREFCIS	O	CIS reference voltage
6	SPCIS	O	CIS start pulse (line sync)
7	CLKCIS	O	CIS pixel clock (point sync)
8	ALIMLED	O	LED supply (current)
9	GNDLEDB	O	Blue LED cathode
10	GNDLEDV	O	Green LED cathode
11	GNDLEDR	O	Red LED cathode
12	GND	-	Ground

ECP: Parallel interface to PC (not used)

Pin	Signal	Input/Output	Use
1	HOSTCLK	I/O	Data clock (forward)
2	DATAECP0	I/O	Data bus LSB
3	DATAECP1	I/O	Data bus bit 1
4	DATAECP2	I/O	Data bus bit 2
5	DATAECP3	I/O	Data bus bit 2
6	DATAECP4	I/O	Data bus bit 4
7	DATAECP5	I/O	Data bus bit 5
8	DATAECP6	I/O	Data bus bit 6
9	DATAECP7	I/O	Data bus MSB
10	PRPHCLK	O	Data clock (reverse)
11	PRPHACK	O	Data acknowledgment (forward)
12	ACKRVRS	O	Acknowledgment of reverse request
13	XFLAG	O	Indicates that ECP mode is supported
14	HOSTACK	I	Data acknowledgment (reverse)
15	PRPHREQ	O	Data drive request
16	RVRSREQ	I	Data drive enable
17	ECPACTIVE	I	Mode select
18	GND	-	Ground
19	GND	-	Ground
20	GND	-	Ground
21	GND	-	Ground
22	GND	-	Ground
23	GND	-	Ground
24	GND	-	Ground
25	GND	-	Ground
26	GND	-	Ground

USB: USB interface

Pin	Signal	Input/Output	Use
1	VBUS_USB	I	Supply from master
2	USBN	I/O	Differential pair
3	USBP	I/O	Differential pair
4	GND	I/O	Ground

LAN: local area network interface

Pin	Signal	Input/Output	Use
1	TXP	O	Network transmission differential pair
2	TXN	O	Network transmission differential pair
3	RXP	I	Network reception differential pair

Pin	Signal	Input/Output	Use
4	NC	-	Not connected
5	NC	-	Not connected
6	RXN	I	Network reception differential pair
7	NC	-	Not connected
8	NC	-	Not connected

STN (“RTC”): switched telephone network interface

Pin	Signal	Input/Output	Use
1	NC	-	Not connected
2	R2	I/O	Loopback L1
3	L2	I/O	Telephone line pair
4	L1	I/O	Telephone line pair
5	R1	I/O	Loopback L2
6	NC	-	Not connected

Wiring Schematics

+24V and 5V Supply

The 24 V and 5 V supply voltages are supplied by the printer engine.

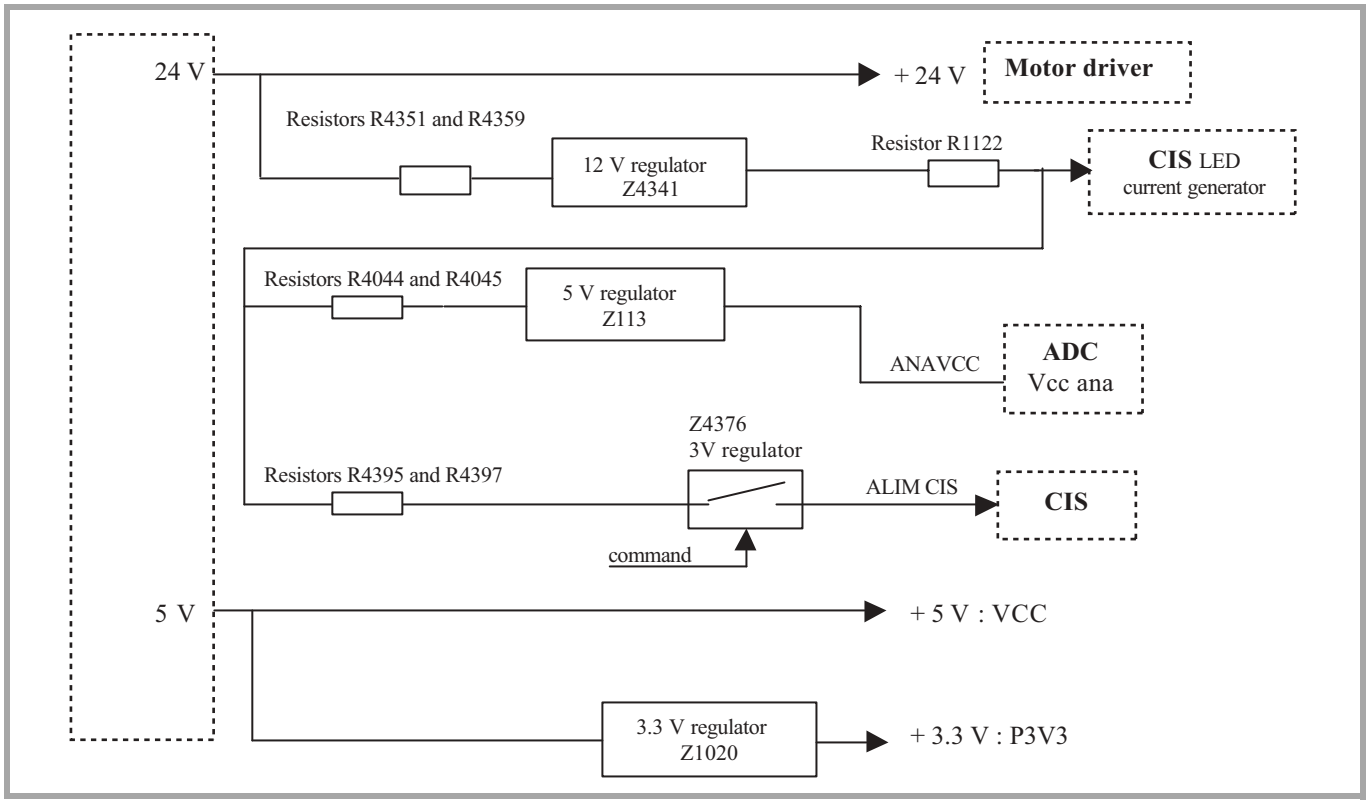

Figure 1.

Crystals

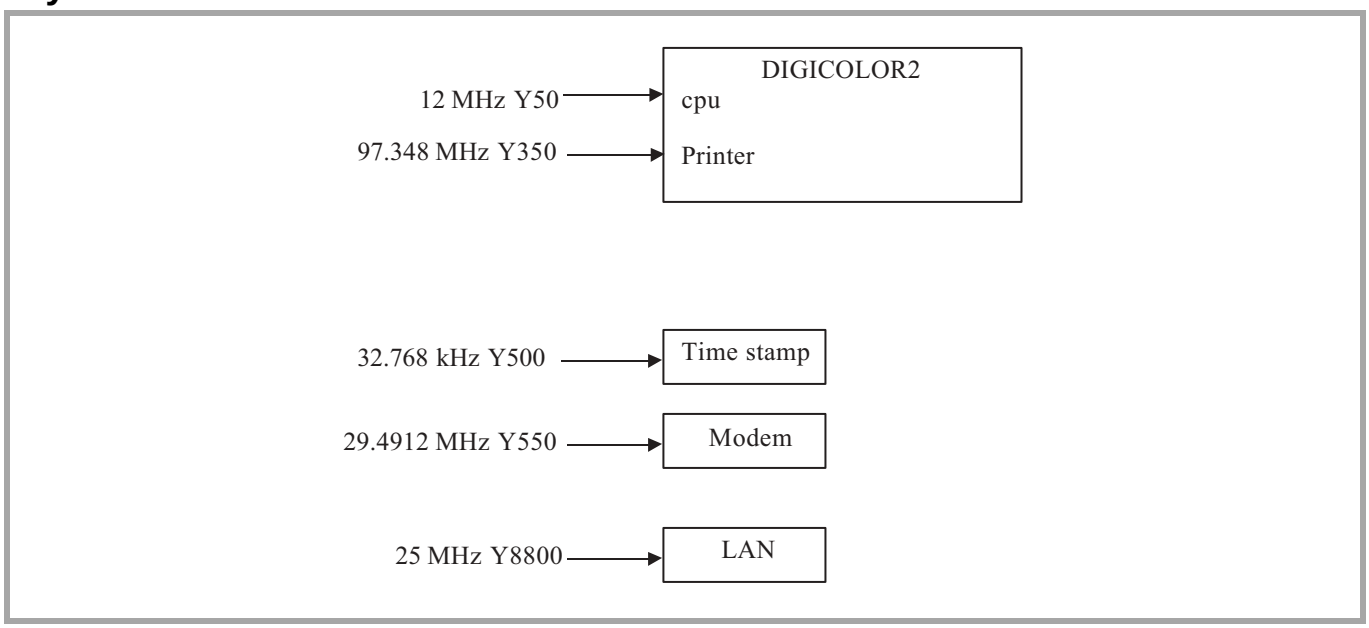

Figure 2.

Reset

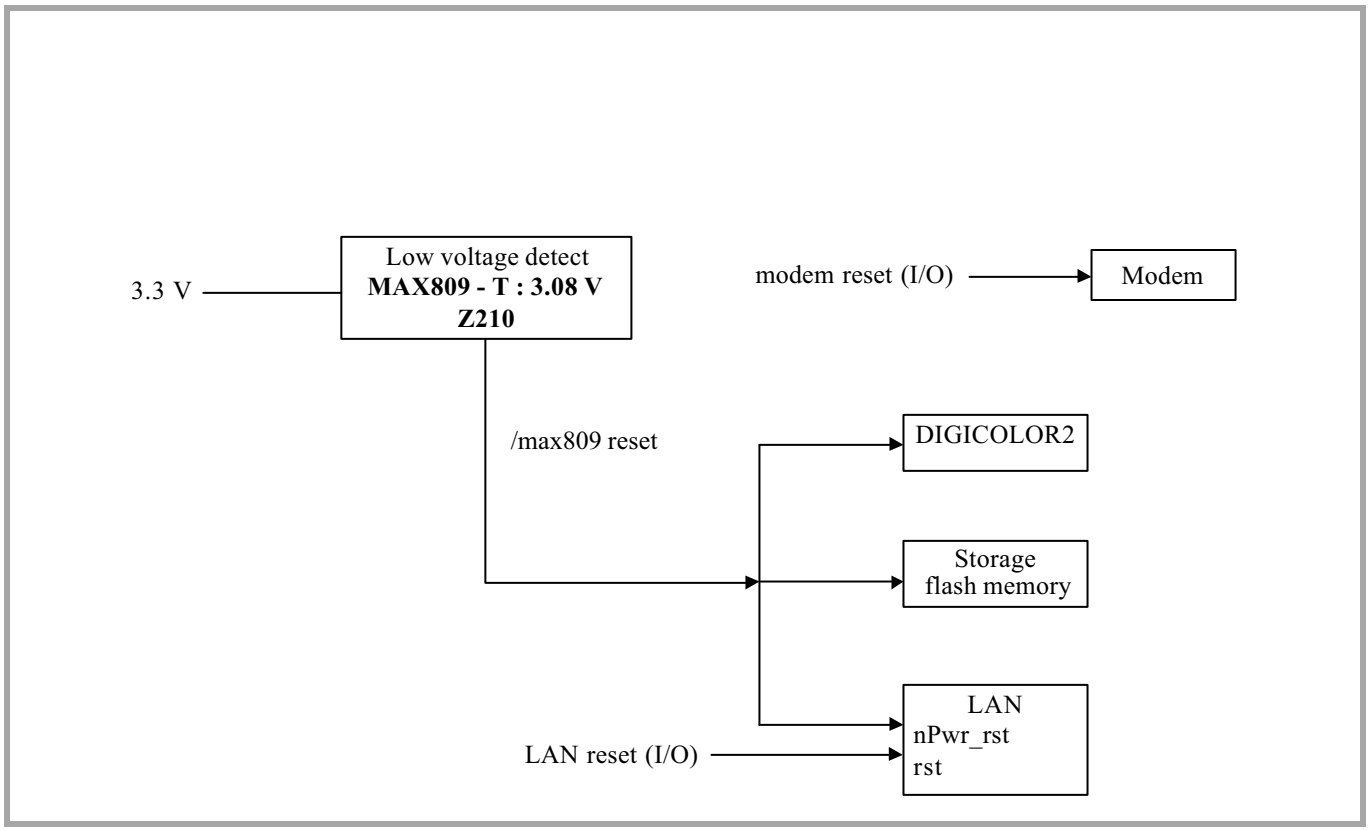

Figure 3.

Electrical Components Layout

Printer Engine

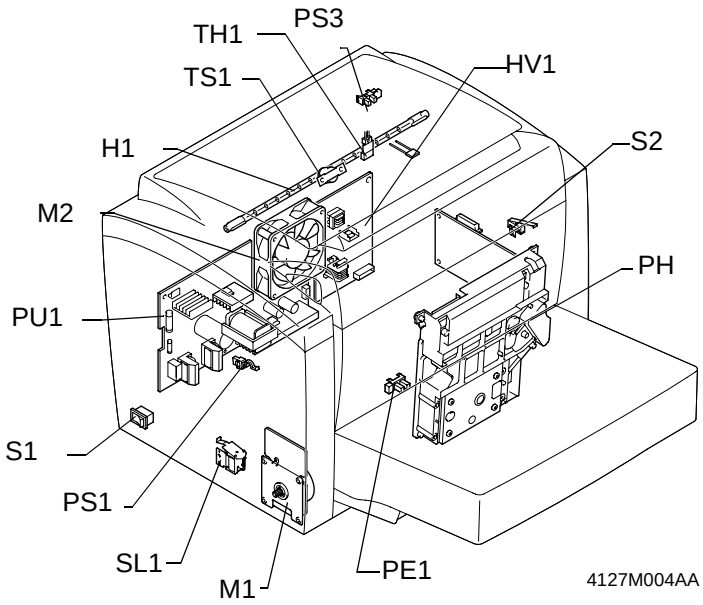

Figure 1.

M1	Main Drive Motor	S2	Interlock Switch
M2	Fuser Fan	PE1	Paper Empty Sensor
H1	Fuser Lamp	PS1	Paper Feed Sensor
TH1	Thermistor	PS3	Paper Exit Sensor
TS1	Thermostat	SL1	Paper Feed Solenoid
PH	ROS Unit	PU1	LVPS
S1	Power Switch	HV1	HVPS

Second Paper Cassette Module (option)

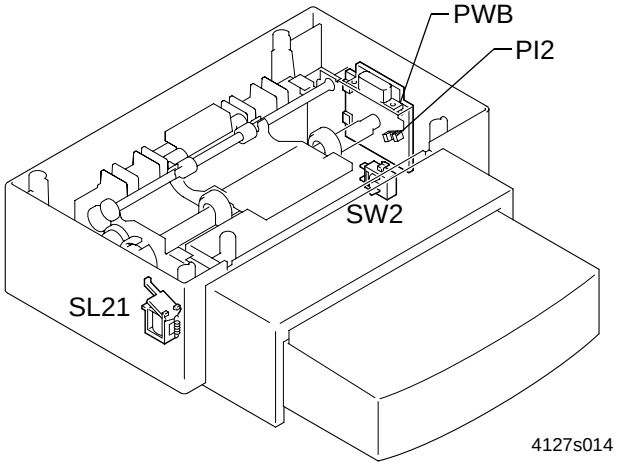

Figure 2.

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

Print Engine Board

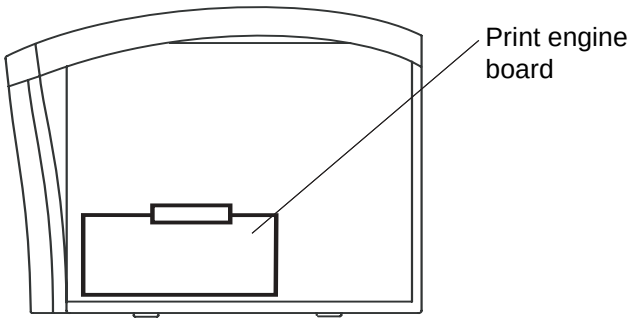

Figure 3.

PWB-A	Print Engine Board

Electrical Parts Function

Printer Engine

Symbol	Name	Function
H1	Fuser Lamp	A halogen lamp that supplies heat to the fuser roll.(600 W)
HV1	HVPS	Supplies power to the following sections: - BCR: Charged voltage - Developing Mag Roll: Developing bias voltage - Developing Toner Regulation Plate: Developing blade voltage - Developing Toner Collecting Plate: Developing Lower Seal voltage - Bias Transfer Roll: Bias transfer voltage
M1	Main Drive Motor	Provides the drive source for the printer.
M2	Fuser Fan	Exhausts heat from the machine.
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 Feed Switch	Detects that a sheet of paper is fed up. The signal is H when paper is detected.
PS3	Paper Exit Sensor	Detects when the paper is fed out. The signal is H when the paper is detected.
PU1	LVPS	Converts the power voltage from AC voltage into DC voltage and supplies that to H1.
PWB-A	Print Engine 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 machine.
S2	Interlock switch	Detects the opening or closing of the Top Cover. Cuts output voltage (except 5 VDC) when the Top Cover is open.

Symbol	Name	Function
SL1	Paper Feed Solenoid	Transmits the drive of the Main Drive Motor to the Paper Feed Roller.
TH1	Thermistor	Detects the temperature of the Fuser Roller, measures the temperature on the surface of the Fuser Roller and sends to the Heater control circuit.
TS1	Thermostat	Cuts power to the Fuser Lamp (H1) when overheating (215°C) is detected at the Fusing Section.

Second Paper Cassette Unit (option)

Symbol	Name	Function
SL21	Paper Feed Solenoid	Controls gears and clutches to transmit the drive from the Main Drive Motor to Paper Feed Roll. The drive is transmitted when the solenoid is energized.
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 machine to/from components in the Second Paper Cassette Module.

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

PU1 (LVPS)

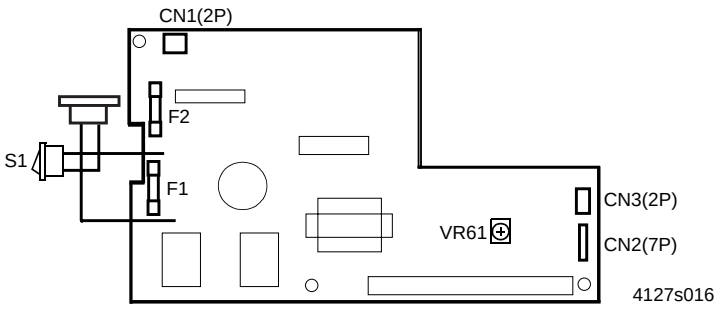

Figure 1.

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]**

HV1 (HVPS)

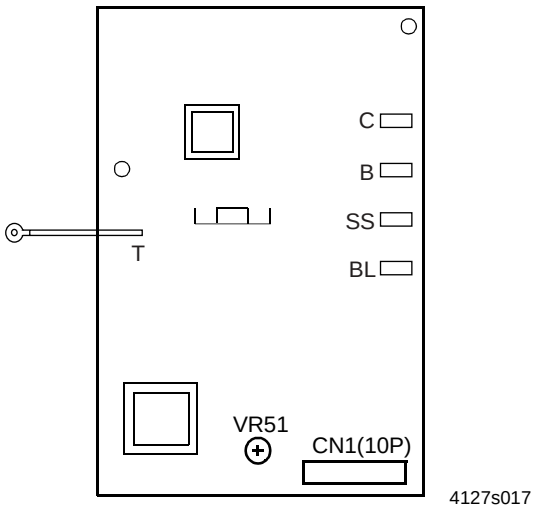

Figure 2.

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]**

Wiring Diagram

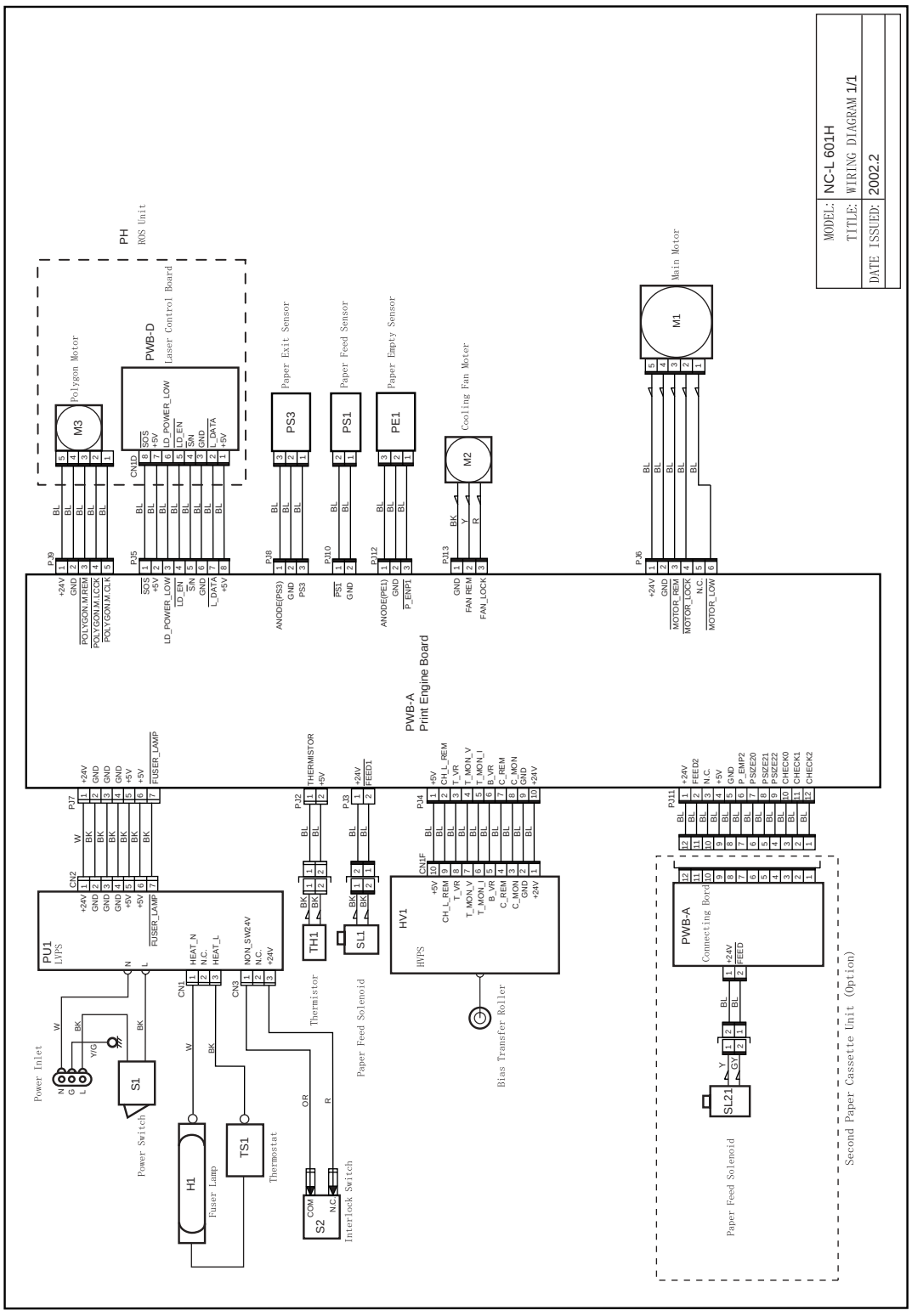

Figure 1.

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APPENDIX A: Health & Safety Incident Report Involving a Xerox Product

Customer Identification		
Customer Name:	**Name of Customer Contact Person**:	
Address:	**E-mail:**	**Telephone** : **Fax** :
Customer Service Engineer Identification		
Name:	**Employee** :	**Pager** :
Location:	**Phone** :	

Details of Incident

Date Of Incident (mm / dd / yr):

Description Of Incident: (Check all that apply)

☐ Excessive Smoke

Describe quantity and duration of smoke:

☐ Fire with open flames seen

☐ Electric shock to operator or service representative

☐ Physical injury/illness to operator or service representative

Describe:

☐ Other

Describe:

Any damage to customer property? No ☐ Yes ☐ Describe:

Did external emergency response provider(s) such as fire department, ambulance, and etc. respond?

No ☐ Yes ☐ Identify: (ie, source, names of individuals)

Apparent cause of incident (identify part that is suspect to be responsible for the incident)

Preliminary actions taken to mitigate incident:

Product Description	
Model No. or Product name:	
Product Serial :	**Serial Number(s) of Accessory (ies):**
Installation Date:	**Total Copy Meter**:
Date of last service maintenance:	
List damaged and affected part(s) of the machine by description and part number:	
Description	**Part Number**
Location of product and affected part(s):	

Individual Providing Notification		
Name:	**Title**:	**Telephone Number**:
Organization:		**E-Mail:**
Mailing Address:		**Date Report Submitted**:

Instructions: E-mail or fax this completed form to EH&S:

For incidents in **Xerox Europe** and **Developing Markets East**
(Middle East, Africa, India, China, and Hong Kong)
please **e-mail:** Elaine.Grange@gbr.xerox.com or **fax**: +44 (0) 1707 35 3914 [intelnet 8*668 3914]
Note: - If you fax this form, please also send original by internal mail

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QUESTION	NOT APPLICABLE	VERY SATISFIED	SATISFIED	NEITHER SATISFIED NOR DISSATISFIED	DISSATISFIED	VERY DISSATISFIED
DO YOU FIND THE MANUAL IS TECHNICALLY ACCURATE?						
DO YOU FIND THE FORMAT OF THE MANUAL EASY TO USE?						
WHAT IS YOUR OVERALL SATISFACTION LEVEL WITH THE MANUAL						

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