OKI
PRINTING SOLUTIONS

C110/C130

Maintenance Manual

012010A

Document Revision History

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		No.	Page	Description of change	
1	2009-02-24			Issue	PED11 K. Aida
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Copyright Information

Disclaimer

Every effort has been made to ensure that the information in this document is complete, accurate, and up-to-date. The manufacturer assumes no responsibility for the results of errors beyond its control. The manufacturer also cannot guarantee that changes in software and equipment made by other manufacturers and referred to in this guide will not affect the applicability of the information in it. Mention of software products manufactured by other companies does not necessarily constitute endorsement by the manufacturer.

While all reasonable efforts have been made to make this document as accurate and helpful as possible, we make no warranty of any kind, expressed or implied, as to the accuracy or completeness of the information contained herein.

The most up-to-date drivers and manuals are available from the web site:
http://www.okiprintingsolutions.com

This manual provides an overview of method for maintaining the C110/C130n.

This manual is intended for maintenance staff. For more information about how to operate the C110/C130n, please refer to User 's manual.

Note!

- Manual may be revised and updated at any time without notice.
- Unexpected mistakes may exist in the manual.
  OKI will not assume any responsibility whatsoever for damage to the equipmentrepaired/adjusted/changed by the user etc with this manual.
- The parts used for this printer may be damaged when handling inappropriately. We strongly recommend maintaining this machine by our registration maintenance staff.
- Please operate the machine after removing static electricity.

CONTENTS

SAFETY AND IMPORTANT WARNING ITEMS

Read carefully the Safety and Important Warning Items described below to understand them before doing service work.

IMPORTANT NOTICE

Because of possible hazards to an inexperienced person servicing this product as well as the risk of damage to the product, Okidata Corporation (hereafter called the ODC) strongly recommends that all servicing be performed only by ODC-trained service technicians.
Changes may have been made to this product to improve its performance after this Service Manual was printed. Accordingly, ODC does not warrant, either explicitly or implicitly, that the information contained in this Service Manual is complete and accurate.
The user of this Service Manual must assume all risks of personal injury and/or damage to the product while servicing the product for which this Service Manual is intended.
Therefore, this Service Manual must be carefully read before doing service work both in the course of technical training and even after that, for performing maintenance and control of the product properly.
Keep this Service Manual also for future service.

DESCRIPTION ITEMS FOR DANGER, WARNING AND CAUTION

In this Service Manual, each of three expressions "⚠**DANGER**", "⚠**WARNING**", and "⚠**CAUTION**" is defined as follows together with a symbol mark to be used in a limited meaning.
When servicing the product, the relevant works (disassembling, reassembling, adjustment, repair, maintenance, etc.) need to be conducted with utmost care.

DANGER: Action having a high possibility of suffering death or serious injury

WARNING: Action having a possibility of suffering death or serious injury

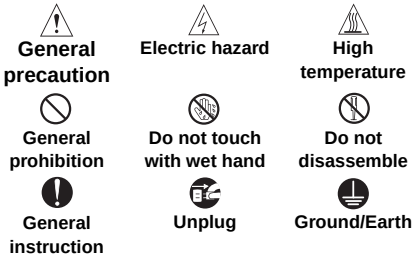
CAUTION: Action having a possibility of suffering a slight wound, medium trouble and property damage

Symbols used for safety and important warning items are defined as follows:

:Precaution when using the copier.

:Prohibition when using the copier.

:Direction when using the copier.



SAFETY WARNINGS

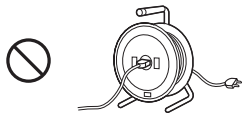
[1] MODIFICATIONS NOT AUTHORIZED BY OKIDATA CORPORATION.

OKI brand products are renowned for their high reliability. This reliability is achieved through high-quality design and a solid service network.
Product design is a highly complicated and delicate process where numerous mechanical, physical, and electrical aspects have to be taken into consideration, with the aim of arriving at proper tolerances and safety factors. For this reason, unauthorized modifications involve a high risk of degradation in performance and safety. Such modifications are therefore strictly prohibited. The points listed below are not exhaustive, but they illustrate the reasoning behind this policy.

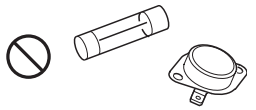
Prohibited Actions

⚠DANGER

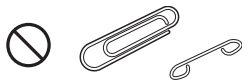
- Using any cables or power cord not specified by ODC.



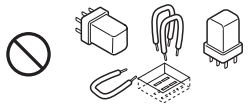
- Using any fuse or thermostat not specified by ODC. Safety will not be assured, leading to a risk of fire and injury.



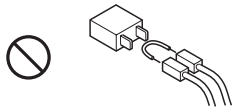
- Disabling fuse functions or bridging fuse terminals with wire, metal clips, solder or similar object.



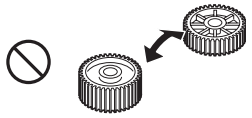
- Disabling relay functions (such as wedging paper between relay contacts)



- Disabling safety functions (interlocks, safety circuits, etc.) Safety will not be assured, leading to a risk of fire and injury.



- Making any modification to the product unless instructed by ODC
- Using parts not specified by ODC



[2] POWER PLUG SELECTION

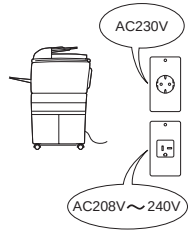
In some countries or areas, the power plug provided with the product may not fit wall outlet used in the area. In that case, it is obligation of customer engineer (hereafter called the CE) to attach appropriate power plug or power cord set in order to connect the product to the supply.

Power Cord Set or Power Plug

⚠WARNING

- Use power supply cord set which meets the following criteria:
  - provided with a plug having configuration intended for the connection to wall outlet appropriate for the product's rated voltage and current, and
  - the plug has pin/terminal(s) for grounding, and
  - provided with three-conductor cable having enough current capacity, and
  - the cord set meets regulatory requirements for the area.

  Use of inadequate cord set leads to fire or electric shock.



- Attach power plug which meets the following criteria:
  - having configuration intended for the connection to wall outlet appropriate for the product's rated voltage and current, and
  - the plug has pin/terminal(s) for grounding, and
  - meets regulatory requirements for the area.

  Use of inadequate cord set leads to the product connecting to inadequate power supply (voltage, current capacity, grounding), and may result in fire or electric shock.

- Conductors in the power cable must be connected to terminals of the plug according to the following order:
  - Black or Brown: L (line)
  - White or Light Blue: N (neutral)
  - Green/Yellow: PE (earth)

  Wrong connection may cancel safeguards within the product, and results in fire or electric shock.

[3] CHECKPOINTS WHEN PERFORMING ON-SITE SERVICE

OKI brand products are extensively tested before shipping, to ensure that all applicable safety standards are met, in order to protect the customer and CE from the risk of injury. However, in daily use, any electrical equipment may be subject to parts wear and eventual failure. In order to maintain safety and reliability, the CE must perform regular safety checks.

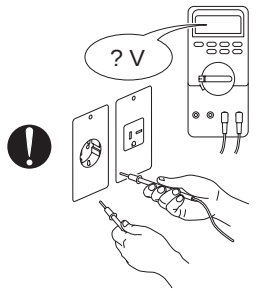
1. Power Supply

Connection to Power Supply

⚠WARNING

- Check that mains voltage is as specified.

  Connection to wrong voltage supply may result in fire or electric shock.



- Connect power plug directly into wall outlet having same configuration as the plug.

  Use of an adapter leads to the product connecting to inadequate power supply (voltage, current capacity, grounding), and may result in fire or electric shock.

  If proper wall outlet is not available, advice the customer to contact qualified electrician for the installation.

- Plug the power cord into the dedicated wall outlet with a capacity greater than the maximum power consumption.

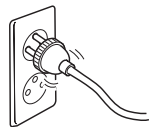
  If excessive current flows in the wall outlet, fire may result.

- If two or more power cords can be plugged into the wall outlet, the total load must not exceed the rating of the wall outlet.

  If excessive current flows in the wall outlet, fire may result.

- Make sure the power cord is plugged in the wall outlet securely.

  Contact problems may lead to increased resistance, overheating, and the risk of fire.



Connection to Power Supply

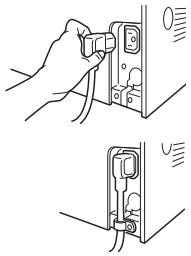
⚠WARNING

- Check whether the product is grounded properly.
  If current leakage occurs in an ungrounded product, you may suffer electric shock while operating the product.
  Connect power plug to grounded wall outlet.

Power Plug and Cord

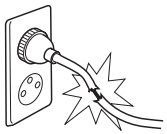
⚠WARNING

- When using the power cord set (inlet type) that came with this product, make sure the connector is securely inserted in the inlet of the product.
  When securing measure is provided, secure the cord with the fixture properly.
  If the power cord (inlet type) is not connected to the product securely, a contact problem may lead to increased resistance, overheating, and risk of fire.

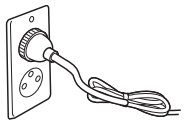


- Check whether the power cord is not stepped on or pinched by a table and so on.
  Overheating may occur there, leading to a risk of fire.

- Check whether the power cord is damaged. Check whether the sheath is damaged.
  If the power plug, cord, or sheath is damaged, replace with a new power cord or cord set (with plug and connector on each end) specified by ODC.
  Using the damaged power cord may result in fire or electric shock.



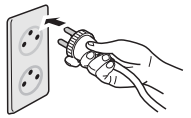
- Do not bundle or tie the power cord.
  Overheating may occur there, leading to a risk of fire.



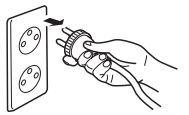
Power Plug and Cord

⚠WARNING

- Check whether dust is collected around the power plug and wall outlet.
  Using the power plug and wall outlet without removing dust may result in fire.



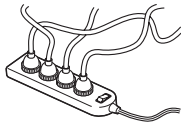
- Do not insert the power plug into the wall outlet with a wet hand.
  The risk of electric shock exists.
- When unplugging the power cord, grasp the plug, not the cable.
  The cable may be broken, leading to a risk of fire and electric shock.



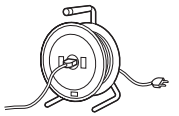
Wiring

⚠WARNING

- Never use multi-plug adapters to plug multiple power cords in the same outlet.
  If used, the risk of fire exists.



- When an extension cord is required, use a specified one. Current that can flow in the extension cord is limited, so using a too long extension cord may result in fire.
  Do not use an extension cable reel with the cable taken up. Fire may result.

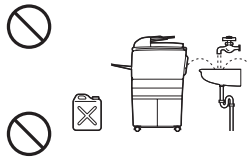


2. Installation Requirements

Prohibited Installation Places

⚠WARNING

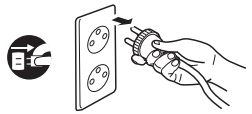
- Do not place the product near flammable materials or volatile materials that may catch fire.
  A risk of fire exists.
- Do not place the product in a place exposed to water such as rain.
  A risk of fire and electric shock exists.



When not Using the Product for a long time

⚠WARNING

- When the product is not used over an extended period of time (holidays, etc.), switch it off and unplug the power cord.
  Dust collected around the power plug and outlet may cause fire.



Ventilation

⚠CAUTION

- The product generates ozone gas during operation, but it will not be harmful to the human body.
  If a bad smell of ozone is present in the following cases, ventilate the room.
  a. When the product is used in a poorly ventilated room
  b. When taking a lot of copies
  c. When using multiple products at the same time

Fixing

⚠CAUTION

- Be sure to lock the caster stoppers.
  In the case of an earthquake and so on, the product may slide, leading to a injury.

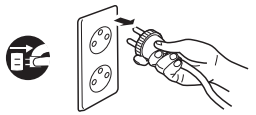
3. Servicing

Inspection before Servicing

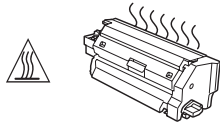
⚠CAUTION

- Before conducting an inspection, read all relevant documentation (service manual, technical notices, etc.) and proceed with the inspection following the prescribed procedure in safety clothes, using only the prescribed tools. Do not make any adjustment not described in the documentation.
  If the prescribed procedure or tool is not used, the product may break and a risk of injury or fire exists.

- Before conducting an inspection, be sure to disconnect the power plugs from the product and options.
  When the power plug is inserted in the wall outlet, some units are still powered even if the POWER switch is turned OFF. Arisk of electric shock exists.



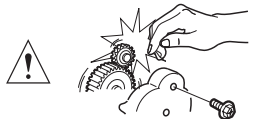
- The area around the fixing unit is hot.
  You may get burnt.



Work Performed with the Product Powered On

⚠WARNING

- Take every care when making adjustments or performing an operation check with the product powered.
  If you make adjustments or perform an operation check with the external cover detached, you may touch live or high-voltage parts or you may be caught in moving gears or the timing belt, leading to a risk of injury.

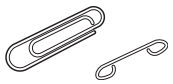


- Take every care when servicing with the external cover detached.
  High-voltage exists around the drum unit. A risk of electric shock exists.

Safety Checkpoints

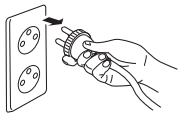
⚠WARNING

- When taking a report of problems from a user, check each part and repair properly.
  A risk of product trouble, injury, and fire exists.
- Check the exterior and frame for edges, burrs, and other damages.
  The user or CE may be injured.
- Do not allow any metal parts such as clips, staples, and screws to fall into the product.
  They can short internal circuits and cause electric shock or fire.



- Check wiring for squeezing and any other damage.
  Current can leak, leading to a risk of electric shock or fire.
- Carefully remove all toner remnants and dust from electrical parts and electrode units such as a charging corona unit.
  Current can leak, leading to a risk of product trouble or fire.
- Check high-voltage cables and sheaths for any damage.
  Current can leak, leading to a risk of electric shock or fire.

- Check electrode units such as a charging corona unit for deterioration and sign of leakage.
  Current can leak, leading to a risk of trouble or fire.
- Before disassembling or adjusting the write unit (P/H unit) incorporating a laser, make sure that the power cord has been disconnected.
  The laser light can enter your eye, leading to a risk of loss of eyesight.

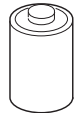


Safety Checkpoints

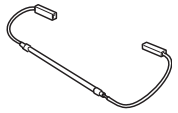
⚠WARNING

- Do not remove the cover of the write unit. Do not supply power with the write unit shifted from the specified mounting position.
  The laser light can enter your eye, leading to a risk of loss of eyesight.

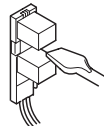
- When replacing a lithium battery, replace it with a new lithium battery specified in the Parts Guide Manual. Dispose of the used lithium battery using the method specified by local authority.
  Improper replacement can cause explosion.



- After replacing a part to which AC voltage is applied (e.g., optical lamp and fixing lamp), be sure to check the installation state.
  A risk of fire exists.



- Check the interlock switch and actuator for loosening and check whether the interlock functions properly.
  If the interlock does not function, you may receive an electric shock or be injured when you insert your hand in the product (e.g., for clearing paper jam).



- Make sure the wiring cannot come into contact with sharp edges, burrs, or other pointed parts.
  Current can leak, leading to a risk of electric shock or fire.

- Make sure that all screws, components, wiring, connectors, etc. that were removed for safety check and maintenance have been reinstalled in the original location. (Pay special attention to forgotten connectors, pinched cables, forgotten screws, etc.)
  A risk of product trouble, electric shock, and fire exists.

Handling of Consumables

⚠WARNING

- Toner and developer are not harmful substances, but care must be taken not to breathe excessive amounts or let the substances come into contact with eyes, etc. It may be stimulative.

  If the substances get in the eye, rinse with plenty of water immediately. When symptoms are noticeable, consult a physician.

- Never throw the used cartridge and toner into fire.

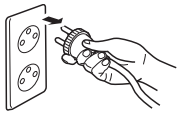
  You may be burned due to dust explosion.

Handling of Service Materials

⚠CAUTION

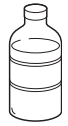
- Unplug the power cord from the wall outlet.

  Isopropyl alcohol and acetone are highly flammable and must be handled with care. A risk of fire exists.



- Do not replace the cover or turn the product ON before any solvent remnants on the cleaned parts have fully evaporated.

  A risk of fire exists.

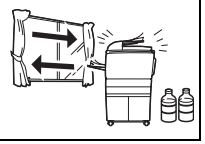


- Use only a small amount of cleaner at a time and take care not to spill any liquid. If this happens, immediately wipe it off.

  A risk of fire exists.

- When using any solvent, ventilate the room well.

  Breathing large quantities of organic solvents can lead to discomfort.



4. Fuse

Fuse

⚠CAUTION

- CAUTION
  Double pole / neutral fusing
- ATTENTION
  Double pôle / Fusible sur le neutre

5. Used Batteries Precautions

Handling of batteries

⚠CAUTION

- 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.

[4] LASER SAFETY

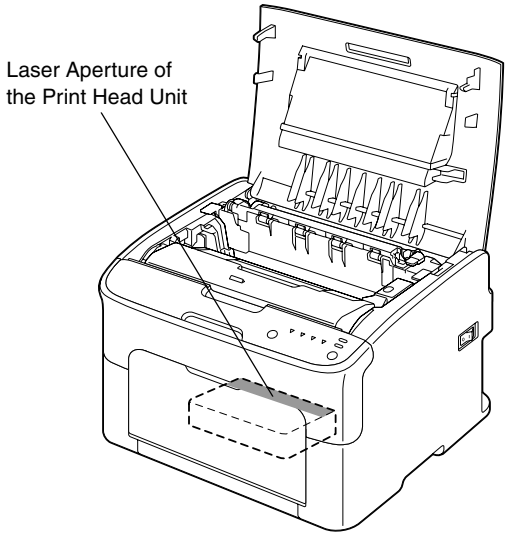
- This is a digital machine certified as a Class 1 laser product. There is no possibility of danger from a laser, provided the machine is serviced according to the instruction in this manual.

4.1 Internal Laser Radiation

semiconductor laser	
Maximum power of the laser diode	20 mW
Maximum average radiation power (*)	13.3 µW
Wavelength	775 - 800 nm

*at laser aperture of the Print Head Unit

- This product employs a Class 3B laser diode that emits an invisible laser beam. The laser diode and the scanning polygon mirror are incorporated in the print head unit.
- The print head unit is NOT A FIELD SERVICEABLE ITEM. Therefore, the print head unit should not be opened under any circumstances.



A034P0C500DA

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

- This machine is certified as a Class 1 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 S-16 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

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

semiconductor laser	
Maximum power of the laser diode	20 mW
Wavelength	775 - 800 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	20 mW
Wavelength	775 - 800 nm

Denmark

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

halvlederlaser	
Laserdiodens højeste styrke	20 mW
bølgelængden	775 - 800 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	20 mW
aallonpituus	775 - 800 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	20 mW
våglängden	775 - 800 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.**

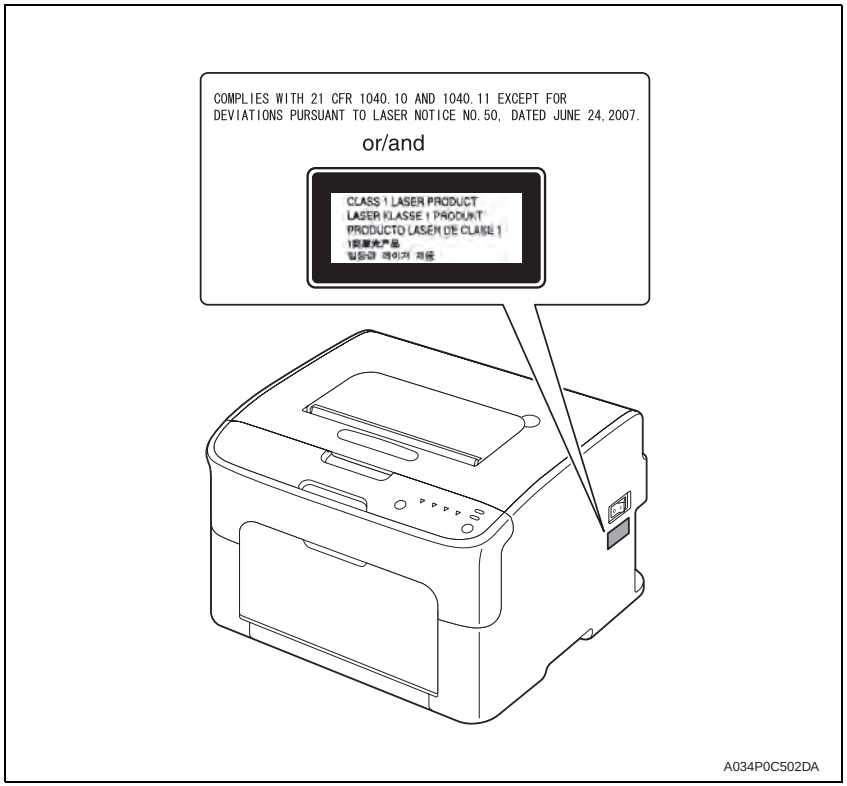
Norway

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	20 mW
bølgelengde	775 - 800 nm

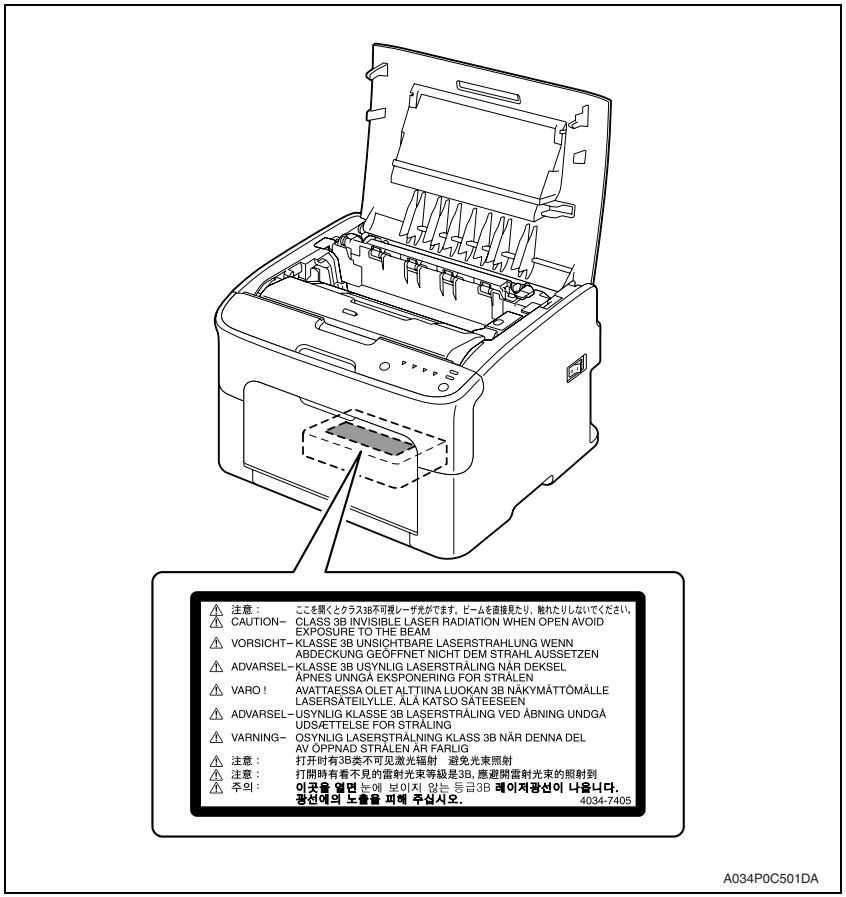
4.2 Laser Safety Label

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



4.3 Laser Caution Label

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



A034P0C501DA

4.4 PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
- When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the printer OFF.
- If the job requires that the printer be left ON, take off your watch and ring and wear laser protective goggles.
- A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.
- The Print Head is not to be disassembled or adjusted in the field. Replace the Unit or Assembly including the Control Board. Therefore, remove the Laser Diode, and do not perform Control Board trimmer adjustment.

SAFETY INFORMATION

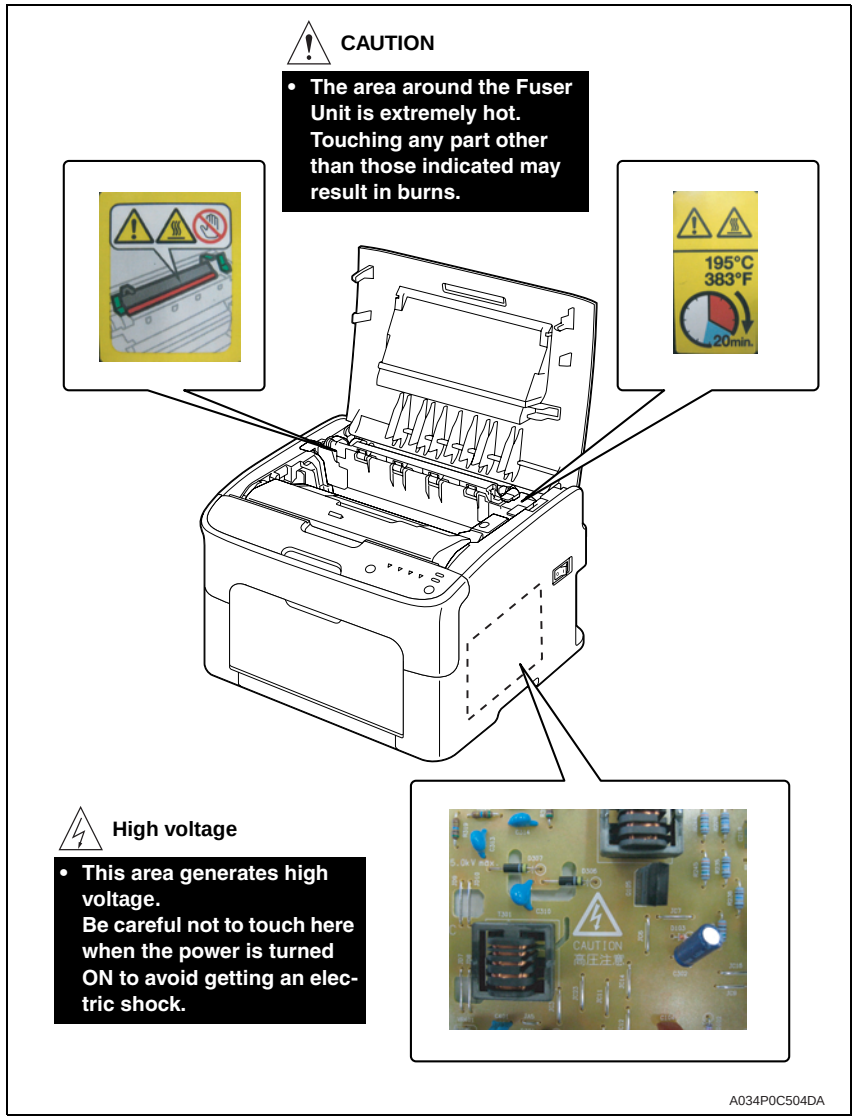
IMPORTANT NOTICE

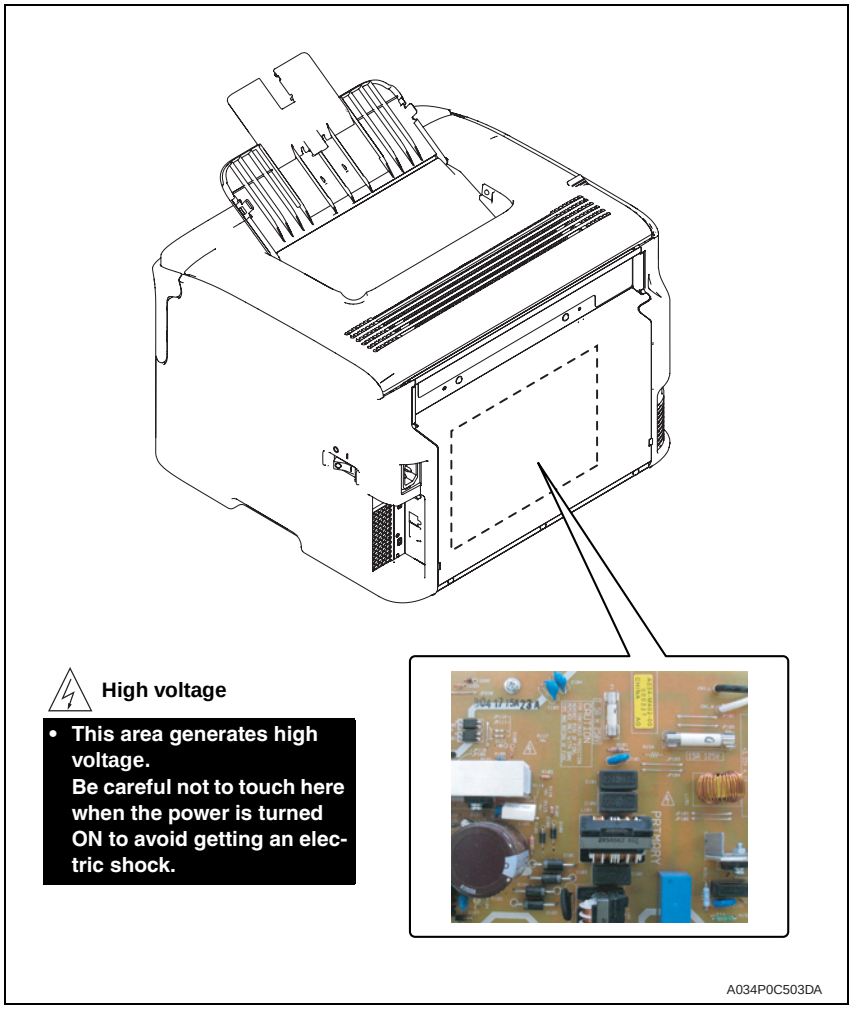
The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products manufactured since August 1, 1976. Compliance is mandatory for products marketed in the United States.

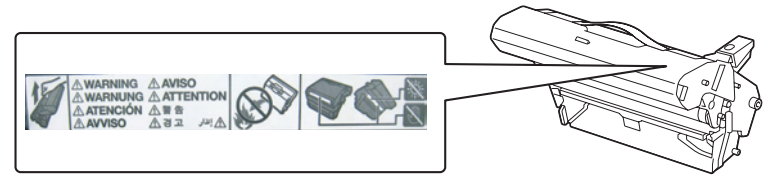
This copier is certified as a "Class 1" laser product under the U.S. Department of Health and Human Services (DHHS) Radiation Performance Standard according to the Radiation Control for Health and Safety Act of 1968. Since radiation emitted inside this copier is completely confined within protective housings and external covers, the laser beam cannot escape during any phase of normal user operation.

INDICATION OF WARNING ON THE MACHINE

Caution labels shown below are attached in some areas on/in the machine.
When accessing these areas for maintenance, repair, or adjustment, special care should be taken to avoid burns and electric shock.

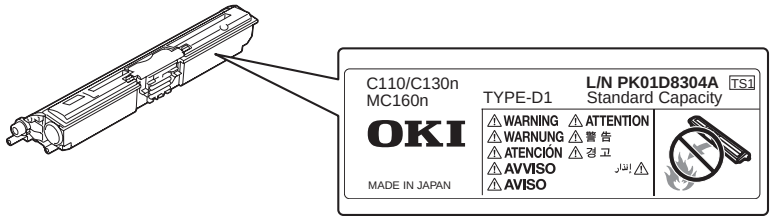






WARNING

- **Do not burn used Imaging Cartridge.**
  Toner expelled from the fire is dangerous.



WARNING

- **Do not burn used Toner Cartridges.**
  Toner expelled from the fire is dangerous.

A034P0504DA

CAUTION:

- **You may be burned or injured if you touch any area that you are advised by any caution label to keep yourself away from. Do not remove caution labels. And also, when the caution label is peeled off or soiled and cannot be seen clearly, replace it with a new caution label.**

MEASURES TO TAKE IN CASE OF AN ACCIDENT

1. If an accident has occurred, the distributor who has been notified first must immediately take emergency measures to provide relief to affected persons and to prevent further damage.
2. If a report of a serious accident has been received from a customer, an on-site evaluation must be carried out quickly and ODC must be notified.
3. To determine the cause of the accident, conditions and materials must be recorded through direct on-site checks, in accordance with instructions issued by ODC.
4. For reports and measures concerning serious accidents, follow the regulations specified by every distributor.

Composition of the service manual

This service manual consists of Theory of Operation section and Field Service section to explain the main machine and its corresponding options.

Theory of Operation section gives, as information for the CE to get a full understanding of the product, a rough outline of the object and role of each function, the relationship between the electrical system and the mechanical system, and the timing of operation of each part.

Field Service section gives, as information required by the CE at the site (or at the customer's premise), a rough outline of the service schedule and its details, maintenance steps, the object and role of each adjustment, error codes and supplementary information.

The basic configuration of each section is as follows. However some options may not be applied to the following configuration.

<Theory of Operation section>

OUTLINE:	Explanation of system configuration, product specifications, unit configuration, and paper path
COMPOSITION/OPERATION:	Explanation of configuration of each unit, operating system, and control system

<Field service section>

OUTLINE:	Explanation of system configuration, and product specifications
MAINTENANCE:	Explanation of service schedule, maintenance steps, service tools, removal/reinstallation methods of major parts, and firmware version up method etc.
ADJUSTMENT/SETTING:	Explanation of utility mode, service mode, and mechanical adjustment etc.
TROUBLESHOOTING:	Explanation of lists of jam codes and error codes, and their countermeasures etc.
APPENDIX:	Parts layout drawings, connector layout drawings, timing chart, overall layout drawing are attached.

Notation of the service manual

A. Product name

In this manual, each of the products is described as follows:

(1)	C110/C130n	Main body
(2)	Microsoft Windows NT 4.0:	Windows NT 4.0 or Windows NT
	Microsoft Windows 2000:	Windows 2000
	Microsoft Windows XP:	Windows XP
	Microsoft Windows Vista:	Windows Vista
	When the description is made in combination of the OS's mentioned above:	
		Windows NT 4.0/2000
		Windows NT/2000/XP/Vista

B. Brand name

The company names and product names mentioned in this manual are the brand name or the registered trademark of each company.

C. Feeding direction

- When the long side of the paper is parallel with the feeding direction, it is called short edge feeding. The feeding direction which is perpendicular to the short edge feeding is called the long edge feeding.
- Short edge feeding will be identified with [S (abbreviation for Short edge feeding)] on the paper size. No specific notation is added for the long edge feeding.
  When the size has only the short edge feeding with no long edge feeding, [S] will not be added to the paper size.

<Sample notation>

Paper size	Feeding direction	Notation
A4	Long edge feeding	A4
	Short edge feeding	A4S
A3	Short edge feeding	A3

C110/C130n Main body

THEORY OF OPERATION

CONTENTS

C110/C130n Main body

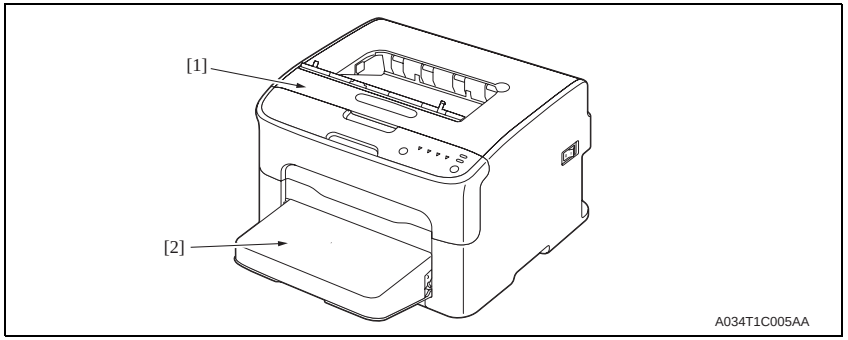
OUTLINE

COMPOSITION/OPERATION

OUTLINE

1. System configuration

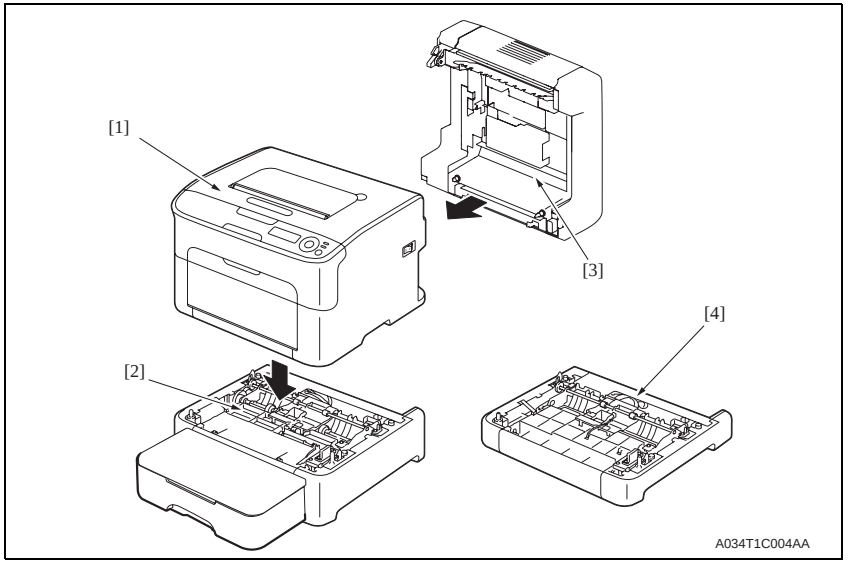
A. C110



[1] Main body

[2] Dust cover (Option)

B. C130n



[1] Main body

[2] Lower Feeder Unit (option)

[3] Duplex Option (option)

[4] Duplex Option Attachment (Option)

2. Product specifications

A. Type

Type	Desktop full-color laser beam printer	
Printing system	Semiconductor laser and electrostatic image transfer to plain paper	
Exposure system	2 laser diodes and polygon mirror	
PC drum type	OPC (organic photo conductor)	
Photoconductor cleaning	Blade cleaning system	
Resolution	C110	1200 x 600 dpi, 600 x 600 dpi
	C130n	600 dpi x 600 dpi x 4 bit or 600 dpi x 600 dpi x 1 bit
Media feeding system	C110	One-way system (Tray 1: 200 sheets)
	C130n	One-way system (Tray 1: 200 sheets) * Expandable to a two-way system by adding an optional Lower Feeder Unit.
Developing system	Single-element developing system	
Charging system	DC comb electrode scorotron system	
Image transfer system	Intermediate transfer belt system	
Media separating system	Curvature separation + Charge-neutralizing system	
Fusing system	Roller fusing	
Media exit system	Face down (Output tray capacity: 100 sheets)	

B. Functions

Warm-up time	C110	Average 30 seconds	
	C130n	Average 45 seconds	
Process speed	Plain paper	126.78 mm/second	
	Thick stock	63.39 mm/second	
First-Page-Out Time (A4)	Plain paper	Full color	1-sided: 22 seconds 2-sided: 35 seconds
		Monochrome	1-sided: 13 seconds 2-sided: 26 seconds
	Thick stock	Full color	1-sided: 30 seconds
		Monochrome	1-sided: 21 seconds
Print speed (A4)	Plain paper	Full color	1-sided: 5 pages/minute 2-sided: 5 pages/minute
		Monochrome	1-sided: 20 pages/minute 2-sided: 13.2 pages/minute
	Thick stock	Full color	1-sided: 2.6 pages/minute
		Monochrome	1-sided: 4.4 pages/minute
Custom media sizes	Media width: 92 to 216 mm (3.6" to 8.5")		
	Media length: 195 to 356 mm (Plain paper) 184 to 297 mm (Thick stock)		
Media types	• Plain paper (60 to 90 g/m² / 16 to 24 lb) • Thick stock 1 (91 to 163 g/m² / 24.4 to 43.4 lb) • Thick stock 2 (164 to 209 g/m² / 43.7 to 55.6 lb) • Postcards • Envelopes • Letterhead • Label sheet		
Tray capacities	Plain paper and letterhead :200 sheets Thick stock, postcards, labels stock, and glossy stock :50 sheets Envelopes :10 sheets		

Lower Feeder Unit: Only plain paper and recycled paper weighing 60 to 90 g/m² (16 to 24 lb) can be loaded.

Duplex Option: Only plain paper and recycled paper weighing 60 to 90 g/m² (16 to 24 lb) can be fed through the unit.

C. Maintenance

Machine durability	50,000 prints or 5 years, whichever comes first

D. Machine specifications

Power requirements	voltage:	AC 100 V ± 10 % AC 110 to 127 V ± 10 % AC 220 to 240 V ± 10%	
	Frequency:	60 Hz ± 3 Hz (for North america) 50/60 Hz ± 3 Hz (for Europe)	
Max power consumption	C110	970 W or less (100 V, 120 V) 1020 W or less (220 V to 240 V)	
	C130n	1000 W or less (100 V, 120 V) 1060 W or less (220 V to 240 V)	
Dimensions	396 mm (W) x 380 mm (D) x 275 mm (H)		
Weight	Approximately 11.5 kg (without consumables) Approximately 14.4 kg (with consumables))		
Operating noise	During standby	C110	29 dB (A)
		C130n	
	During printing	C110	49 dB (A): Color 51 dB (A): monochrome
		C130n	49 dB (A): Color 50 dB (A): monochrome

E. Operating environment

Temperature	10 to 35 °C / 50 to 95 °F (with a fluctuation of 10 °C / 18 °F or less per hour)
Humidity	15% to 85% (with a fluctuation of 20% or less per hour)

F. Controller

(1) C110

Type	Built-in type controller
Standard memory	16 MB
Interface	USB 2.0 compliant
Support	• Microsoft Windows Vista Home Basic/Home Premium/Ultimate/Business/ Enterprise • Windows Vista Home Basic/Home Premium/ Ultimate/Business/Enterprise x64 Edition, Windows XP Home Edition/Professional (Service Pack 2 or later) • Windows XP Professional x64 Edition • Windows Server 2003, Windows Server 2003 x64 Edition • Windows 2000 (Service Pack 4 or later)

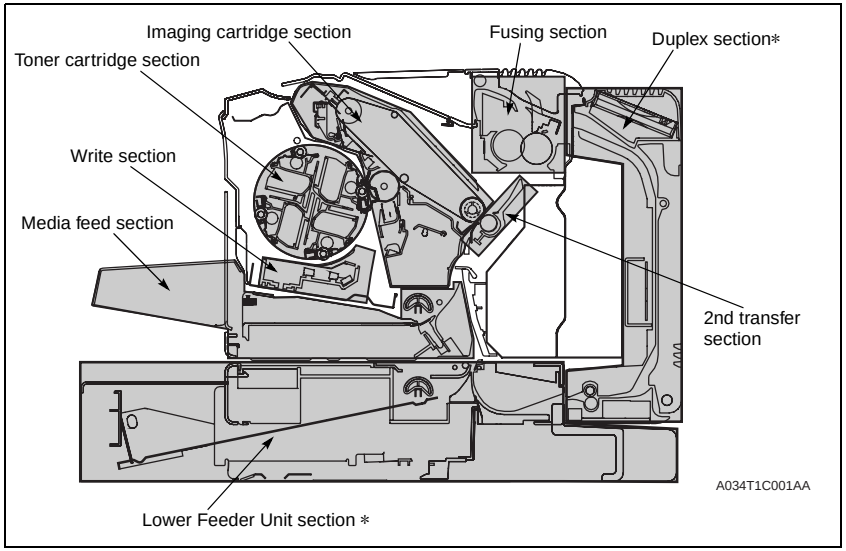
(2) C130n

Type	Built-in type controller
Standard memory	256MB
Interfaces	USB 2.0 and USB 1.1 compliant, 10Base-T/100Base-TX (IEEE 802.3) Ethernet
Support	• Microsoft Windows Windows Server 2008 Standard/Enterprise/Datacenter, Vista Home Basic/Home Premium/Ultimate/Business/Enterprise, WindowsVista Home Basic /Home Premium /Ultimate/Business /Enterprise x64 Edition, Windows XP Home Edition/Professional (Service Pack 1 or later; Service Pack 2 or later is recommended), Windows XP Professional x64 Edition, Windows Server 2003, Windows Server 2003 x64 Edition, Windows 2000 (Service Pack 4 or later) • Mac OS X (10.2 or later; We recommend installing the newest patch), Mac OS X Server (10.2 or later) • Red Hat Linux 9.0, SuSE Linux 8.2

NOTE

- **These specifications are subject to change without notice.**

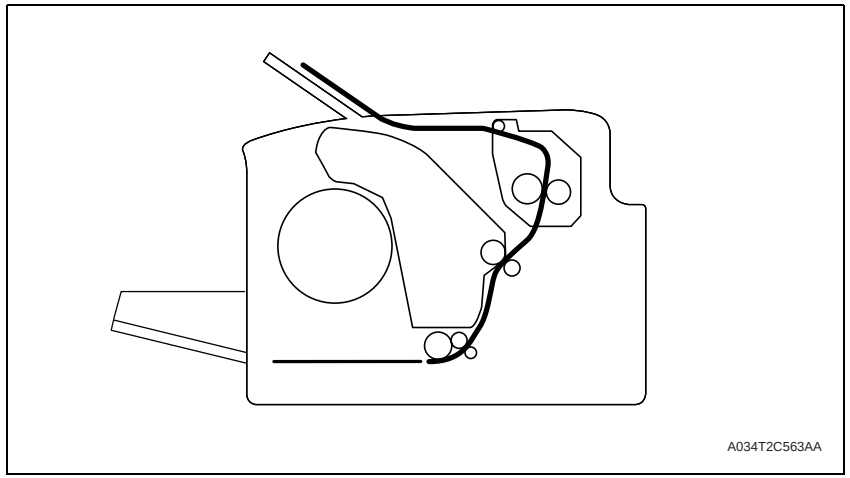
3. Center cross section



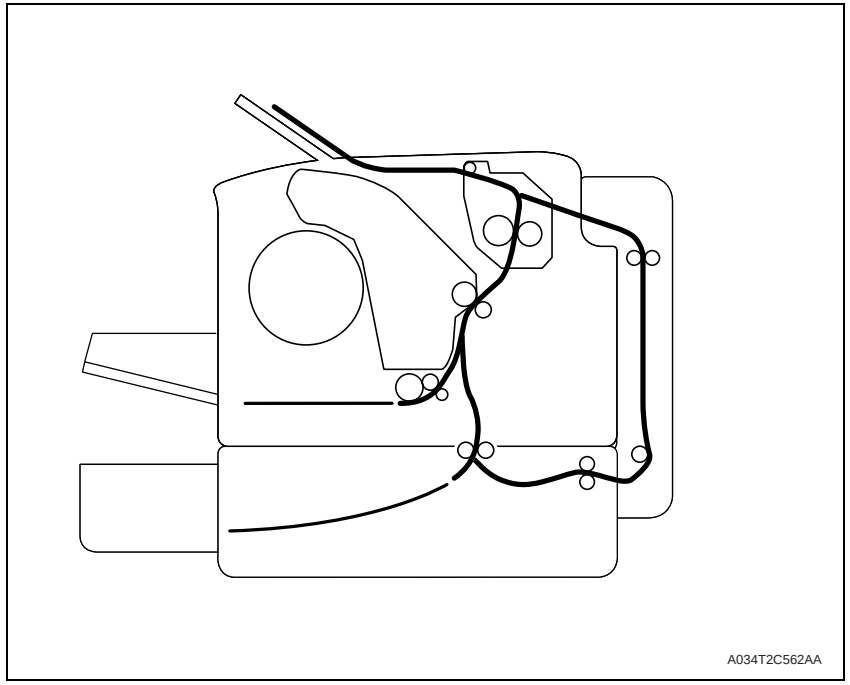
*: Only for the C130n

4. Media path

A. C110



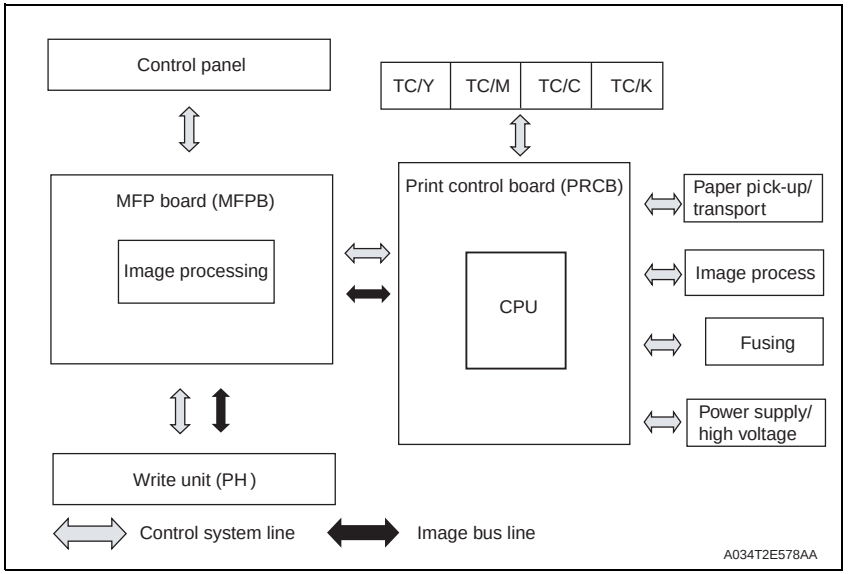
B. C130n



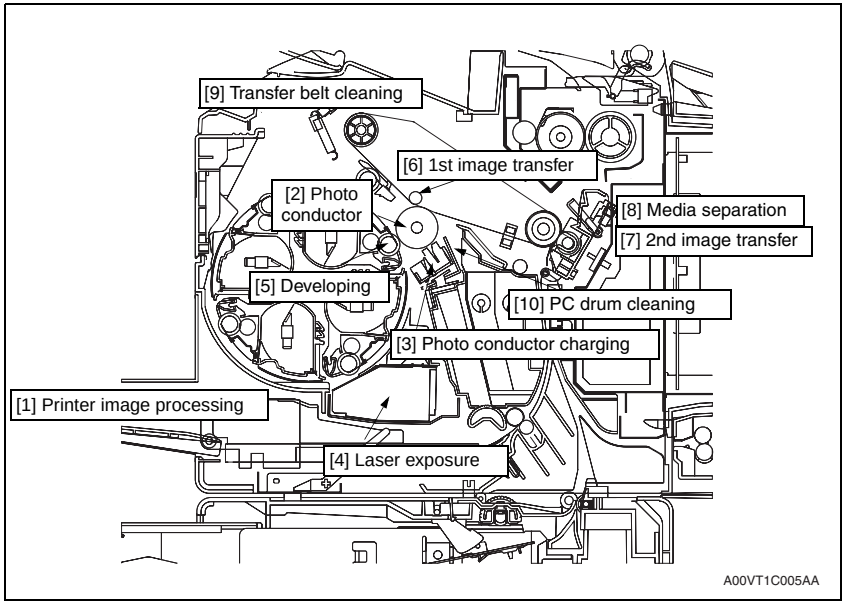
COMPOSITION/OPERATION

5. Overall composition

5.1 Control block diagram

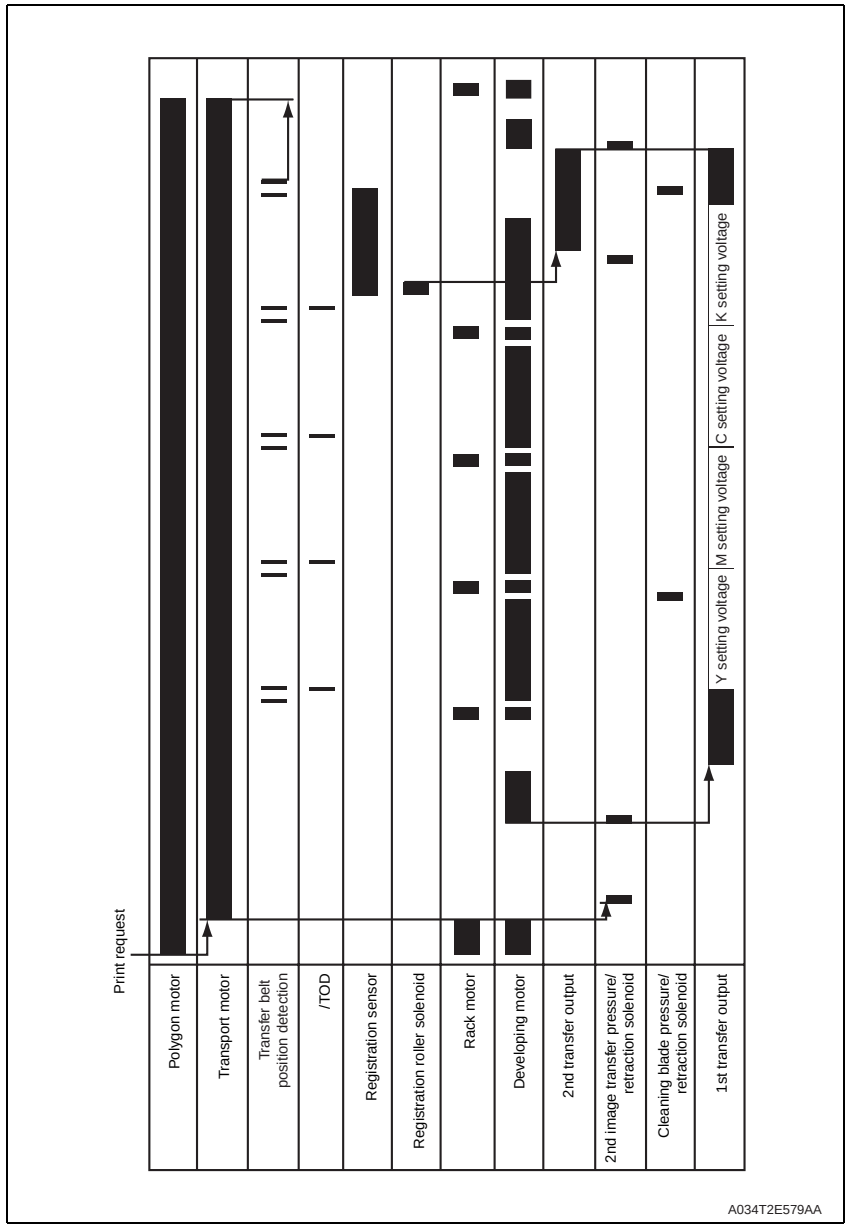


5.2 Image creation process



[1]	Printer image processing	• The intensity of the laser light is controlled by the image signal sent from the host computer.
[2]	Photo conductor	• The image projected onto the surface of the photo conductor is converted to a corresponding electrostatic latent image.
[3]	Photo conductor charging	• A negative DC charge layer is formed on the surface of the photo conductor.
[4]	Laser exposure	• The surface of the photo conductor is irradiated with the laser light and an electrostatic latent image is thereby formed.
[5]	Developing	• The toner, negatively charged in the Hopper, is attracted onto the electrostatic latent image formed on the surface of the photo conductor. It is thereby changed to a visible, developed image. • A DC negative bias voltage is applied to the Developing roller, thereby preventing toner from sticking to the background image portion.
[6]	1st image transfer	• A DC positive voltage is applied to the backside of the transfer belt, thereby allowing the visible, developed image on the surface of the photo conductor to be transferred onto the transfer belt.
[7]	2nd image transfer	• A DC positive voltage is applied to the backside of the media, thereby allowing the visible, developed image on the surface of the transfer belt to be transferred onto the media.
[8]	Media separation	• The media, which has undergone the 2nd image transfer process, is neutralized.
[9]	Transfer belt cleaning	• A charge is applied to the transfer belt. By potential difference, residual toner on the surface of the transfer belt is collected for cleaning.
[10]	Photo conductor cleaning	• The residual toner left on the surface of the photo conductor is scraped off.

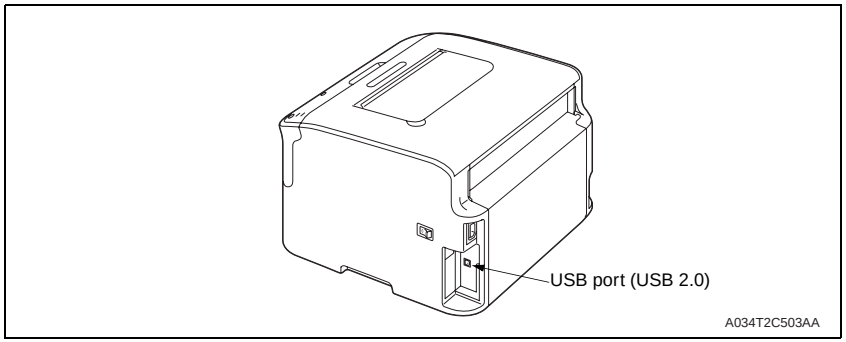
5.3 Operation sequence



6. Interface section

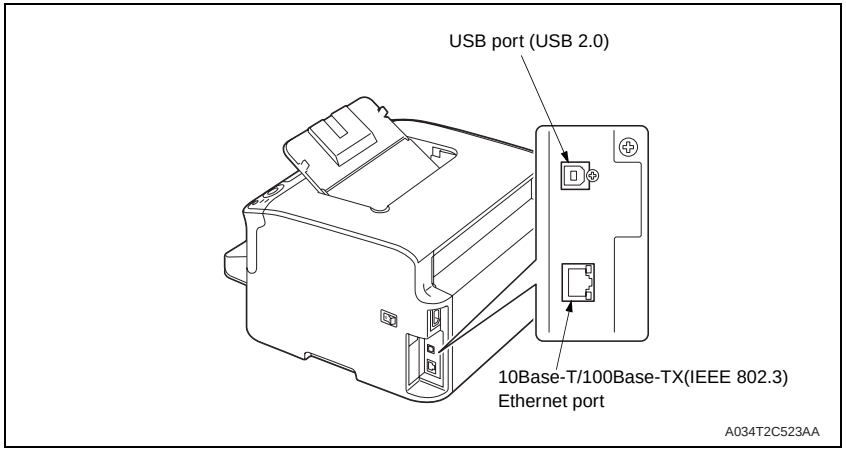
6.1 Composition

6.1.1 C110



Type	Application
USB port (USB 2.0)	For PC to printer connection

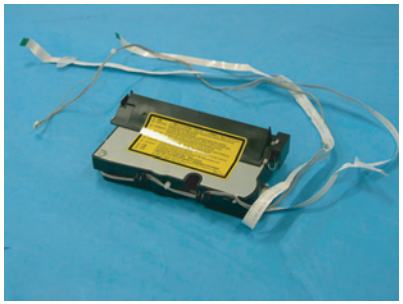
6.1.2 C130n



Type	Application
USB port (USB 2.0)	For PC to printer connection
10Base-T/100Base-TX(IEEE 802.3)Ethernet port	For network

7. Write section (PH section)

7.1 Composition



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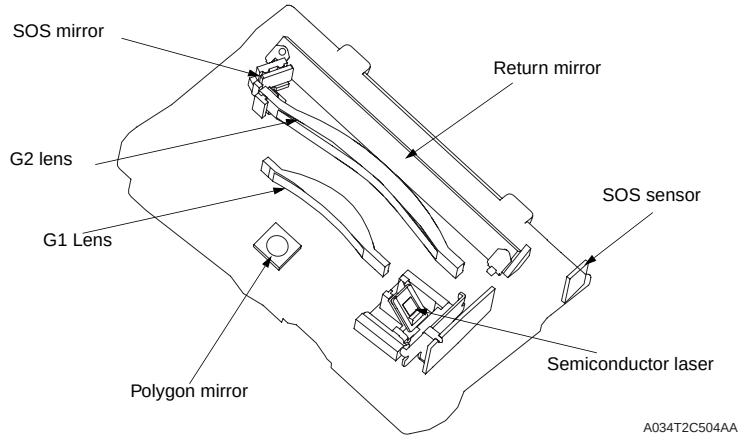

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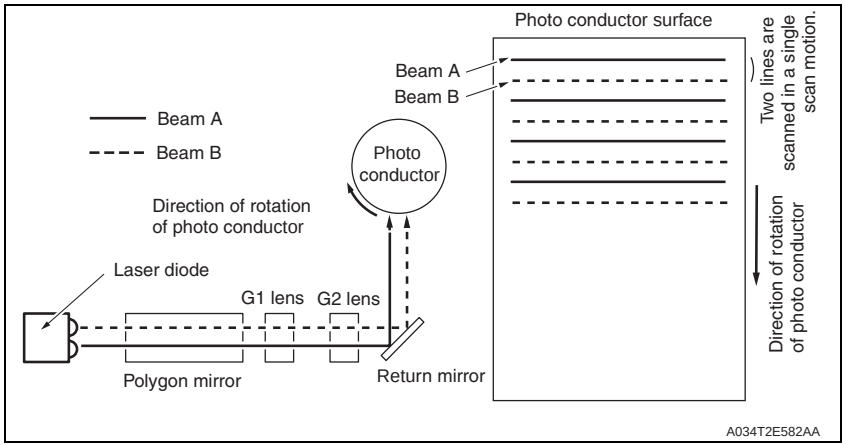
7.2 Operation

7.2.1 Outline

- The surface of the photo conductor is irradiated with a laser light and an electrostatic latent image is thereby formed.
- The polygon mirror has four faces and the machine uses a two-beam array LD to inhibit the speed of the polygon mirror from increasing.
- The two-beam array LD consists of two LD elements arranged vertically. Two lines are scanned with two laser beams emitted from these two LD elements through a single face of the polygon mirror.



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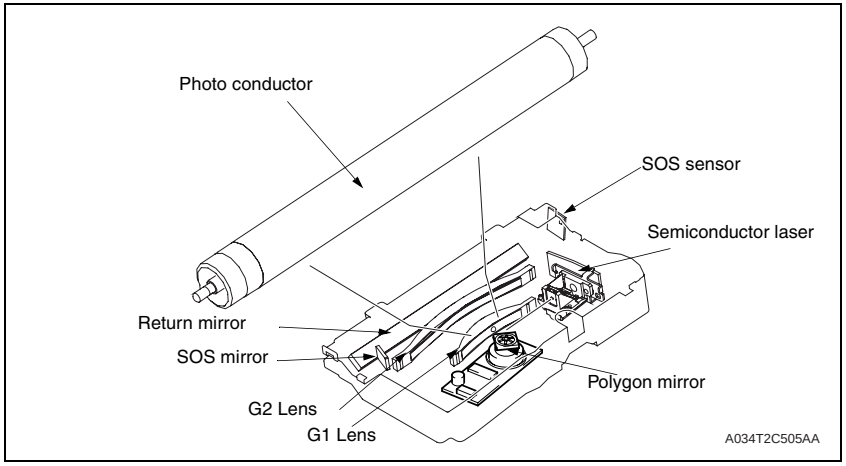
7.2.2 Laser exprosure process

1. The laser light emitted from the Semiconductor laser strikes the polygon mirror.
2. The polygon mirror with four faces is rotated at high speeds by the polygon motor.
3. The SOS sensor ensures that the laser light emission start timing remains constant for each line of main scan.



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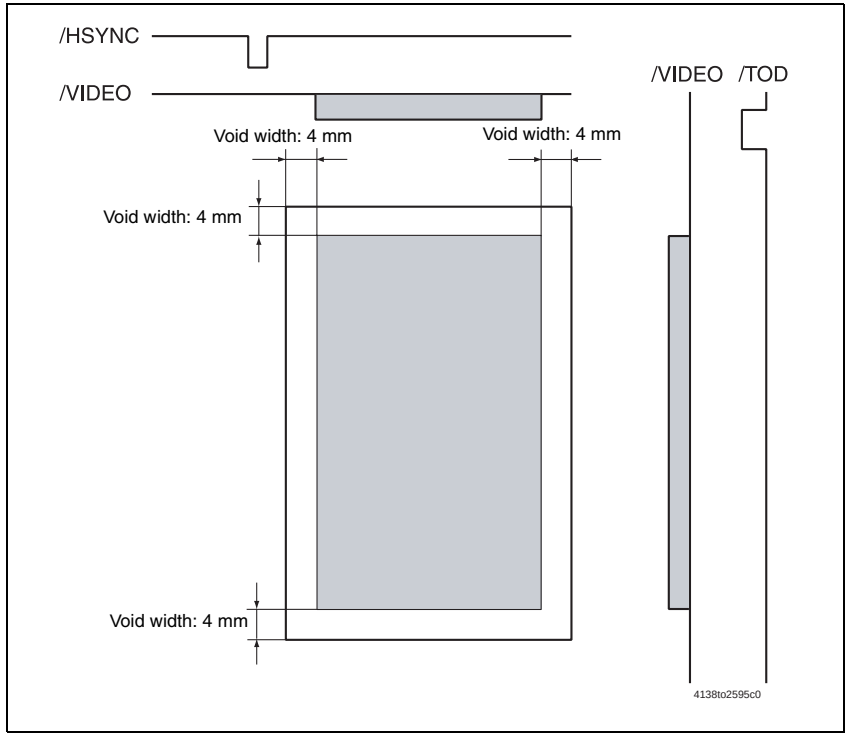
7.2.3 Laser emission area

A. Main scan direction (CD)

- The print start position in the CD direction is determined by the CD print start signal (/HSYNC) that is output from the MFP board (MFPB) and the width of the media.
- The laser emission area is determined by the media size. The area of 4 mm on both edges of the media is, however, the void image area.

B. Sub scan direction (FD)

- The print start position in the FD direction is determined by the Image write start signal (/TOD) that is output from the MFP board (MFPB) and the length of the media.
- The laser emission area is determined by the media size. The area of 4 mm on both the leading and trailing edges of the media is, however, the void image area.

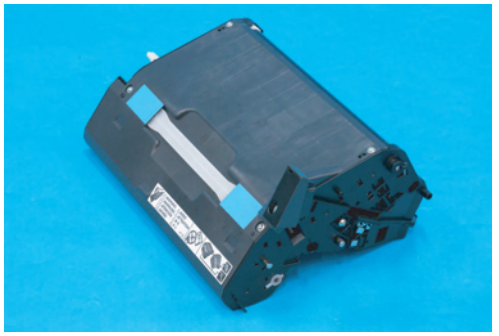


7.2.4 Image stabilization control item

- LD intensity control

8. IMAGEING CARTRIDGE SECTION

8.1 Composition



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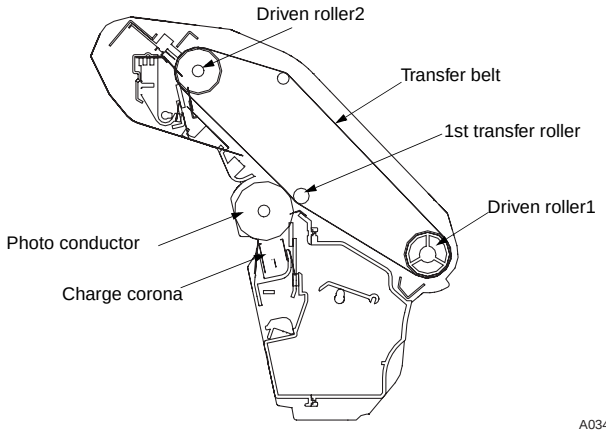

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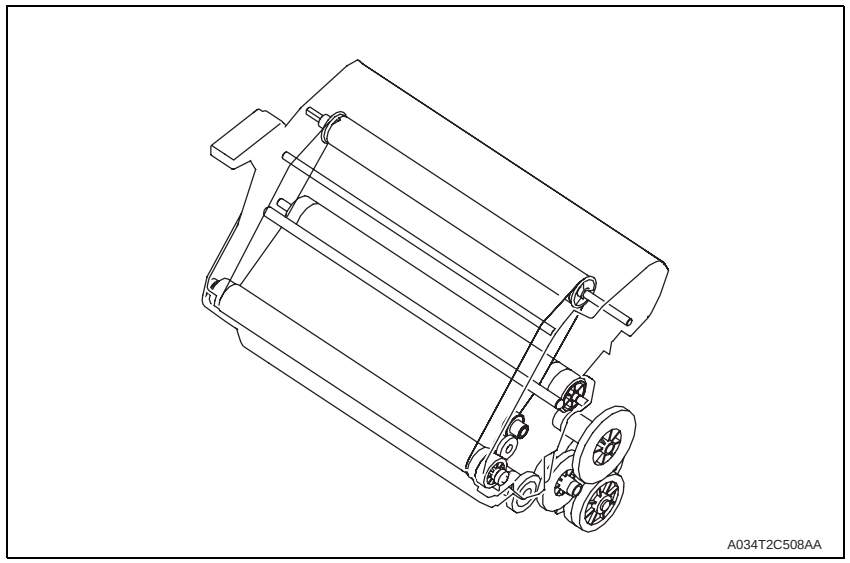
8.2 Drive



8.3 Operation

8.3.1 Imaging cartridge (IC) life control

A. New DC detection

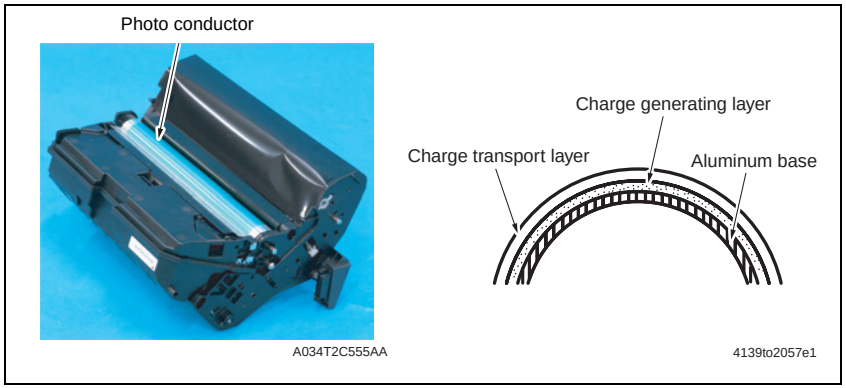
- The machine attempts to perform a new IC detection sequence when the power switch is turned OFF and ON, or the Front door is closed.
- If no new IC is detected, the image stabilization sequence is not carried out.
- If a new IC is detected, the image stabilization sequence is carried out.
- The imaging cartridge shipped with the machine does not have the function to detect a new IC.

B. Reaching the life

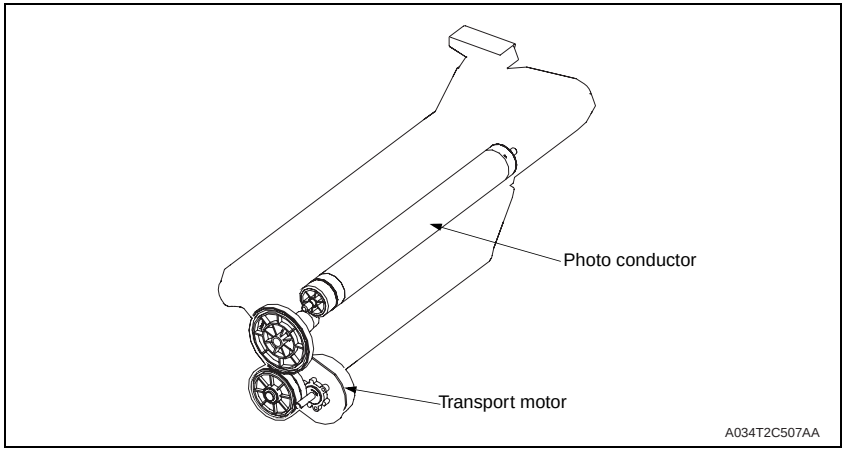
- The life counter is reset when a new IC is detected.
- The machine gives a warning message when the life value is reached (printing will be continued). When the Waste toner reaches its full level, the initiation of any new print cycle will be prohibited. The machine then prompts the user to replace the IC.

9. Photo conductor section

9.1 Composition



9.2 Drive



9.3 Operation

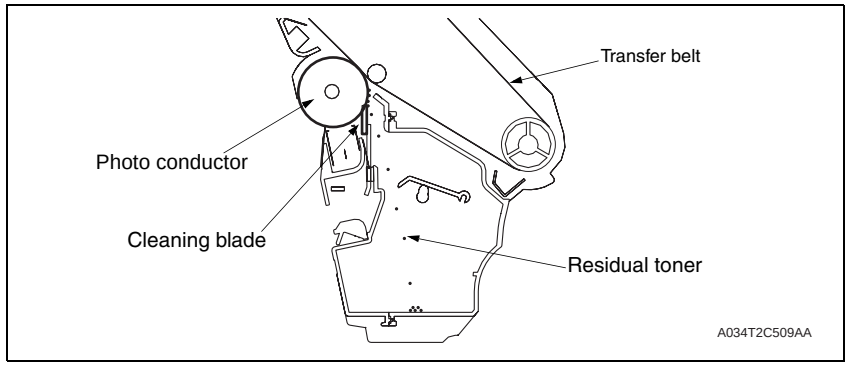
9.3.1 Photo conductor drive mechanism

A. Photo conductor drive

- The photo conductor is driven by the Transport motor (M1).

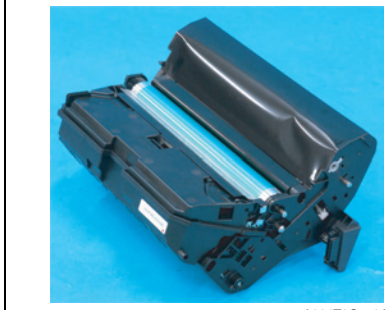
9.3.2 Photo conductor cleaning mechanism

- The cleaning blade is pressed up against the surface of the photo conductor, scraping residual toner off the surface.
- The toner scraped off the surface of the photo conductor is collected in the drum cartridge.



10. Charge corona section

10.1 Composition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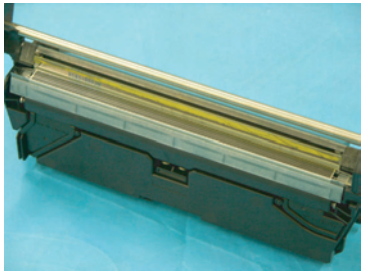
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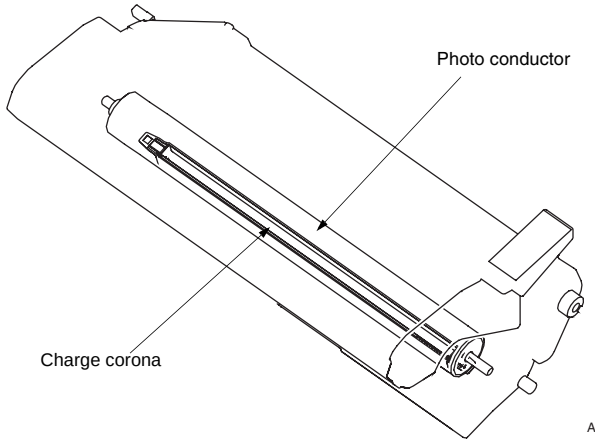


10.2 Operation

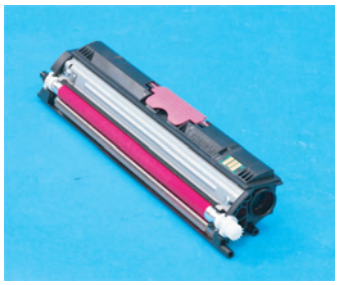
10.2.1 Charge corona control

A. Charging grid

- The photo conductor is charged through corona discharge from the photo conductor charge corona.
- The photo conductor is charged via a grid mesh, which ensures that an even charge is applied to the entire surface of the photo conductor.
- The photo conductor charge corona of a comb electrode type discharges only to the grid mesh side, involving a smaller amount of ozone produced as compared with the wire electrode.
- Charge corona output rating: -500uA

11. Developing section

11.1 Composition



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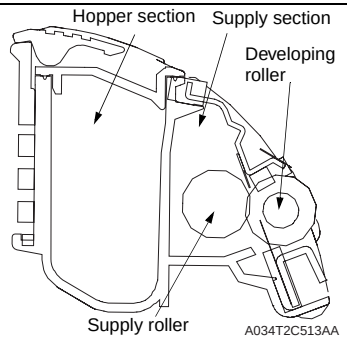

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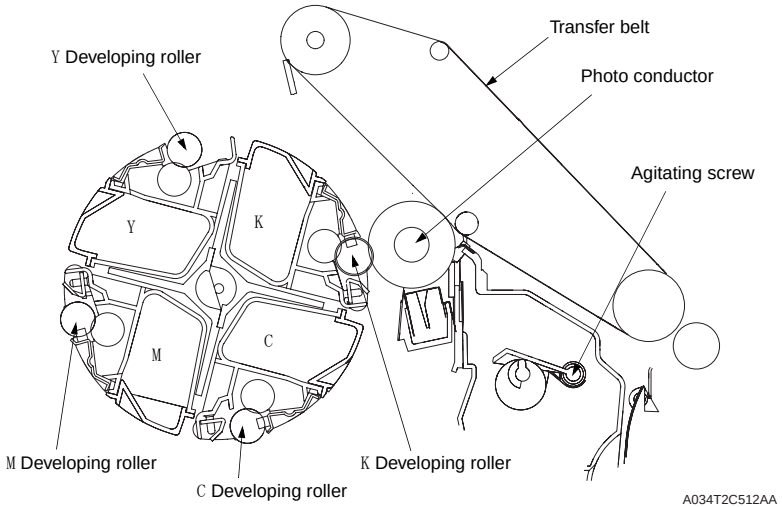

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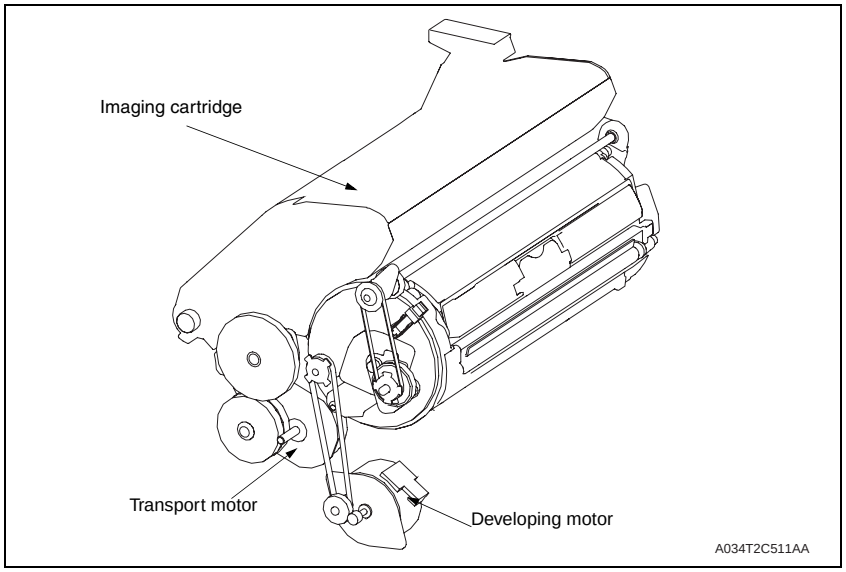
11.2 Drive



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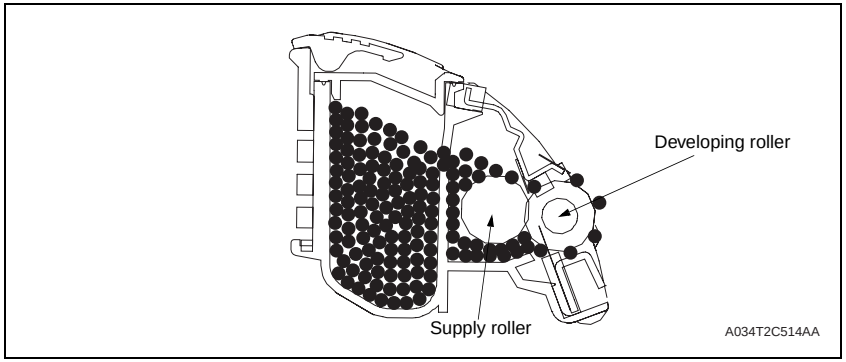
11.3 Operation

11.3.1 Toner flow

- Toner stored in the hopper is conveyed into the toner supply portion through rotation of the toner cartridge rack.
- The toner conveyed into the toner supply portion is conveyed by the supply roller onto the developing roller.
- Toner then sticks to the electrostatic latent image formed on the surface of the photo conductor. That part of toner left on the surface of the developing roller is returned to the toner supply portion.



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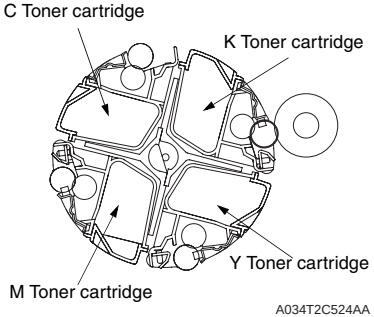
11.3.2 Toner Cartridge Rack

- The toner cartridge rack is mounted with four toner cartridges. The rack employs a rotary system.
- Development of the image of each color of toner is performed by rotating the toner cartridge rack.



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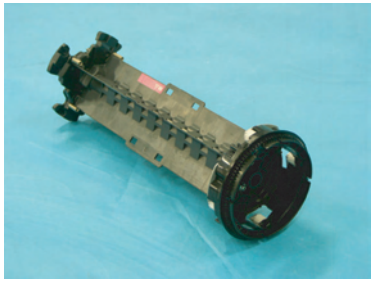

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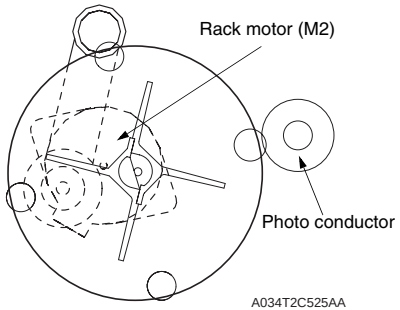
A. Toner cartridge rack drive

- The toner cartridge rack is driven by the Rack motor (M2).



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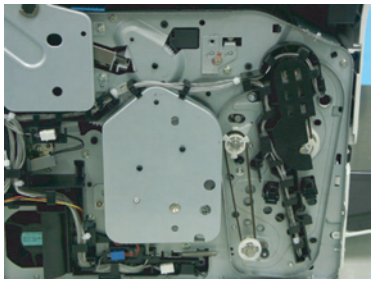

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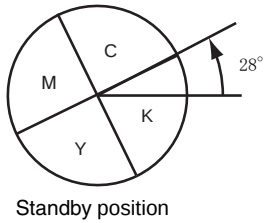
B. Toner cartridge rack stop position

- The toner cartridge rack must be brought to a stop so that the toner cartridge of each color of toner is located at its correct position. To accomplish this task, three stop positions are established: the standby (reference) position, the developing position, and the cartridge replacement position.
- The standby position refers to the position at which the toner cartridge rack is stationary when the machine is in the standby state. The toner cartridge rack is located at this standby position when the machine completes a warm-up cycle or waits for a print command.
- The development position refers to the position at which the toner cartridge rack stops during development of a specific color of toner. The development of a specific color of toner takes place at the development position.
- The cartridge replacement position refers to the position at which the toner cartridge rack is stopped for replacement of the toner cartridge of a specific color of toner.

(1) Standby (reference) position

- The standby position is 28° before the developing position of the M toner cartridge.



Standby position

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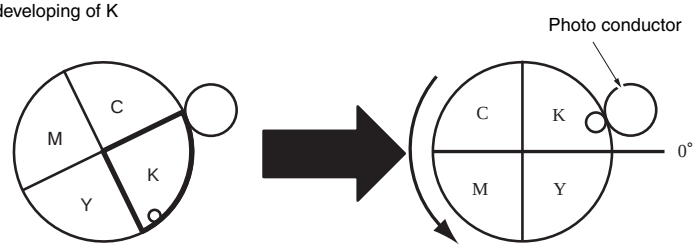
(2) Developing position

- The developing position is where the toner cartridge rack is rotated 62° from the standby position.



Standby position

Developing position

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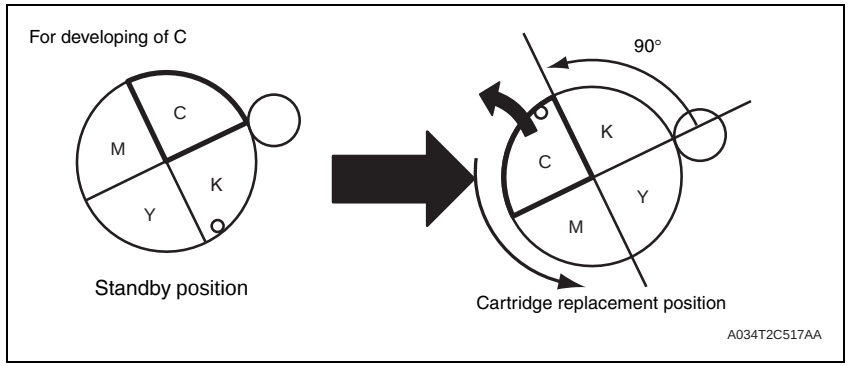
(3) Cartridge replacement position

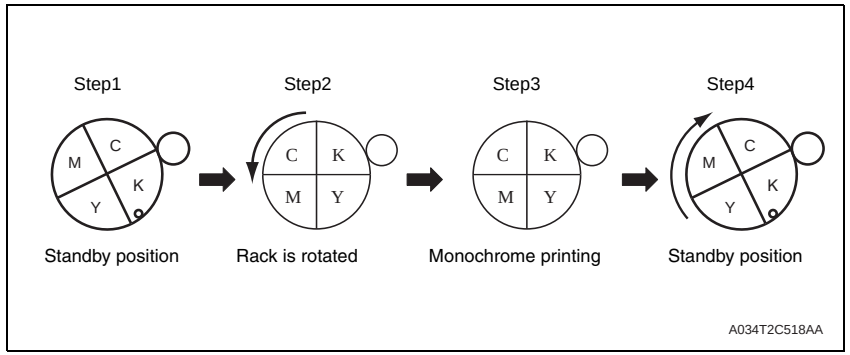
- The cartridge replacement position is where the toner cartridge rack is rotated 90° from the developing position.



C. Monochrome printing process

(1) Operation sequence

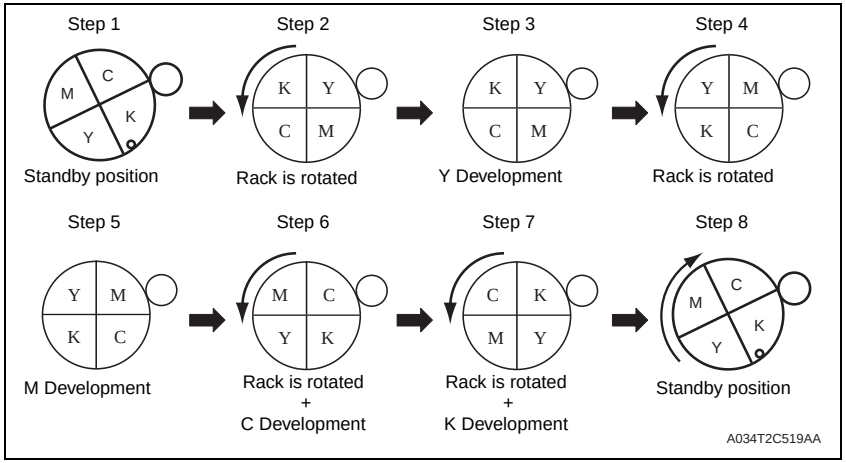
1. The toner cartridge rack is stationary at the standby position.
2. When a print request is received from the controller, the toner cartridge rack is rotated to bring the K toner cartridge to its developing position.
3. Development of monochrome printing is started.
4. When the development is completed, the toner cartridge rack is rotated in the opposite direction and brought to a stop at the standby position.



D. Color printing process

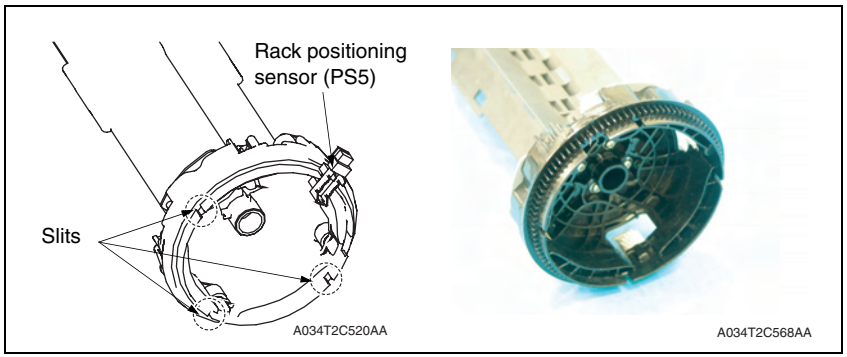
(1) Operation sequence

1. The toner cartridge rack is stationary at the standby position.
2. When a print request is received from the controller, the toner cartridge rack is rotated and temporarily stopped at the K developing position. The toner cartridge rack is then rotated again to bring the Y toner cartridge to its developing position.
3. Development of Y is carried out.
4. When development of Y is completed, the toner cartridge rack is rotated to bring the M toner cartridge to its developing position.
5. Development of M is carried out.
6. Similarly, the toner cartridge rack is rotated and development of C is carried out.
7. Similarly, the toner cartridge rack is rotated and development of K is carried out.
8. When development of K is completed, the toner cartridge rack is rotated in the opposite direction and brought to a stop at the standby position.



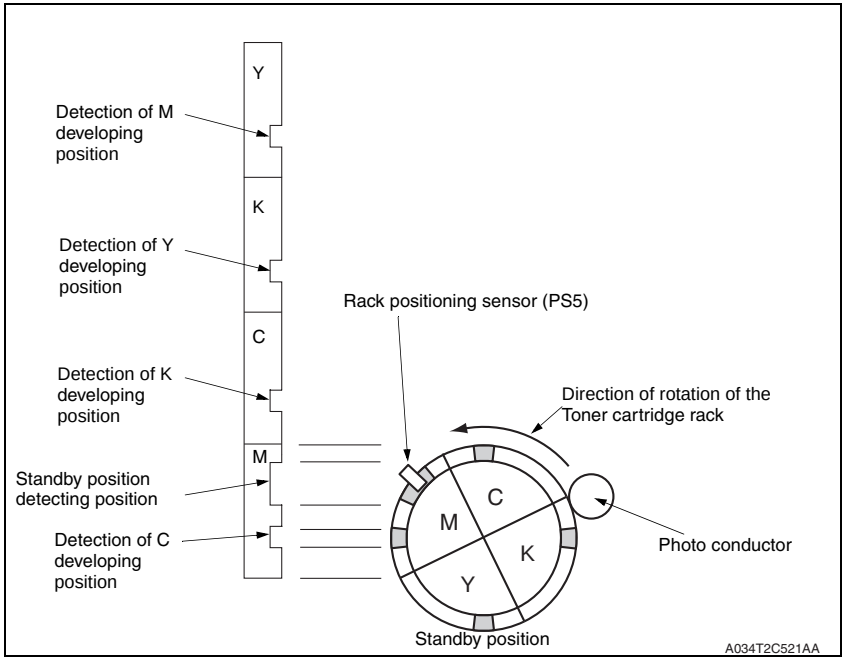
E. Toner cartridge rack stop position detection

- The toner cartridge rack stop position for each color of toner is detected by the Rack motor (M2) and the Rack positioning sensor (PS5).
- The toner cartridge rack is provided with slits, each for a specific color of toner. When the rack rotates, the Rack positioning sensor (PS5) is blocked and unblocked.
  A specific stop position is detected when the Rack positioning sensor (PS5) is blocked and unblocked.



(1) Toner cartridge rack standby position

- The M toner cartridge is provided with a slit for detecting the standby position.
- When the toner cartridge rack is rotated, the Rack positioning sensor (PS3) moves past the slit for detecting the standby position. This allows the machine to determine that the toner cartridge rack is currently at the standby position. Through pulse control of the rack motor, the machine then successfully brings the toner cartridge rack to its exact standby position.



(2) Toner cartridge rack developing position

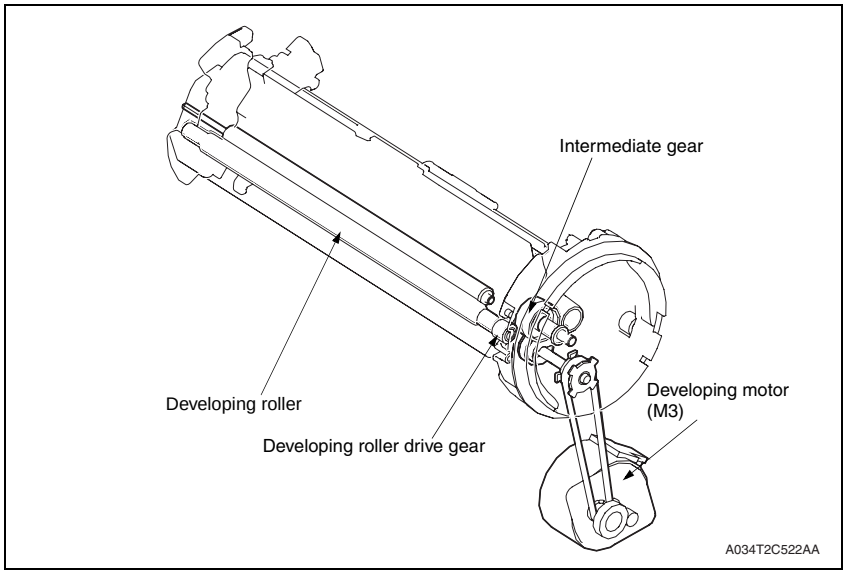
- To bring the toner cartridge rack to a stop at the corresponding developing position, the rack is rotated from the standby position 62° through pulse control of the rack motor.

(3) Cartridge replacement position

- When a request is made for replacing the toner cartridge of a specific color of toner (by means of an input from the control panel, upon a toner empty condition, or through an input made via the printer driver), the toner cartridge rack is rotated 70° from the developing position through pulse control of the rack motor.

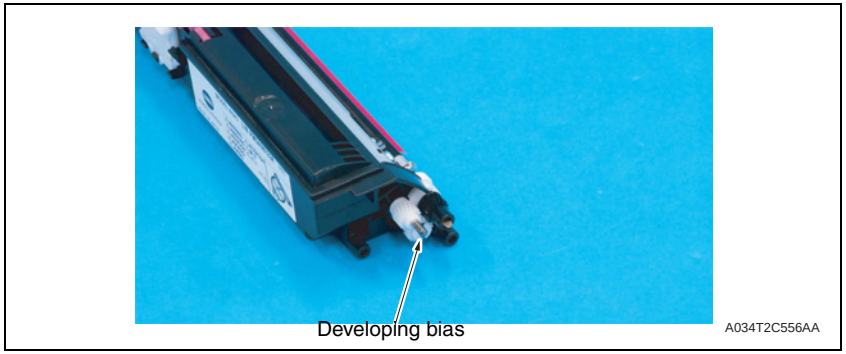
11.3.3 Developing Roller drive

- The developing roller is driven by the Developing motor (M3) and Intermediate gear.
- When the toner cartridge rack is stationery at the developing position, the developing roller drive gear comes into mesh with the Intermediate gear. The developing roller is then rotated through the drive provided by the Developing motor (M3) and Intermediate gear.



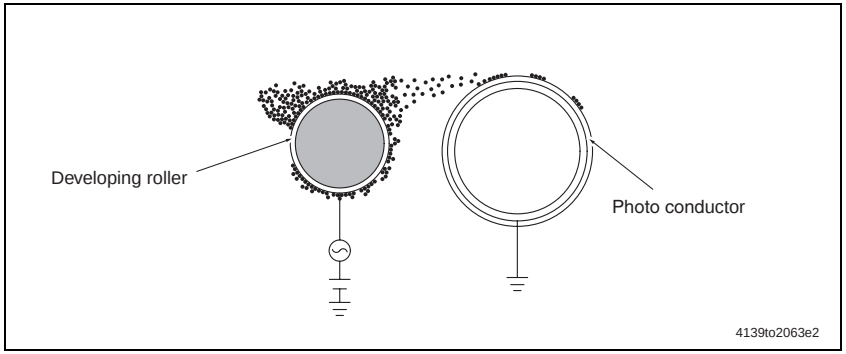
11.3.4 Developing bias

- The developing bias voltage (Vb) is applied to the developing roller so that an adequate amount of toner is attracted onto the surface of the photo conductor.
- The developing bias voltage (Vb) is supplied by the High voltage unit (HV).
- The developing bias voltage is applied to the developing roller via the supply roller.
- The developing bias voltage is also applied to the doctor blade.
- The developing bias voltage is turned ON at the same time that the developing motor is energized and turned OFF at the same time that the developing motor is deenergized.



11.3.5 Developing system

- The machine employs the single-component, non-contact developing system.
- In the non-contact, single-component developing system, the magnetic brush does not rub the surface of the photo conductor (or the image). This prevents a foggy image from occurring and the photo conductor from being worn.



11.3.6 Toner cartridge (TC) life control

A. Toner cartridge detection and new cartridge detection timing

- The machine attempts to perform a detection sequence when the front door is closed.

B. Toner cartridge detection

- The machine accesses the TC detection board (CSIC) to check for data stored in it. Using that data, the machine determines whether or not a toner cartridge is loaded.

C. New Toner cartridge detection

- After a toner cartridge has been detected, the machine determines whether it is new or not based on the data acquired.

D. Toner cartridge near empty and empty condition detection

- The amount of toner consumed is calculated from the number of dots produced for one printed page by the controller. A toner near empty condition and a toner empty condition are thereby detected.

<Toner near empty decision>

1. The machine determines that there is a toner near empty condition when the image counter and dot counter reach the life value.

<Toner empty decision>

2. The machine determines that there is a toner empty condition when a predetermined number of printed pages are produced after the toner near empty condition has been detected.

11.3.7 Image refresh mode

- The supply roller of the toner cartridge contacts the developing roller and is thereby deformed during a long period of shelf time.
- If a photo image or a solid image is printed after the supply roller is deformed, faint lines can at times occur at a pitch of 24 mm in the main scanning direction.
- The image refresh mode is made available to lessen this phenomenon.
- Use of this mode helps make less noticeable the faint lines occurring at a pitch of 24 mm in the main scanning direction.
- Executing the image refresh mode rotates the toner cartridge rack.

(1) Operation overview

- The operation of the image refresh mode varies depending on the condition of the toner cartridge.

Toner cartridge evaluation		Operation overview
If there is at least one toner cartridge, with which 30 or less printed pages have been produced since the detection of a new toner cartridge?	No	• The developing roller is rotated for the toner cartridges of toner of all colors. • The developing roller is to be rotated for the period of time corresponding to producing ten printed pages.
	Yes	• The developing roller is rotated for the specific toner cartridge in question. The developing roller is to be rotated for the period of time corresponding to producing 40 printed pages. • If there are toner cartridges of toner of two or more colors involved, the image refresh mode is carried out for the toner cartridge of toner of one color before that for the toner cartridge of toner of another color is started.

- The developing roller is rotated for about two minutes for one color of toner.

12. 1st transfer section

12.1 Composition

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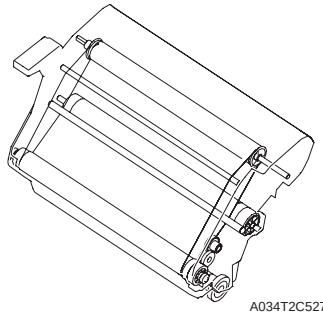

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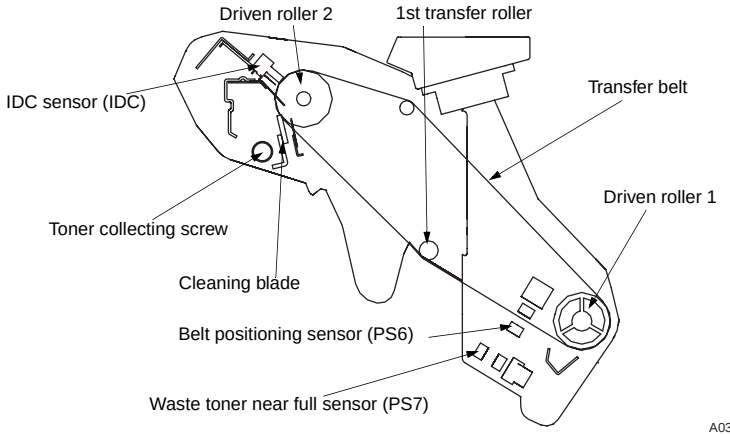

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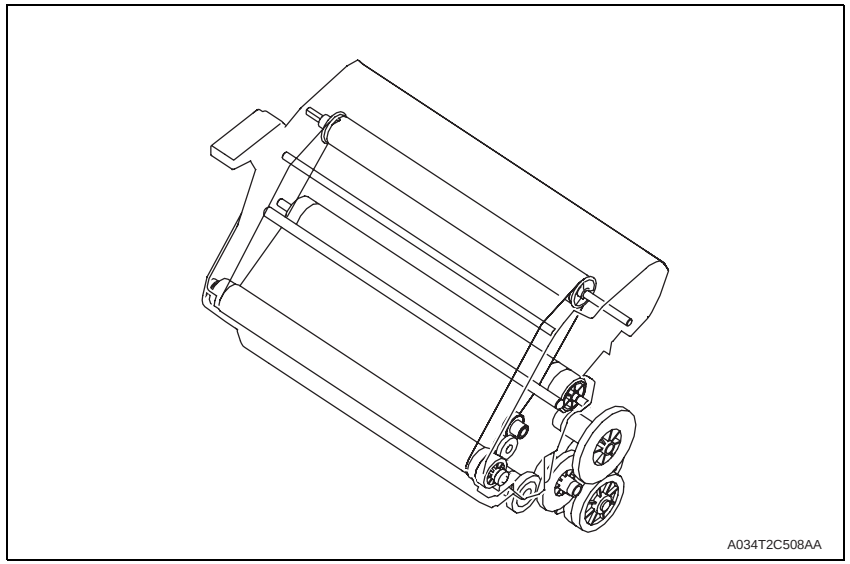
12.2 Drive



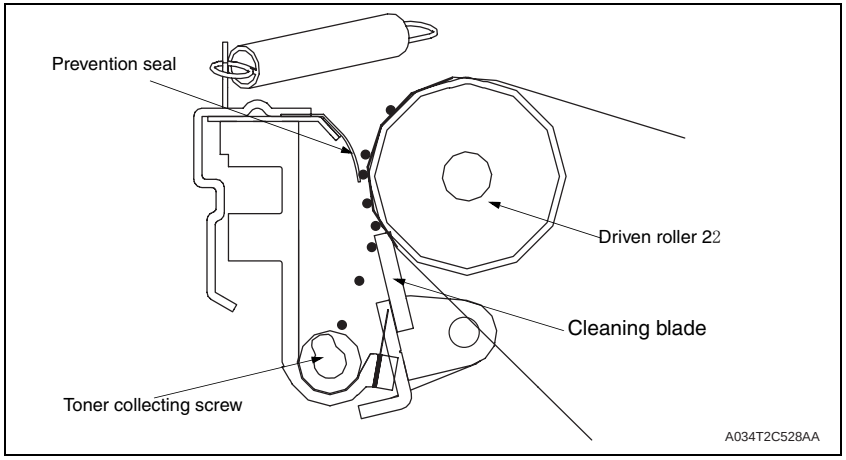
12.3 Operation

12.3.1 1st transfer output control

- The 1st image transfer roller is not equipped with a pressure/retraction mechanism and presses the transfer belt up against the photo conductor drum.
- The 1st transfer voltage is determined during the image stabilization control in consideration of the machine condition, environment, and print mode.

12.3.2 Transfer belt cleaning mechanism

- To scrape residual toner off the surface of the transfer belt, there is a cleaning blade provided.
- The cleaning blade is pressed up against the transfer belt, thereby scraping residual toner off the surface of the transfer belt.
- The toner collecting screw conveys toner scraped off by the cleaning blade into the imaging cartridge.
- The prevention seal is affixed to prevent waste toner from leaking through a gap above the cleaning blade.

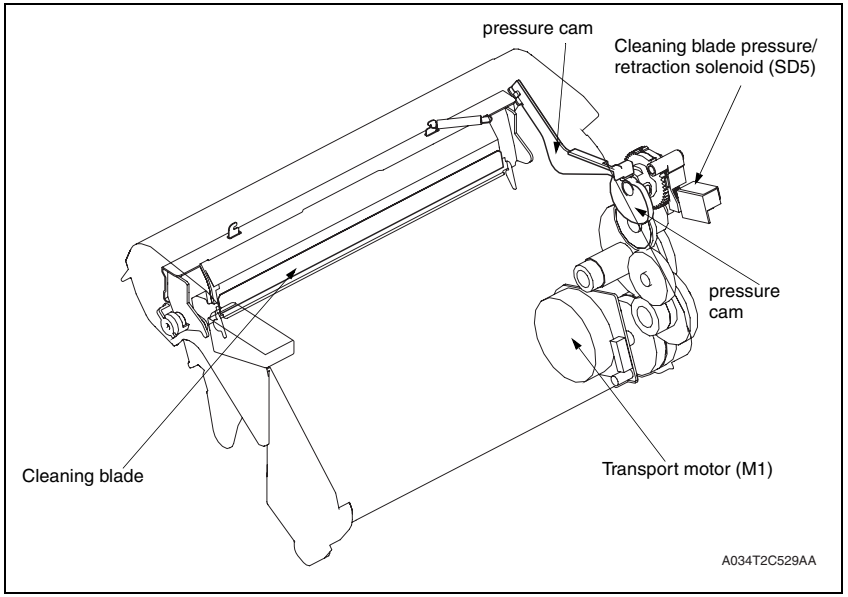


12.3.3 Cleaning blade pressure/retraction mechanism

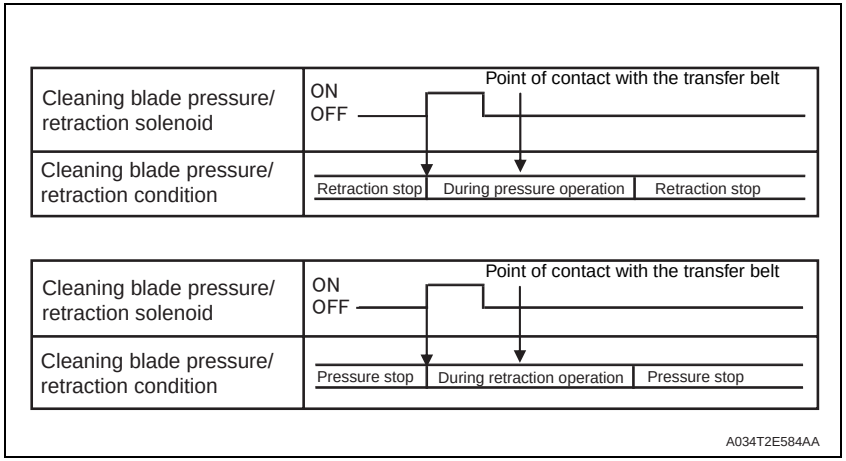
- In color printing, an image is formed on the transfer belt for each color of toner. The cleaning blade is therefore provided with a pressure/retraction mechanism.
- The machine is not, however, provided with a pressure/retraction sensor. Instead, the IDC sensor detects a sample image on the transfer belt to control the pressure/retraction operation.
- In monochrome printing, no retraction sequence is carried out.
- The cleaning blade is normally in pressed contact with the transfer belt.

A. Pressure/retraction operation

- The cleaning blade pressure/retraction operations are performed by the Transport motor (M1), Cleaning blade pressure/retraction solenoid (SD5), pressure cam, and the lever.
- When the Cleaning blade pressure/retraction solenoid (SD5) is energized, drive from the Transport motor (M1) is transmitted to the pressure cam.

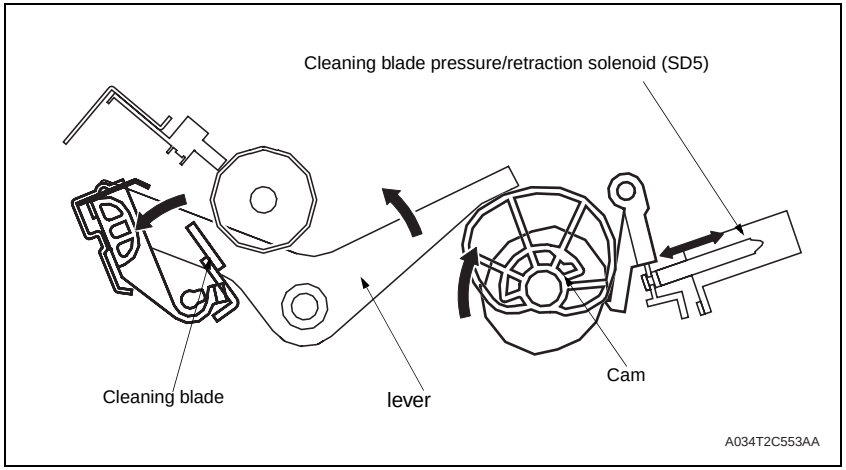


B. Operation timing



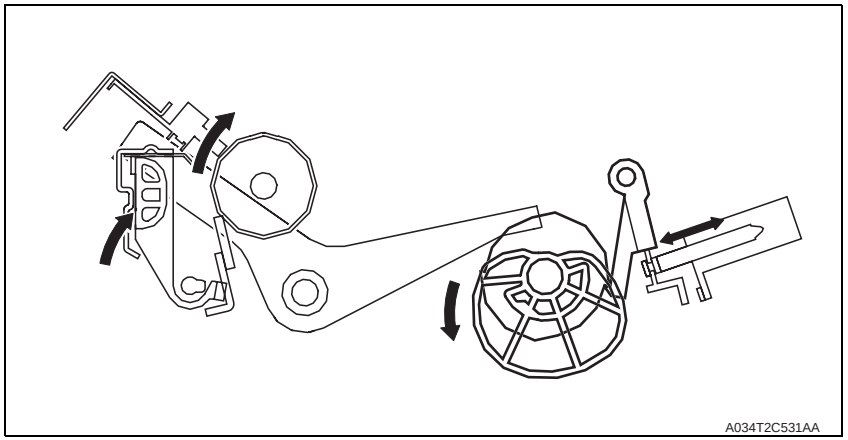
C. Retraction sequence

1. Drive from the Transport motor (M1) is transmitted to the drive gear.
2. Rotation of the drive gear is transmitted to the pressure cam.
3. When the Cleaning blade pressure/retraction solenoid (SD5) is energized, the half-moon-shaped pressure cam rotates a half turn to push the lever forward.
4. When the lever is pushed forward, the cleaning blade is retracted.
5. When the cleaning blade is retracted, it results in the cleaning blade being retracted from the transfer belt.



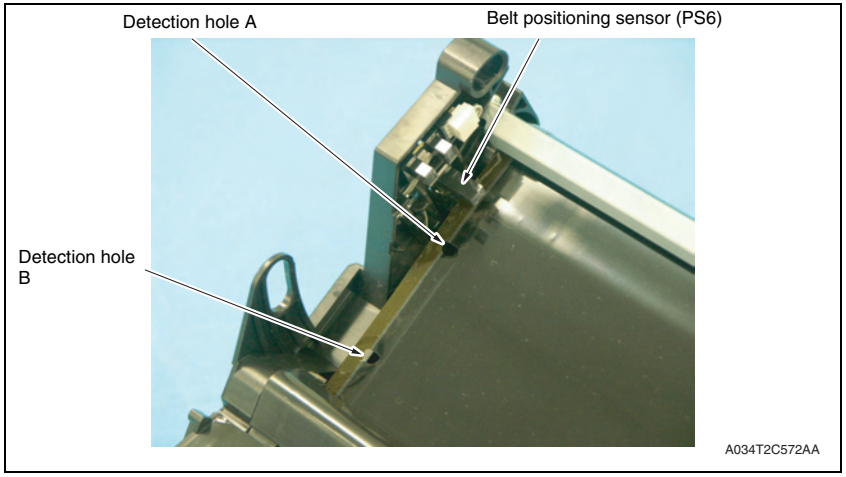
D. Pressure sequence

1. When the Cleaning blade pressure/retraction solenoid (SD5) is energized in the condition, in which the cleaning blade is retracted from the transfer belt, the pressure cam rotates a half turn. This pushes the lever backward.
2. When the lever is pushed backward, the cleaning blade is returned. Then, the cleaning blade is pressed against the transfer belt.



12.3.4 Belt Positioning Sensor

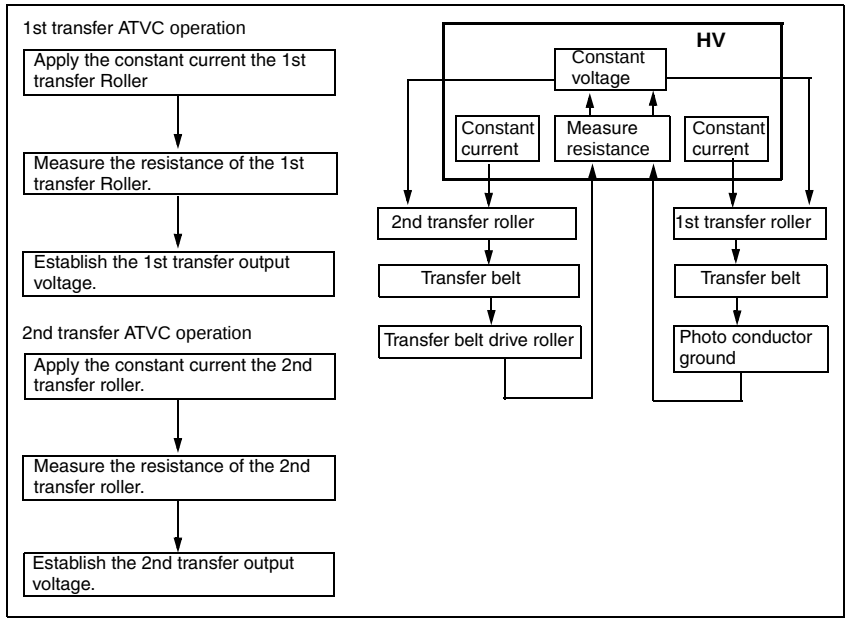
- When development takes place in this machine, the image of each color of toner is formed on the surface of the transfer belt. The leading edge of the image of each color of toner must therefore be aligned correctly with each other on the surface of the transfer belt.
- The position of the transfer belt is detected when the Belt positioning sensor (PS6) detects detection holes provided in the transfer belt.
- There are two detection holes provided in the transfer belt. The image write start position is varied according to the media size. For a media size of A4 or smaller, the image write start position is aligned with detection hole A. For a Media size greater than A4, detection hole B serves as the reference for the image write start position.



12.3.5 ATVC (Auto transfer voltage control)

- The ATVC, or Auto transfer voltage control, is for optimizing the transfer output. A constant current is made to flow through each of the transfer rollers. From the voltage thereby detected, the resistance of each of the 1st transfer roller, 2nd transfer roller, and transfer belt is measured. The ATVC then automatically adjusts the appropriate image transfer output voltage to be applied to the 1st transfer roller and the 2nd transfer roller during the print cycle.
- The 1st transfer ATVC operation is performed mainly through the image stabilization control.
- The 2nd transfer ATVC operation is performed when, for example, environmental conditions change during a print cycle.

A. Overview of ATVC operation



B. 1st transfer ATVC operation

1. The data on the 1st transfer constant current for each color of toner output from the High voltage unit (HV) is fed back to the High voltage unit via the 1st transfer roller, transfer belt, and the photo conductor ground. The resistance of the transfer belt is thereby measured.
2. Based on the measured resistance value, the optimum 1st transfer voltage is established.

C. 2nd transfer ATVC operation

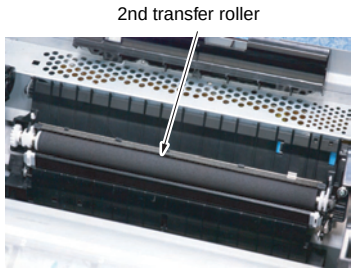
1. The data on the 2nd transfer constant current output from the High voltage unit (HV) is fed back to the High voltage unit via the 2nd transfer roller, transfer belt, and the transfer belt drive roller. The resistance of the transfer belt is thereby measured.
2. Based on the measured resistance value and inconsideration of the environmental conditions and print color, the optimum 2nd transfer voltage is established.

12.3.6 Image stabilization control item

- IDC sensor LED intensity control
- Transfer belt surface correction control
- Control of the maximum amount of toner sticking
- Laser intensity adjustment control
- γ correction control

13. 2ND TRANSFER SECTION/ MEDIA SEPARATION

13.1 Composition



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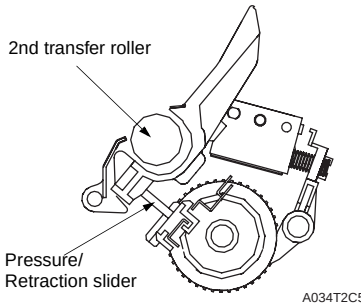

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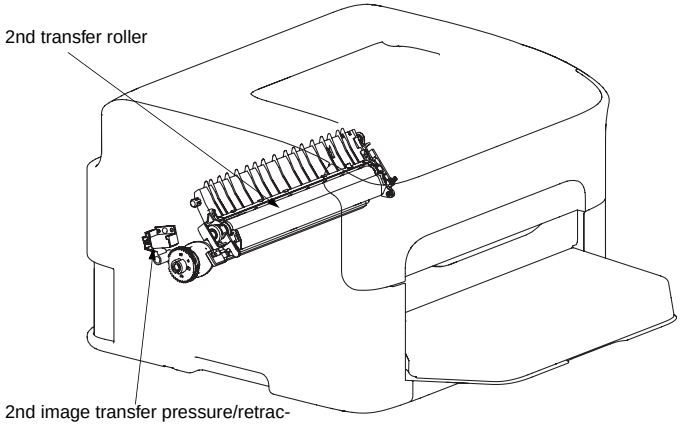

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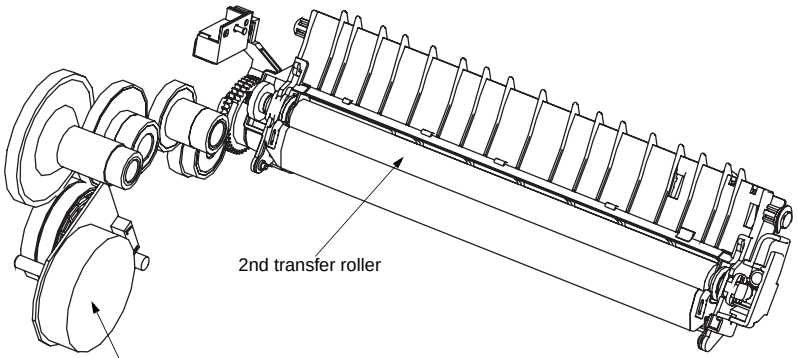
13.2 Drive



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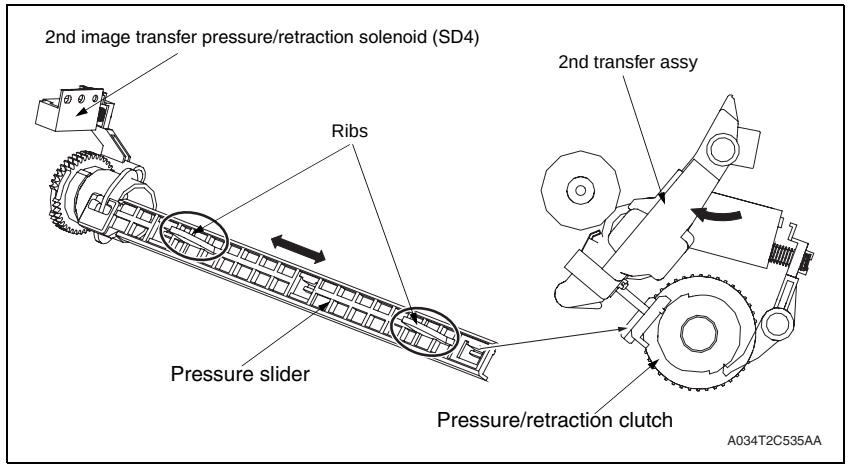
13.3 Operation

13.3.1 2nd transfer roller pressure/retraction control

- In color printing, the toner image of each color of toner is transferred to the transfer belt (thus a total of four times to cover the four colors of toner). Pressure/retraction control with respect to the transfer belt is therefore provided for the 2nd transfer roller.
- In the standby state, the 2nd transfer roller is in a position retracted from the transfer belt.
- The pressure/retraction operation is performed by the Transport motor (M1), 2nd image transfer pressure/retraction solenoid (SD4), and the pressure/retraction clutch.
- When the 2nd image transfer pressure/retraction solenoid (SD4) is energized, drive from the Transport motor (M1) is transmitted to the pressure/retraction clutch.

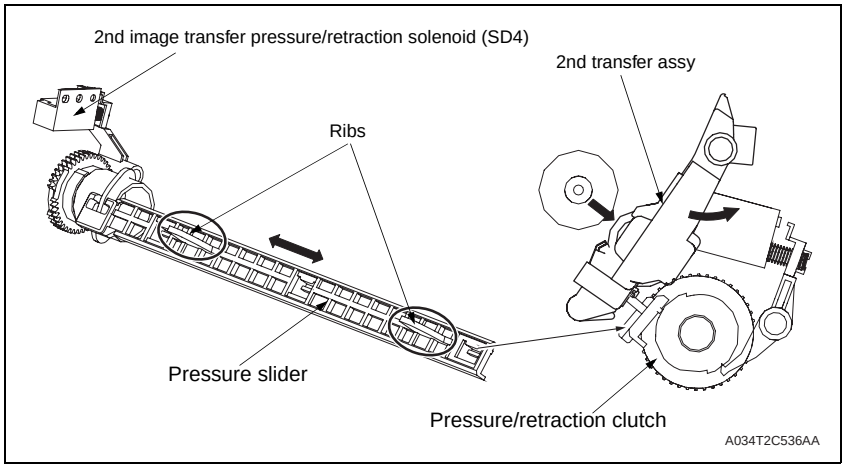
A. Pressure sequence

1. Drive from the Transport motor (M1) is transmitted to the drive gear.
2. Rotation of the drive gear is transmitted to the Pressure/retraction clutch.
3. When the 2nd image transfer pressure/retraction solenoid (SD4) is energized, the Pressure/retraction clutch rotates a half turn. This moves the Pressure slider.
4. When the Pressure slider is moved, ribs on the Pressure slider push up the 2nd transfer assy.
5. When the 2nd transfer assy is pushed up, the 2nd transfer roller is pressed up against the transfer belt.



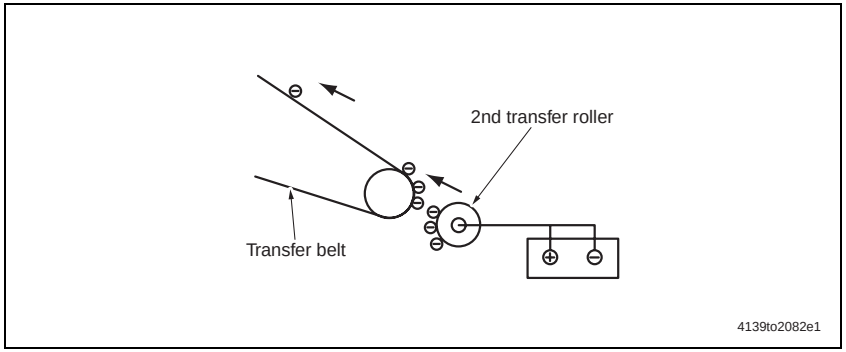
(1) Retraction sequence

1. When the 2nd image transfer pressure/retraction solenoid (SD4) is energized in the condition in which the 2nd transfer roller is pressed against the transfer belt, the Pressure/retraction clutch rotates a half turn. This moves the Pressure slider.
2. When the Pressure slider is moved, the 2nd transfer assy, which has been pushed up by the ribs on the Pressure slider, lowers.
3. When the 2nd transfer assy lowers, it allows the 2nd transfer roller to be retracted from the transfer belt.



13.3.2 2nd transfer roller cleaning

- DC positive and negative transfer bias voltages are alternately applied to the 2nd transfer roller. This allows toner residue on the surface of the 2nd transfer roller to be transferred back to the transfer belt, thus cleaning the 2nd transfer roller.
- The toner transferred back to the transfer belt is collected by the cleaning blade.

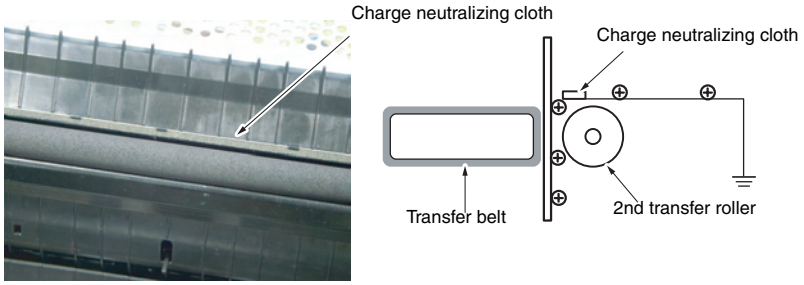


A. Operation timing

- The machine performs a cleaning sequence if it detects a sheet of paper having a length shorter than the length of the specified paper type.
- The cleaning sequence is also carried out during a resetting sequence following a paper misfeed and the opening of the door during a print cycle.

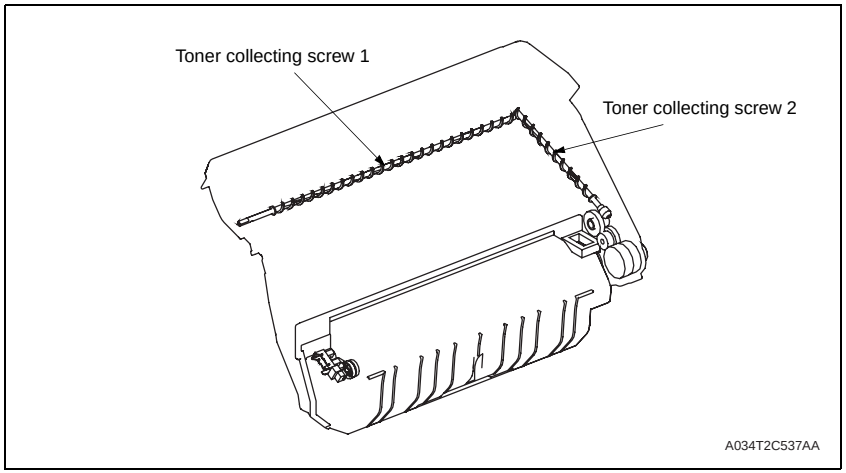
13.3.3 Neutralization and separation of media

- To neutralize the media that has undergone the 2nd transfer process, a Charge neutralizing cloth is provided for the guide plate after the 2nd transfer roller.

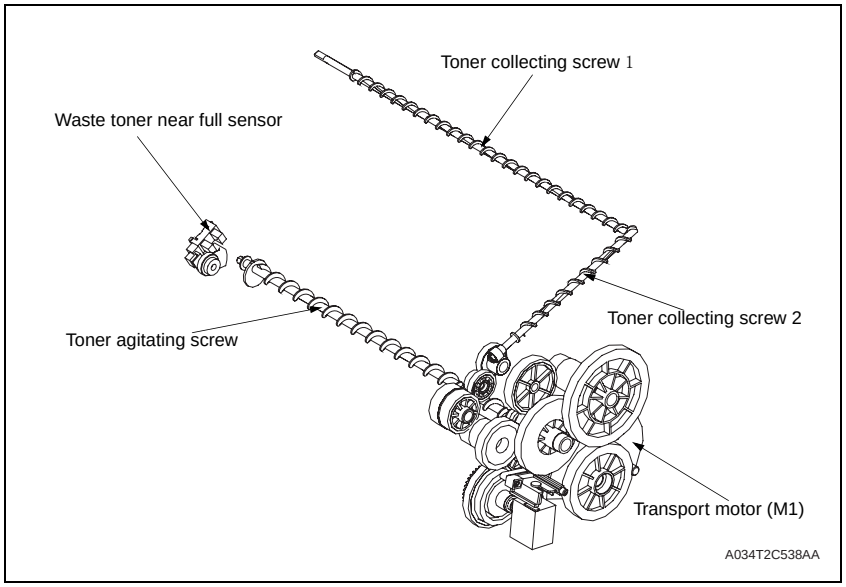


14. Toner collecting section

14.1 Composition



14.2 Drive



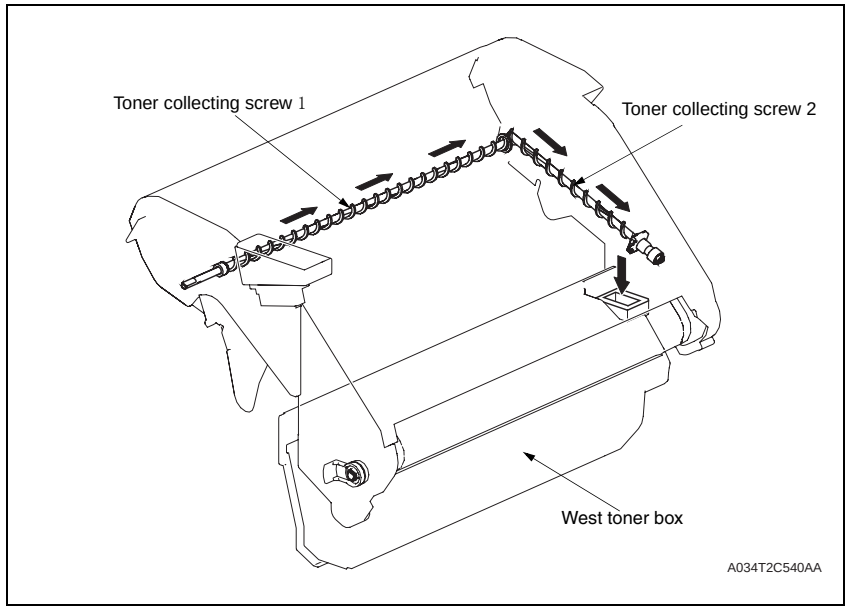
14.3 Operation

14.3.1 Toner collecting mechanism

- Waste toner scraped off by the cleaning blade of the transfer belt and that scraped off by the cleaning blade of the photo conductor are conveyed by each of the toner collecting screws into the drum cartridge.

A. Transfer belt

- Waste toner scraped off by the cleaning blade is collected by the toner collecting screws 1/2 for transfer belt.
- The waste toner collected by the toner collecting screw is conveyed to the waste toner box by way of the toner collecting screw 2.

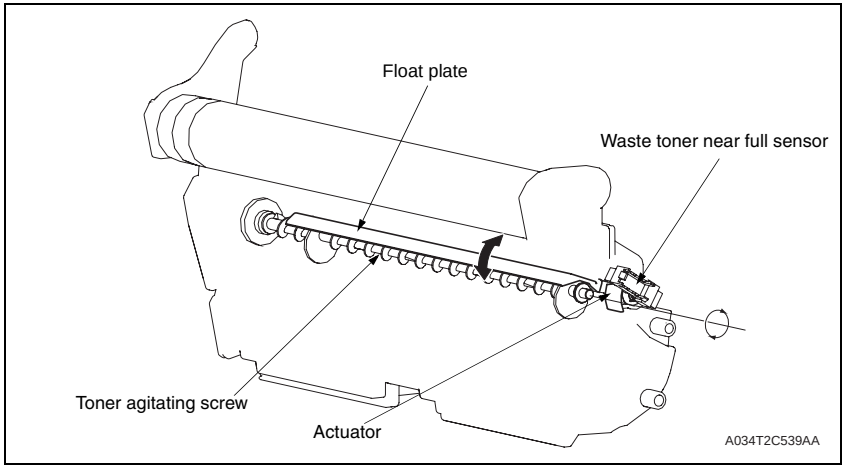


14.3.2 Waste toner near full detection system

- Waste toner near full and waste toner full conditions are detected through the control performed using the Waste toner near full sensor, toner agitating screw, and the internal counter.

A. Waste toner near full condition detection control

- Rotation of the toner agitating screw causes the actuator to move up and down via the float plate, so that the Waste toner near full sensor detects “H” and “L” signals alternately.
- When the amount of waste toner in the waste toner box exceeds a predetermined level, the toner agitating screw no longer rotates. This results in the Waste toner near full sensor detecting either the “H” or “L” signal only.
- The machine determines that the waste toner box is in the waste toner near full condition.

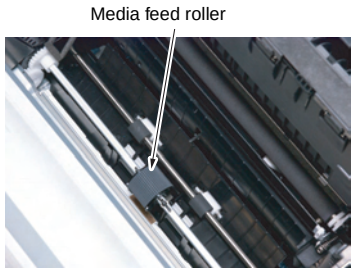


B. Waste toner full detection control

- The machine determines that there is a waste toner full condition when 200 images are reached after a waste toner near full condition has been detected.
- The counter is automatically cleared to reset the waste toner full condition when the imaging cartridge is replaced with a new one.

15. Media feed section

15.1 Composition



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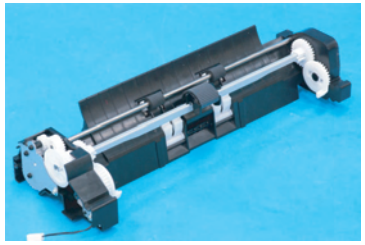

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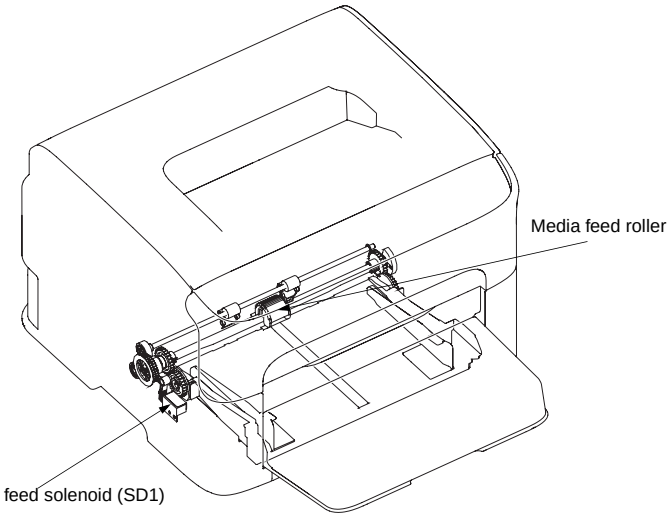

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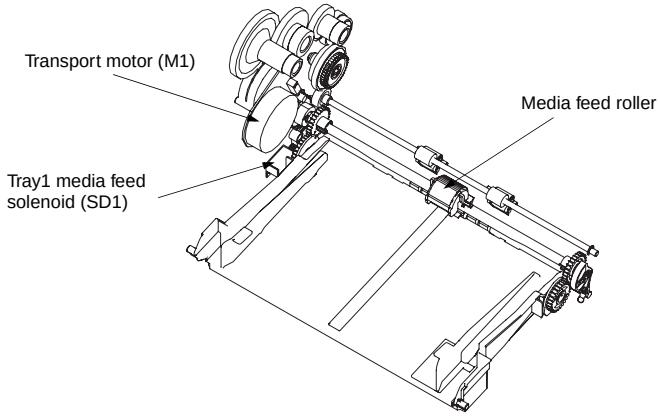
15.2 Drive



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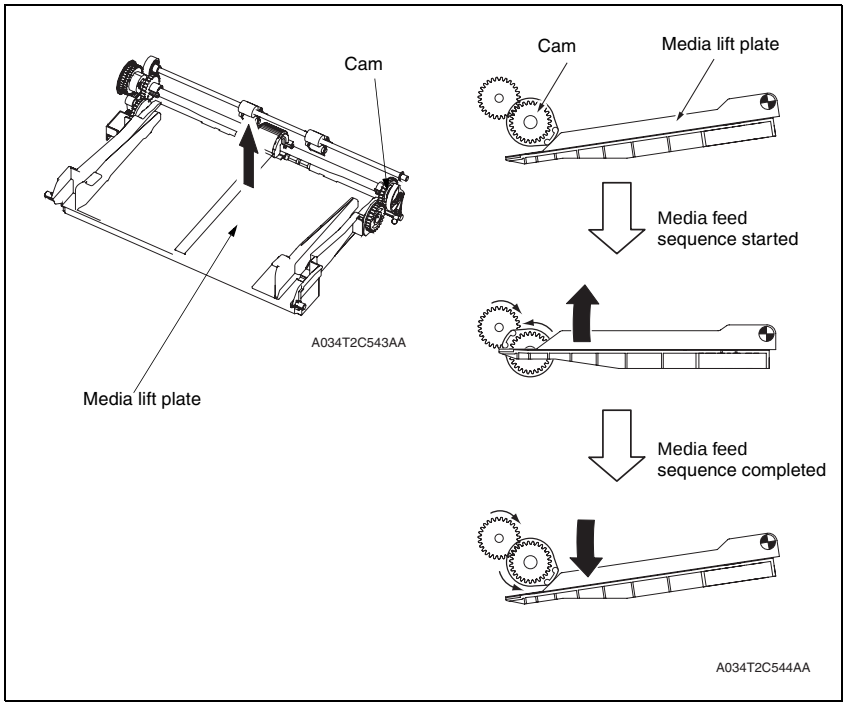
15.3 Operation

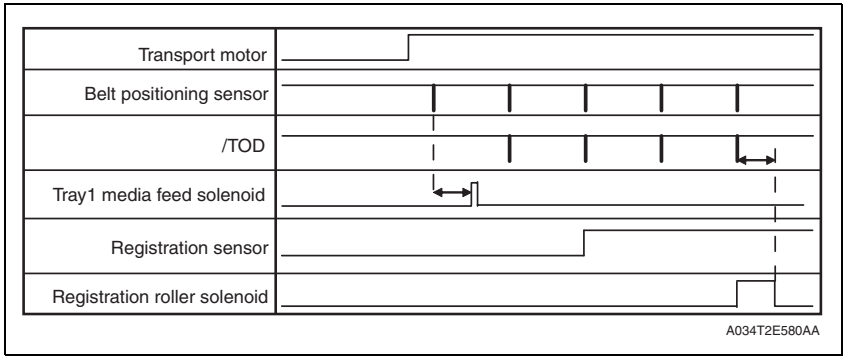
15.3.1 Up/down control

A. Up/down operation

- When the Tray1 Paper pick-up solenoid (SD1) is energized, drive from the Transport motor (M1) is transmitted to the Pick-up roller via the Paper pick-up clutch. The Pick-up roller is thereby rotated.
- At the same time, the Lift cam is rotated, which raises the media lift plate. This allows the media to be taken up and fed in by the Pick-up roller.



B. Operation timing



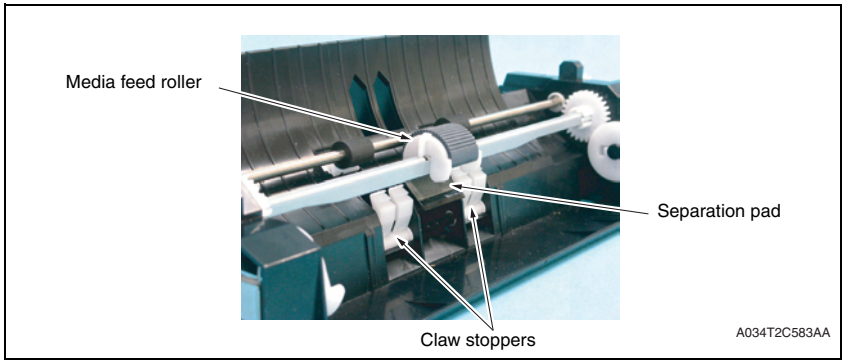
15.3.2 Paper feed control

A. Pick-up/separation control

- When the Tray 1 media feed solenoid (SD1) is energized, drive from the Transport motor (M1) is transmitted to the pick-up roller via the paper pick-up clutch and the pick-up roller is rotated.

15.3.3 Double feed prevention mechanism

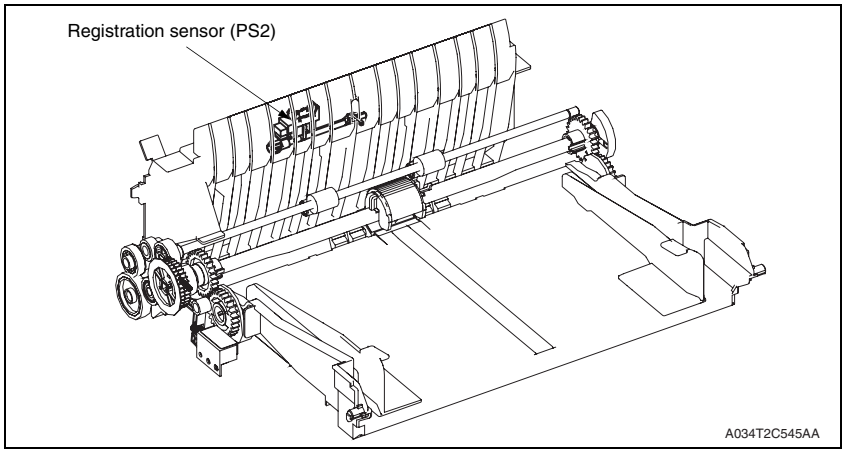
- The fixed separation pad system plus the claw stoppers are used for media separation. This ensures that only the first sheet of media is taken up and fed in.



15.3.4 Remaining media detection control

A. Media empty detection

- The machine is not provided with any paper empty sensor.
- A media empty/misfeed condition is detected if the Registration sensor is not activated after the lapse of a predetermined period of time after a media feed sequence is started.

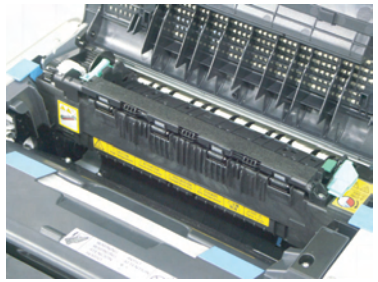


15.3.5 Media feed retry function

- To reduce the number of media misfeeds detected due to failure to take up and feed in media properly during color printing, another media feed sequence is carried out if the Registration sensor (PS1) is not unblocked and blocked within a predetermined period of time.
- The media feed retry sequence takes place only once.
- If the Registration sensor is not blocked and unblocked even after the second media feed sequence, the machine detects a media empty/misfeed condition.

16. Fusing section

16.1 Composition



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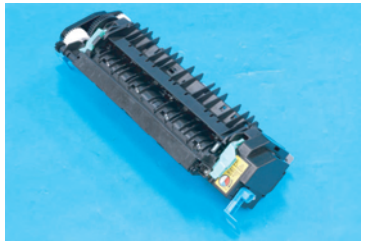

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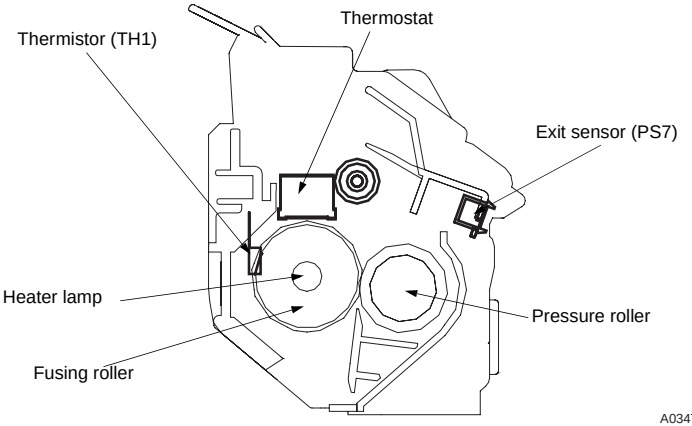

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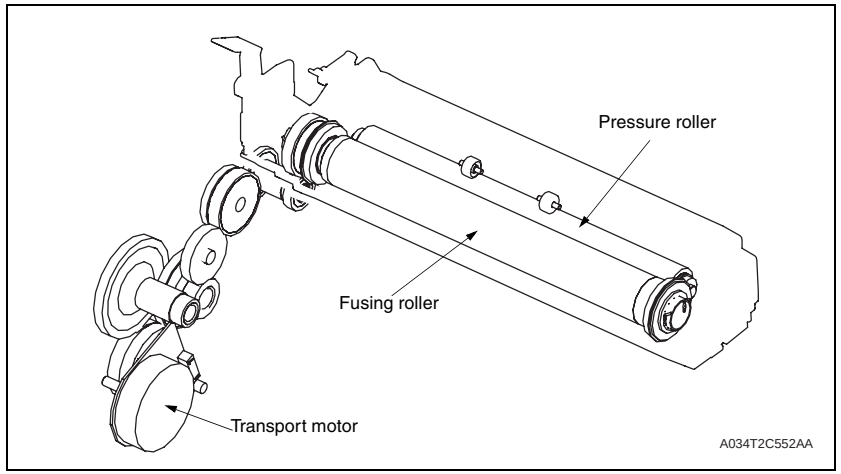
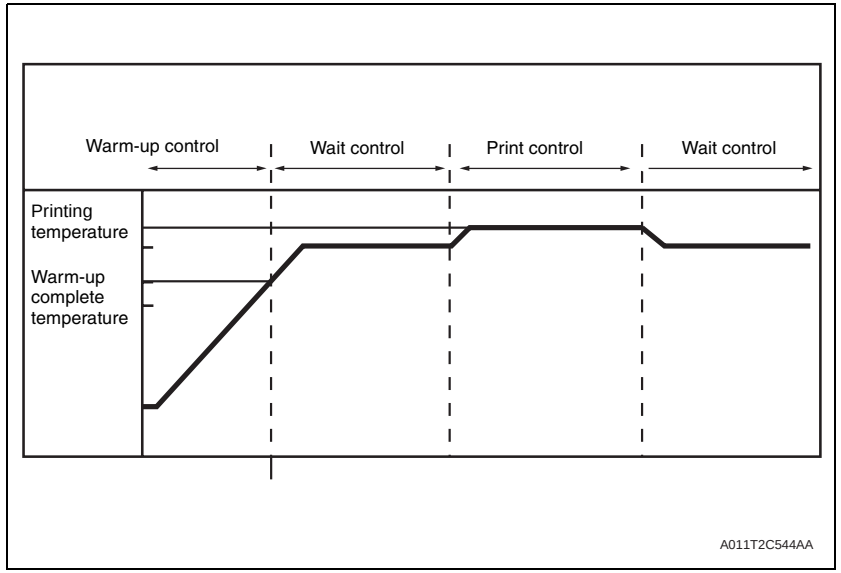
16.2 Drive



16.3 Operation

16.3.1 Fusing temperature control

- To fuse the toner image on the media (image yet to be permanently fixed) properly into the media, the heater lamps are turned ON and OFF as necessary to bring the fusing temperature to an appropriate level.
- Thermistors are used to detect the surface temperature of the Fusing roller. The heater lamps are then turned ON and OFF as necessary to achieve the set temperature.



A. Warm-up control

Control is provided until the Fusing roller reaches the predetermined level.

B. Control start timing

- The power switch is turned ON.
- A malfunction or media misfeed is reset.
- The main body leaves the power save mode.
- A door is closed.

C. Control termination timing

- The Fusing roller reaches a predetermined temperature.
- A malfunction or media misfeed is reset.
- A door is opened.

D. Control start decision

- Either of the following two control start decisions is made according to the temperature detected by the temperature/humidity sensor. The fusing temperature during the print cycle varies depending on the type of the start control carried out, either low temperature start control or ordinary start control.

Control start decision	Environment upon start
Low temperature start control	The temperature/humidity sensor detects a temperature lower than the predetermined value.
Ordinary start control	The temperature/humidity sensor detects a temperature equivalent to, or higher than, the predetermined value.

16.3.2 Wait control

- Control is provided to ensure that the temperatures at different parts of the fusing unit reach a constant level during the wait state.

A. Control start timing

- At the end of the warm-up control
- At the end of the post-print cycle control (print start control)

B. Control termination timing

- The front cover is opened and closed.
- A malfunction or media misfeed occurs.

16.3.3 Print control

- To ensure a good fixing level and light transmission performance of the OHP transparencies, the fusing speed and fusing roller temperature are controlled.

A. Control start timing

- A print request is received.

B. Control termination timing

- A malfunction or media misfeed occurs.

C. Print control temperatures

- The fusing roller temperature is set according to the type of media, main body interior temperature (as measured by the temperature/humidity sensor), and warm-up start decision.
- For types of media other than plain paper, the fusing speed is controlled at the 1/2 speed.

D. Print control temperature adjustments

- The temperature during print control is adjusted using the menu available from the control panel. The temperature can, however, be decreased only.
- Adjustment steps are 0°C, -5°C, and -10°C.

16.3.4 Protection against abnormally high temperature

- The machine provides protection at three different stages to prevent abnormally high temperature of the Fusing unit.

A. Soft protection

- If the Thermistor (TH1) detects a temperature exceeding a predetermined value, the malfunction code representing abnormally high temperature is displayed. At this time, the power supply line is shut down.
- If the temperature of the fusing roller does not reach a predetermined value within a predetermined period of time after the start of the warm-up cycle, the power supply line is shut down.

B. Hard protection

- If the CPU overruns and the output level of the CPU of the Mechanical control board becomes a HIGH or LOW level, and not a pulse output, and a predetermined temperature or higher is detected, a circuit within the Mechanical control board turns OFF the relay to shut down each power supply line.

C. Thermostat protection

- If detection of abnormally high temperatures by soft protect or hard protect cannot be made due to a faulty Thermistor (TH), the thermostat operates at a predetermined temperature to shut down the power supply line.
- If detection of abnormally high temperatures by soft protect or hard protect cannot be made due to a faulty Thermistor (TH), the thermostat operates at a predetermined temperature to shut down the power supply line.

16.3.5 PPM control

- PPM control is provided to prevent the temperature on edges of the heating roller from increasing during a multi-print cycle using plain media of a small size.
- The distance between sheets of media is widened according to the number of printed pages set to be produced and the media length. This evens out the temperature of the heating roller and thus stabilizes fusing performance of the printed toner image.
- The PPM control is provided at 20 ppm for a multi-print cycle of producing 20 pages. The number of printed pages per minute is established as detailed below for each media size for the 21st and subsequent pages.
- No PPM control is provided for a multi-print cycle of color printing, as it is 1/4 of the monochrome printing.

Media conditions	PPM
A5, invoice	14ppm
Media having a narrower width and longer length than above	8ppm

17. Media exit section

17.1 Composition

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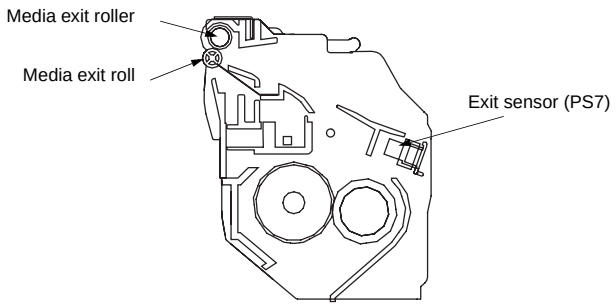

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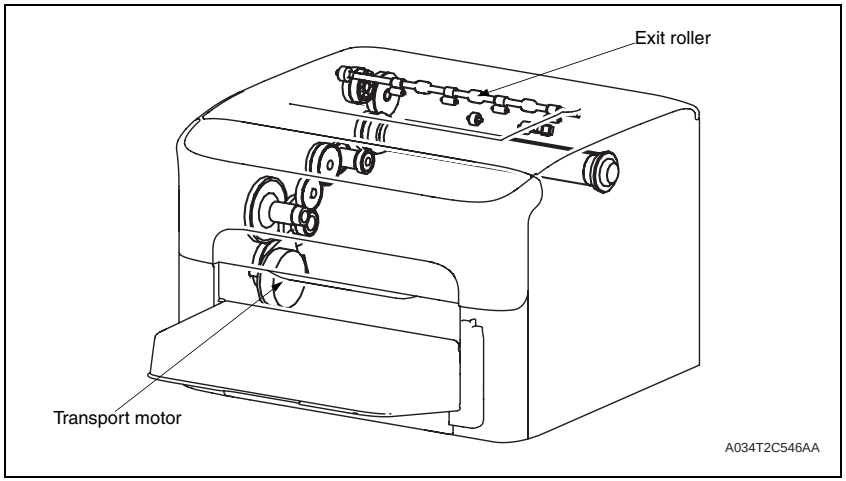
17.2 Drive



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17.3 Operation

17.3.1 Conveyance control

A. Reverse/paper exit switch control

- The exit roller is driven by the transport motor.
- During 1-sided printing, the exit roller rotates in the forward direction and feeds the media transported from the fusing section out onto the media exit tray.
- If the machine is mounted with an optional Duplex unit, the exit roller is driven by the transport motor of the Duplex unit.
- The exit roller is rotated in the forward or backward direction by the transport motor of the Duplex unit to convey the media into the Duplex unit.

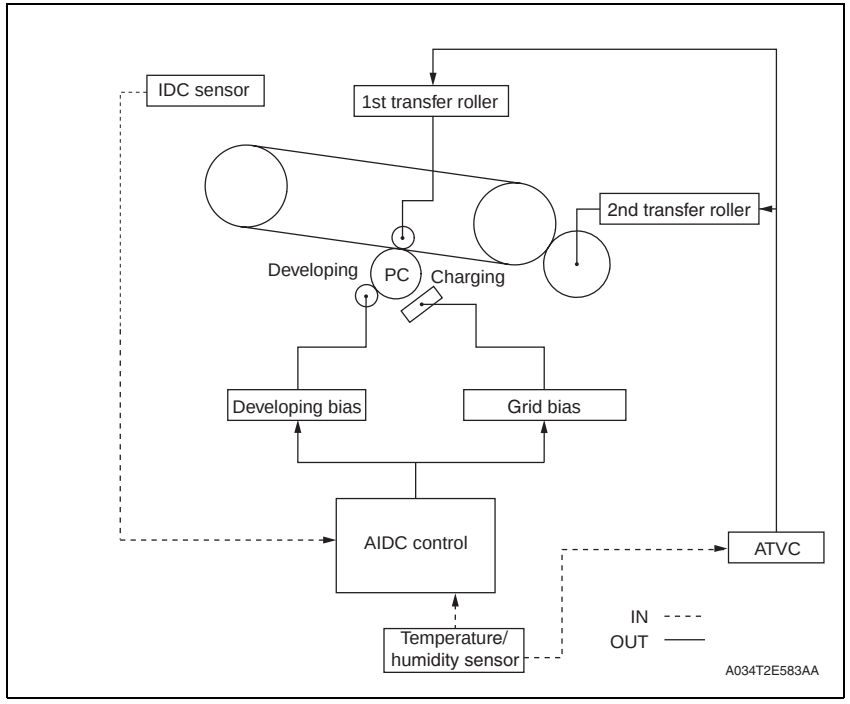
18. Image stabilization control

18.1 Overview

- To ensure that a stabilized output image is produced at all times, the following image stabilization controls are provided.

Purpose	Control	Detection
To ensure stabilized transfer output	ATVC * Described in the section dealing with the transfer Section	Temperature/ humidity sensor (TEM/ HUMS)
To ensure stabilized image density; to ensure good tone reproduction	IDC control • Leak detection control • IDC intensity control • Transfer belt surface correction control • Control of the maximum amount of toner sticking • Laser intensity adjustment control • γ correction control	IDC sensor (IDC) Temperature/ humidity sensor (TEM/ HUMS)

* An explanation is given of the control for each section.



18.2 Operation

18.2.1 Leak detection control

- For the clearance between the photo conductor and developing roller, an optimum developing bias voltage is established that does not result in a leak image or uneven density.

18.2.2 IDC sensor LED intensity control

- The following adjustment is made to correct any changes in characteristics occurring due to change with time and contamination of the IDC sensor (IDC): the intensity of the LED is adjusted for the surface of the transfer belt on which no toner sticks, so that the output value of the IDC sensor (IDC) becomes constant.

18.2.3 Transfer belt surface correction control

- The reflectance of the Image transfer belt is measured using the ADIC sensor (IDC). One measurement is taken for one complete turn of the Image transfer belt.
- The measured value is corrected during the laser intensity adjustment control and γ correction control.

18.2.4 Control of the maximum amount of toner sticking

- The developing bias setting value is adjusted to keep constant the amount of toner sticking to the surface of the photo conductor with reference to the 100% solid image.

18.2.5 Laser intensity adjustment control

- Characteristics of the photo conductor, developing, and charging change as affected by changes with time and in environment. The intensity of the laser light is adjusted so that fine lines and gradations of a predetermined level are reproduced at all times.

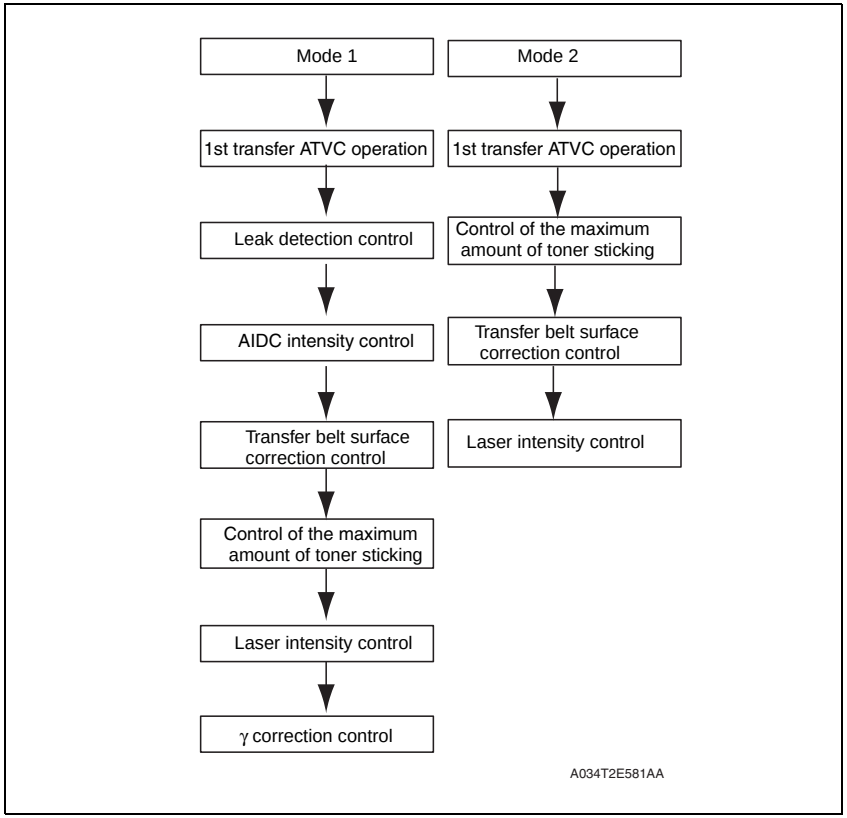
18.2.6 γ correction control

- A gradation pattern is produced on the surface of the Image transfer belt. The IDC sensor (IDC) measures the density of the pattern and sends the measured result to the controller for gradation adjustment.

18.3 Operation timing

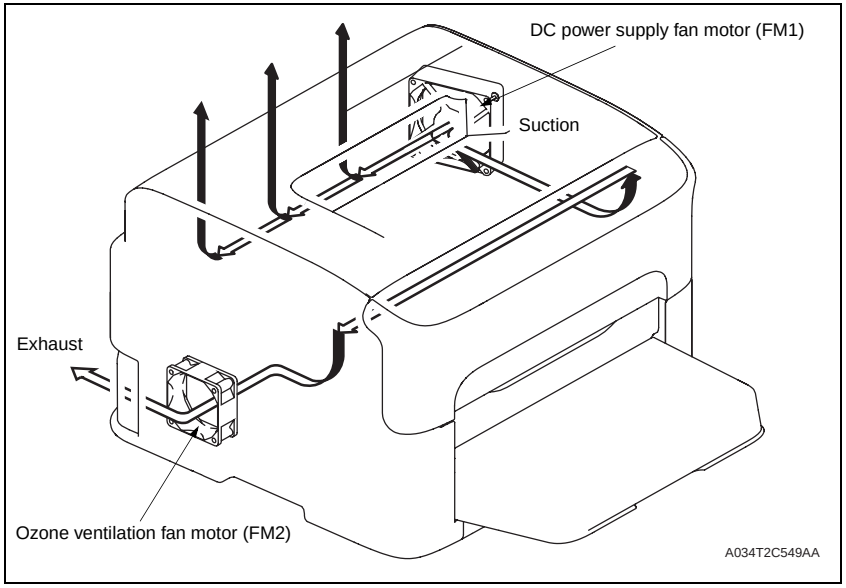
Mode	Operation timing
Mode 1	• The environment in which the power switch is turned ON is different from the environment the machine was in when the power switch was turned OFF last. • The environment in which the Energy saver mode is canceled is different from the environment the machine was in when it entered the Energy saver mode last. • The power switch is turned OFF and ON or the Energy saver mode is canceled after a predetermined number of printed pages have been produced. • A new drum cartridge or toner cartridge is detected.
Mode 2	• The power switch is turned OFF and ON or the Energy saver mode is canceled after a predetermined number of printed pages have been produced.

18.4 Operation flow



19. Fan control

19.1 Composition



19.2 Operation

19.2.1 Function

Motor name	Function (purpose)
DC power supply fan motor (FM1)	To discharge heat stagnant inside the machine to the outside to prevent the temperature of the DC power supply from rising.
Ozone ventilation fan motor (FM2)	To recover toner powder in the imaging cartridge. To draw ozone produced in the imaging cartridge to the outside.

19.2.2 Control conditions

Motor name	Condition	Control conditions
DC power supply fan motor (FM1)	ON (high speed)	• For a predetermined period of time after the power is turned ON • For a predetermined period of time after the end of the Energy save mode • At the start of a print cycle (full-speed rotation after a predetermined period of time of half-speed rotation) • At the start of pre-drive
	ON (low speed)	• During standby • At the end of a print cycle (half-speed rotation after a predetermined period of time of full-speed rotation)
	OFF	• During the Energy save mode • When a malfunction occurs • During firmware upgrading
Ozone ventilation fan motor (FM2)	ON	• During transport motor drive
	OFF	• Other than above

C110/C130n Main body

FIELD SERVICE

CONTENTS

C110/C130n Main body

OUTLINE

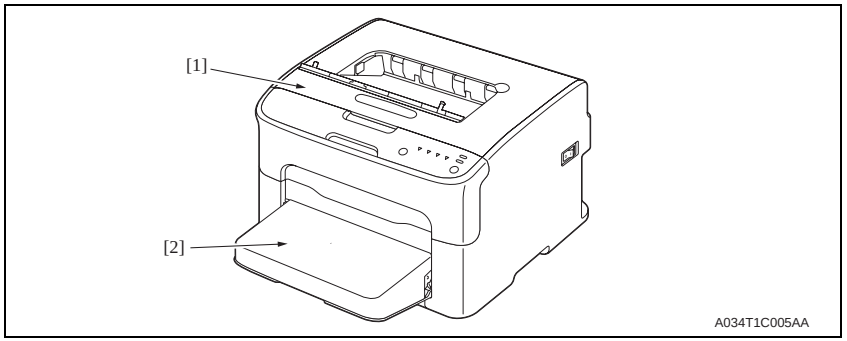
MAINTENANCE

ADJUSTMENT/SETTING

OUTLINE

1. System configuration

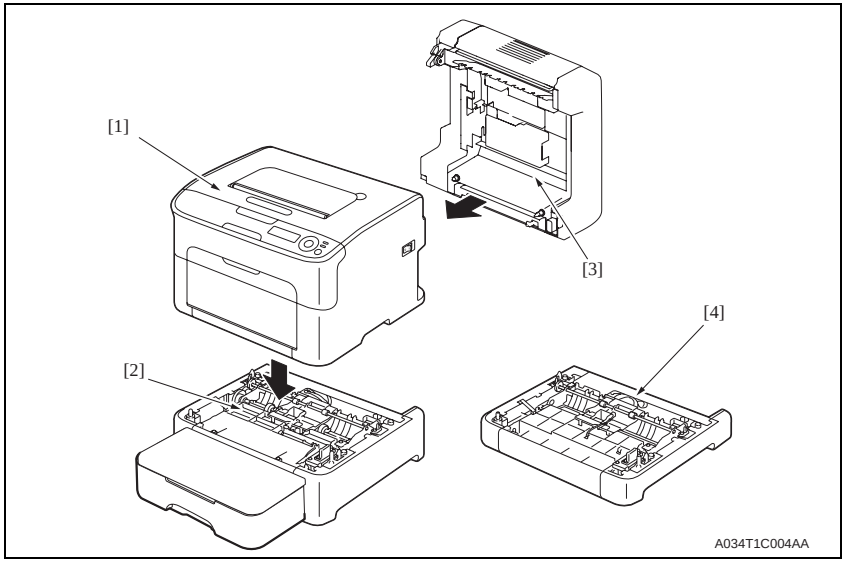
A. C110



[1] Main body

[2] Dust cover (option)

B. C130n



[1] Main body

[2] Lower Feeder Unit (option)

[3] Duplex Option (option)

[4] Duplex Option Attachment (Option)

2. Product specifications

A. Type

Type	Desktop full-color laser beam printer	
Printing system	Semiconductor laser and electrostatic image transfer to plain paper	
Exposure system	2 laser diodes and polygon mirror	
PC drum type	OPC (organic photo conductor)	
Photoconductor cleaning	Blade cleaning system	
ResolutionC	C110	1200 x 600 dpi, 600 x 600 dpi
	C130n	600 dpi x 600 dpi x 4 bit or 600 dpi x 600 dpi x 1 bit
Media feeding system	C110	One-way system (Tray 1: 200 sheets)
	C130n	One-way system (Tray 1: 200 sheets) * Expandable to a two-way system by adding an optional Lower Feeder Unit.
Developing system	Single-element developing system	
Charging system	DC comb electrode scorotron system	
Image transfer system	Intermediate transfer belt system	
Media separating system	Curvature separation + Charge-neutralizing system	
Fusing system	Roller fusing	
Media exit system	Face down (Output tray capacity: 100 sheets)	

B. Functions

Warm-up time	C110	Average 30 seconds	
	C130n	Average 45 seconds	
Process speed	Plain paper	126.78 mm/second	
	Thick stock	63.39 mm/second	
First-Page-Out Time (A4)	Plain paper	Full color	1-sided: 22 seconds 2-sided: 35 seconds
		Monochrome	1-sided: 13 seconds 2-sided: 26 seconds
	Thick stock	Full color	1-sided: 30 seconds
		Monochrome	1-sided: 21 seconds
Print speed (A4)	Plain paper	Full color	1-sided: 5 pages/minute 2-sided: 5 pages/minute
		Monochrome	1-sided: 20 pages/minute 2-sided: 13.2 pages/minute
	Thick stock	Full color	1-sided: 2.6 pages/minute
		Monochrome	1-sided: 4.4 pages/minute
Custom media sizes	Media width: 92 to 216 mm (3.6" to 8.5")		
	Media length: 195 to 356 mm (Plain paper) 184 to 297 mm (Thick stock)		
Media types	• Plain paper (60 to 90 g/m² / 16 to 24 lb) • Thick stock 1 (91 to 163 g/m² / 24.4 to 43.4 lb) • Thick stock 2 (164 to 209 g/m² / 43.7 to 55.6 lb) • Postcards • Envelopes • Letterhead • Label sheet		
Tray capacities	Plain paper and letterhead		:200 sheets
	Thick stock, postcards, labels stock, and glossy stock		:50 sheets
	Envelopes		:10 sheets

Lower Feeder Unit: Only plain paper and recycled paper weighing 60 to 90 g/m² (16 to 24 lb) can be loaded.

Duplex Option: Only plain paper and recycled paper weighing 60 to 90 g/m² (16 to 24 lb) can be fed through the unit.

For details, see the service manual for each option.

C. Maintenance

Machine durability	50,000 prints or 5 years, whichever comes first

D. Machine specifications

Power requirements	voltage:	AC 100 V ± 10 % AC 110 to 127 V ± 10 % AC 220 to 240 V ± 10%	
	Frequency:	60 Hz ± 3 Hz (for North america) 50/60 Hz ± 3 Hz (for Europe)	
Max power consumption	C110	970 W or less (100 V, 120 V) 1020 W or less (220 V to 240 V)	
	C130n	1000 W or less (100 V, 120 V) 1060 W or less (220 V to 240 V)	
Dimensions	396 mm (W) x 380 mm (D) x 275 mm (H)		
Weight	Approximately 11.5 kg (without consumables) Approximately 14.4 kg (with consumables))		
Operating noise	During standby	C110	29 dB (A)
		C130n	
	During printing	C110	49 dB (A): Color 51 dB (A): monochrome
		C130n	49 dB (A): Color 50 dB (A): monochrome

E. Operating environment

Temperature	10 to 35 °C / 50 to 95 °F (with a fluctuation of 10 °C / 18 °F or less per hour)
Humidity	15% to 85% (with a fluctuation of 20% or less per hour)

F. Controller

(1) C110

Type	Built-in type controller
Standard memory	16 MB
Interface	USB 2.0 compliant
Support	• Microsoft Windows Vista Home Basic/Home Premium/Ultimate/Business/ Enterprise • Windows Vista Home Basic/Home Premium/ Ultimate/Business/Enterprise x64 Edition, Windows XP Home Edition/Professional (Service Pack 2 or later) • Windows XP Professional x64 Edition • Windows Server 2003, Windows Server 2003 x64 Edition • Windows 2000 (Service Pack 4 or later)

(2) C130n

Type	Built-in type controller
Standard memory	256MB
Interfaces	USB 2.0 and USB 1.1 compliant, 10Base-T/100Base-TX (IEEE 802.3) Ethernet
Support	• Microsoft Windows Windows Server 2008 Standard/Enterprise/Datacenter, Vista Home Basic/Home Premium/Ultimate/Business/Enterprise, WindowsVista Home Basic /Home Premium /Ultimate/Business /Enterprise x64 Edition, Windows XP Home Edition/Professional (Service Pack 1 or later; Service Pack 2 or later is recommended), Windows XP Professional x64 Edition, Windows Server 2003, Windows Server 2003 x64 Edition, Windows 2000 (Service Pack 4 or later) • Mac OS X (10.2 or later; We recommend installing the newest patch), Mac OS X Server (10.2 or later) • Red Hat Linux 9.0, SuSE Linux 8.2

NOTE

- **These specifications are subject to change without notice.**

MAINTENANCE

3. Periodical check

3.1 Maintenance items

3.1.1 Parts to be replaced by users (CRU)

Class	Part to be replaced	Number of prints	Clean	Replace
Processing section	Standard in-box toner cartridge (K) *1	500 (Continuous printing)		●
	Standard in-box toner cartridge (C, M, Y)	500 (Continuous printing)		●
	Standard in-box toner cartridge (K) *2	1,000 (Continuous printing)		●
	Standard-capacity toner cartridge (C, M, Y)	1,500 (Continuous printing)		●
	High-capacity toner cartridge (C, M, Y, K)	2,500 (Continuous printing)		●
	Imaging cartridge	Monochrome 45,000 (Continuous printing) *3		●
		Monochrome 10,000 (1P/J) *3		
		Full Color 11,250 (Continuous printing) *3		
		Full Color 7,500 (1P/J) *3		
	PH window	When a malfunction occurs	●	
Fusing section	Fuser unit	50,000		●
Tray 1 media feed section	Media feed roller	When malfunction occurs	●	
Tray 2 media feed section	Media feed roller	When malfunction occurs	●	
Duplex option transport section	Transport roller	When malfunction occurs	●	
	Media feed roller *4		●	

*1: Only C110
*2: Only C130n
*3: In case of single side printing for normal paper of A4/Letter size
*4: Only when the duplex option attachment is installed.

3.2 Concept of parts life

	Description	Near life value	Life value	Max. life value
Toner cartridge	The consumption rates are calculated from the dot counter and the image counter and the life is reached when the consumption rate, whichever is greater, reaches 100%.	2,350 pages	2,500 pages	3,500 pages *1
		1,350 pages	1,500 pages	2,100 pages *1
		850 pages	1,000 pages	1,400 pages *1
		350 pages	500 pages	700 pages *1
Imaging cartridge	The imaging cartridge drive time count is compared with the printed page count and whichever reaching its life value is detected.	—	45,000 images	48,500 images
Waste toner bottle (integrated in I/C)	Detected with the waste toner near full sensor. A waste toner full condition is detected when 200 more images are produced after a waste toner near-full condition has been detected.	—	—	—
Fuser unit	The fuser unit drive time is counted based on the transport motor drive time. The consumption rates of the fuser unit drive time count and the printed page count are calculated and the life value is reached when the consumption rate, whichever is greater, reaches 100%.	—	50,000 prints	—
Transfer roller	The number of printed pages is counted.	—	50,000 prints	—

*1: The machine prohibits the initiation of any new print cycle when the maximum life value is reached.

A. Conditions for life specifications values

- The life specification values represent the number of pages printed or figures equivalent to it when the given conditions (see the table given below) are met. They may be more or less, depending on the machine operating conditions of each individual user.

Item	Description
Job type	Monochrome: 3 consecutive pages (3 pages/job) Full Color: 2 consecutive pages (2 pages/job)
Media size	A4S or LetterS
Color ratio	Black to Color = 1 : 1
Original density	ISO chart C/W ratio = 5% each color

3.3 Maintenance Procedure (periodical check parts)

3.3.1 Toner cartridge (C/M/Y/K)

A. Periodically replaced parts/cycle

- Standard in-box toner cartridge (C, M, Y, K): Every 500 prints
- Standard in-box toner cartridge (K): Every 1,000 prints
- Standard-capacity toner cartridge (C,M,Y): Every 1,500 prints
- High-capacity toner cartridge (C,M,Y,K): Every 2,500 prints

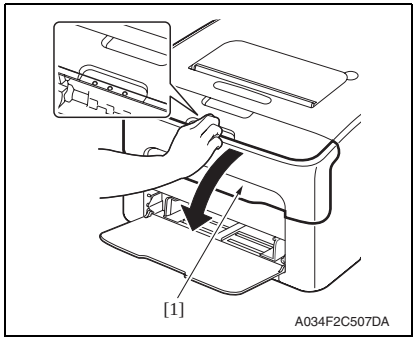
B. Removal procedure

(1) For C110

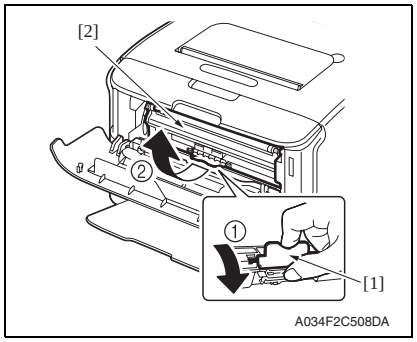
1. Check the color of the toner cartridge to be replaced on the control panel.
2. Press the ROTATE TONER key and select the color of the toner cartridge to be replaced.

NOTE

- **Press the ROTATE TONER key for more than 10 seconds to remove the toner cartridges of all colors.**



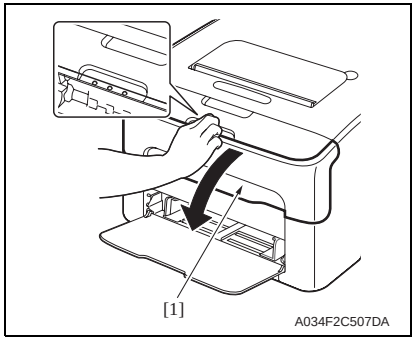
3. Open the front cover [1] and make sure that the specific toner cartridge to be replaced is in the front.



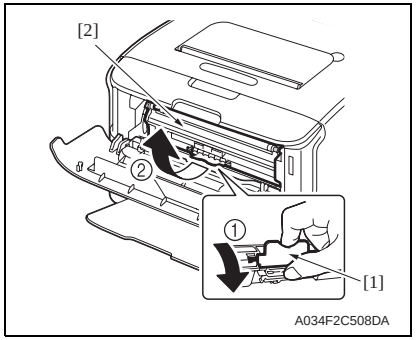
4. Hold onto the handle [1] of the toner cartridge, pull it and remove the toner cartridge [2].

(2) For C130n

1. Check the color of the toner cartridge to be replaced on the control panel.
2. Select [MAIN MENU] - [QUALITY MENU] - [REPLACE TONER] from the menu and select the toner cartridge of the specific color of toner to be replaced.
See P.92



3. Open the front cover [1] and make sure that the specific toner cartridge to be replaced is in the front.

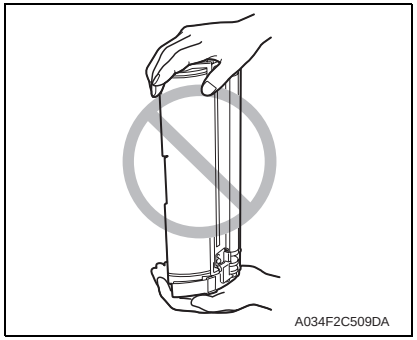


4. Hold onto the handle [1] of the toner cartridge, pull it and remove the toner cartridge [2].

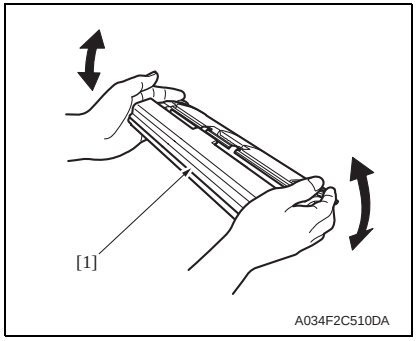
NOTE

- **When all toner cartridges need to be removed and replaced manually, select [MAIN MENU] - [QUALITY MENU] - [REPLACE TONER] - [REMOVE ALL].**
See P.92

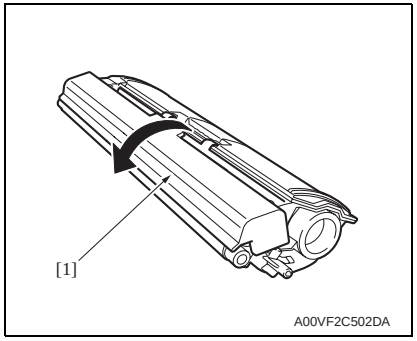
C. Reinstallation procedure



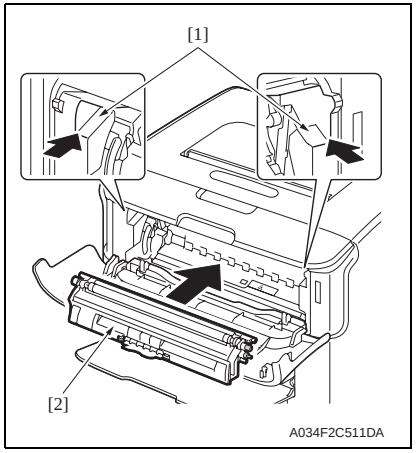
NOTE
Do not let the toner cartridge stand upright or keep it in that upright position.



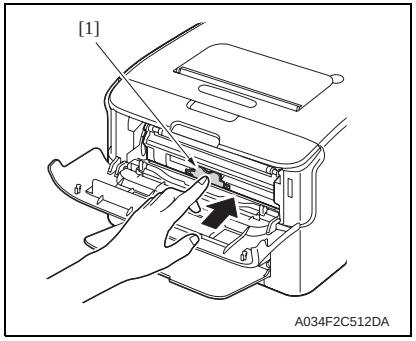
1. Shake the toner cartridge [1] a few times to distribute the toner.



2. Remove the protective cover [1].



3. Aligning the shaft [1] on both sides of the toner cartridge with the rails in the machine, install the toner cartridge [2].



4. Press in the toner cartridge until [1] it locks into place.

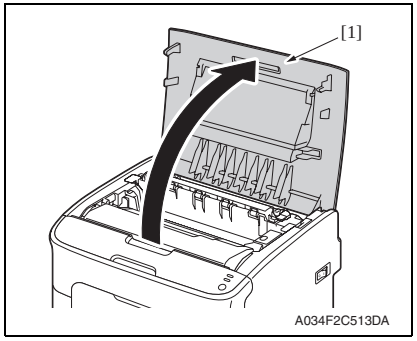
5. Close the front cover.
6. Press the CANCEL key.

3.3.2 Imaging cartridge

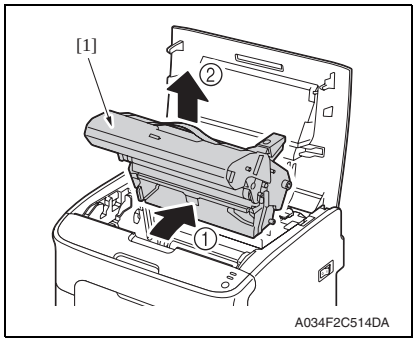
A. Periodically replaced parts/cycle

- Imaging cartridge (Monochrome continuous printing): Every 45,000 counts
  Imaging cartridge (Monochrome 1P/J): Every 10,000 counts
  Imaging cartridge (Full color continuous printing): Every 11,250 counts
  Imaging cartridge (Full color 1P/J): Every 7,500 counts

B. Replaced procedure



1. Open the top cover.

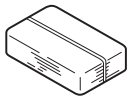


2. Hold onto the handle [1] of the imaging cartridge [2], pull it up slowly to remove the imaging cartridge as shown in the picture.

3. To reinstall, reverse the order of removal.

4. Service tool

4.1 Service material list

Tool name	Shape	Material No.	Remarks
Cleaning pad			Cleaning pad can be substitued with the lint-free cloth.
Isopropyl alcohol			

5. Firmware upgrade

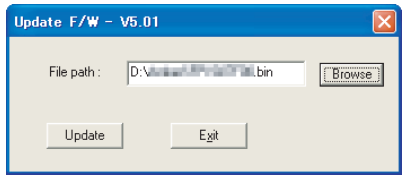
5.1 For C110

5.1.1 Controller firmware upgrade

NOTE

- **Make sure that the printer driver has been installed in the PC.**
- **Before updating the firmware, confirm the current Controller Firmware Version.**
  See P.84

1. Connect the machine and PC using the USB cable.
2. Copy the firmware data and upgrading program in any arbitrary directory of the PC.
3. Double-click “UpdateFW.exe”.
4. Click [Browse] and select File path, “XXXXX.bin”.
5. Click [Update].



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6. When [Transfer Successfully!] message appears on the screen, click [OK] to close the execution tool.

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7. Confirm the Controller Firmware Version.
   See P.84

5.2 For C130n

5.2.1 Controller firmware upgrade

NOTE

- **Make sure that the printer driver has been installed in the PC.**
- **Before updating the firmware, print Configuration Page to confirm the current Controller Firmware Version.**
  See P.90

A. USB connections

1. Connect the machine and PC using the USB cable.
2. Copy the firmware data (system3.img) to any directory on the PC.
3. Holding down the ENTER key and ◀ key on the control panel at the same time, turn ON the printer’s power switch.
4. To select YES for each of the items shown below, use the ◀ or ▶ key. Then press the ENTER key.

- [UPDATE PRINTER]: YES
- [REPLACE CODE]: YES
- [REPLACE ALL FONT]: YES
- [REPLACE SYS FONT]: YES
- [UPDATE NOW]: YES

5. Make sure that the message “PRINTER UPDATE SEND DATA NOW” appears on the control panel.
6. Start the command prompt and go to the directory in which the firmware data is stored.
7. Type “copy/b system.img \\xxxxx\yyyyy:” and then press the Enter key
   (xxxxx is the hostname) (yyyyy is the sharename)

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8. Check the message on the control panel and make sure that [IDLE] is displayed.

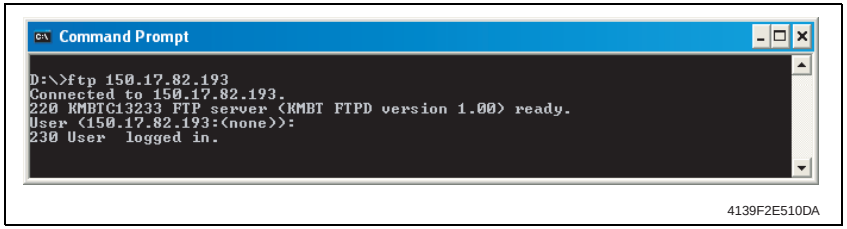
NOTE

- **Do not turn the printer’s power switch OFF while the firmware is upgrading.**

9. Print a Configuration Page and check the firmware version to verify the upgrade.
   See P.90

B. Network connections

1. Connect the machine to the PC using an Ethernet cable.
2. Copy the firmware data (system.ps) to any directory on the PC.
3. Start the command prompt and go to the directory in which the firmware data is stored.
4. Specify the IP address of the machine to start FTP.
5. Check the user name and then press the Enter key to go to the next step.



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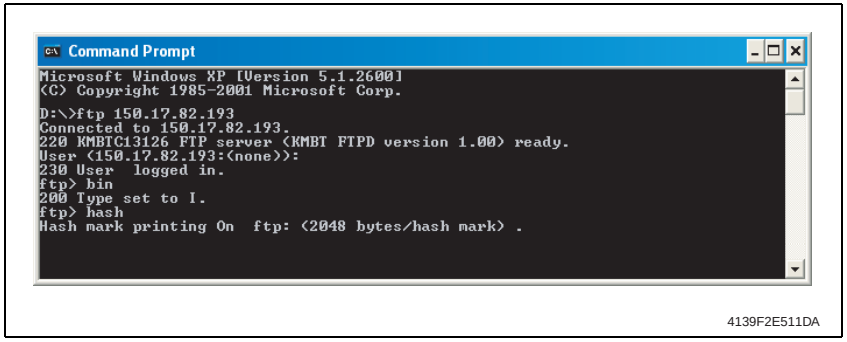
6. Using the “bin” command, set the file transfer mode to the binary transfer.
7. Type the hash command.



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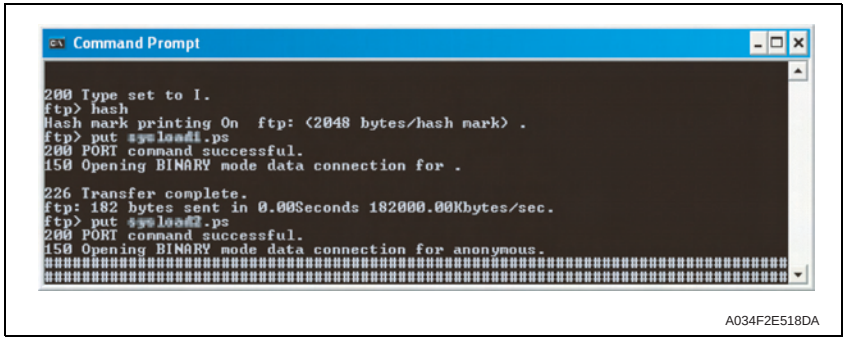
8. Type “put system.ps” and press the Enter key.
   If there are two or more firmware data files involved, repeat the same steps.



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NOTE

- **Do not turn the printer’s power switch OFF while the firmware is upgrading.**

9. Print a Configuration Page and check the firmware version to verify the upgrade.
   See P.90

5.2.2 Boot Rom firmware rewriting

1. Connect the machine and PC using the USB cable.
2. Copy the firmware data (bootrom.img) to any directory on the PC.
3. Press ENTER key, ◀ key and cancel key on the operation panel at the same time to turn on the power.
4. Press ENTER key on [MAINTENANCE MENU GET BOOT VERSION] to confirm the present version of Boot Rom firmware.
   [GET BOOT VERSION X.X]
5. Push the CANCEL key.
6. Press ▶ key, and when [MAINTENANCE MENU UPDATE BOOTCODE] is displayed, press ENTER key.
7. Select item of [UPDATE BOOTCODE] and “Yes” with ◀/▶ key, and press ENTER key.
8. Make sure that the message “UPDATE BOOTCODE SEND DATA NOW” appears on the control panel.
9. Start the command prompt and go to the directory in which the firmware data is stored.
10. Type “copy/b bootrom.img \\xxxxx\yyyyy:” and then press the Enter key
    (xxxxx is the hostname) (yyyyy is the sharename)

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11. Check the message on the control panel and make sure that [IDLE] is displayed.

NOTE

- **Do not turn the printer’s power switch OFF while the firmware is upgrading.**

12. Follow step 3 and 4 to confirm the version of Boot Rom firmware.

6. Other

6.1 Disassembly/adjustment prohibited items

A. Paint-locked screws

NOTE

- **To prevent loose screws, a screw lock in blue or green series color is applied to the screws.**
- **The screw lock is applied to the screws that may get loose due to the vibrations and loads created by the use of machine or due to the vibrations created during transportation.**
- **If the screw lock coated screws are loosened or removed, be sure to apply a screw lock after the screws are tightened.**

B. Red-painted screws

NOTE

- **The screws which are difficult to be adjusted in the field are painted in red in order to prevent them from being removed by mistake.**
- **Do not remove or loosen any of the red-painted screws in the field. It should also be noted that, when two or more screws are used for a single part, only one representative screw may be marked with the red paint.**

C. Variable resistors on board

NOTE

- **Do not turn the variable resistors on boards for which no adjusting instructions are given in Adjustment/Setting.**

D. Removal of PWBs

⚠ CAUTION

- **When removing a circuit board or other electrical component, refer to "Handling of PWBs" and follow the corresponding removal procedures.**
- **The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.**
- **Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.**

6.2 Disassembly/assembly/cleaning list (other parts)

6.2.1 Disassembly/assembly parts list

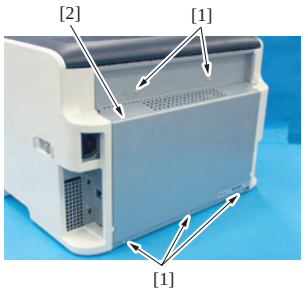
No	Section	Part name	Ref.Page
1	Exterior parts	Rear cover	P.68
2		Left cover	P.68
3		Right cover	P.68
4		Operation panel	P.68
5	Boards and etc.	Print control board (PRCB)	P.69
6		MFP board (MFPB)	P.70
7		DC power supply (DCPU)	P.70
8		High voltage unit (HV)	P.71
9	Units	Transfer roller unit	P.72
10		Fuser unit	P.72
11		PH unit	P.73
12		Media feed driving unit	P.74
13	Other Parts	Transport motor (M1)	P.75
14		Developing motor (M3)	P.76
15		DC power supply fan motor (FM1)	P.77
16		Ozone ventilation fan motor (FM2)	P.78
17		Tray1 media feed solenoid (SD1)	P.78
18		Registration roller solenoid (SD2)	P.78
19		2nd image transfer pressure/retraction solenoid (SD4)	P.79
20		Cleaning blade pressure/retraction solenoid (SD5)	P.79
21		Tray1 media feed roller	P.79
22		Separation pad	P.80

6.2.2 Cleaning parts list

No	Section	Part name	Ref.Page
1	Tray 1	Media feed roller	P.81
2	Processing section	Print head window	P.81

6.3 Disassembly/assembly procedure

6.3.1 Rear cover



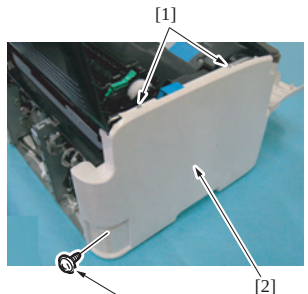
1. Remove five screws [1], and remove the rear cover [2].

6.3.2 Left cover

⚠ WARNING

- **Make sure to remove the rear cover before mounting the left cover in order to prevent the gasket attached to the cover from coming off. The gasket removing may lead electric leakage, which could cause electric shock during the machine operation. Or if the gasket flakes off into the machine, it may cause abnormal heat generation.**

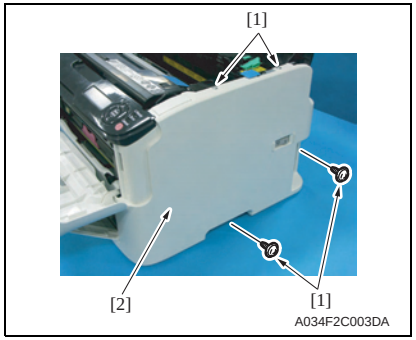
1. Remove the rear cover.
See P.68
2. Remove the operation panel
See P.68
3. Open the top cover.
4. Open the front cover.



5. Remove three screws [1], and remove the left cover [2].

6.3.3 Right cover

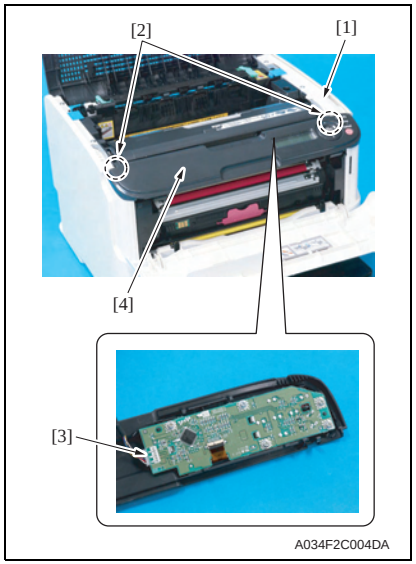
1. Remove the operation panel
See P.68
2. Open the top cover.
3. Open the front cover.



4. Remove four screws [1], and remove the right cover [2].

6.3.4 Operation panel

1. Open the top cover.
2. Open the front cover.



3. Remove the harness cover [1]
4. Unhook two tabs [2] and disconnect the connector [3], and remove the operation panel [4].

NOTE

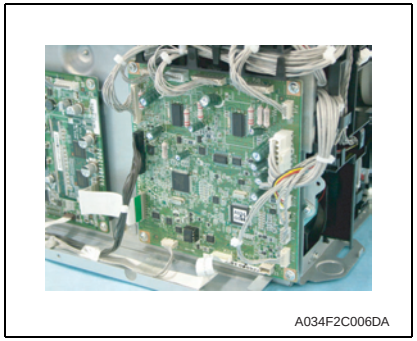
- **The left picture shows C130n.**

6.3.5 Print control board (PRCB)

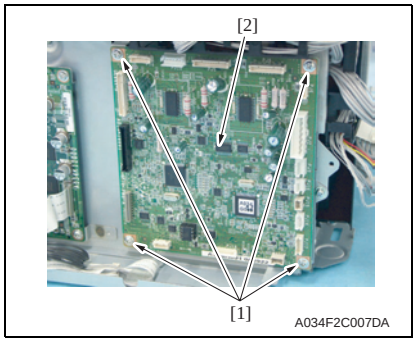
NOTE

- **When the printer control board is replaced with a new one, be sure to execute [BK CLEAR].**
  See P.103

1. Remove the rear cover.
   See P.68
2. Remove the left cover.
   See P.68



3. Disconnect all connectors and flat cables from the printer control board.

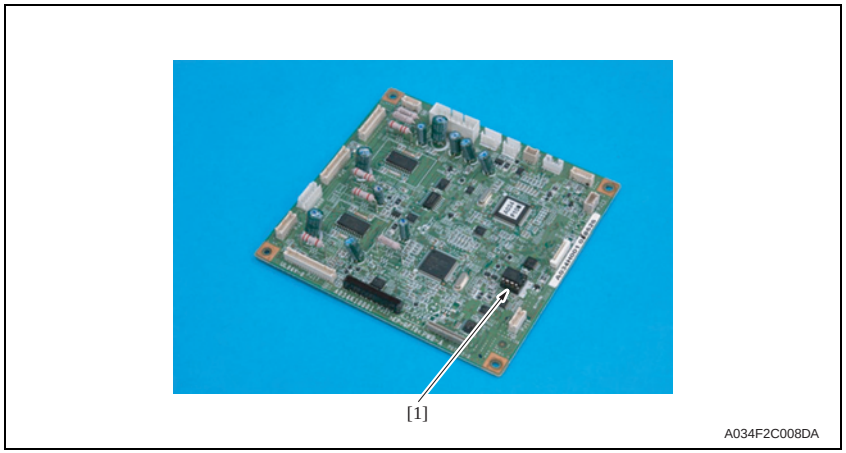


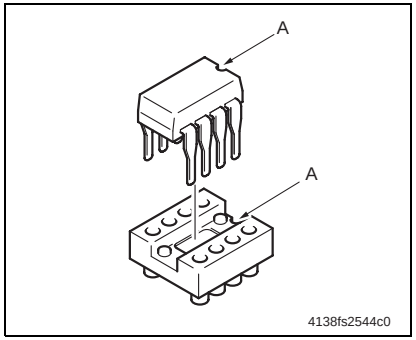
4. Remove four screws [1] and remove the printer control board [2].

5. Remove parameter chip (IC9) [1] from the printer control board.

NOTE

- **When the printer control board (PRCB) has been replaced, be sure to remount parameter chip (IC9). Remove parameter chip (IC9) from the old printer control board and mount it on the new printer control board.**





NOTE

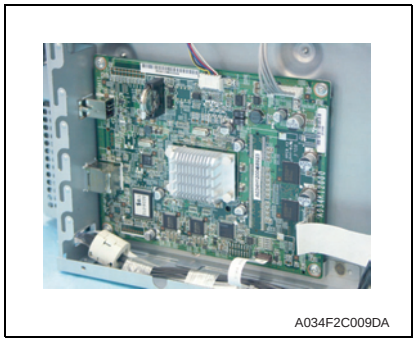
- **When mounting parameter chip (IC9), align the notches (indicated by "A" in the illustration).**

6.3.6 MFP board (MFPB)

NOTE

- **When the MFP board is replaced, upgrade the firmware to the latest version.**
  See P.65
- **When the MFP board is replaced with a new one, be sure to execute [BK CLEAR].**
  See P.103

1. Remove the rear cover.
   See P.68
2. Remove the right cover.
   See P.68

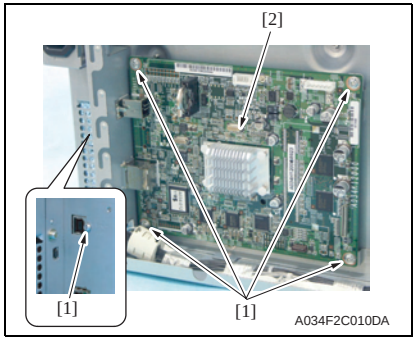


A034F2C009DA

3. Disconnect all connectors and flat cables from the MFP board.

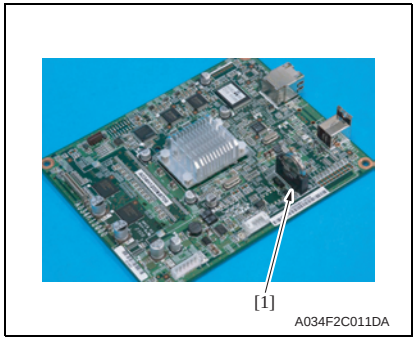
NOTE

- **The left picture shows C130n.**



A034F2C010DA

4. Remove five screws [1] and remove the MFP board [2].



A034F2C011DA

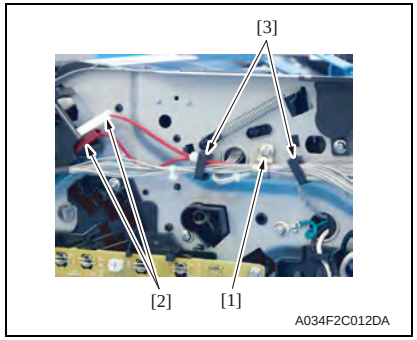
5. Remove the back up battery [1] on the MFP board.

NOTE

- **Only for C130n.**

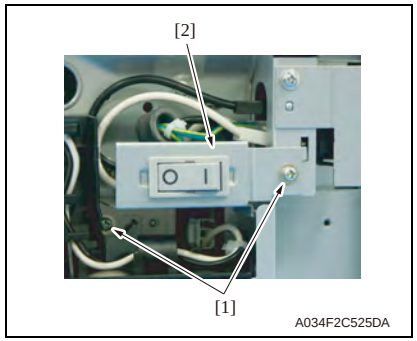
6.3.7 DC power supply (DCPU)

1. Remove the printer control board.
   See P.69
2. Remove the MFP board.
   See P.70



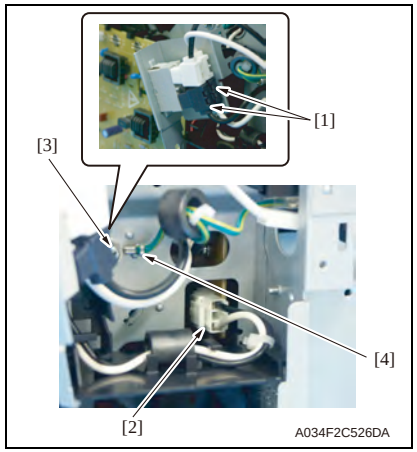
A034F2C012DA

3. Remove the screw [1].
4. Disconnect two connectors [2] (Red and white), remove the harness from two wire saddles [3].



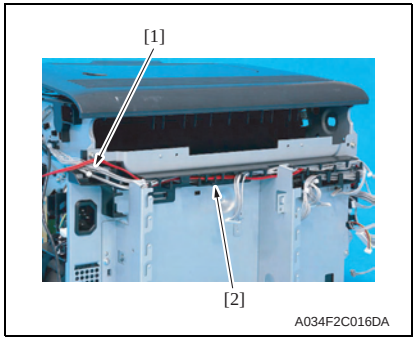
A034F2C525DA

5. Remove two screws [1], and remove the main switch [2].

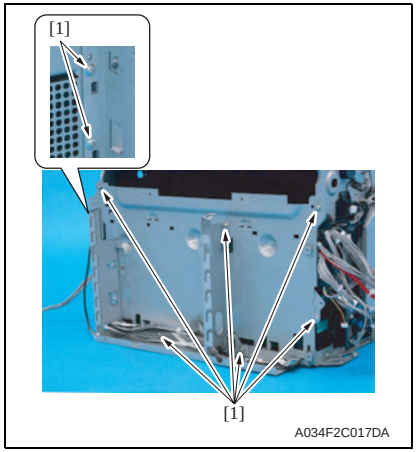


A034F2C526DA

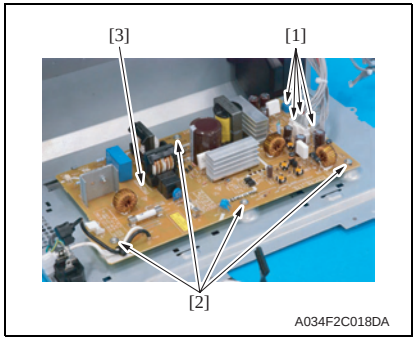
6. Disconnect two connectors (black) [1].
7. Disconnect the connector [2].
   Remove screw [3] and pull the terminal [4].



8. Remove the harness [1], and remove the harness guide [2].



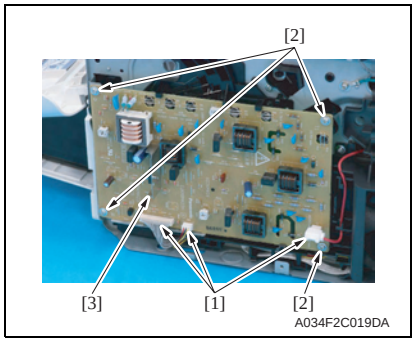
9. Remove eight screws [1] to pull out the DC power unit assy [2].



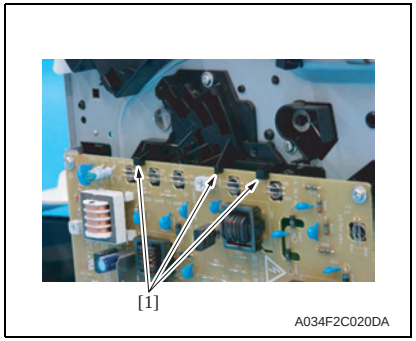
10. Disconnect four connectors [1] and remove four screws [2], and remove the DC power supply assy [3].

6.3.8 High voltage unit (HV)

1. Remove the right cover.
See P.68



2. Disconnect three connectors [1] and remove four screws [2], and remove the high voltage unit [3].

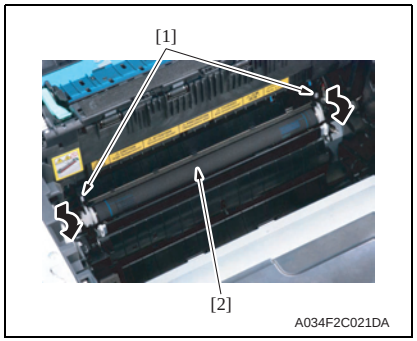


Precautions for reinstallation of the high voltage unit

- **Make sure that the high voltage unit fits into the tab [1] at the location shown on the left.**
- **During the reinstallation procedure, make sure that the high voltage terminal is not deformed or left loose.**

6.3.9 Transfer roller unit

1. Remove the imaging cartridge.
See P.64



2. Press and pull the levers [1] at both sides forward to remove the transfer roller unit [2].

NOTE

- **Use care not to lose the two springs of the transfer roller unit. They can easily come off.**

3. To reinstall, reverse the order of removal.

NOTE

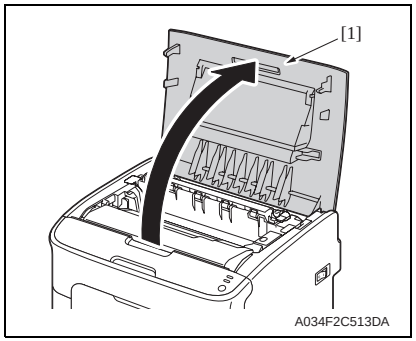
- **When the transfer roller unit is replaced with a new one, it is necessary to reset the maintenance counter.**
For C110: See P.87
For C130n: See P.101
- **Make calibration after replacing the transfer roller unit.**
For C110: See P.84
For C130n: See P.92

6.3.10 Fuser unit

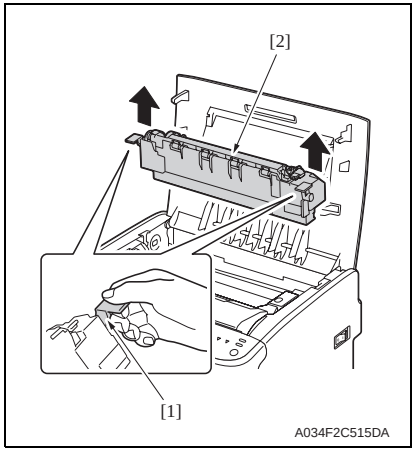
⚠ CAUTION

- **The temperature gets high in the vicinity of the fuser unit. You may get burned when you come into contact with the area. Before replacement operations, make sure that more than 20 minutes have elapsed since the main and sub power switches were turned off.**

1. Turn OFF the power switch, unplug the power cord from the power outlet, and let the machine to stand idle for about 20 min.



2. Open the top cover.



3. Pull up the lever [1] to remove the fuser unit [2].

4. To reinstall, reverse the order of removal.

NOTE

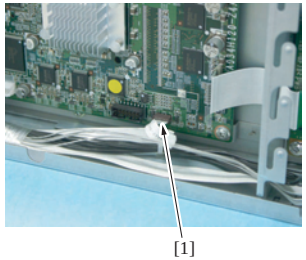
- **When the fuser unit is replaced with a new one, it is necessary to reset the maintenance counter.**
For C110: See P.87
For C130n: See P.101

6.3.11 PH unit

⚠ CAUTION

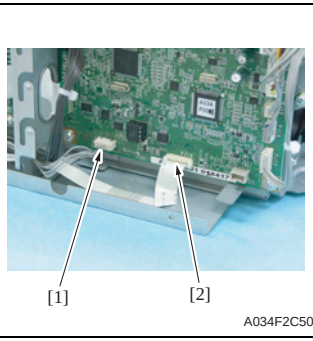
- **Do not replace the printer head unit while the power is ON. Laser beam generated during the above mentioned activity may cause blindness.**
- **Do not disassemble or adjust the printer head unit. Laser beam generated during the above mentioned activity may cause blindness.**

1. Remove the imaging cartridge.
See P.64
2. Remove the rear cover.
See P.68
3. Remove the right cover.
See P.68
4. Remove the left cover.
See P.68
5. Remove the control panel.
See P.68
6. Remove the high voltage unit.
See P.71

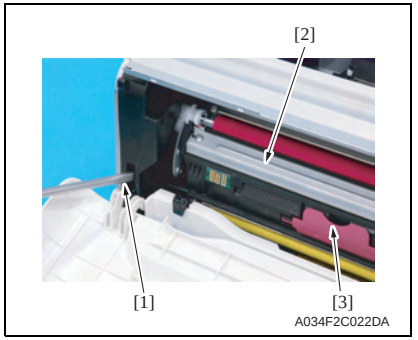


7. Disconnect the flat cable [1] on the MFP board.

NOTE
- **For C110: P108**
- **For C130n: CN5**

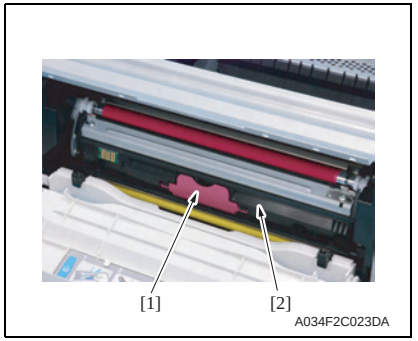


8. Disconnect the connector (PJ19) [1] and flat cable (PJ18) [2] on the printer control board.

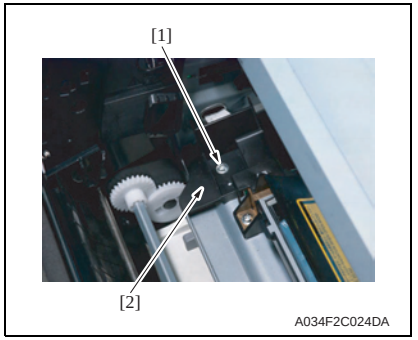


9. Press the rack release lever [1] and then rotate the rack [2] so that the toner cartridge [3] is moved to a position, at which the toner cartridge can be easily removed.

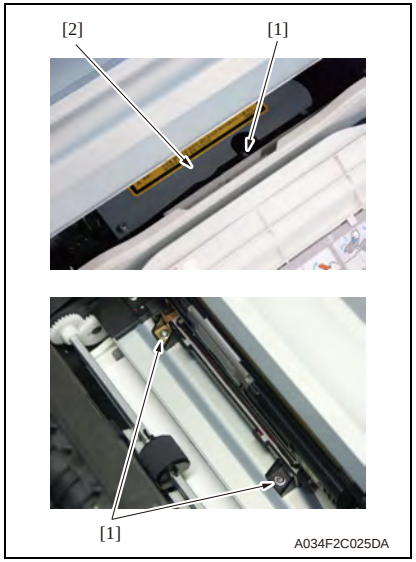
NOTE
- **When rotating the rack, use care not to touch the developing roller.**



10. Hold onto the handle [1], pull it and remove the toner cartridge [2].
11. Repeat steps *9.* and *10.* to remove all toner cartridges.



12. Remove the screw [1], and remove the cover [2].



6.3.12 Media feed driving unit

1. Remove the right cover.
See P.68
2. Remove the left cover.
See P.68

3. Lay the main body of the printer on its back.

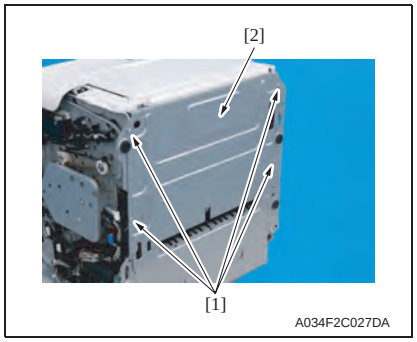
NOTE

- **Put the printer on the flat place such as a desk for this work, not to impose unreasonable force on the machine.**

13. Remove three screws [1], and remove the PH unit [2].

NOTE

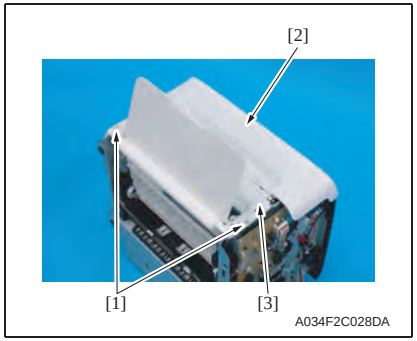
- **To remove the front screw, move the rack to the position where the screw can be removed easier and remove the screw using a short driver.**



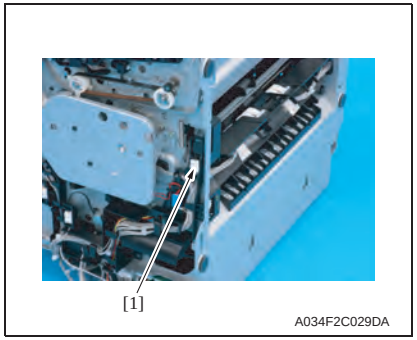
4. Remove four screws [1], and remove the sheet metal [2].

NOTE

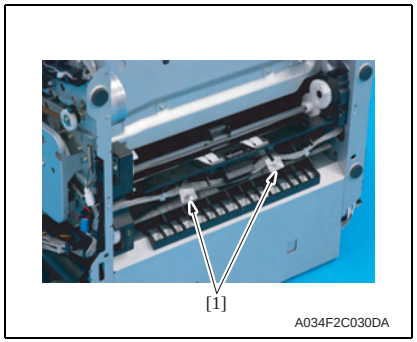
- **Use care not to lose the two springs.**



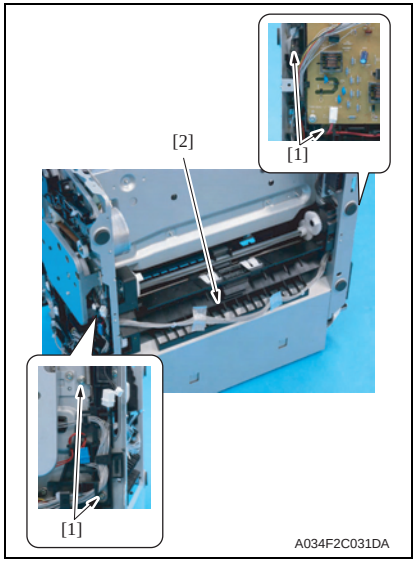
5. Remove two screws [1] and open the front cover [2] to remove the media feed tray unit [3].



6. Disconnect the connector [1] of the tray1 media feed solenoid.



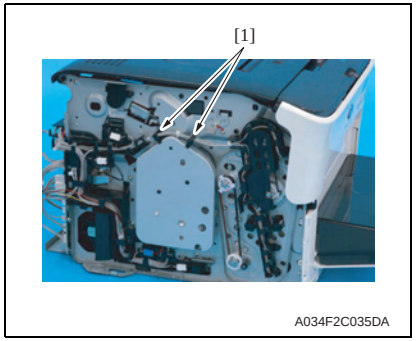
7. Remove the tapes [1] at two positions.



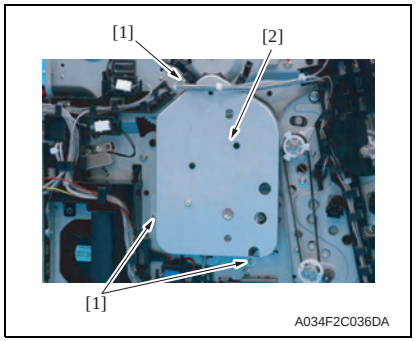
8. Remove four screws [1], and remove the media feed driving unit [2].

6.3.13 Transport motor (M1)

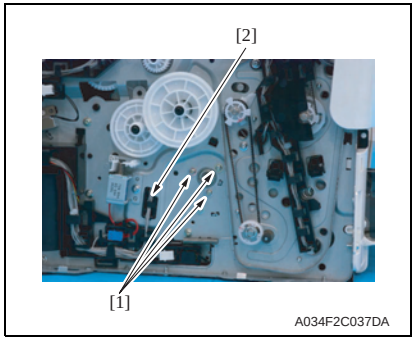
1. Remove the left cover.
See P.68
2. Remove all toner cartridges.
See P.62



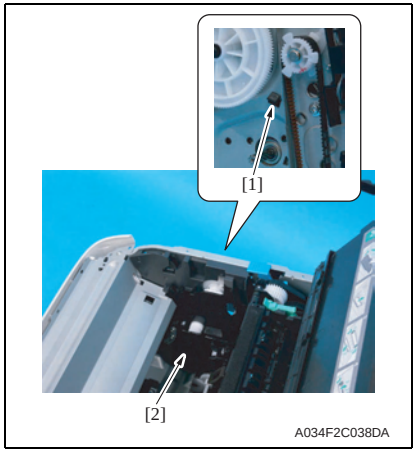
3. Remove the harness from two wire saddles [1].



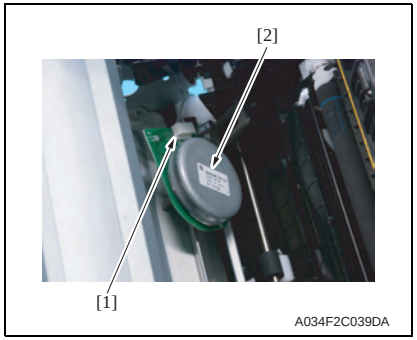
4. Remove three screws [1], and remove the sheet metal [2].



5. Remove three screws [1].
6. Remove the harness [2] from the harness guide.



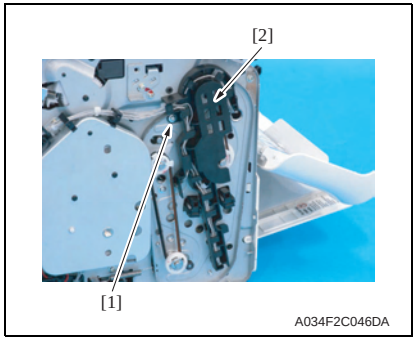
7. Unlock the tab [1], and remove the motor cover [2].



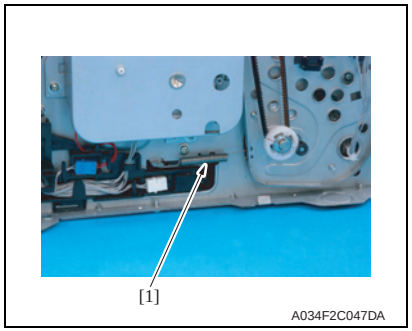
8. Disconnect the connector [1], and remove the transport motor [2].

6.3.14 Developing motor (M3)

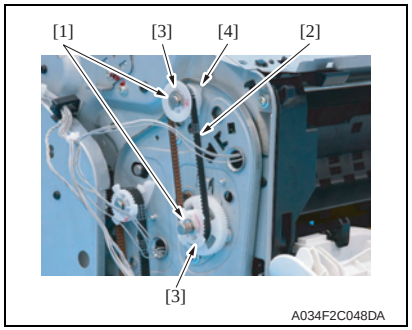
1. Remove the left cover.
See P.68



2. Remove the screw [1], and remove the harness guide [2] by taking out the harness.



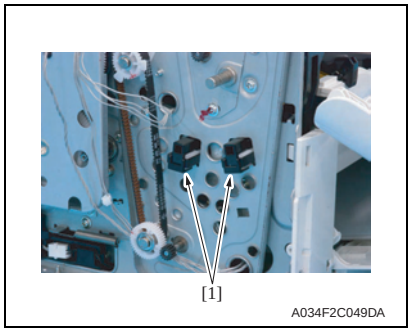
3. Remove the spring [1].



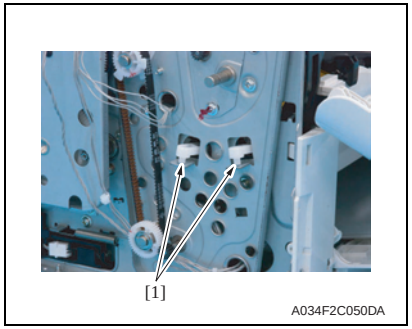
4. Remove two E-rings [1], belt [2], two gears [3] and bearing [4].

NOTE

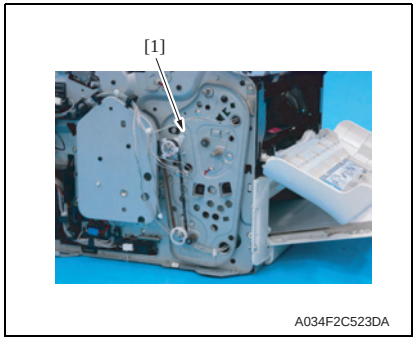
- **Make sure to pull out the belt [2] and gears [3] forward parallel together.**
- **Use care not to lose the shaft.**



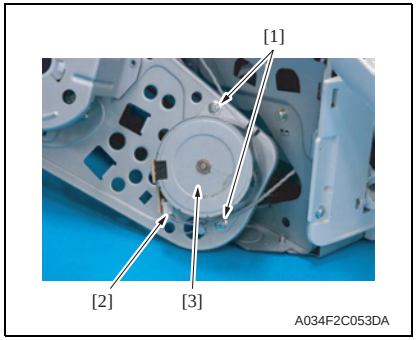
5. Remove two covers [1] by taking out the hooks at both sides.



6. Remove two levers [1].



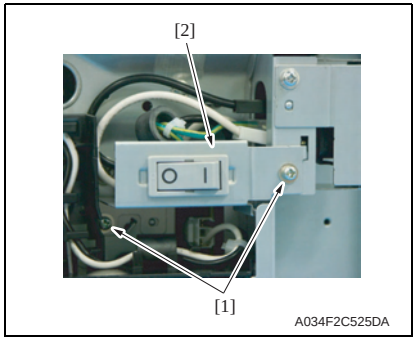
7. Slide out the motor assy [1].



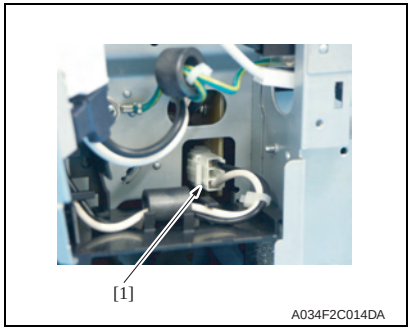
8. Remove two screws [1] and disconnect the connector [2], and remove the developing motor [3].

6.3.15 DC power supply fan motor (FM1)

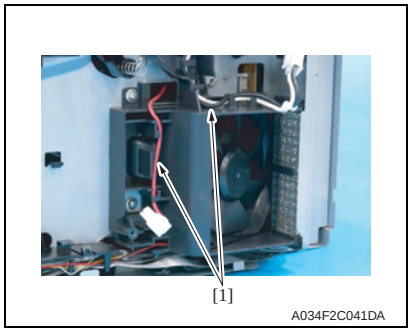
1. Remove the rear cover.
See P.68
2. Remove the right cover.
See P.68
3. Remove the high voltage unit.
See P.71



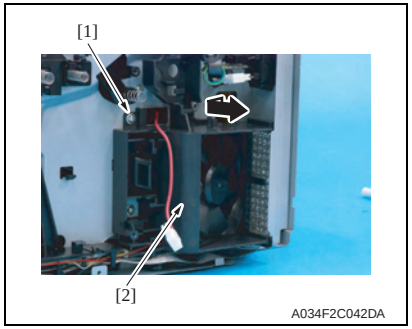
4. Remove two screws [1], and remove the main switch [2].



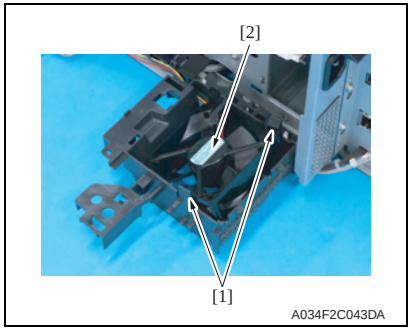
5. Disconnect the connector [1].



6. Remove the harness [1] from the wire saddle.



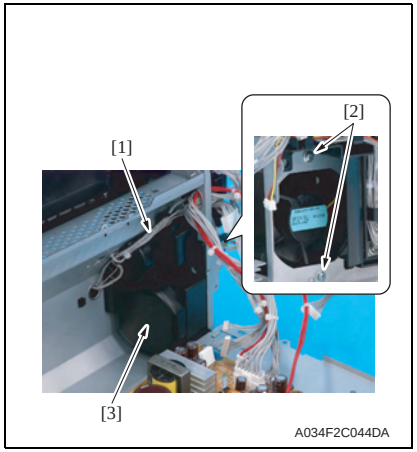
7. Remove the screw [1] to take out the DC power unit motor assy [2] as shown in the picture.



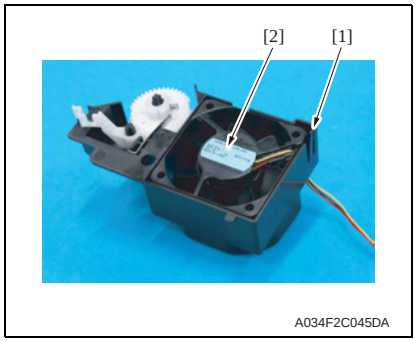
8. Unhook two tabs [1], remove the DC power supply fan motor [2].

6.3.16 Ozone ventilation fan motor (FM2)

1. Slide out the DC power supply assy.
See step 1 to 9 of P.70



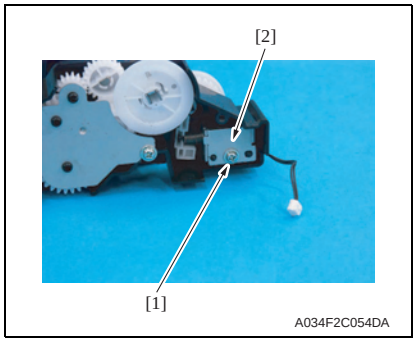
2. Remove the harness [1] from the harness guide.
3. Remove the screw [2], remove the ozone ventilation fan motor assy [3].



4. Unhook the tab [1], remove the ozone ventilation fan motor [2].

6.3.17 Tray1 media feed solenoid (SD1)

1. Remove the media feed driving unit.
See P.74



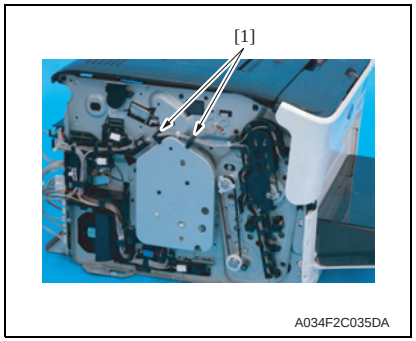
2. Remove the screw [1], and remove the tray1 media feed solenoid [2].

NOTE

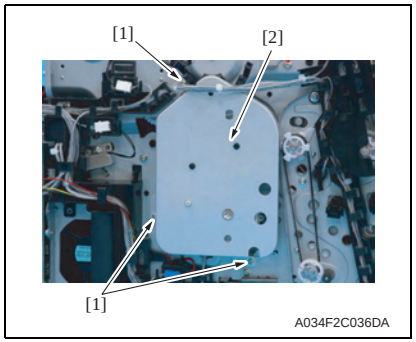
- **Use care not to lose the two springs.**

6.3.18 Registration roller solenoid (SD2)

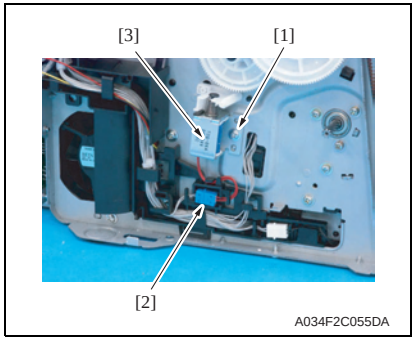
1. Remove the left cover.
See P.68



2. Remove the harness from two wire saddles [1].



3. Remove three screws [1], and remove the sheet metal [2].



4. Remove the screw [1] and disconnect the connector [2], and remove the registration roller solenoid [3].

NOTE

- **Use care not to lose the two springs.**

6.3.19 2nd image transfer pressure/retraction solenoid (SD4)

1. Remove the rear cover.
See P.68
2. Remove the left cover.
See P.68

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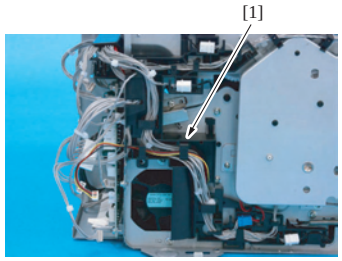
3. Disconnect all connectors and flat cables from the printer control board.



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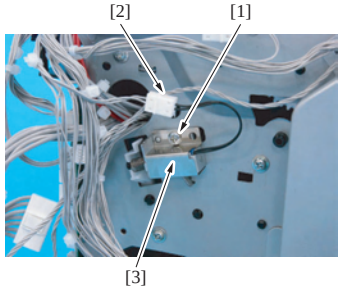
4. Remove the harness from the harness guide [1] to remove it.



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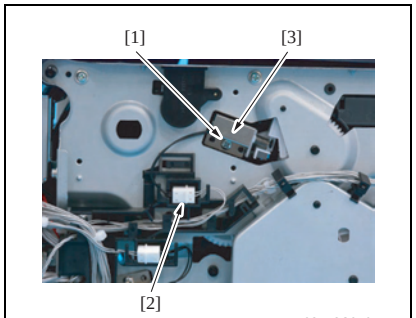
5. Remove the screw [1] and disconnect the connector [2], and remove the 2nd image transfer pressure/retraction solenoid [3].

NOTE

- **Use care not to lose the two springs.**

6.3.20 Cleaning blade pressure/retraction solenoid (SD5)

1. Remove the left cover.
See P.68



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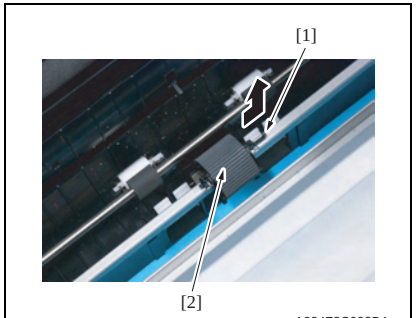
2. Remove the screw [1] and disconnect the connector [2], and remove the cleaning blade pressure/retraction solenoid [3].

NOTE

- **Use care not to lose the two springs.**

6.3.21 Tray 1 media feed roller

1. Open the top cover.
2. Remove the imaging cartridge.
See P.64



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3. Remove the media feed roller [2] pulling up the hook [1].

6.3.22 Separation pad

1. Remove the right cover.
See P.68
2. Remove the left cover.
See P.68

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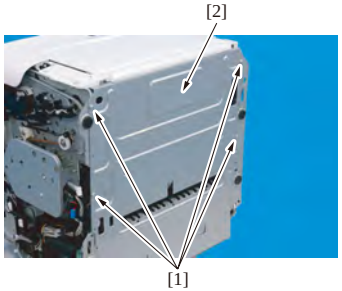
3. Lay the main body of the printer on its back.

NOTE

- **Put the printer on the flat place such as a desk for this work, not to impose unreasonable force on the machine.**



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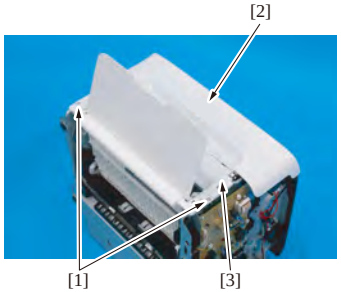
4. Remove four screws [1], and remove the sheet metal [2].

NOTE

- **Use care not to lose the two springs.**



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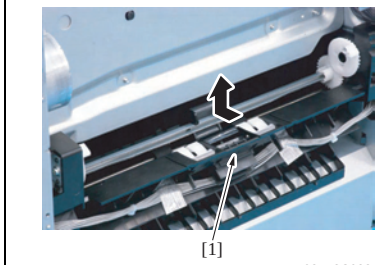
5. Remove two screws [1] and open the front cover [2] to remove the media feed tray unit [3].



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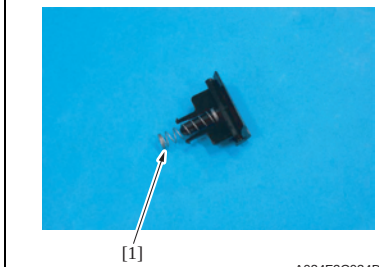
6. Remove the separation pad [1].



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7. Remove the spring [1].

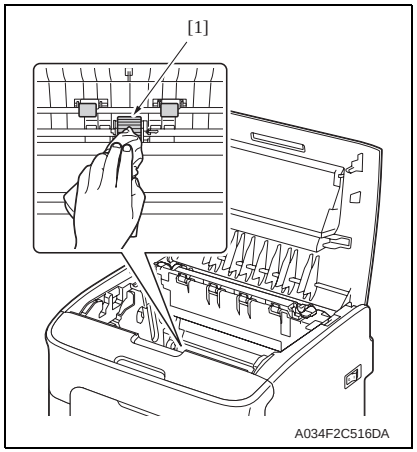
6.4 Cleaning procedure

NOTE

- **The alcohol described in the cleaning procedure represents the isopropyl alcohol.**

6.4.1 Tray 1 media feed roller

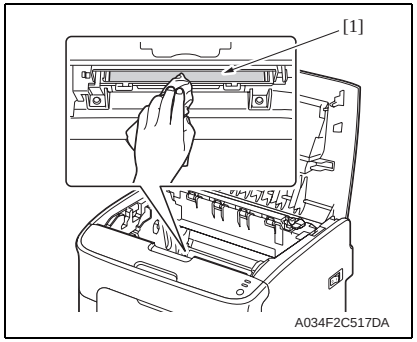
1. Open the top cover.
2. Remove the imaging cartridge.
See P.64



3. Using a cleaning pad dampened with alcohol, wipe the tray1 media feed roller [1] clean of dirt.

6.4.2 Printer head window

1. Enter the [P/H CLEAN UP] mode.
For C110: See P.84
For C130n: See P.92
2. Open the top cover.
3. Remove the imaging cartridge.
See P.64



4. Clean P/H window [1] with soft cloth.

ADJUSTMENT/SETTING

7. How to use the adjustment section

- "Adjustment/Setting" contains detailed information on the adjustment items and procedures for this machine.
- Throughout this "Adjustment/Setting," the default settings are indicated by " ".

Advance checks

Before attempting to solve the customer problem, the following advance checks must be made. Check to see if:

- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The original has a problem that may cause a defective image.
- The density is properly selected.
- The original glass, slit glass, or related part is dirty.
- Correct media is being used for printing.
- The units, parts, and supplies used for printing (developer, PC drum, etc.) are properly replenished and replaced when they reach the end of their useful service life.
- Toner is not running out.

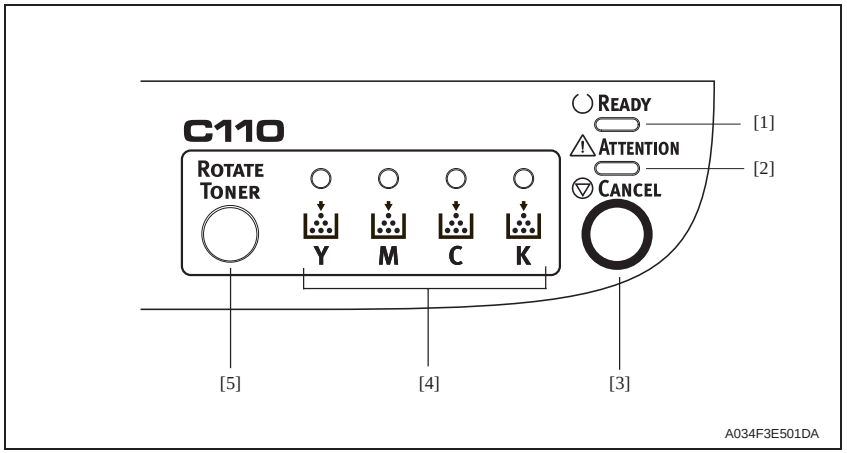
⚠ CAUTION

- **Be sure to unplug the power cord of the machine before starting the service job procedures.**
- **If it is unavoidably necessary to service the machine with its power turned ON, use utmost care not to be caught in the scanner cables or gears of the exposure unit.**
- **Special care should be used when handling the fusing unit which can be extremely hot.**
- **The developing unit has a strong magnetic field. Keep watches and measuring instruments away from it.**
- **Take care not to damage the PC drum with a tool or similar device.**
- **Do not touch IC pins with bare hands.**

8. Description of the control panel (C110)

8.1 Control panel display

- The control panel contains six LED indicators and two keys, the ROTATE TONER key and the CANCEL key.



[1] READY indicat
[2] ATTENTION indicator
[3] CANCEL key
[4] Toner indicators
[5] ROTATE TONER key

8.1.1 LED Indicator

- Each of the LED indicators provides five different types of signals. A specific printer condition is indicated by the combination of these signal types.

Signal	Description
OFF	• OFF at all times
ON	• ON at all times
Slow blinking	• 1 blink every 2 seconds
Blinking	• 1 blink per second
Rapid blinking	• 2 blinks per second

8.1.2 List of status messages

- The combinations of ON, OFF, and/or blinking states of the READY indicator, ATTENTION indicator, and toner indicators represent specific conditions of the printer.

A. State messages

READY indicator (green)	ATTENTION indicator (orange)	Description
OFF	OFF	• Idle
ON	OFF	• Ready to print.
Middle blinking	OFF	• Processing data.
		• Printing.
ON	ON	• Initializing
		• Cancel job.
Slow blinking	OFF	• Energy save mode

B. Error messages

READY indicator (green)	ATTENTION indicator (orange)	Toner indicators (orange)	Description
Slow blinking alternately		Toner status	• Media empty/jam
OFF	Middle blinking	Toner status	• Front cover or top cover is open. • The imaging cartridge is not installed.
OFF	ON	Toner status	• The toner cartridge is not installed. • The toner cartridge is empty.
OFF	High blinking	Toner status	• Toner out
OFF	ON	High blinking	• The imaging cartridge is empty.
OFF	High blinking	Toner status	• Process error.
Slow blinking alternately		Toner status	• Media size error.
OFF	Slow blinking	Toner status	• Memory full.

C. Warning messages

READY indicator (green)	ATTENTION indicator (orange)	Toner indicators (orange)	Description
ON	OFF	High blinking	• The toner cartridge is not a genuine OKI toner cartridge or not the correct type.
ON	OFF	Middle blinking	• The installed toner cartridge is a wrong toner cartridge.
ON	Slow blinking	Toner status	• The imaging cartridge is near end.
OFF	Slow blinking	All high blinking	• The imaging cartridge is empty.
ON	OFF	Slow blinking	• The toner cartridge in near empty.
ON	Slow blinking	Toner status	• Process caution
High blinking	High blinking	All high blinking	• Fatal error

8.1.3 CANCEL key

- The CANCEL key can be used to cancel a print job. It also allows that specific print job to be resumed after the error has been eliminated.

A. Cancelling a print job

- The currently processing print job can be canceled.

1. While data is being processed or printed (the green “READY” indicator is blinking), hold down the CANCEL key for more than 5 seconds.
2. Release the CANCEL key after both indicators light up. The current print job has now been cancelled.

B. Continuing a print job after an error message

- The print job can be resumed after an error of any of the following types has been eliminated:
- When there is no more media in the tray
- When media of a different format than that set in the printer driver was fed into the printer

1. Check that one of the above errors has occurred.
2. Perform the remedial action according to the error.
3. Press the CANCEL key (less than 5 seconds) to reinitiate media feeding.
4. The print job continues.

8.1.4 ROTATE TONER key

- The ROTATE TONER key allows you to switch the printer from normal operation mode to change toner mode, eject all toner mode or print head cleanup mode.
  The mode that the printer enters depends on how long the ROTATE TONER key is held down.

Mode	Key operation	Indicators status
Change toner mode	Press the ROTATE TONER key (Less than 5 seconds)	Magenta toner indicator flashes. Replaceable toner indicator flashes every time the key is pressed.
Printer head cleanup mode	Press ROTATE TONER key for between 5 and 10 seconds.	All indicators blink once after the key has been held down for 5 seconds.
Eject all toner mode	Press ROTATE TONER key for more than 10 seconds.	All indicators flash once after the key has been held down for 10 seconds.

9. Remote panel utility (Only for C110)

- The Remote Panel Utility shows information about the current status of the printer and allows you to specify various settings.

NOTE
- **In order to use the Remote Panel Utility, install it after installing the printer driver.**

9.1 Opening

1. Connect the PC with user machine.
2. Double-click the Remote Panel Utility icon that appears in the notification area.

NOTE
- **The Remote Panel Utility can be used when the printer is connected to a computer and both machines are turned on.**

9.2 Panel tab

9.2.1 Remote Panel

Display	Content
Status	Allows the current status of the printer to be checked.
Display Configuration Page	Displays the configuration page. In addition, the contents of the configuration page can be saved as an INI file.
T/C Change	Click the button to switch the printer to the selected operation mode. The following two modes are available. • Change Toner: Used when replacing a toner cartridge. Select this mode, and then click the T/C Change button to switch the printer to the Change Toner mode. • Eject All Toner: To remove all toner cartridges.
Image Refresh	• When faint lines occur at a pitch of 24 mm in the main scanning direction, aging of the toner cartridge is performed to help make the faint lines less noticeable. **NOTE** **• Execution of the image refresh mode consumes toner.** **• This function does not help uneven density at a pitch of 25 mm.**

9.2.2 Set Default

Display	Content
Apply	• Toner Low Message: Specifies whether a printer indicator blinks or a warning message appears in the status display box of the Remote Panel Utility when toner is about to run out. If Off is selected, neither of these notifications appear when the toner is about to run out. The default setting is On. "On" / Off
	• Toner Out Stop: Specifies whether to stop or continue printing when a toner empty condition is detected. The default setting is On. "On" / Off
	• Energy Save Time: Specifies the length of time before the machine enters energy saver mode after the last print is received or the last key operated. The default setting is 30 (min). 5 / 15 / "30" / 60
	• Auto Continue: If Off is selected, the next print job will not be performed if a paper size error occurred in the printer, unless the CANCEL key is pressed to cancel the error. If On is selected, the next print job is sent if a paper size error occurred in the printer, the error is automatically cancelled, and the next print job is performed. The default setting is Off. On / "Off"

9.2.3 Callibration

Display	Content
Start	Performs the calibration operation.

9.3 User Service tab

9.3.1 Top Adjustment

Function	• Adjusts the top margin of media for single-sided printing.
Use	• To correct a misaligned print image. Plain Paper: Adjust the head margin of plain paper. Thick Paper: Adjust the head margin of thick paper. Envelope: Adjust the head margin of envelope.
Setting /procedure	-15 to +15 (1 step: 0.2 mm)

9.3.2 Left Adjustment

Function	• Adjusts the left margin of media for single-sided printing.
Use	• To correct a misaligned print image. Tray1 (Simplex Side): Adjust the left margin of media fed from tray 1 (manual tray.)
Setting /procedure	-15 to +15 (1 step: 0.2 mm)

9.3.3 Transfer Power

Function	• Adjust the 2nd image transfer output (ATVC) on the single-sided pages for each media type.
Use	To use when the transfer failure at the trailing edge occurs. Plain Paper: Adjust the 2nd image transfer output of plain paper. Thick1 : Adjust the 2nd image transfer output of thick paper 1. Thick2 : Adjust the 2nd image transfer output of thick paper 2. Postcard: Adjust the 2nd image transfer output of Postcard. Envelope: Adjust the 2nd image transfer output of Envelope. Labels: Adjust the 2nd image transfer output of Labels.
Adjustment Range	• The default setting is 0. -8 to +7 (1 step)
Adjustment Instructions	• To increase the ATVC value (in the direction of a foggier image), decrease the setting value. • To decrease the ATVC value (in the direction of a less foggy image), increase the setting value.

9.3.4 P/H Clean Up

Function	• To move the toner cartridge (Magenta) to the position where it can be removed so that the printer head window can be cleaned.
Use	• To clean the printer head window.
Setting /procedure	*1.* Click [P/H Clean Up]. *2.* Open the front cover and remove the toner cartridge (M). *3.* Close the front cover. *4.* Open the top cover and remove the imaging cartridge. *5.* Clean the print head window by wiping it with a soft, dry cloth.

9.3.5 Service's Choice

A. GDI Time out

Function	• To specify the time for GDI time out.
Use	
Setting /procedure	• The default setting is 60 (min). 5 / 10 / 20 / 30 / 40 / 50 / "60"

B. Energy Save

Function	• Set weather to activate Energy Save mode when print job receiving or panel operation have not been made for a given period.
Use	
Setting /procedure	• The default setting is On. "On" / Off **NOTE** **• OEL/AOS 1byte/Korea: option not available**

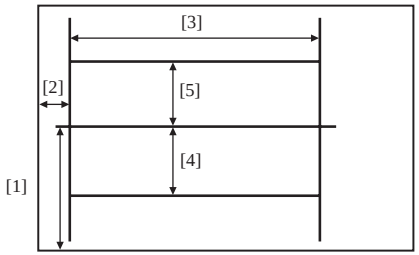
C. Flicker

Function	• Eliminates flickers of a room fluorescent light when it occurs due to power source use environment or similar reason.
Use	• Use when the fluorescent light flickers due to power source use environment or similar reason.
Setting /procedure	• The default setting is 0. "0" / 1 / 2

D. Image Adj Param

Function	• Optimizes the image by varying the output value of the developing bias when an image problem occurs due to the atmospheric pressure at high altitudes.
Use	• To adjust the developing when an image problem (uneven density) occurs in an environment of low atmospheric pressure in places such as at high altitudes.
Setting /procedure	• The default setting is 0. "0" / 1 / 2 / 3 **NOTE** **• When the setting has been changed, be sure to run a [Calibration] process.** See P.84

9.3.6 Print Pattern 1

Function	• To print the test pattern for adjusting the image.
Use	• If there is tilt or when registration or zoom ratio adjustments are performed [1]: The length of the half of the width of a paper (Change with the width of the paper.) [2]: 20 mm (Fixed value) [3]: 200 mm (Fixed value) [4], [5]: 50 mm (Fixed value)  A034F3C500DA

9.3.7 Print Pattern 2

Function	• To print the test pattern for halftones and gradations. One page each is printed for each of Y, M, C, and K, a total of four pages.
Use	• When checking density and pitch irregularities • When checking reproducibility of gradations

9.3.8 Download

Function	To download the service data shown below from the printer.
Use	• Top Adjustment • Left Adjustment • Transfer Power • Service's Choice

9.3.9 Upload

Function	• To upload the set data shown below to the printer.
Use	• Top Adjustment • Left Adjustment • Transfer Power • Service's Choice

9.4 Service Mode Tab

A. Procedure

• Press the following key in this order

1. Press the [Tab] key.
2. Press the [Alt] key + [a] key.
3. Input the "sysADMIN".

9.4.1 Enable Warning

A. Toner Low

Function	• Specifies whether a printer indicator blinks or a warning message appears in the status display box of the Remote Panel Utility when toner is about to run out. If Off is selected, neither of these notifications appear when the toner is about to run out.
Use	
Adjustment Range	• The default setting is On. "On" / Off

B. I/C Low

Function	• Specifies whether a printer indicator blinks or a warning message appears in the status display box of the Remote Panel Utility when imaging cartridge is about to run out. If Off is selected, neither of these notifications appear when the imaging cartridge is about to run out.
Use	
Adjustment Range	• The default setting is On. "On" / Off

9.4.2 Temperature

Function	• To adjust the fusing heating temperature individually for each paper type so as to ensure good fusing performance that varies with varying environmental conditions.
Use	• When fusing performance is poor, or wax streak or offset occurs when the type of paper is changed or environmental conditions change. • Use this function when curled paper, or paper misfeed as a result of the curled paper, occurs under varying environmental conditions or depending on the type of paper used.
Adjustment Range	• The default setting is 0. Plain Paper: -10 / -5 / "0" Thick Paper: -10 / -5 / "0" ENVELOPE: -10 / -5 / "0"

9.4.3 BK Clear

Function	• To clear engine information backup data
Use	• Execute this function to synchronize data when the MFP board or the printer control board is replaced with a new one.

9.4.4 Supplies Replace

A. Fuser Unit

Function	• Resets the fuser unit counter.
Use	• To use when the fuser unit has been replaced.

B. Transfer Roller

Function	• Resets the transfer roller counter.
Use	• To use when the transfer roller has been replaced.

9.4.5 Download

Function	To download the service data shown below from the printer.
Use	• Enable Warning: To set whether to display Toner low or I/C low. • Temperature: Displays the set fuser temperature of each paper. • Jam Counter: Displays the number of misfeeds that have occurred. • Trouble Counter: Displays the number of malfunctions detected. • Transfer Belt: Displays the remaining life of the transfer belt as a percentage. • Fuser Unit: Displays the remaining life of the fuser unit as a percentage. • Transfer Roller: Displays the remaining life of the transfer roller as a percentage. • Drum Unit: Displays the remaining life of the imaging cartridge as a percentage.

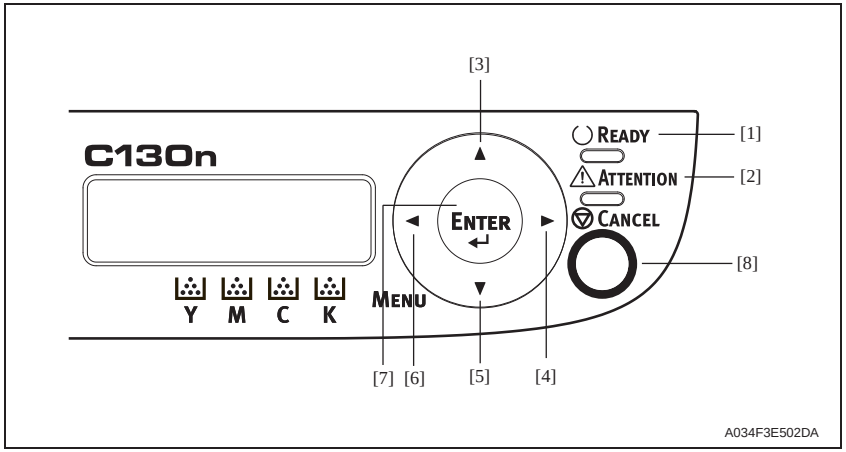
9.4.6 Upload

Function	• To upload the set data shown below to the printer.
Use	• Enable Warning: To set whether to display Toner low or I/C low. • Temperature: Displays the set fusion temperature of each paper.

10. Description of the control panel (C130n)

10.1 Control panel display

- The control panel contains six LED indicators and two keys, the ROTATE TONER key and the CANCEL key.



[1] • READY indicator

[2] • ATTENTION indicator

[3] • Moves up in the menu structure

[4] • Moves right in the menu structure
• Moves right through the available menu choices

[5] • Moves down in the menu structure.
• Within a menu choice that is changeable character by character, scrolls downward through the available characters

[6] • Moves left in the menu structure
• Moves left through the available menu choices

[7] • Enters the menu system
• Moves down in the menu structure
• Selects the displayed menu choice

[8] • CANCEL key

11. Description of the control panel (C130n)

11.1 List of control panel messages

11.1.1 Standard status messages

- Normal state messages are displayed on the upper line of the LCD.

Message	Description
IDLE	• Ready to print.
PROCESSING	• Processing data.
PRINTING	• Printing.
WARMING UP	• Warming up.
CALIBRATING	• Calibrating. Whenever you replace a toner cartridge or reboot the printer after making an environmental change, the printer automatically pauses to do an automatic image density control (AIDC) cycle. This process is provided to make reliable printer operation with optimum output quality possible.
ENERGY SAVER	• Energy saver mode.
CANCELLING JOB	• Canceling a job.
INITIALIZING	• The printer is being initialized.
C130n STARTING PRINTER	• The printer is starting up.
PORT AUTH ACTIVE	• The IEEE802.1x port is being authorized.

11.1.2 Caution messages

Message	Description
I/C END	• The imaging cartridge has reached the end of its life.
I/C LOW	• The imaging cartridge is near the end of its life.
TRAY 2 IS EMPTY	• Tray 2 is media empty.
TRAY 2 OPEN	• Tray 2 cassette is not installed or is not fully closed.
VIDEO I/F ERROR	• A video interface error occurred in the printer.
X INCORRECT	• The specified color of toner cartridge is not a genuine OKI toner cartridge or not the correct type.
X MEMORY ERROR	• A memory error occurred in the toner cartridge.
X TONER LOW	• The specified color of toner cartridge is low and should be replaced within 200 pages at 5% coverage of Letter/A4 pages.

11.1.3 Error messages

Message	Description
CHECK TRAY1 PAPER ↓↑ (Displaying alternately)) PRESS ENTER	• Tray 1 is media empty. • Media has misfed in Tray 1.
I/C LIFE END	• The imaging cartridge has reached the end of its life.
AUTH TIMEOUT	• The user is automatically logged off due to IEEE802.1x port authorization.
AIDC ERROR	• The AIDC sensor has developed a malfunction of some sort.
BELT ERROR	• The printer detected incorrect image position on the image transfer belt.
DUPLEX UNIT PANEL OPEN	• The duplex option cover is open.
ERROR LOADING IMAGE	• While updating code, an error has occurred.
TOP COVER OPEN	• The top cover of the machine is open.
PAPER JAM XXXX	• A media jam has occurred at the specified location.
PUT “SIZE” “TYPE” IN TRAY 1	• The media size set from the printer driver is different from the size of media loaded in Tray 1. **NOTE** • **Load the correct paper on Tray1, and press the ENTER key, then specify the [SIZE] and [TYPE] of the paper.**
PUT “SIZE” “TYPE” IN TRAY 2	• The media size set from the printer driver is different from the size of media loaded in Tray 2. **NOTE** • **This message appears when [MAIN MENU] → [PAPER MENU] → [INPUT TRAY] → [AUTO CONTINUE] is set to [OFF].**
X TONER LIFE END REPLACE X	• The X toner cartridge has reached the end of its life.
X TONER MISSING	• The specified color of toner cartridge is not installed.
X TONER OUT	• The specified color of toner cartridge is empty. **NOTE** • **Appears when [MAIN MENU] → [QUALITY MENU] → [TONER OUT ACTION] is set to [CONTINUE].**

11.1.4 Malfunction messages

For details of malfunction messages and troubleshooting procedures, see “Malfunction code”.

Message	Description
FIRMWARE UPDATE WRITING ERROR	• Data cannot be written since the flash memory is damaged.
SERVICECALL XX	• The engine or controller is faulty.

12. MENU (C130n)

12.1 List of MAIN MENU functions

*1: This setting is available only when an optional Lower Feeder Unit is installed.
*2: This setting is available only when a Duplex Option is installed.

MENU					Ref. page
MAIN MENU	PRINT MENU	MENU MAP			P.90
		CONFIGURATION			P.90
		STATISTICS PAGE			P.90
		FONT LIST	POSTSCRIPT		P.90
			PCL		P.90
		DIRECTORY LIST			P.90
		DEMO			P.90
	PAPER MENU	INPUT TRAY	TRAY 1 MODE		P.90
			TRAY 1	MEDIA SIZE	P.90
				MEDIA TYPE	P.90
			TRAY 2 *1	MEDIA SIZE	P.91
			CUSTOM SIZE	WIDTH (XX)	P.91
				LENGTH (XX)	
			AUTO CONTINUE		P.91
			TRAY CHAINING *1		P.91
			MAP *1	MODE	P.91
				LOGICAL TRAY 0-9	P.91
		DUPLEX *2			P.91
		ORIENTATION			P.91
		PAGE RECOVERY			P.92
	QUALITY MENU	REPLACE TONER	BLACK		P.92
			CYAN		
			MAGENTA		
			YELLOW		
			REMOVE ALL		P.92
		TONER OUT ACTION			P.92
		AIDC	REQUEST AIDC		P.92
			MODE		P.92
		P/H CLEAN UP			P.92
		ECONOMY PRINT			P.93
		DUPLEX SPEED			P.93
		IMAGE REFRESH			P.93

MENU						Ref. page
	INTERFACE MENU	ETHERNET	TCP/IP	ENABLE		P.93
				IPV4	DHCP/BOOTP	P.93
					IPV4 ADDRESS	P.93
					DEFAULT ROUTER	P.93
					SUBNET MASK	P.93
					ENABLE AUTO IP	P.94
				IPV6	ENABLE	P.94
					IDENTIFIER	P.94
					ENABLE AUTO	P.94
					GLOBAL PREFIX	P.94
			IP SERVICES	ENABLE HTTP		P.94
				DISABLE FILTERS		P.94
				DISABLE IPSEC		P.94
			IPX/SPX	FRAME TYPE		P.94
			ETHERNET SPEED			P.94
			DISABLE 802.1X			P.94
			PS PROTOCOL			P.95
		USB	ENABLE			P.95
			JOB TIMEOUT			P.95
	SYSTEM DEFAULT	PRINT QUALITY				P.95
		COLOR MODE				P.95
		EMULATIONS	DEFAULT			P.95
			AUTO DEFAULT			P.95
			POSTSCRIPT	ERROR PAGE		P.95
			PCL	LINE TERMINATION		P.96
				FONT	PITCH SIZE	P.96
					FONT NUMBER	P.96
					POINT SIZE	P.96
					SYMBOL SET	P.96
		STARTUP OPTIONS	START PAGE			P.96
		DATE & TIME				P.96
		ENERGY SAVER				P.96
		SECURITY	CONFIG	ENABLE		P.96
				SET USER PASSWD		P.97
				SET ADMIN PASSWD		P.97
		FORMAT	ERASE FLASH			P.97
		RESTORE/SAVE	RESTORE FACTORY			P.97
			SAVE CUSTOM			P.97
			RESTORE CUSTOM			P.97
	SERVICE MENU					P.97
LANGUAGE MENU						P.97

12.2 PRINT MENU

12.2.1 MENU MAP

Function	• Prints the menu map.
Use	• To check the available menu settings.
Setting /procedure	• The default setting is Yes. "YES" / NO

12.2.2 CONFIGRATION

Function	• Prints the configuration page.
Use	• To check configuration of the machine. The following items can be checked: TCP/IP Printer Information Printer Interfaces Installed Options Paper Settings
Setting /procedure	• The default setting is Yes. "YES" / NO

12.2.3 STATISTICS PAGE

Function	• Prints the statistics page.
Use	• To check the consumable status and the usage of the machine, such as the number of pages printed.
Setting /procedure	• The default setting is Yes. "YES" / NO

12.2.4 FONT LIST

A. POSTSCRIPT

Function	• Prints a list of PostScript fonts.
Use	• To check the available PostScript fonts.
Setting /procedure	• The default setting is Yes. "YES" / NO

B. PCL

Function	• Prints a PCL fonts.
Use	• To check the available PCL fonts.
Setting /procedure	• The default setting is Yes. "YES" / NO

12.2.5 DIRECTORY LIST

Function	• Prints a directory list of the flash.
Use	• To check the files saved on the flash.
Setting /procedure	• The default setting is Yes. "YES" / NO

12.2.6 DEMO

Function	• Prints the demo page.
Use	• To print a demo page.
Setting /procedure	• The default setting is Yes. "YES" / NO

12.3 PAPER MENU

12.3.1 INPUT TRAY

A. TRAY 1 MODE

Function	• To set auto tray switch.
Use	• If [AUTO] is selected, to specify that the printer driver settings have priority during printing. • If [CASSETTE] is selected, to specify that printing is performed when the printer driver settings and the control panel settings are all the same.
Setting /procedure	• The default setting is AUTO. "AUTO" / CASSETTE

B. TRAY 1

(1) MEDIA SIZE

Function	• Specifies the size of the media loaded in Tray 1.
Use	• To specify the size of the media loaded in Tray 1.
Setting /procedure	• The default setting for North America is LETTER. The default setting for all other regions is A4. • The media sizes available are as follows. "LETTER" / LEGAL / EXECUTIVE / "A4" / A5 / B5 / B5(ISO) / G LETTER / STATEMENT / FOLIO / UK QUARTO / FOOLSCAP / G LEGAL / C6 / DL / J-POSTCARD / KAI 16 / KAI 32 / 16K / SP FOLIO / OFICIO / CUSTOM

(2) MEDIA TYPE

Function	• Specifies the setting for the type of media loaded in Tray 1.
Use	• To specify the type of media loaded in Tray 1.
Setting /procedure	• The default setting is PLAIN PAPER. "PLAIN PAPER" / LABELS / LETTERHEAD / ENVELOPE / POSTCARD / THICK1 / THICK2

C. TRAY 2
(1) MEDIA SIZE

Function	• Specifies the size of the media loaded in Tray 2.
Use	• To specify the size of the media loaded in Tray 2.
Setting /procedure	• The default setting for North America is LETTER. The default setting for all other regions is A4. LETTER / A4 **NOTE** • **This setting is available only when an optional Lower Feeder Unit is installed.**

D. CUSTOM SIZE
(1) WIDTH (XX)

Function	• Specifies the width of the custom-sized media in Tray 1.
Use	• To specify the width of the custom-sized media in Tray 1.
Setting /procedure	• On the model for North America, the settings appear in inches and the menu item appears as [WIDTH(IN)]. On the models for all other regions, the settings appear in millimeters and the menu item appears as [WIDTH(MM)]. • The default setting is 92 mm (3.63 inch). 92 to 216 (363 to 850)

(2) LENGTH (XX)

Function	• Specifies the length of the custom-sized media in Tray 1.
Use	• To specify the length of the custom-sized media in Tray 1.
Setting /procedure	• On the model for North America, the settings appear in inches and the menu item appears as [LENGTH(IN)]. On the models for all other regions, the settings appear in millimeters and the menu item appears as [LENGTH(MM)]. • The default setting is 184 mm (7.24 inch). For PLAIN PAPER: 195 to 356 (731 to 1401) For THICK1, 2: 184 to 297 (724 to 1170)

E. AUTO CONTINUE

Function	• Enables or disables printing when the size of the media loaded in the tray does not match that of the print data.
Use	• To print data on the media loaded in the tray of the media loaded in the tray does not match that of the print data.
Setting /procedure	• The default setting is OFF. “OFF” / ON

F. TRAY CHAINING

Function	• Allows a print cycle to continue without interruption when the current tray runs out of media during the print cycle by automatically reselecting another tray, in which the media of the same size and the same type is loaded.
Use	• To allow media to be pulled from another tray when the media in the first tray runs out.
Setting /procedure	• The default setting is YES. “YES” / NO **NOTE** • **This setting is available only when an optional Lower Feeder Unit is installed.**

G. MAP
(1) MODE

Function	• Selects whether or not the tray mapping function is used.
Use	• To specify whether trays are mapped.
Setting /procedure	• The default setting is ON. “ON” / OFF

(2) LOGICAL TRAY 0-9

Function	• Specifies whether jobs received from another manufacturer's printer driver are printed using Tray 1 or Tray 2.
Use	• To specify the media source for print jobs using another manufacturer’s printer driver.
Setting /procedure	• Only the default for LOGICAL TRAY 2 is PHYSICAL TRAY 2. PHYSICAL TRAY 1 is the default for all trays other than LOGICAL TRAY 2. PHYSICAL TRAY 1 / PHYSICAL TRAY 2

12.3.2 DUPLEX

Function	• Selects whether or not the duplex print function is used.
Use	• To use the duplex print function. OFF : Duplex printing is not possible. SHORTEDGE : The pages will be printed on both sides of the media for short-edge binding. LONGEDGE : The pages will be printed on both sides of the media for long-edge binding.
Setting /procedure	• The default setting is OFF. “OFF” / SHORTEDGE / LONGEDGE **NOTE** • **This setting is available only when a Duplex Option is installed.**

12.3.3 ORIENTATION

Function	• Specifies the orientation of the media.
Use	• To change the orientation of the media.
Setting /procedure	• The default setting is PORTRAIT. “PORTRAIT” / LANDSCAPE

12.3.4 PAGE RECOVERY

Function	• Selects whether or not the page is printed again after recovering from a media mis-feed or a paper jam.
Use	• To specify the point from which printing should continue after a media misfeed. ON : The page that was misfeed is printed again. OFF : Printing continues with the next page without reprinting the misfed page.
Setting /procedure	• The default setting is ON. "ON" / OFF

12.4 QUALITY MENU

12.4.1 REPLACE TONER

A. BLACK/CYAN/MAGENTA/YELLOW

Function	• Moves the specified color of toner cartridge into replacement position, so it can be replaced.
Use	• To replace the specified color of toner cartridge.
Setting /procedure	*1.* Select [QUALITY MENU] → [REPLACE TONER] and the specific color of toner to be replaced. *2.* Select [YES], and press the ENTER key. *3.* The rack rotates to bring the specified color of toner cartridge to the replacement position. When the rack stops moving, the message [OPEN DOOR AND REPLACE (color) TONER] appears on the display. *4.* Open the front cover and replace the toner cartridge. *5.* Close the front cover. The initial screen will then reappear.

B. REMOVAL ALL

Function	• To remove (or replace) every toner cartridge in order and move the position where the removal is available so that all toner cartridges can be removed (or replaced).
Use	• To remove (or replace) all toner cartridges.
Setting /procedure	*1.* Select [QUALITY MENU] → [REPLACE TONER] → [REMOVAL ALL]. *2.* Select [YES], and press the ENTER key. *3.* The rack rotates to bring the first color toner cartridge to the replacement position. When the rack stops moving, the message [OPEN DOOR AND REMOVE M TONER] appears on the display. *4.* Open the front cover and replace the toner cartridge. *5.* Close the front cover. then, the message [OPEN DOOR AND REMOVE C TONER] appears on the display. *6.* Repeating the same steps, remove the remaining toner cartridges. **NOTE** • **The toner cartridges are to be removed in the order of M → C → K → Y → M.** *7.* Close the front cover. the initial screen will then reappear.

12.4.2 TONER OUT ACTION

Function	• Specifies whether to stop or continue printing when a toner empty condition is detected.
Use	• To select to permit printing upon a toner empty condition.
Setting /procedure	• The default setting is STOP. "STOP" / CONTINUE

12.4.3 AIDC

A. REQUEST AIDC

Function	• Executes image adjustments.
Use	• To calibrate the engine when there are print image quality problems. • To calibrate the engine when the transfer belt unit and transfer roller are replaced with new ones.
Setting /procedure	• The default setting is NO. YES / "NO" • If YES is selected, image adjustments are performed.

B. MODE

Function	• Applies the image adjustments
Use	• If ON is selected, to apply the image adjustments. • If OFF is selected, to not apply image adjustments.
Setting /procedure	• The default setting is ON. "ON" / OFF

12.4.4 P/H CLEAN UP

Function	• To move the toner cartridge (Magenta) to the position where it can be removed so that the printer head window can be cleaned.
Use	• To clean the printer head window.
Setting /procedure	• The default setting is YES. "YES" / NO *1.* Select [MAIN MENU] - [QUALITY MENU] - [P/H CLEAN UP]. *2.* Open the front cover and remove the toner cartridge (M). *3.* Close the front cover. *4.* Open the top cover and remove the imaging cartridge. *5.* Clean the print head window by wiping it with a soft, dry cloth.

12.4.5 ECONOMY PRINT

Function	• To set whether to print with saving toner consumption amount.
Use	• If OFF is selected: Normal printing • If On is selected: Toner consumption amount will be saved for printing.
Setting /procedure	• The default setting is OFF. "OFF" / ON

12.4.6 DUPLEX SPEED

Function	• To set print speed and image quality for duplex printing.
Use	• If AUTOMATIC is selected, the print speed is automatically selected. • If SPEED is selected, the print speed is increased, while the print quality is decreased. • If QUALITY is selected, the print speed is decreased, while the print quality is increased.
Setting /procedure	• The default setting is AUTOMATIC. "AUTOMATIC" / SPEED / QUALITY

12.4.7 IMAGE REFRESH

Function	• Use this function to perform aging of the toner cartridge, thereby making less noticeable the faint lines occurring at a pitch of 24 mm in the main scanning direction.
Use	**NOTE** **• Execution of the image refresh mode consumes toner.** **• This function does not help uneven density at a pitch of 25 mm.**
Setting /procedure	• The default setting is YES. "YES" / NO

12.5 INTERFACE MENU

12.5.1 ETHERNET

A. TCP/IP

(1) ENABLE

Function	• Sets whether to enable or disable TCP/IP.
Use	• To disable TCP/IP.
Setting /procedure	• The default setting is YES. "YES" / NO

(2) IPV4

• DHCP/BOOTP

Function	• Automatically acquires an IP address from the DHCP or BOOTP server, if there is one in the network, and specifies whether to load other network information.
Use	• To automatically acquire an IP address and load other network information.
Setting /procedure	• The default setting is YES. "YES" / NO

• IPV4 ADDRESS

Function	• Sets the IP address of the printer on the network.
Use	• To enter the printer's IP address.
Setting /procedure	• Enter the [IP ADDRESS] using the ▲, ▼, ◀, and ▶ arrow keys. • The default setting is "192.168.001.002." **NOTE** **• When the printer's IP address is set manually, DHCP/BOOTP is automatically set to OFF.**

• DEFAULT ROUTER

Function	• Sets the IP address of the router if one is on the network.
Use	• To enter the IP address of the router.
Setting /procedure	• Enter the IP address using the ▲, ▼, ◀, and ▶ arrow keys. • The default setting is "000.000.000.000".

• SUBNET MASK

Function	• Sets the subnet mask of the printer used on the network.
Use	• To enter the printer subnet mask.
Setting /procedure	• Enter the subnet mask using the ▲, ▼, ◀, and ▶ arrow keys. • The default setting is "000.000.000.000".

• **ENABLE AUTO IP**

Function	• Selects whether or not the IP address is automatically acquired when DHCP/BOOTP, PING, and ARP are not functioning or when there is no response.
Use	• To automatically acquire an IP address when DHCP/BOOTP, PING, and ARP are not functioning or when there is no response.
Setting /procedure	• The default setting is NO. YES / “NO”

(3) IPV6

• **ENABLE**

Function	• To set whether to use IPv6 in IP network communication.
Use	• If YES is selected, IPv6 is enabled. • If NO is selected, IPv6 is disabled.
Setting /procedure	• The default setting is YES. “YES” / NO

• **IDENTIFIER**

Function	• Displays the Link-Local address.
Use	

• **ENABLE AUTO**

Function	• To set whether to use the IPv6 address automatic acquisition setting.
Use	• If YES is selected, IPv6 address is automatically obtained. • If NO is selected, IPv6 auto configuration is disabled.
Setting /procedure	• The default setting is YES. “YES” / NO

• **GLOBAL PREFIX**

Function	• Displays the global address.
Use	

B. IP SERVICES

(1) ENABLE HTTP

Function	• To set enabled/disabled of HTTP
Use	• If YES is selected, HTTP is enabled. • If NO is selected, HTTP is disabled.
Setting /procedure	• The default setting is YES. “YES” / NO

(2) DISABLE FILTERS

Function	• To set enabled/disabled of IP filtering
Use	• If YES is selected, filter is enabled. • If NO is selected, filter is disabled.
Setting /procedure	• The default setting is NO. YES / “NO”

(3) DISABLE IPSEC

Function	• To set enabled/disabled of ISPEC
Use	• If YES is selected, IPsec is enabled. • If NO is selected, IPsec is disabled.
Setting /procedure	• The default setting is NO. YES / “NO”

C. IPX/SPX

(1) FRAME TYPE

Function	• Sets the Ethernet frame type.
Use	• To specify the Ethernet frame type for transmission.
Setting /procedure	• The default setting is AUTO. “AUTO” / 802.2 / 802.3 / ETHER II / SNAP

D. ETHERNET SPEED

Function	• Specifies the transmission speed for the network and the transmission method for bi-directional transmission.
Use	• To set the specific network speed and the transmission method.
Setting /procedure	• The default setting is AUTO. “AUTO” / 100 FULL DUPLEX / 100 HALF DUPLEX / 10 FULL DUPLEX / 10 HALF DUPLEX **NOTE** • **Make sure to turn the power switch OFF and ON again after changing the network speed.**

E. DISABLE 802.1X

Function	• To set enabled/disabled of IEEE802.1x
Use	• If YES is selected, IEEE802.1x function is enabled. • If NO is selected, IEEE802.1x function is disabled.
Setting /procedure	• The default setting is NO. YES / “NO”

F. PS PROTOCOL

Function	• Selects whether PostScript jobs are received in the binary format or the quoted format.
Use	• To transmit PostScript data in quoted format.
Setting /procedure	• The default setting is BINARY. "BINARY" / QUOTED BINARY

12.5.2 USB

A. ENABLE

Function	• Specifies whether to enable or disable USB.
Use	• To disable USB.
Setting /procedure	• The default setting is YES. "YES" / NO

B. JOB TIMEOUT

Function	• Specifies the length of time until the print job being received is timed out when the USB interface is being used.
Use	• To set the amount of time before a print job sent to the USB interface times out.
Setting /procedure	• The default setting is 60 (seconds). 0 to 999

12.6 SYSTEM DEFAULT

12.6.1 PRINT QUALITY

Function	• Selects the image quality for prints.
Use	• To change the image quality setting.
Setting /procedure	• The default setting is HIGH. "HIGH" / STANDARD

12.6.2 COLOR MODE

Function	• Specifies whether printing is in full color or grayscale.
Use	• To select color or grayscale printing.
Setting /procedure	• The default setting is COLOR. "COLOR" / GRAYSCALE

12.6.3 EMULATIONS

A. DEFAULT

Function	• Specifies the printer control language.
Use	• To change the printer control language. • If [AUTOMATIC] is selected, the printer automatically selects the printer control language from the data stream.
Setting /procedure	• The default setting is AUTOMATIC. "AUTOMATIC" / POSTSCRIPT / PCL5 / PCL XL / HEX DUMP

B. AUTO DEFAULT

Function	• Selects the printer description language when it cannot be identified from the data.
Use	• To set the printer control language to be used when it cannot be automatically identified from the print job.
Setting /procedure	• The default setting is PCL5. "PCL5" / POSTSCRIPT

C. POSTSCRIPT

(1) ERROR PAGE

Function	• Sets whether or not an error page is printed when a PostScript error occurs.
Use	• To specify whether an error page should be printed if a PostScript error occurs.
Setting /procedure	• The default setting is ON. "ON" / OFF

D. PCL
(1) LINE TERMINATION

Function	• Sets the CR/LF mapping for line termination in the PCL language.
Use	• To change the CR/LF mapping.
Setting /procedure	• The default setting is CR=CR LF=CRLF. "CR=CR LF=CRLF" / CR=CR LF=LF / CR=CRLF LF=LF / CR=CRLF LF=CRLF

(2) FONT
• PITCH SIZE

Function	• Sets the font pitch size in the PCL language when not specified by the printer driver.
Use	• To set the font pitch size in the PCL language when it cannot be specified by the printer driver during printing from Windows DOS, etc.
Setting /procedure	• The default setting is 1000. 44 to 9999

• FONT NUMBER

Function	• Sets the font in the PCL language when not specified by the printer driver.
Use	• To use when the printer driver cannot specify the font during printing from Windows DOS, etc. The font numbers that appear correspond to the PCL font list.
Setting /procedure	• The default setting is 0. 0 to 32767

• POINT SIZE

Function	• Sets the font size in the PCL language when not specified by the printer driver.
Use	• To set the font size in the PCL language when it cannot be specified by the printer driver during printing from Windows DOS, etc.
Setting /procedure	• The default setting is 1200. 400 to 99975

• SYMBOL SET

Function	• Sets the font symbol set in the PCL language when not specified by the printer driver.
Use	• To use when the font symbol set cannot be specified by the printer driver during printing from Windows DOS, etc.
Setting /procedure	• The default setting is PC8. • The font symbol set available for setting are as follows. "PC8" / DESKTOP / ISO4 / ISO6 / ISO11 / ISO15 / ISO17 / ISO21 / ISO60 / ISO69 / ISOL1 / ISOL2 / ISOL5 / ISOL6 / ISOL9 / LEGAL / MATH8 / MCTEXT / MSPUBL / PC775 / PC850 / PC852 / PC858 / PC8DN / PC8TK / PC1004 / PIFONT / PSMATH / PSTEXT / ROMAN8 / WIN30 / WINBALT / WINL1 / WINL2 / WINL5 / WIN31J / GB2312 / ARABIC8 / HPWARA / PC864ARA / HEBREW7 / ISOHEB / HEBREW8 / PC862HEB / ISOCYR / PC866CYR / WINCYR / PC866UKR / GREEK8 / WINGRK / PC851GRK / PC8GRK / ISOGRK

12.6.4 STARTUP OPTIONS

A. START PAGE

Function	• Selects whether or not a startup page is printed when the printer is turned on.
Use	• To specify whether a startup page is printed. YES: The startup page is printed when the printer is turned on. NO : The startup page is not printed.
Setting /procedure	• The default setting is NO. YES / "NO"

12.6.5 DATE & TIME

Function	• Set the date and time on the time-of-day (TOD) clock.
Use	• To adjust the TOD clock. • The settings appear in the following order: year, month, day:hour, minutes, seconds.
Setting /procedure	*1.* Select [DATE & TIME]. *2.* Using ▲, ▼, ◀, and ▶ keys, enter the time-of-day, and day, month, and year. *3.* Accept the date and time setting using the ENTER key.

12.6.6 ENERGY SAVER

Function	• Specifies the length of time before the machine enters energy saver mode after the last print is received or the last key operated.
Use	• To set the amount of time before the machine enters energy saver mode.
Setting /procedure	• The default setting is 30 MIN. 15 MIN / "30 MIN" / 1 HOUR / 2 HOUR (*) **NOTE** **• (*) Displayed only on the model for the 110 V models.**

12.6.7 SECURITY

A. CONFIG
(1) ENABLE

Function	• To set whether or not to protect all menus with password.
Use	• To protect all menus with password input.
Setting /procedure	• The default setting is OFF. "OFF" / ON

(2) SET USER PASSWD

Function	• To set user password to display the user menu.
Use	**NOTE** • **The specified password is applied only if [SECURITY] → [CONFIG] → [ENABLE] is set to [ON].** • **Empty passwords are not allowed.**
Setting /procedure	• The default setting is 1. *1.* Select [SET USER PASSWD]. *2.* Enter passwords with 16 digits at maximum. *3.* Accept the password setting using the ENTER key.

(3) SET ADMIN PASSWD

Function	• To set Admin password to display the admin menu.
Use	**NOTE** • **The specified password is applied only if [SECURITY] → [CONFIG] → [ENABLE] is set to [ON].** • **Empty passwords are not allowed.**
Setting /procedure	• The default setting is “the last four digits of the printer serial number”. *1.* Select [SET ADMIN PASSWD]. *2.* Enter passwords with 16 digits at maximum. *3.* Accept the password setting using the ENTER key.

12.6.8 FORMAT

A. ERASE FLASH

Function	• Selects whether or not to initialize the flash RAM.
Use	• To initialize the flash RAM.
Setting /procedure	• The default setting is NO. “NO” / YES **NOTE** • **If YES is selected, the flash RAM is initialized.**

12.6.9 RESTORE/SAVE

A. RESTORE FACTORY

Function	• Selects whether or not all menu items are reset to their factory default settings.
Use	• To return the current settings to their factory default settings.
Setting /procedure	• The default setting is NO. “NO” / YES **NOTE** • **Printer will auto reboot if [YES] is selected.**

B. SAVE CUSTOM

Function	• Selects whether or not all changed menu settings are saved.
Use	• To save the custom settings.
Setting /procedure	• The default setting is NO. “NO” / YES **NOTE** • **If [YES] is selected, all changes are saved.**

C. RESTORE CUSTOM

Function	• Selects whether or not menu items are reverted to the previously saved settings.
Use	• To revert the settings to the previously saved settings.
Setting /procedure	• The default setting is NO. “NO” / YES **NOTE** • **Printer will auto reboot if [YES] is selected.**

12.7 SERVICE MENU

See P.99

12.8 LANGUAGE

Function	• Sets the language of the control panel display.
Use	• To change the language of the control panel display. • The default setting varies according to the applicable marketing area.
Setting /procedure	• The default setting is ENGLISH. ENGLISH / FRANCAIS / ESPANOL / PORTUGES / CESKY / DEUTSCH / ITALIANO /JAPANESE / NEDERLANDS / POLISH

13. USER SERVICE MENU (C130n)

13.1 USER SERVICE MENU entry procedure

A. Procedure

1. Press the ▲ key for more than 2 seconds on [IDLE] screen.
2. Press the ENTER key.
3. Press the ENTER key to display [MAIN MENU].
4. Press the ◀ key.

B. Exiting

- Press ▲ key to return to the initial screen.

13.2 List of SERVECE MENU functions

USER SVC MENU				Ref. page
SETTINGS	ENERGY SAV			P.100
ADJUSTMENTS	FLICKER			P.100
	TOP MARGIN	PLAIN PAPER		P.100
		THICK PAPER		
		ENVELOPE		
	LEFT MARGIN	LEFT ADJ TRAY1		P.100
		LEFT ADJ TRAY2		
	LEFT MARGIN DUP	LEFT ADJ TRAY1		P.100
		LEFT ADJ TRAY2		
	TRANSFER POWER	SIMPLEX PASS	PLAIN PAPER	P.100
			THICK1	
			THICK2	
			POSTCARD	
			ENVELOPE	
			LABELS	
		DUPLEX PASS	PLAIN PAPER	P.100
	IMAGE ADJ PARAM			P.101
TEST	TEST PRINT	PATTERN 1		P.103
		PATTERN 2		

14. Service mode (C110)

14.1 Service mode entry procedure

- It will be displayed by activating Panel Remote Utility and enter the password.

See P.86

NOTE

- **Ensure appropriate security for the service mode entry procedure. It should NEVER be given to any unauthorized person.**

15. SERVICE MENU (C130n)

15.1 SERVICE MENU entry procedure

NOTE

- **Ensure appropriate security for the SERVICE MENU entry procedure. It should NEVER be given to any unauthorized person.**

A. Procedure

1. Select [MAIN MENU] → [SERVICE MENU] and press the ENTER key.
2. Press ENTER key twice.
3. Using ▲, ▼, ◀, and ▶ keys, input the “C130” and then press the ENTER key.

B. Exiting

- Press ▲ key to return to the initial screen.

15.2 List of SERVICE MENU functions

SERVICE MENU				Ref. page
SERVICE PASSWORD	ENTER PASSWORD			—
SETTINGS	ENERGY SAVE			P.100
ADJUSTMENTS	FLICKER			P.100
	TOP MARGIN	PLAIN PAPER		P.100
		THICK PAPER		
		ENVELOPE		
	LEFT MARGIN	LEFT ADJ TRAY1		P.100
		LEFT ADJ TRAY2		
	LEFT MARGIN DUP	LEFT ADJ TRAY1		P.100
		LEFT ADJ TRAY2		
	TRANSFER POWER	SIMPLEX PASS	PLAIN PAPER	P.100
			THICK1	
			THICK2	
			POSTCARD	
			ENVELOPE	
			LABELS	
		DUPLEX PASS	PLAIN PAPER	P.100
	IMAGE ADJ PARAM			P.101
	FUSER TEMP	PLAIN PAPER		P.101
		THICK1		
		THICK2		
		ENVELOPE		
	SUPPLIES REPLACE	TRANSFER ROLLER		P.101
		FUSER UNIT		P.101
	ERASE NVRAM			P.101
COUNTERS	TOTAL COUNTER	TOTAL FACES		P.101
		COLOR FACES		P.101

SERVICE MENU			Ref. page
		MONOCHROME FACES	P.101
		TOTAL DUP FACES	P.101
		COLOR DUP FACES	P.101
		MONO DUP FACES	P.102
	TRAY COUNTER	TRAY 1	P.102
		TRAY 2	
	PAPER SIZE COUNT	A4	P.102
		B5	
		A5	
		LEGAL	
		LETTER	
		OTHERS	
	PAPER TYPE COUNT	PLAIN PAPER	P.102
		THICK1	
		THICK2	
		ENVELOPE	
		LETTERHEAD	
		POSTCARD	
		LABELS	
	SUPPLIES USAGE	CYAN TONER	P.102
		MAGENTA TONER	P.102
		YELLOW TONER	P.102
		BLACK TONER	P.102
		I/C	P.102
	SRU USAGE	TRANS BELT UNIT	P.102
		TRANSFER ROLLER	P.102
		FUSER UNIT	P.102
	JAM COUNTER		P.102
	TROUBLE COUNTER		P.102
SYSTEM VERSION	MAIN F/W VER		P.102
	ENGINE F/W VER		P.102
	MAIN RAM SIZE		P.102
	SERIAL NUMBER		P.102
TEST	PAPER FEED TEST		P.103
	TEST PRINT	PATTERN1	P.103
		PATTERN2	P.103
PRINT SETTINGS			P.103
BK CLEAR			P.103
FUSER UNLOCK			P.103
CIE COLORSPACE			P.103

15.3 SETTINGS

15.3.1 ENERGY SAVE

Function	• Set to activate Energy Save mode when print job receiving or panel operation have not been made for a given period.
Use	
Setting /procedure	• The default setting is ON. "ON" / OFF **NOTE** **• Other than 110v: option not available**

15.4 ADJUSTMENTS

15.4.1 FLICKER

Function	• Eliminates flickers of a room fluorescent light when it occurs due to power source use environment or similar reason.
Use	• Use when the fluorescent light flickers due to power source use environment or similar reason.
Setting /procedure	• The default setting is 0. "0" / 1 / 2

15.4.2 TOP MARGIN

Function	• Adjusts the top margin of media for single-sided printing.
Use	• To correct a misaligned print image. PLAIN PAPER: Adjust the head margin of plain paper. THICK PAPER: Adjust the head margin of thick paper. ENVELOPE: Adjust the head margin of envelope.
Setting /procedure	*1.* Enter the SERVICE MENU. *2.* Select [ADJUSTMENTS] - [TOP MARGIN] and press the ENTER key. *3.* Select desired paper type and press the ENTER key. *4.* Select desired adjustment amount with the up key▲ /down key▼ and press the ENTER key. -15 to +15 (1 step: 0.2 mm)

15.4.3 LEFT MARGIN

Function	• Adjusts the left margin of media for single-sided printing.
Use	• To correct a misaligned print image. LEFT ADJ TRAY1: Adjust the left margin of media fed from tray 1. LEFT ADJ TRAY2: Adjust the left margin of media fed from tray 2.
Setting /procedure	*1.* Enter the SERVICE MENU. *2.* Select [ADJUSTMENTS] - [LEFT MARGIN] and press the ENTER key. *3.* Select desired tray and press the ENTER key. *4.* Select desired adjustment amount with the up key▲ /down key▼ and press the ENTER key. -15 to +15 (1 step: 0.2 mm)

15.4.4 LEFT MARGIN DUP

Function	• Adjusts the left margin of media for double-sided printing.
Use	• To correct a misaligned print image. LEFT ADJ TRAY1: Adjust the left margin of duplex print media fed from tray 1. LEFT ADJ TRAY2: Adjust the left margin of duplex print media fed from tray 2.
Setting /procedure	*1.* Enter the SERVICE MENU. *2.* Select [ADJUSTMENTS] - [LEFT ADJ DUPLEX] and press the ENTER key. *3.* Select desired tray and press the ENTER key. *4.* Select desired adjustment amount with the up key ▲/down key ▼ and press the ENTER key. -15 to +15 (1 step: 0.2 mm)

15.4.5 TRANSFER POWER

A. SIMPLEX PASS

Function	• Adjust the 2nd image transfer output (ATVC) on the single-sided pages for each media type.
Use	• To use when the transfer failure at the trailing edge occurs.
Adjustment Range	• The default setting is 0. -8 to +7 (1 step)
Adjustment Instructions	• To increase the ATVC value (in the direction of a foggier image), decrease the setting value. • To decrease the ATVC value (in the direction of a less foggy image), increase the setting value.
Setting /procedure	*1.* Enter the SERVICE MENU. *2.* Select [TRANSFER POWER] and press the ENTER key. *3.* Select [SIMPLEX PASS] and press the ENTER key. *4.* Select desired media type with the left key ◀/right key ▶ and press the ENTER key. *5.* Select desired setting value with the up key ▲/down key ▼ and press the ENTER key.

B. DUPLEX PASS

Function	• Adjust the 2nd image transfer output (ATVC) on the duplexed pages for each media type.
Use	• To use when the transfer failure at the trailing edge occurs.
Adjustment Range	• The default setting is 0. -8 to +7 (1 step)
Adjustment Instructions	• To increase the ATVC value (in the direction of a foggier image), decrease the setting value. • To decrease the ATVC value (in the direction of a less foggy image), increase the setting value.
Setting /procedure	*1.* Enter the SERVICE MENU. *2.* Select [TRANSFER POWER] and press the ENTER key. *3.* Select [DUPLEX PASS] and press the ENTER key. *4.* Select desired setting value with the up key ▲/down key ▼ and press the ENTER key.

15.4.6 IMAGE ADJ PARAM

Function	• Optimizes the image by varying the output value of the developing bias when an image problem occurs due to the atmospheric pressure at high altitudes.
Use	• To adjust the developing when an image problem (uneven density) occurs in an environment of low atmospheric pressure in places such as at high altitudes.
Setting /procedure	• The default setting is 0. "0" / 1 / 2 / 3 **NOTE** • **When the setting has been changed, be sure to run a [REQUEST AIDC] process.** See P.92

15.4.7 FUSER TEMP

Function	• To adjust the fusing heating temperature individually for each paper type so as to ensure good fusing performance that varies with varying environmental conditions.
Use	• When fusing performance is poor, or wax streak or offset occurs when the type of paper is changed or environmental conditions change. • Use this function when curled paper, or paper misfeed as a result of the curled paper, occurs under varying environmental conditions or depending on the type of paper used.
Adjustment Range	• The default setting is 0. PLAIN PAPER: -10 / -5 / "0" THICK1: -10 / -5 / "0" THICK2: -10 / -5 / "0" ENVELOPE: -10 / -5 / "0"
Adjustment Instructions	• If fusing performance is poor, increase the setting. • If wax streaks occur, decrease the setting. • If offset is poor, decrease the setting. • If curling of the paper occurs, decrease the setting.
Setting /procedure	*1.* Enter the SERVICE MENU. *2.* Select [FUSER TEMP] and press the ENTER key. *3.* Select the type of paper and press the ENTER key. *4.* Select desired setting value with the up key ▲/down key ▼ and press the ENTER key.

15.4.8 SUPPLIES REPLACE

A. TRANSFER ROLLER

Function	• Resets the transfer roller counter.
Use	• To use when the transfer roller has been replaced.
Setting /procedure	• The default setting is NO. "NO" / YES *1.* Enter the SERVICE MENU. *2.* Select [ADJUSTMENTS] - [SUPPLIES REPLACE] → [TRANSFER ROLLER], and select [YES.] *3.* Press the ENTER key and reset the counter.

B. FUSER UNIT

Function	• Resets the fuser unit counter.
Use	• To use when the fuser unit has been replaced.
Setting /procedure	• The default setting is NO. "NO" / YES *1.* Enter the SERVICE MENU. *2.* Select [ADJUSTMENTS] - [SUPPLIES REPLACE] → [FUSER UNIT], and select [YES.] *3.* Press the ENTER key and reset the counter.

15.4.9 ERASE NVRAM

Function	• To erase NVRAM data.
Use	
Setting /procedure	• The default setting is NO. "NO" / YES

15.5 COUNTERS

15.5.1 TOTAL COUNTER

A. TOTAL FACES

Function	• Displays the total number of pages printed to date.
Use	• To identify the total number of printed pages.

B. COLOR FACES

Function	• Displays the total number of pages printed in color.
Use	• To identify the total number of color pages printed.

C. MONOCHROME FACES

Function	• Displays the total number of monochrome pages printed to date.
Use	• To identify the total number of monochrome pages printed.

D. TOTAL DUP FACES

Function	• To display total number of duplex printing.
Use	• To confirm the number of duplex printing so that usage status can be comprehended.

E. COLOR DUP FACES

Function	• To display total number of color duplex printing.
Use	• To confirm the number of color duplex printing so that usage status can be comprehended.

F. MONO DUP FACES

Function	• To display total number of monochrome duplex printing.
Use	• To confirm the number of monochrome duplex printing so that usage status can be comprehended.

15.5.2 TRAY COUNTER

Function	• To display the number of printing by tray.
Use	• To confirm the number of printing by tray so that usage status can be comprehended.

15.5.3 PAPER SIZE COUNT

Function	• To display the number of printing by paper size.
Use	• To confirm the number of printing by paper size so that usage status can be comprehended.

15.5.4 PAPER TYPE COUNT

Function	• To display the number of printing by paper type.
Use	• To confirm the number of printing by paper type so that usage status can be comprehended.

15.5.5 SUPPLIES USAGE

A. CYAN TONER

Function	• Displays how much of the toner cartridge (C) has been used as a percentage.
Use	• To monitor the amount of life remaining in the toner cartridge (C).

B. MAGENTA TONER

Function	• Displays how much of the toner cartridge (M) has been used as a percentage.
Use	• To monitor the amount of life remaining in the toner cartridge (M).

C. YELLOW TONER

Function	• Displays how much of the toner cartridge (Y) has been used as a percentage.
Use	• To monitor the amount of life remaining in the toner cartridge (Y).

D. BLACK TONER

Function	• Displays how much of the toner cartridge (K) has been used as a percentage.
Use	• To monitor the amount of life remaining in the toner cartridge (K).

E. I/C

Function	• Displays the remaining life of the imaging cartridge as a percentage.
Use	• To monitor the amount of life remaining in the imaging cartridge.

15.5.6 SRU USAGE

A. TRANS BELT UNIT

Function	• Displays the remaining life of the transfer belt as a percentage.
Use	• To monitor the amount of life remaining in the transfer belt.

B. TRANSFER ROLLER

Function	• Displays the remaining life of the transfer roller as a percentage.
Use	• To monitor the amount of life remaining in the transfer roller.

C. FUSER UNIT

Function	• Displays the remaining life of the fuser unit as a percentage.
Use	• To monitor the amount of life remaining in the fuser unit.

15.5.7 JAM COUNTER

Function	• Displays the number of misfeeds that have occurred.
Use	• When checking for the number of misfeeds that have occurred

15.5.8 TROUBLE COUNTER

Function	• Displays the number of malfunctions detected.
Use	• When checking for the number of malfunctions detected

15.6 SYSTEM VERSION

15.6.1 MAIN F/W VER

Function	• Displays the version of the controller firmware.
Use	• When upgrading the firmware • When the image processing board has been replaced with a new one

15.6.2 ENGINE F/W VER

Function	• Displays the version of the engine firmware.
Use	• When the printer control board has been replaced with a new one

15.6.3 MAIN RAM SIZE

Function	• Displays the size of the main memory.
Use	• When checking for the memory size

15.6.4 SERIAL NUMBER

Function	• Displays the serial number of the printer engine.
Use	• When checking for the printer serial number

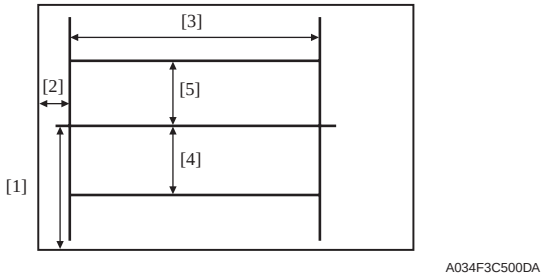
15.7 TEST

15.7.1 PAPER FEED TEST

Function	• To check the paper feeding in the paper take-up/transport sections without printing on the paper.
Use	• When a paper misfeed occurs
Setting /procedure	• The default setting is YES. "YES" / NO

15.7.2 TEST PRINT

A. PATTERN1

Function	• To print the test pattern for adjusting the image.
Use	• If there is tilt or when registration or zoom ratio adjustments are performed [1]: The length of the half of the width of a paper (Change with the width of the paper.) [2]: 20 mm (Fixed value) [3]: 200 mm (Fixed value) [4], [5]: 50 mm (Fixed value)  A034F3C500DA
Setting /procedure	• The default setting is YES. "YES" / NO

B. PATTERN2

Function	• To print the test pattern for halftones and gradations.
Use	• When checking density and pitch irregularities • When checking reproducibility of gradations
Setting /procedure	• The default setting is YES. "YES" / NO

15.8 PRINT SETTINGS

Function	• To print the list of engine adjusted values.
Use	• To confirm every adjusted values set at SERVICE MENU.
Setting /procedure	• The default setting is YES. "YES" / NO

15.9 BK CLEAR

Function	• To clear engine information backup data
Use	• Use when the engine information backup data is cleared. YES: Executes data clear NO: Does not execute data clear **NOTE** • **Execute this function to synchronize data when the MFP board or the printer control board is replaced with a new one.**
Setting /procedure	• The default setting is YES. "YES" / NO

15.10 FUSER UNLOCK

Function Use	• The engine will lock when there are two consecutive increases of fuser warm-up failures (SERVICE CALL 0500) or Thermistor resistance failures (SERVICE CALL 0503) and the printer cannot be reset by turning the power OFF/ON. This command resets the lock to restore functionality.
Setting /procedure	• The default setting is YES. "YES" / NO *1.* Enter the SERVICE MENU. *2.* Select [FUSER UNLOCK], and press the ENTER key. *3.* Select [YES], and press the ENTER key. *4.* Confirm [POWER CYCLE THE PRINTER NOW] is displayed and turn OFF/ON the power.

15.11 CIE COLORSPACE

Function Use	• Prints color spaces precisely using CIE standard color instead of CMYK. CMYK: Improves printing capability (speed) CIE: Prints color spaces precisely
Setting /procedure	• The default setting is CMYK. "CMYK" / CIE

TROUBLESHOOTING

16. Jam display

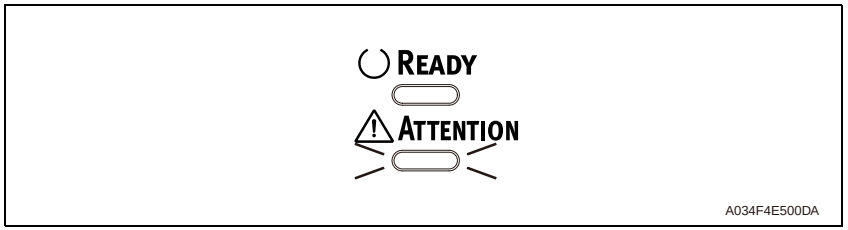
16.1 Misfeed display

- When a paper misfeed occurs, the printer shows the corresponding paper misfeed status by means of the ATTENTION indicator on the control panel or LCD display.

16.1.1 Indication given by the ATTENTION indicator (C110)

- The ATTENTION indicator blinks once a second.

See P.82



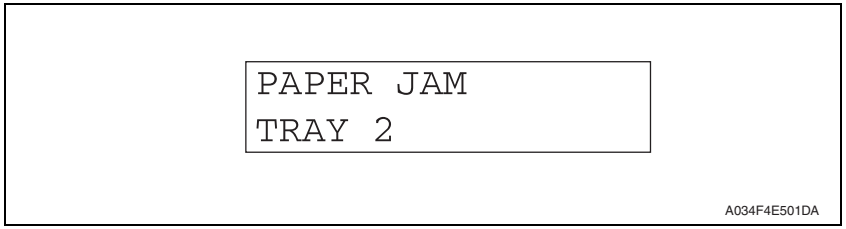
NOTE

- **Details of the misfeed location are given in the Remote Panel Utility on the PC connected to the printer.**

16.1.2 Indication given by the LCD display (C130n)

- When a media misfeed occurs, a message is displayed on the control panel.

See P.88



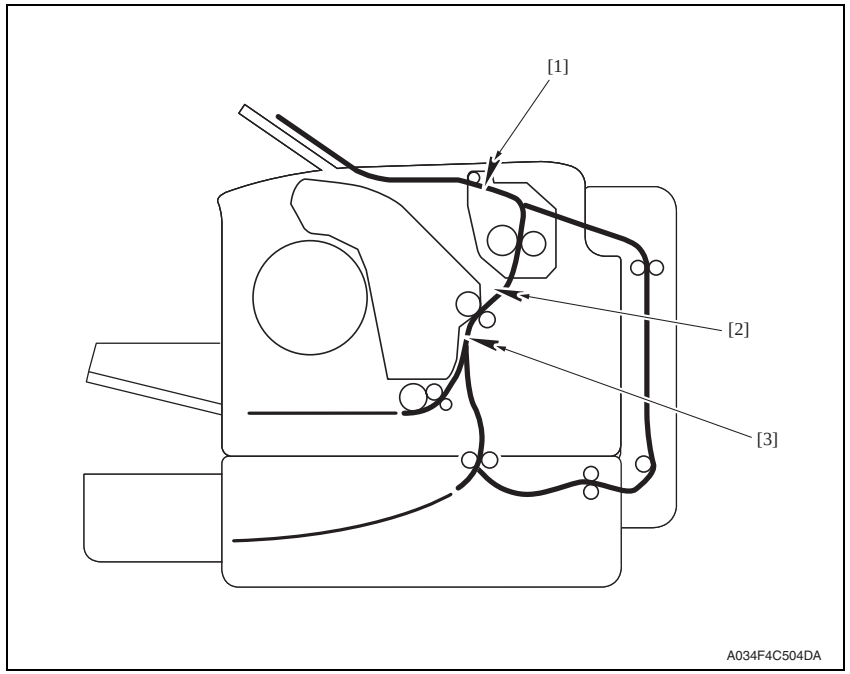
Display	Misfeed Location	Misfeed processing location	Action
PAPER JAM TRANSFER	Transfer section	Top cover	See P.106
PAPER JAM FUSER	Fusing section	Top cover	See P.106
PAPER JAM EXIT	Exit section	Top cover	See P.107
PAPER JAM TRAY 2	Lower Feeder Unit media take-up section	Tray 2	Lower Feeder Unit Service Manual P.17
PAPER JAM DUPLEX	Duplex Option media feed/conveyance section	Duplex option door	Duplex Option Service Manual P.20
	Duplex Option media feed section		
PAPER JAM TRAY 1	Media feed section	Top cover, front cover	See P.107

16.1.3 Misfeed display resetting procedure

- Open the relevant cover, clear the sheet of misfed media, and close the cover.

16.2 Sensor layout

- System equipped with a lower feeder unit and duplex option.



[1] Exit sensor (PS4)

[2] 2nd image transfer retraction position sensor (PS3)

[3] Registration sensor (PS2)

16.3 Solution

16.3.1 Initial check items

- When a paper misfeed occurs, first make checks of the following initial check items.

Check item	Action
Does the media meet product specifications?	• Change media.
Is the media curled, wavy, or damp.	• Change media. • Instruct user in correct media storage.
Is a foreign matter present along the media path, or is the media path deformed or worn?	• Clean or change the media path.
Are rolls/rollers dirty, deformed, or worn?	• Clean or change the defective roll/roller.
Are the edge guide and trailing edge stop at correct position to accommodate the media?	• Set as necessary.
Are actuators found operational as checked for correct operation?	• Correct or change the defective actuator.

16.3.2 Misfeed at 2nd transfer section

A. Detection timing

Type	Description
Detection of misfeed at 2nd transfer section	The media does not unblock the registration sensor (PS2) even after the lapse of a predetermined period of time after the registration roller solenoid (SD2) has been deenergized.
	The 2nd image transfer retraction position sensor (PS3) is not blocked by the media that has moved past the position, at which the sensor is blocked.
Detection of media left in 2nd transfer section	The registration sensor (PS2) is blocked when the power switch is turned ON, a cover is opened and closed, or a misfeed or malfunction is reset.
	The 2nd image transfer retraction position sensor (PS3) is blocked when the power switch is turned ON, a cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Registration sensor (PS2) 2nd image transfer retraction position sensor (PS3) Registration roller solenoid (SD2)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Initial check items	—	—
2	Check the PRCB connector for proper connection and correct as necessary.	—	—
3	PS2 sensor check.	PRCB PJ12-6 (ON)	C110: C-3 C130n: C-3
4	PS3 sensor check.	PRCB PJ12-3 (ON)	C110: C-2 to 3 C130n: C-2
5	SD2 operation check.	PRCB PJ10-4 (REM)	C110: C-9 to 10 C130n: C-9
6	Change PRCB.	—	—

16.3.3 Misfeed at fusing section

A. Detection timing

Type	Description
Detection of misfeed at fusing section	The media does not block the exit sensor (PS4) even after the lapse of a predetermined period of time after the registration roller solenoid (SD2) has been energized.
	The exit sensor (PS4) is unblocked within a predetermined period of time after it has been blocked by the media.
	The transport motor, polygon motor, and rack motor are energized even after the lapse of a predetermined period of time after media information has been created.
Detection of media left in fusing section	The exit sensor (PS4) is blocked when the power switch is turned ON, a cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Exit sensor (PS4) Registration roller solenoid (SD2)	Printer control board (PRCB) MFP board (MFPB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Initial check items	—	—
2	Check the MFPB connector for proper connection and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	PS4 sensor check.	PRCB PJ6-3 (ON)	C110: B to C-6 C130n: C-6
5	SD2 operation check.	PRCB PJ10-4 (REM)	C110: C-9 to 10 C130n: C-9
6	Change MFPB.	—	—
7	Change PRCB.	—	—

16.3.4 Misfeed at exit section

A. Detection timing

Type	Description
Detection of misfeed at exit section	The exit sensor (PS4) is not unblocked even after the lapse of a predetermined period of time after it has been blocked by the media.
Detection of media left in exit section	The exit sensor (PS4) is blocked when the power switch is turned ON, a cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Exit sensor (PS4)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Initial check items	—	—
2	Check the PRCB connector for proper connection and correct as necessary.	—	—
3	PS4 sensor check.	PRCB PJ6-3 (ON)	C110: B to C-6 C130n: C-6
4	Change PRCB.	—	—

16.3.5 Misfeed at media feed section

A. Detection timing

Type	Description
Detection of misfeed at media feed section	The leading edge of the media does not block the registration sensor (PS2) even after the lapse of a predetermined period of time after the tray1 media feed solenoid (SD1) has been energized.

B. Action

Relevant electrical parts	
Registration sensor (PS2) Tray1 media feed solenoid (SD1)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (electrical component)
1	Initial check items	—	—
2	Check the PRCB connector for proper connection and correct as necessary.	—	—
3	PS2 sensor check.	PRCB PJ12-6 (ON)	C110: C-3 C130n: C-3
4	SD1 operation check.	PRCB PJ10-2 (REM)	C110: C-10 C130n: C-10
5	Change PRCB.	—	—

17. Malfunction code

17.1 Trouble codes (service call)

- When a malfunction occurs, the printer shows the corresponding trouble status by means of the ATTENTION indicator on the control panel or LCD display.

17.1.1 Indication of the ATTENTION indicator (C110)

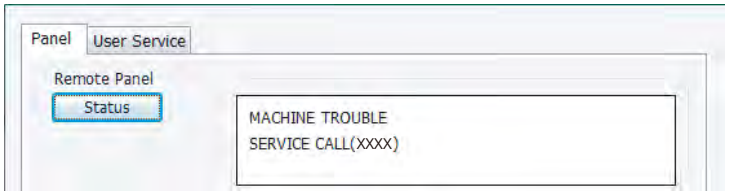
- The CPU circuit of the printer performs a self-diagnostics procedure. If a faulty condition is encountered, the ATTENTION indicator blinks twice a second.

See P.82

A034F4E500DA

A. Check the trouble code

- When PANEL REMOTE UTILITY is activated, trouble code is displayed by clicking [Status].



A034F4E503DA

17.1.2 Indication of the LCD display (C130n)

- The printer's CPU performs a self-diagnostics function that, on detecting a malfunction, gives the corresponding trouble code and maintenance call mark on the control panel.

17.1.3 Trouble code list

Code	Item	Detection Timing
0001	Transport motor malfunction	• The motor lock signal remains HIGH for a predetermined consecutive period of time while the transport motor remains energized.
001B	Rack rotation failure	• The rack positioning sensor is in the blocked state when the rack motor remains deenergized. • The rack positioning sensor is not blocked a second time even after the lapse of a predetermined period of time after it has been blocked once while the rack motor remains energized. • The rack positioning sensor is unable to detect the deceleration control position after the lapse of a given period of time after the rack motor has started while the rack motor is turning. • The count value of the edge of ON signal of the rack positioning sensor during each developing positions are not a predetermined value while the rack motor is turning.
004A	Duplex unit cooling fan motor malfunction	Duplex Option Service Manual P.22
004C	Ozone ventilation fan motor malfunction	• The ozone ventilation fan motor does not rotate evenly even after the lapse of a given period of time while it is being started. • The motor lock signal remains HIGH for a given period of consecutive time while the ozone ventilation fan motor is being rotated.
004E	Power supply cooling fan motor malfunction	• The fan motor lock signal remains HIGH for a predetermined consecutive period of time while the power supply cooling fan motor remains energized.
0092	Transfer belt rotation failure	• The belt positioning sensor does not detect the transfer belt position detection hole a second time even after the lapse of a predetermined period of time after it has detected one while the transfer belt is rotated.
0094	2nd image transfer pressure /retraction failure	• The state of the 2nd image transfer retraction position sensor is not changed from the unblocked to blocked state even after the lapse of a predetermined period of time during predrive. • The 2nd image transfer retraction position sensor is in the unblocked state even after the lapse of a predetermined period of time during predrive. • The 2nd image transfer retraction position sensor is not blocked (roller in the retracted position) within a predetermined period of time after the retraction sequence of the 2nd transfer roller has been started. • The 2nd image transfer retraction position sensor is not unblocked (roller in the pressed position) within a predetermined period of time after the pressure sequence of the 2nd transfer roller has been started.
0300	Polygon motor malfunction	• A LOW motor lock signal is not detected even after the lapse of a predetermined period of time after the polygon motor has been started. • The motor lock signal remains HIGH for a predetermined consecutive period of time while the polygon motor remains energized.
0310	Laser malfunction	• The SOS signal is not detected within a predetermined period of time after the output of a laser has been started. • The SOS signal is never detected in the image area.
0500	Fuser warm-up failure	• The thermistor does not detect a predetermined temperature value even after the lapse of a predetermined period of time after the current warm-up cycle has been started and the current warm-up cycle is thus not completed.
0502	Thermistor open-circuit failure	• The temperature detected by the thermistor does not reach a predetermined level even after the lapse of a given period time after the warm-up cycle has been started.
0503	Thermistor resistance failure	• The heater lamp remains ON for a predetermined consecutive period of time.
0510	Abnormally low fuser temperature	• The temperature detected by the thermistor remains lower than a predetermined value for a predetermined period of time.
0520	Abnormally high fuser temperature	• The temperature detected by the thermistor is a predetermined value or higher for a predetermined period of time.
0F51	Waste toner full sensor trouble	• Waste toner full sensor detects abnormal situation.
13C0	Printer control board malfunction	• Communications with the M/C expansion IO G/A (IC on the printer control board) are not properly carried out.
13DD	Backup data error	• The printer determines that EEPROM is yet to be mounted when the main power switch is turned ON.
13E2	Flash ROM write error	• Flash ROM writing is found faulty during a check.
13F0	Engine control failure	• An undefined malfunction occurs in the engine section (PRCB, etc.).

Code	Item	Detection Timing
3C00	EEPROM installation error	• Contact the responsible people of OKI when not returning in power switch OFF/ON.
3C10	EPROM data error	

17.1.4 Resetting a malfunction

- To reset a malfunction, turn the power switch OFF and then ON again.

17.2 Solution

17.2.1 0001: Transport motor malfunction

Relevant electrical parts	
Transport motor (M1)	Printer control board (PRCB) DC power supply (DCPU)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M1 connector for proper connection and correct as necessary.	—	—
2	Check M1 for proper drive coupling and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	M1 operation check.	PRCB PJ8-1 to 6	C110: C-2 C130n: C-2
5	Change PRCB.	—	—
6	Change DCPU.	—	—

17.2.2 001B: Rack rotation failure

Relevant electrical parts	
Rack motor (M2) Rack positioning sensor (PS5)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M2 connector for proper connection and correct as necessary.	—	—
2	Check M2 for proper drive coupling and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	PS5 sensor check.	PRCB PJ5-11 (ON)	C110: C-11 to 12 C130n: C-11 to 12
5	M2 operation check.	PRCB PJ5-5 to 8	C110: C-12 C130n: C-12
6	Change PRCB.	—	—

17.2.3 004C: Ozone ventilation fan motot malfunction

Relevant electrical parts	
Ozone ventilation fan motor (FM2)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the FM2 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	FM2 operation check.	PRCB PJ16-1 (REM) PRCB PJ16-3 (LOCK)	C110: C-4 C130n: C-4
5	Change FM2.	—	—
6	Change PRCB.	—	—

17.2.4 004E: Power supply cooling fan motor malfunction

Relevant electrical parts	
DC power supply fan motor (FM1)	Printer control board (PRCB) DC power supply (DCPU)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the FM1 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	FM1 operation check.	HV CN2-1 (REM) HV CN2-3 (LOCK)	C110: B-5 C130n: B-4 to 5
5	Change PRCB.	—	—
6	Change DCPU.	—	—

17.2.5 0092: Transfer belt rotation failure

Relevant electrical parts	
Belt positioning sensor (PS6) Imaging cartridge	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the PRCB connector for proper connection and correct as necessary.	—	—
2	PS6 sensor check.	—	—
3	Change Imaging cartridge.	—	—
4	Change PRCB.	—	—

17.2.6 0094: 2nd image transfer pressure/retraction failure

Relevant electrical parts	
2nd image transfer retraction position sensor (PS3) 2nd image transfer pressure/retraction solenoid (SD4) Transport motor (M1)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M1 connector for proper connection and correct as necessary.	—	—
2	Check M1 for proper drive coupling and correct as necessary.	—	—
3	Check the SD4 connector for proper connection and correct as necessary.	—	—
4	Check the PRCB connector for proper connection and correct as necessary.	—	—
5	PS3 sensor check.	PRCB PJ12-3 (ON)	C110: C-2 to 3 C130n: C-2
6	SD4 operation check.	PRCB PJ10-6 (REM)	C110: C-9 C130n: C-9
7	M1 operation check.	PRCB PJ8-1 to 6	C-2
8	Change PRCB.	—	—

17.2.7 0300: Polygon motor malfunction

Relevant electrical parts	
PH unit	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the cable and connector for proper connection and correct as necessary.	—	—
2	Change PH unit.	—	—
3	Change PRCB.	—	—

17.2.8 0310: Laser malfunction

Relevant electrical parts	
PH Unit	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the cable and connector for proper connection and correct as necessary.	—	—
2	Change PH unit.	—	—
3	Change PRCB.	—	—

17.2.9 0500: Fuser warm-up failure
0503: Thermistor resistance failure

Relevant electrical parts	
Fuser unit	Printer control board (PRCB) DC power supply (DCPU)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Change fuser unit.	—	—
2	For C110: *1.* Main switch is turned ON. *2.* Open the top cover. *3.* Press the following keys in this order. ROTATE TONER key → ATTENTION key → ATTENTION key → ROTATE TONER key. *4.* Main switch is turned OFF/ON. For C130n: *1.* Main switch is turned ON. *2.* Execute [SERVICE MENU] - [FUSER UNLOCK]. See P.103	—	—
3	Change PRCB.	—	—
4	Change DCPU.	—	—

17.2.10 0502: Thermistor open-circuit failure
0510: Abnormally low fuser temperature
0520: Abnormally high fuser temperature

Relevant electrical parts	
Fuser unit	Printer control board (PRCB) DC power supply (DCPU)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the fuser unit for correct installation (whether it is secured in position).	—	—
2	Check the fuser unit, DCPU, and PRCB for proper connection and correct as necessary.	—	—
3	Change fuser unit.	—	—
4	Change PRCB.	—	—
5	Change DCPU.	—	—

17.2.11 0F51: Waste toner full sensor trouble

Relevant electrical parts	
Waste toner full sensor (PS7)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the PRCB connector for proper connection and correct as necessary.	—	—
2	PS7 sensor check.	—	—
3	Change PRCB.	—	—

17.2.12 13C0: Printer control board malfunction

Relevant electrical parts	
Printer control board (PRCB)	

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the PRCB connector for proper connection and correct as necessary.	—	—
2	Change PRCB.	—	—

17.2.13 13DD: Backup data error

Relevant electrical parts	
Printer control board (PRCB)	

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Confirm mounting status of EEPROM on the printer control board, and make modification if necessary.	—	—
2	Change PRCB.	—	—

17.2.14 13E2: Flash ROM write error

Relevant electrical parts	
Printer control board (PRCB)	MFP board (MFPB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the cable and connector for proper connection and correct as necessary.	—	—
2	Change PRCB.	—	—
3	Change MFPB.	—	—

17.2.15 13F0: Engine control failure

Relevant electrical parts	
Printer control board (PRCB)	MFP board (MFPB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the cable and connector for proper connection and correct as necessary.	—	—
2	Change PRCB.	—	—
3	Change MFPB.	—	—

18. Power supply errors

18.1 Machine is not energized at all (PU operation check)

Relevant electrical parts	
Power switch Printer control board (PRCB)	DC power supply (DCPU)

Step	Check Item	Location (Electrical component)	Result	Action
1	Is the power source voltage being applied to CN6 on DCPU?	C110: L-3 C130n: L-3	NO	Check wiring from power outlet to SW1 to CN1-N.
2	Are fuses (F1 and F2) on DCPU conducting?	—	NO	Change DCPU.
3	Are DC24 V and DC5 V being applied to PJ17 on the printer control board?	C110: E-5 C130n: E-4 to 5	NO	Change DCPU.
			YES	Change PRCB.

18.2 Control panel indicators do not light

Relevant electrical parts	
MFP board (MFPB) Control panel	DC power supply (DCPU)

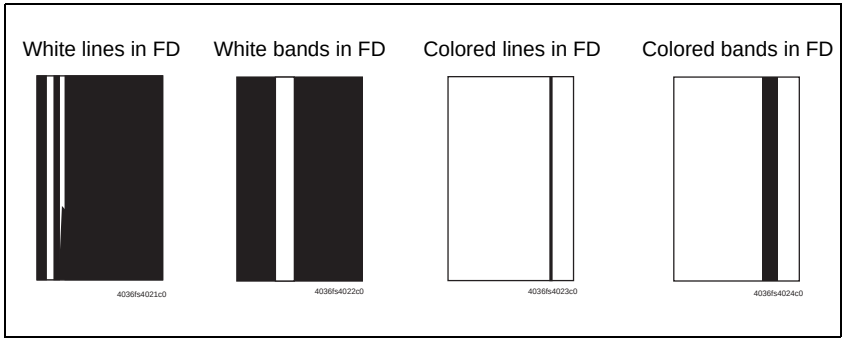
Step	Check Item	Location (Electrical component)	Result	Action
1	Is the power source voltage being applied to CN6 on DCPU?	C110: L-3 C130n: L-3	NO	Check wiring from power outlet to SW1 to CN1-N.
2	Are fuses (F1 and F2) on DCPU conducting?	—	NO	Change DCPU.
3	Is PJ1 on PRCB properly connected?	C110: F to G-4 to 5 C130n: F to G-3 to 4	NO	Reconnect.
	For C110: Is P105 on MFPB properly connected? For C130n: Is CN8 on MFPB properly connected?	C110: H-4 to 5 C130n: F to G-3 to 4		
	For C110: Is P102 on MFPB properly connected? For C1310n: Is CN9 on MFPB properly connected?	C110: I-6 C130n: I-5		
4	For C110 Is PJ1 on operation board properly connected? For C130n Is CN1 on operation board properly connected?	C110: K-6 C130n: K-5	NO	Reconnect.
			YES	Operation panel. Change MFPB.

19. Image quality problems

19.1 Solution

19.1.1 White lines in FD, white bands in FD, colored lines in FD, and colored bands in FD

A. Typical faulty images

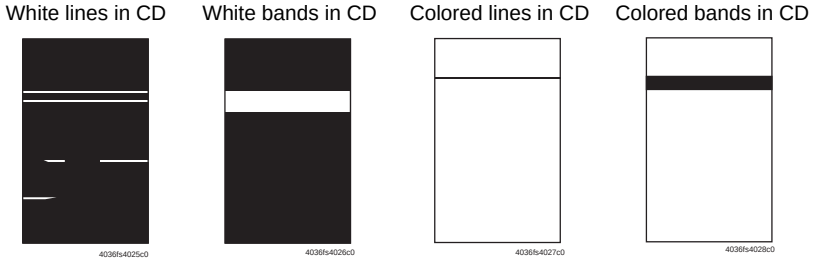


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging cartridge	Are there scratches or lines evident on the photo conductor surface?	YES	Replace the imaging cartridge.
2		Is the outside dirty?	YES	Clean.
3		Is the connector or contact terminal of the imaging cartridge connected properly?	NO	Clean the contact terminal.
4		Is the transfer belt dirty with fingerprints or oil?	YES	Clean.
5		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new imaging cartridge.
6	PH unit	Is the connector or contact terminal of the PH unit connected properly?	NO	Clean the contact terminal or reconnect the connector.
7		Is the window surface dirty?	YES	Clean.
8	2nd transfer roller	Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
9	Media path	Is there a foreign object in the media path?	YES	Remove the foreign object.
10	Fuser unit	Is the fusing entrance guide plate dirty or scratched?	YES	Clean. Replace the fuser unit.
11		Have steps 1 to10 eliminated the problem?	NO	Replace the toner cartridge. → Replace the PH unit.

19.1.2 White lines in CD, white bands in CD, colored lines in CD, and colored bands in CD

A. Typical faulty images

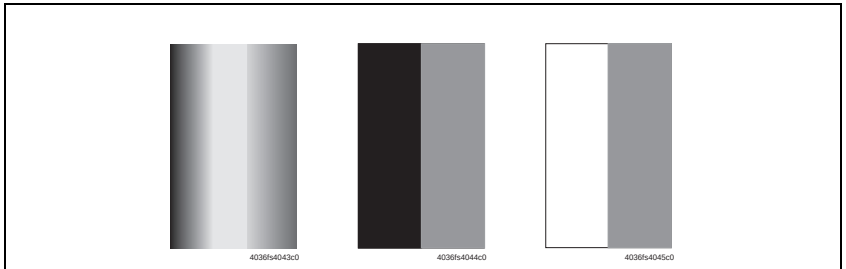


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging cartridge	Are there scratches or lines evident on the photo conductor surface?	YES	Replace the imaging cartridge.
2		Is the outside dirty?	YES	Clean.
3		Is the connector or contact terminal of the imaging cartridge connected properly?	NO	Clean the contact terminal.
4		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new imaging cartridge.
5	Toner cartridge	Is the developing bias contact terminal in good contact?	NO	Clean the contact terminal or check the terminal position.
6	PH unit	Is the connector or contact terminal of the PH unit connected properly?	NO	Clean the contact terminal or reconnect the connector.
7	2nd transfer roller	Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
8	Media path	Is there a foreign object in the media path?	YES	Remove the foreign object.
9	Fuser unit	Is the fusing entrance guide plate dirty or scratched?	YES	Clean.
10		Have steps 1 to 9 eliminated the problem?	NO	Replace the DC power supply.

19.1.3 Uneven density in FD

A. Typical faulty images



B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging cartridge	Are there scratches or lines evident on the photo conductor surface?	YES	Replace the imaging cartridge.
2		Is the outside dirty?	YES	Clean.
3		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new imaging cartridge.
4		Is the terminal dirty?	YES	Clean.
5	PH unit	Is the window surface dirty?	YES	Clean.
6	2nd transfer roller	Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
7		Have steps 1 to 6 eliminated the problem?	NO	Replace the toner cartridge. → Replace the PH Unit. → Replace high voltage unit.

19.1.4 Uneven density in CD

A. Typical faulty images


4036fs4046c0


4036fs4047c0

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging cartridge	Are there scratches or lines evident on the photo conductor surface?	YES	Replace the imaging cartridge.
2		Is the outside dirty?	YES	Clean.
3		Is the transfer belt dirty with fingerprints or oil?	YES	Clean.
4		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new imaging cartridge.
5		Is the terminal dirty?	YES	Clean.
6	2nd transfer roller	Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
7		Have steps 1 to 6 eliminated the problem?	NO	Replace the toner cartridge. → Replace high voltage unit.

19.1.5 Low image density

A. Typical faulty images

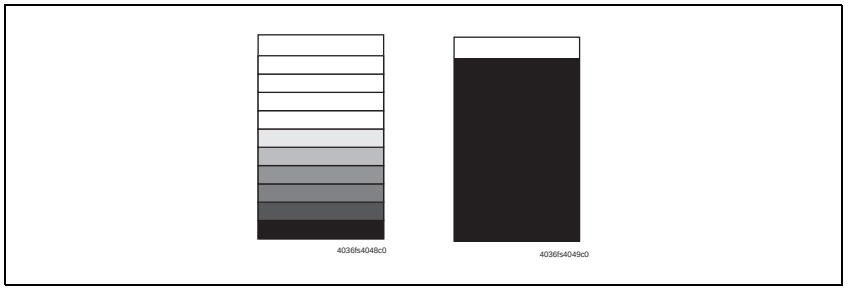
4036fs4036c0

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging cartridge	Is the outside dirty?	YES	Clean.
2		Is the contact dirty?	YES	Clean.
3	PH unit	Is the window surface dirty?	YES	Clean.
4	2nd transfer roller	Is the contact dirty?	YES	Clean.
5	Media	Is the media damp?	YES	Replace the media with new media that has just been unwrapped.
6	IDC sensor board	Is the sensor dirty?	YES	Clean.
7		Have steps 1 to 6 eliminated the problem?	NO	Replace the toner cartridge. → Replace the Imaging cartridge. → Replace the 2nd transfer roller. → Replace the PH unit. → Replace the IDC sensor board. → Replace the printer control board. → Replace the high voltage unit.

19.1.6 Gradation reproduction failure

A. Typical faulty images

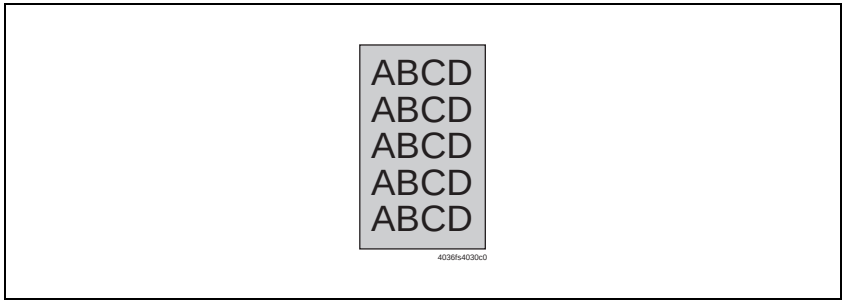


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging cartridge	Is the outside dirty?	YES	Clean.
2	PH unit	Is the window surface dirty?	YES	Clean.
3	IDC sensor board	Is the sensor dirty?	YES	Clean.
4		Have steps 1 to 3 eliminated the problem?	NO	Replace the toner cartridge. → Replace the PH unit. → Replace the IDC sensor board. → Replace the high voltage unit.

19.1.7 Foggy background

A. Typical faulty images



B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging cartridge	Are there scratches or lines evident on the photo conductor surface?	YES	Replace the imaging cartridge.
2		Is the outside dirty?	YES	Clean.
3		Is the contact terminal of the imaging cartridge connected properly?	NO	Clean the contact terminal.
4	Toner cartridge	Is the developing bias contact terminal in good contact?	NO	Clean the contact terminal or check the terminal position.
5	PH unit	Is the connector or contact terminal of the PH unit connected properly?	NO	Clean the contact terminal or reconnect the connector.
6		Is the window surface dirty?	YES	Clean.
7	IDC sensor bozrd	Is the sensor dirty?	YES	Clean.
8		Have steps 1 to 7 eliminated the problem?	NO	Replace the toner cartridge. → Replace the PH unit. → Replace the IDC sensor board.

19.1.8 Poor color reproduction

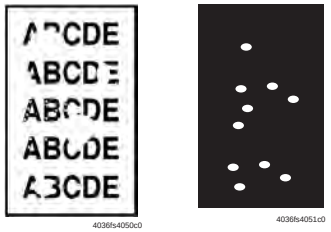
A. Typical faulty images

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Media	Is the media damp?	YES	Replace the media with new media that has just been unwrapped.
2	imaging cartridge	Is the terminal dirty?	YES	Clean.
3	IDC sensor board	Is the sensor dirty?	YES	Clean.
4		Have steps 1 to 3 eliminated the problem?	NO	Replace the imaging cartridge. → Replace the IDC sensor board. → Replace the printer control board. → Replace the high voltage unit.

19.1.9 Void areas, white spots

A. Typical faulty images



B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging cartridge	Are there scratches or lines evident on the photo conductor surface?	YES	Replace the imaging cartridge.
2		Is the outside dirty?	YES	Clean.
3		Is the transfer belt dirty with fingerprints or oil?	YES	Clean.
4		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new imaging cartridge.
5		Is the ground terminal connected properly?	NO	Correct.
6	2nd transfer roller	Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
7	Media path	Is there a foreign object in the media path?	YES	Remove the foreign object.
8		Is the fusing entrance guide plate dirty or scratched?	YES	Clean or replace.
9		Have steps 1 to 8 eliminated the problem?	NO	Replace the toner cartridge.

19.1.10 Colored spots

A. Typical faulty images

Colored spots

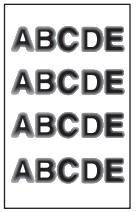
B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging cartridge	Are the spots in a single color?	NO	Replace the imaging cartridge.
2		Are there scratches or lines evident on the photo conductor surface?	YES	Replace the imaging cartridge.
3		Is the Transfer Belt dirty with fingerprints or oil?	YES	Clean.
4		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new imaging cartridge.
5	2nd transfer roller	Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
6	Media path	Is there a foreign object in the media path?	YES	Remove the foreign object.
7	Fuser unit	Is the fusing roller dirty or scratched?	YES	Replace the fuser unit.
8		Have steps 1 to 7 eliminated the problem?	NO	Replace the toner cartridge.

19.1.11 Blurred image

A. Typical faulty images

Blurred image

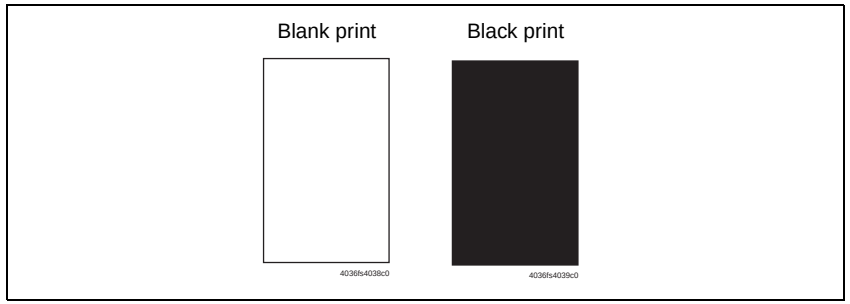


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	PH unit	Is the window surface dirty?	YES	Clean.
2	Imaging cartridge	Is the outside dirty?	YES	Clean.
3		Have steps 1 to 2 eliminated the problem?	NO	Replace the imaging cartrdge. → Replace the PH unit.

19.1.12 Blank copy, black copy

A. Typical faulty images

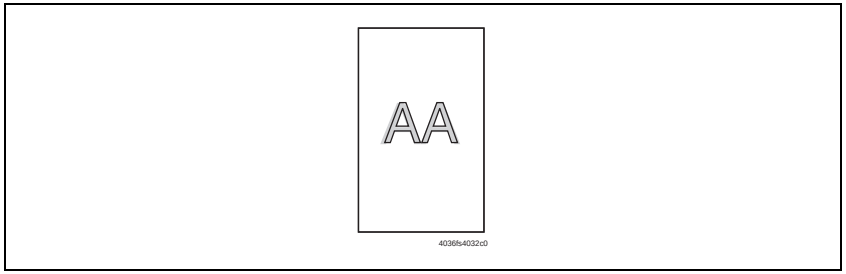


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Image check	Does a blank print occur?	YES	Check the PH unit connector for proper connection.
2	Imaging cartridge	Is the gear of the imaging cartridge drive mechanism installed properly?	NO	Check or correct the drive transmitting section or replace the imaging cartridge.
3		Is the charge corona voltage contact or photo conductor ground contact of the imaging cartridge connected properly?	NO	Check, clean, or correct the contact.
4	High voltage unit	Is the connector connected properly?	NO	Reconnect.
5		Have steps 1 to 4 eliminated the problem?	NO	Replace the high voltage unit. → Replace the printer control board. → Replace the PH unit.

19.1.13 Incorrect color image registration

A. Typical faulty images



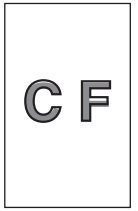
B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Imaging cartridge	Is the transfer belt dirty with fingerprints or foreign matter?	YES	Clean.
2		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new imaging cartridge.
3		Is the photo conductor scratched?	YES	Replace the imaging cartridge.
4		Is the drive coupling to the machine dirty?	YES	Clean.
5	2nd transfer roller	Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
6		Have steps 1 to 5 eliminated the problem?	NO	Replace the PH unit. → Replace the printer control board.

19.1.14 Poor fusing performance, offset

A. Typical faulty images

Poor fusing performance



4036fs4059c0

Offset

4036fs4060c0

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Media	Does the media being used conform to specifications?	NO	Replace the media.
2	Fuser unit	Are the fuser separator levers in the correct position?	NO	Correct.
3		Have steps 1 to 2 eliminated the problem?	NO	Replace the fuser unit. → Replace the printer control board.

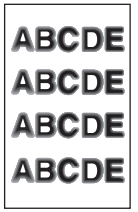
19.1.15 Brush effect, blurred image

A. Typical faulty images

Brush effect

4036fs4061c0

Blurred image



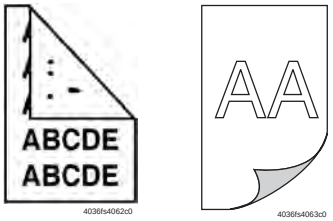
4036fs4031c0

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Media	Is the media damp?	YES	Replace the media with new media that has just been unwrapped.
2		Does the media being used conform to specifications?	NO	Replace the media.
3	Imaging cartridge	Are there scratches or lines evident on the photo conductor surface?	YES	Replace the imaging cartridge.
4		Is the transfer belt dirty with fingerprints or oil?	YES	Clean.
5		Is the transfer belt dirty or scratched?	YES	Wipe the surface clean of dirt with a soft cloth. Replace the scratched transfer belt with a new imaging cartridge.
6	Fuser unit	Is the fusing entrance guide plate dirty?	YES	Clean.
			NO	Replace the fuser unit.

19.1.16 Back marking

A. Typical faulty images

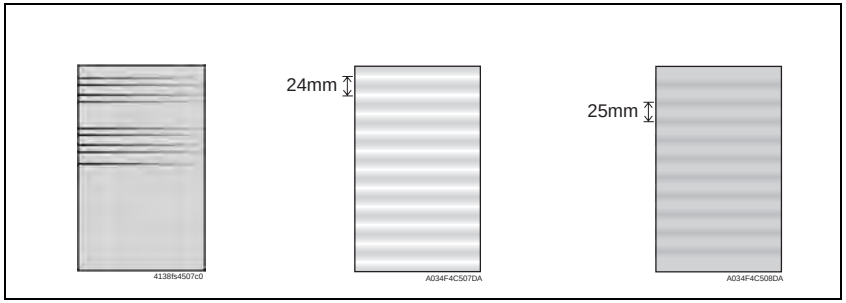


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Media path	Is there a foreign object in the media path?	YES	Remove the foreign object.
2	Fuser unit	Is the fusing entrance guide plate dirty or scratched?	YES	Clean or replace.
3		Is the fusing roller scratched or dirty?	YES	Replace the fuser unit.
4	imaging cartridge	Is the transfer belt dirty with fingerprints or foreign matter?	YES	Clean.
5	2nd transfer roller	Is the 2nd transfer roller dirty or scratched?	YES	Replace the 2nd transfer roller.
6		Have steps 1 to 5 eliminated the problem?	NO	Replace the imaging cartridge. → Replace the fuser unit. → Replace the high voltage unit.

19.1.17 Pitch lines, pitch uneven density

A. Typical faulty images



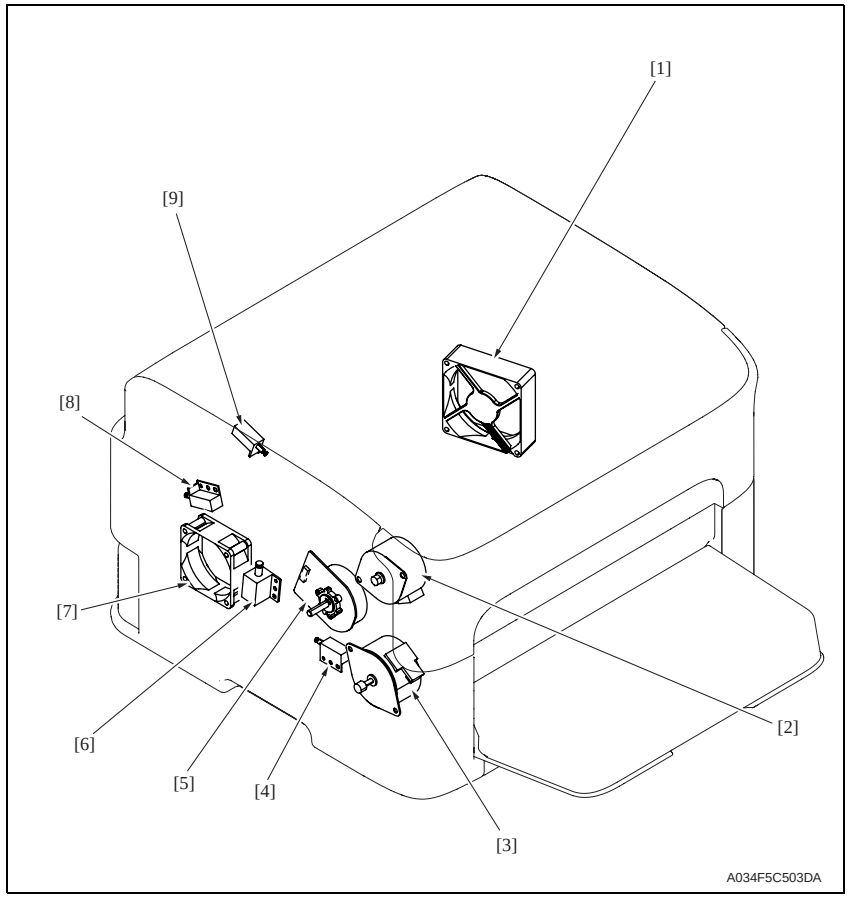
B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Image check	Do faint lines occur at a pitch of 24 mm in the main scanning direction?	YES	• For C110: Execute [Image Refresh] using the remote panel utility. See P.84 • For C130n: Execute [MAIN MENU] - [QUALITY MENU] - [IMAGE REFRESH]. See P.93 **NOTE** • **If one image refresh sequence does not make the faint lines less noticeable, run it a second time.**
		Does uneven density at a pitch of 25 mm occur?	YES	• Leave the main unit to stand idle under environment free of high humidity.
2	Toner cartridge	Is the toner cartridge for each color of toner installed in position?	NO	Reinstall.
3	PH unit	Is the PH unit secured in position with the fixing screw?	NO	Secure it in position.
4	Toner cartridge	Is the drive mechanism of the toner Cartridge dirty or damaged?	YES	Clean or replace the toner cartridge.
5	Imaging cartridge	Is the photo conductor dirty, scratched, or worn?	YES	Replace the imaging cartridge.
6	2nd transfer roller	Are the 2nd transfer roller and drive mechanism dirty, deformed, or worn?	YES	Replace the 2nd transfer roller.
7	Fuser unit	Are the rollers and drive mechanism of the fuser unit dirty, scratched, deformed, or worn?	YES	Replace the fuser unit.
8		Have steps 1 to 7 eliminated the problem?	NO	Replace the imaging cartridge.

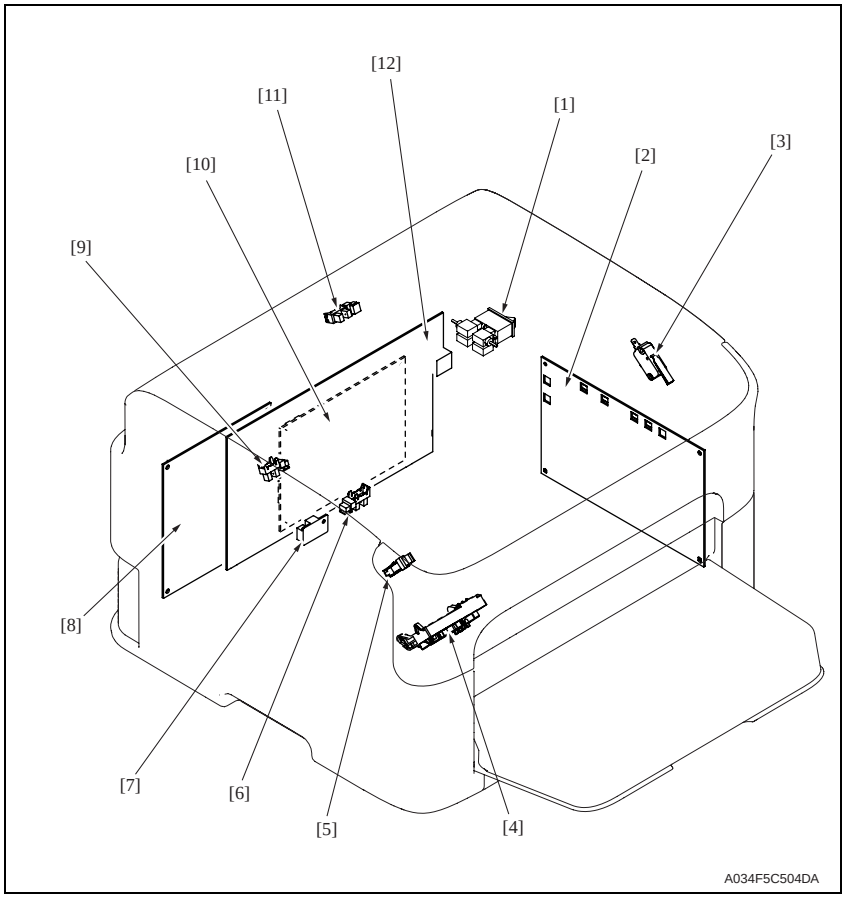
APPENDIX

20. Parts layout drawing

20.1 Main body

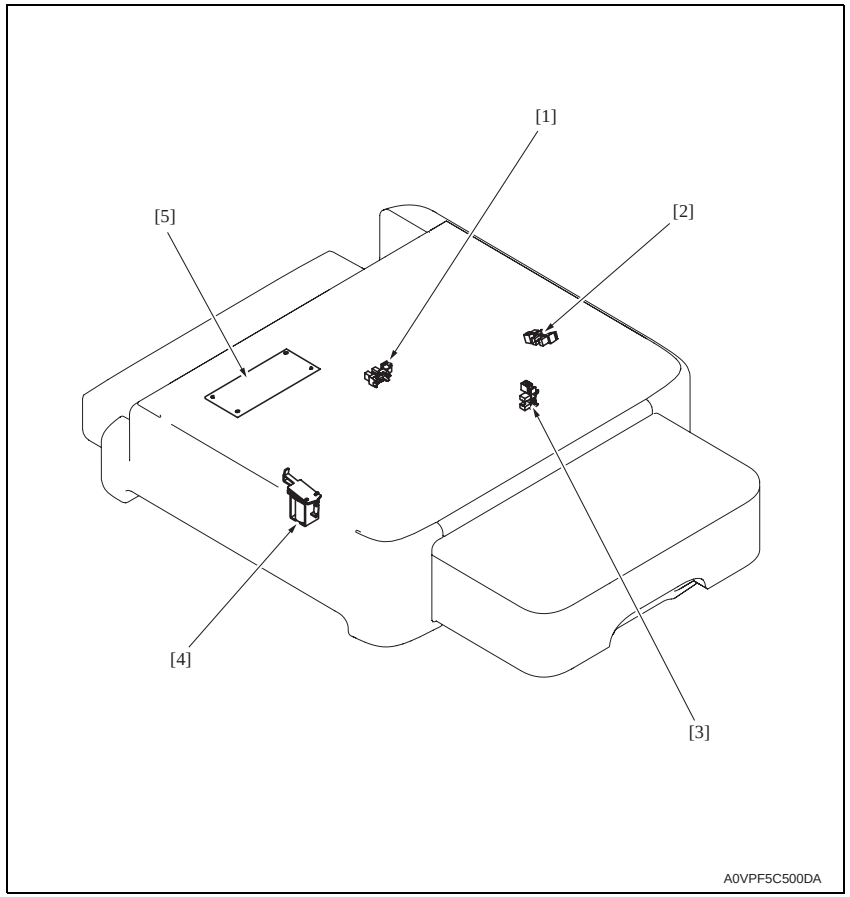


[1] DC power supply fan motor (FM1)
[2] Rack motor (M2)
[3] Developing motor (M3)
[4] Tray1 media feed solenoid (SD1)
[5] Transport motor (M1)
[6] Registration roller solenoid (SD2)
[7] Ozone ventilation fan motor (FM2)
[8] 2nd image transfer pressure/retraction solenoid (SD4)
[9] Cleaning blade pressure/retraction solenoid (SD5)



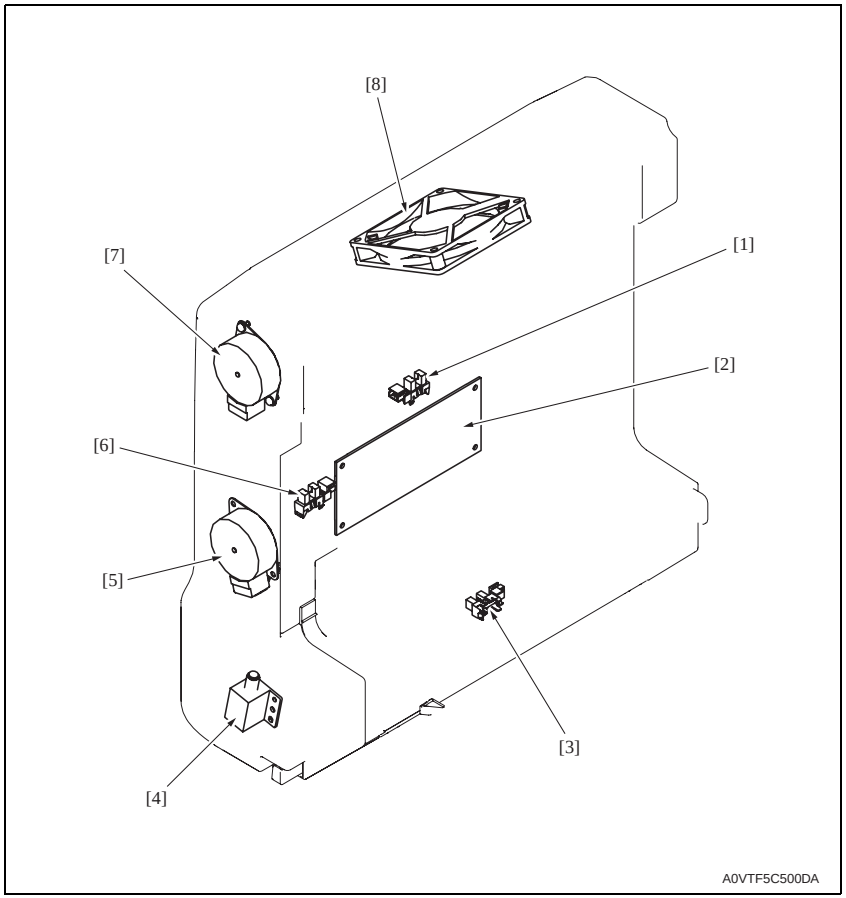
[1] Main power switch (SW1)
[2] High voltage unit (HV)
[3] Interlock switch (MS2)
[4] Contact switch (SW5)
[5] Rack positioning sensor (PS5)
[6] Registration sensor (PS2)
[7] Temperature/ humidity sensor (TEM/HUMS)
[8] Print control board (PRCB)
[9] 2nd image transfer retraction position sensor (PS3)
[10] MFP board (MFPB)
[11] Exit sensor (PS4)
[12] DC power supply (DCPU)

20.2 Lower feeder unit (option)



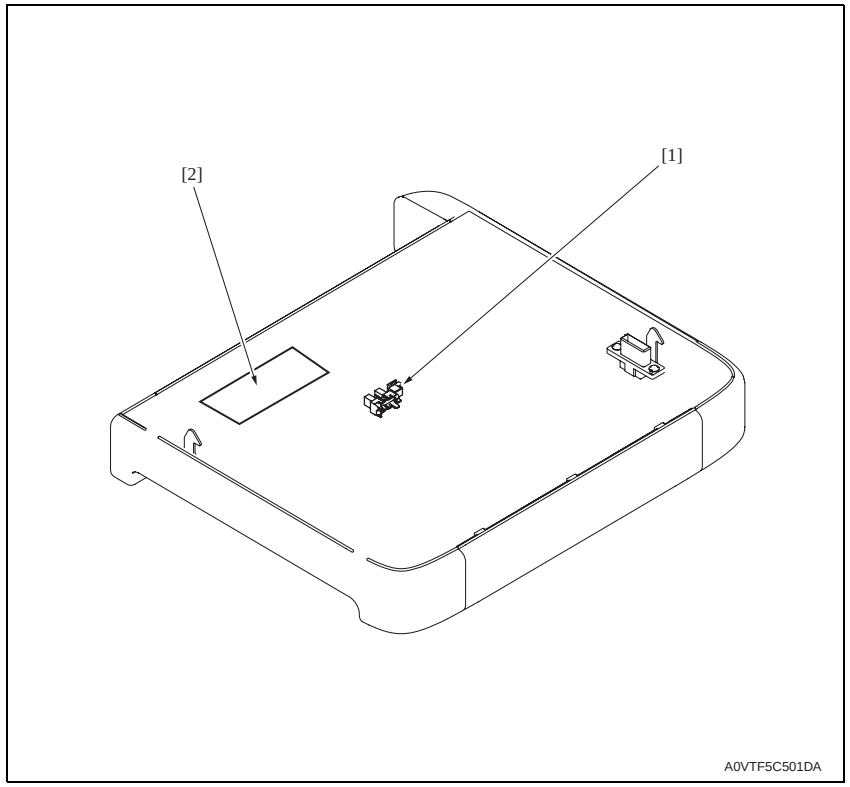
[1] Transport sensor (PS12)
[2] Media empty sensor (PS10)
[3] Tray set sensor (PS11)
[4] Media feed solenoid (SD6)
[5] PC control board (PCCB)

20.3 Duplex option (option)



[1] Transport sensor/1 (PS15)
[2] AD drive board (ADDB)
[3] Loop sensor (PS13)
[4] Registration solenoid (SD7)
[5] Transport motor (M6)
[6] Door sensor (PS14)
[7] Switchback motor (M5)
[8] Cooling fan motor (FM3)

20.4 Duplex option attachment (option)



[1] Transport sensor/2 (PS17)

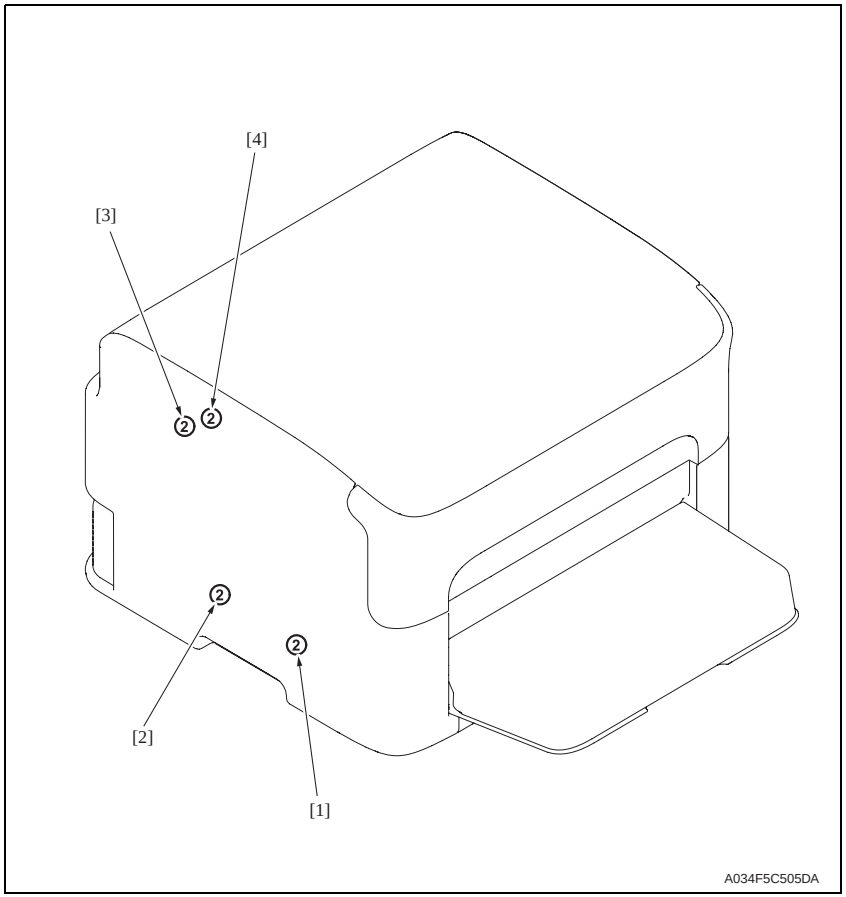
[2] Relay board/2 (REYB/2)

21. Connector layout drawing

Description

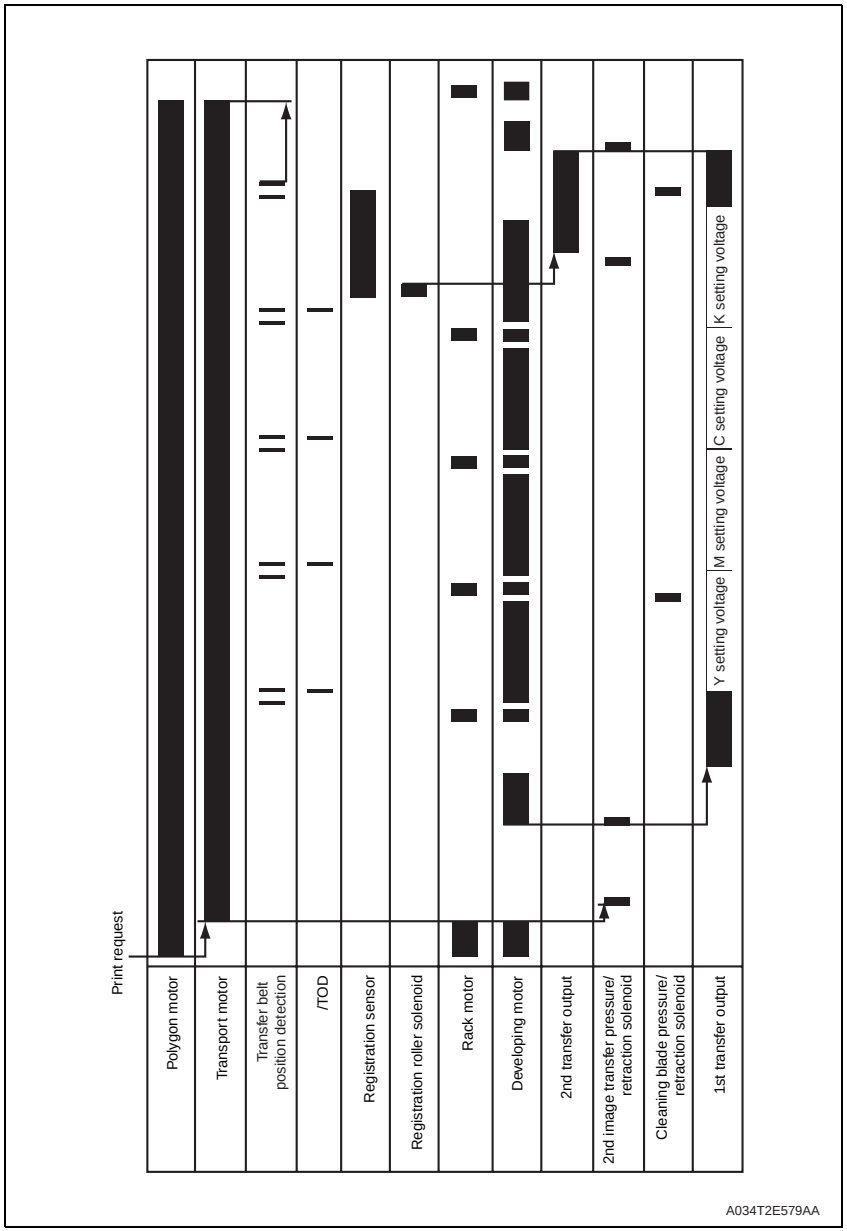
Number of Pin → ① Possible to confirm by removing external cover.

1 Not possible to confirm by removing external cover.

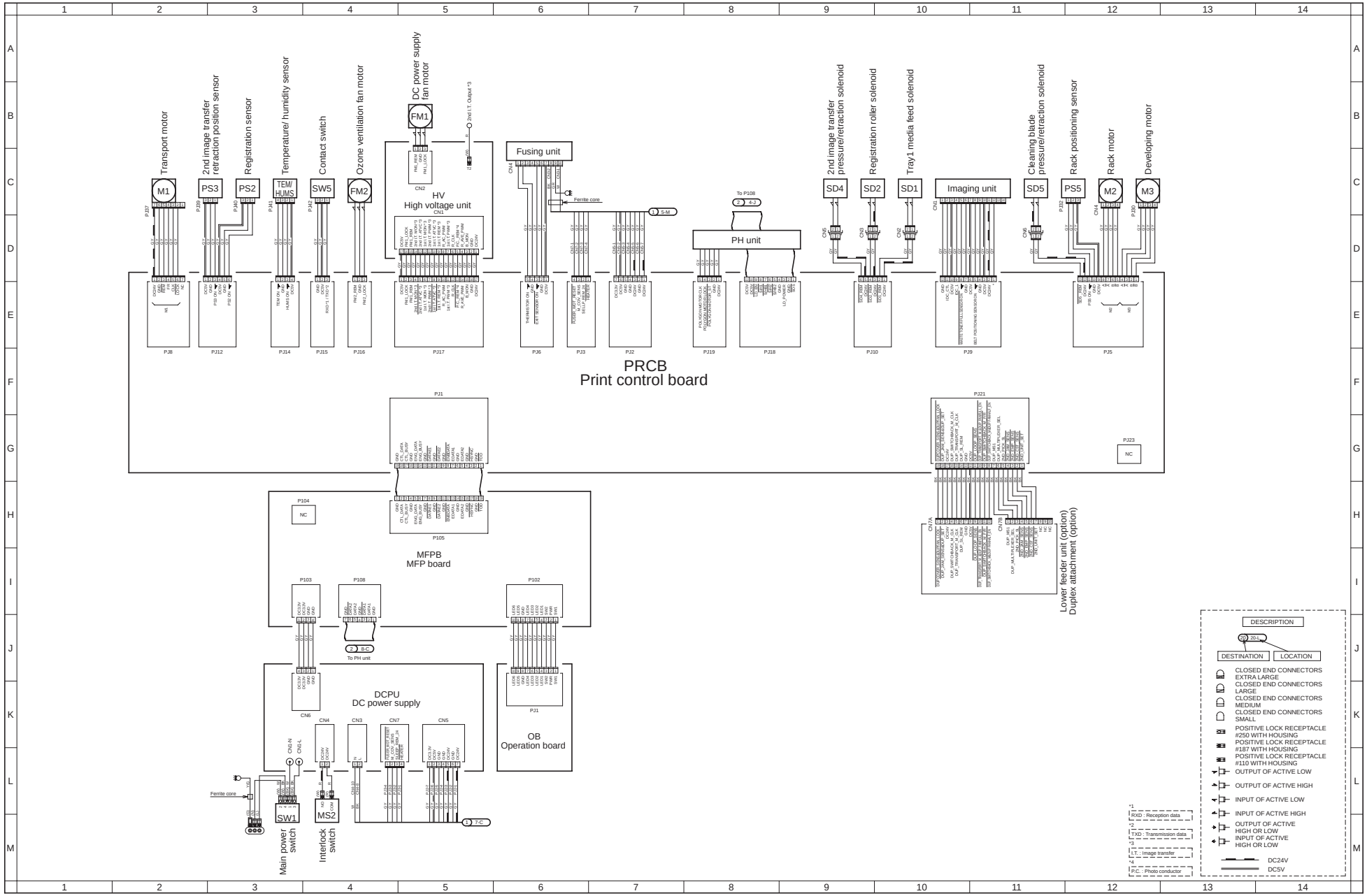


No.	CN No.	Location	No.	CN No.	Location
[1]	CN2	D-10	[3]	CN5	D-9
[2]	CN3	D-9	[4]	CN6	D-11

22. Timing chart



C110 Overall wiring diagram



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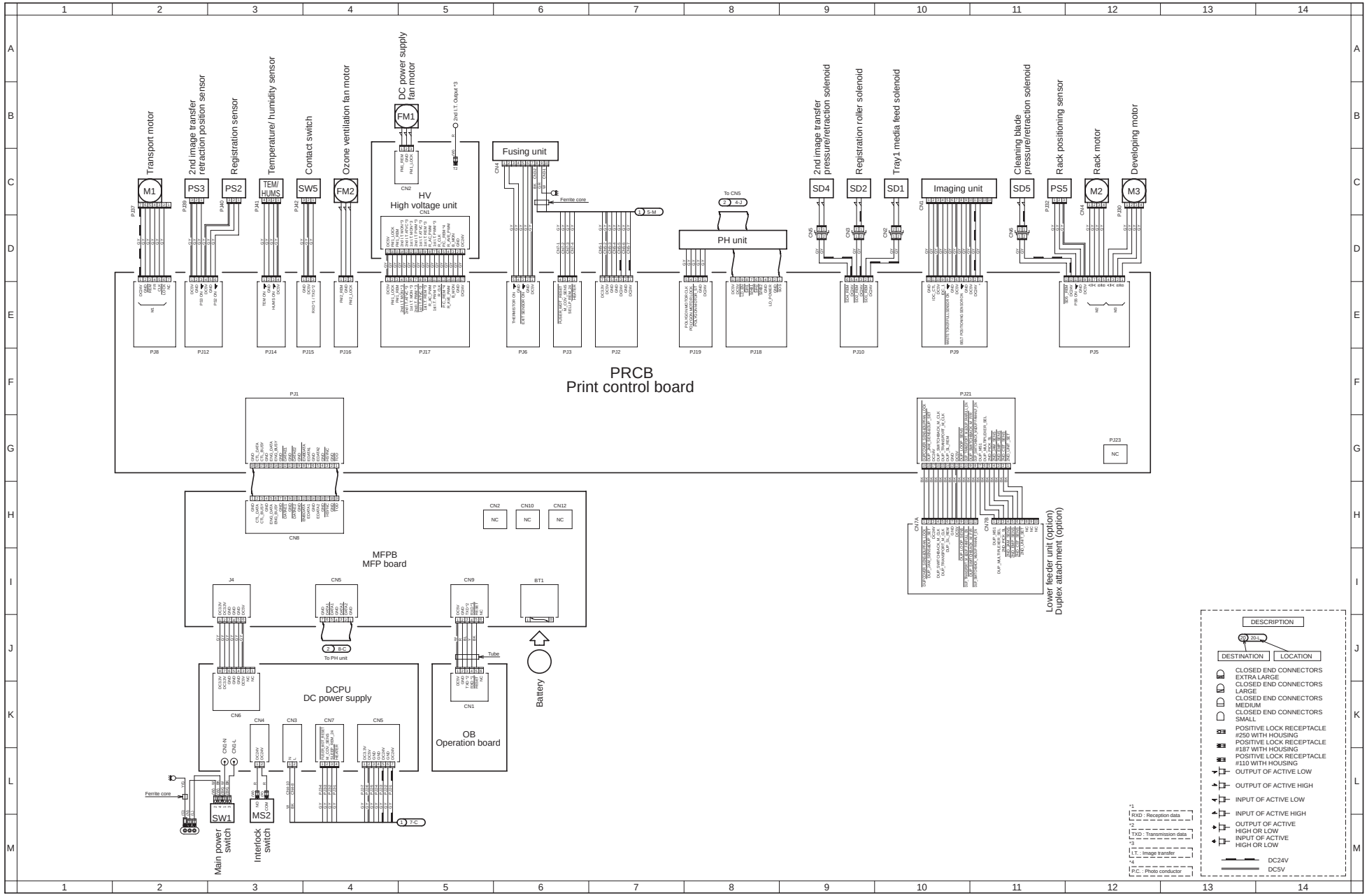
C130n Overall wiring diagram



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Oct.2008