KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

magicolor ® 7450

FIELD SERVICE TOTAL CONTENTS

magicolor 7450 Main Unit

Lower Feeder Unit

Duplex Option

Blank Page

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, KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. (hereafter called the KMBT) strongly recommends that all servicing be performed only by KMBT-trained service technicians.

Changes may have been made to this product to improve its performance after this Service Manual was printed. Accordingly, KMBT 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.
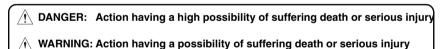
Therefore, this Service Manual must be carefully read before doing service work both in the course of technical training and even after that, for performing maintenance and control of the product properly.

Keep this Service Manual also for future service.

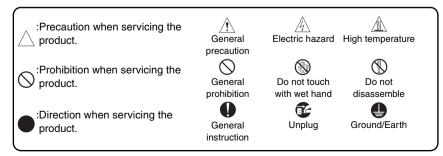## DESCRIPTION ITEMS FOR DANGER, WARNING AND CAUTION

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 servicing the product.

⊘ :Prohibition when servicing the product.

● :Direction when servicing the product.

⚠ General precaution

⚡ Electric hazard

🔥 High temperature

⊘ General prohibition

🚫 Do not touch with wet hand

🚫 Do not disassemble

❗ General instruction

🔌 Unplug

⏚ Ground/Earth

SAFETY WARNINGS

[1] MODIFICATIONS NOT AUTHORIZED BY KONICA MINOLTA BUSINESS TECHNOLOGIES, INC.

KONICA MINOLTA 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 KMBT.	
• Using any fuse or thermostat not specified by KMBT. 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 KMBT	
• Using parts not specified by KMBT	
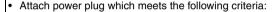
[2] POWER PLUG SELECTION

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.

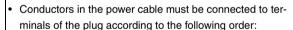<table>
<tr><td colspan="2">Power Cord Set or Power Plug</td></tr>
<tr><td colspan="2">⚠ WARNING</td></tr>
<tr>
<td>
• Use power supply cord set which meets the following criteria:
  - provided with a plug having configuration intended for the connection to wall outlet appropriate for the product's rated 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.
</td>
<td></td>
</tr>
<tr>
<td>
• 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.
</td>
<td></td>
</tr>
<tr>
<td>
• 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.
</td>
<td></td>
</tr>
</table>

[3] CHECKPOINTS WHEN PERFORMING ON-SITE SERVICE

KONICA MINOLTA brand products are extensively tested before shipping, to ensure that all applicable safety standards are met, in order to protect the customer and customer engineer (hereafter called the 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

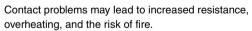| Connection to Power Supply	
⚠ **WARNING**	
• Check that mains voltage is as specified. Connection to wrong voltage supply may result in fire or electric shock.	

• 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.	

• 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 (with plug and connector on each end) specified by KMBT. 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.

- 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.
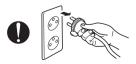
- Do not insert the power plug into the wall outlet with a wet hand.

  The risk of electric shock exists.

- When unplugging the power cord, grasp the plug, not the cable.

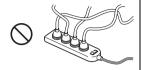 The cable may be broken, leading to a risk of fire and electric shock.

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
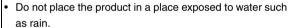
⚠ WARNING

- 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.

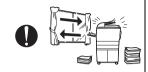 If a bad smell of ozone is present in the following cases, ventilate the room.
  a. When the product is used in a poorly ventilated room
  b. When taking a lot of copies
  c. When using multiple products at the same time

Stability

⚠ CAUTION

• Be sure to lock the caster stoppers.
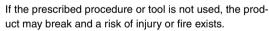
  In the case of an earthquake and so on, the product may slide, leading to a injury.
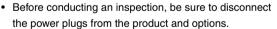
Inspection before Servicing
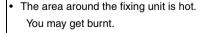
⚠ CAUTION

• Before conducting an inspection, read all relevant documentation (service manual, technical notices, etc.) and proceed with the inspection following the prescribed procedure, 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. A risk 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.
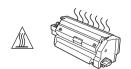
Safety Checkpoints
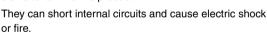
⚠ WARNING

• Check the exterior and frame for edges, burrs, and other damage.

    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.
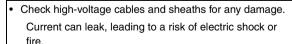
• Check wiring for squeezing and any other damage.

    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.

Safety Checkpoints

⚠ WARNING

- 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.

- 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.

Safety Checkpoints

⚠ WARNING

• 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.

Drum cleaner (isopropyl alcohol) and roller cleaner (acetone-based) 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.
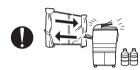
Handling of Service Materials

⚠ CAUTION

• 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] Used Batteries Precautions

ALL Areas

<div align="center">CAUTION</div>

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

<div align="center">VORSICHT!</div>

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

<div align="center">ATTENTION</div>

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

<div align="center">ADVARSEL!</div>

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

<div align="center">VAROITUS</div>

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

<div align="center">VARNING</div>

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

Norway

<div align="center">ADVARSEL</div>

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

[5] FUSE

CAUTION
Double pole / neutral fusing

ATTENTION
Double pôle / fusible sur le neutre.

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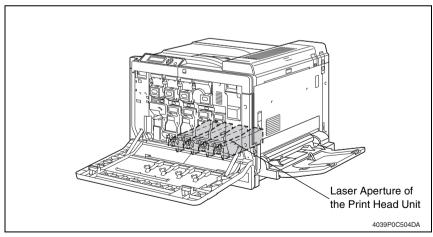
• This is a digital machine certified as a Class 1 laser product. There is no possibility of danger from a laser, provided the machine is serviced according to the instruction in this manual.

6.1 Internal Laser Radiation

semiconductor laser	
Maximum power of the laser diode	10 mW
Maximum average radiation power (*)	8.0 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.

Laser Aperture of the Print Head Unit

4039P0C504DA

U.S.A., Canada
(CDRH Regulation)
• This machine is certified as a Class 1 Laser product under Radiation Performance Stan-
  dard according to the Food, Drug and Cosmetic Act of 1990. Compliance is mandatory
  for Laser products marketed in the United States and is reported to the Center for
  Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration of
  the U.S. Department of Health and Human Services (DHHS). This means that the device
  does not produce hazardous laser radiation.

• The label shown 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.

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semiconductor laser	
Maximum power of the laser diode	10 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	10 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	10 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	10 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	10 mW
våglängden	775-800 nm

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

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

Norway

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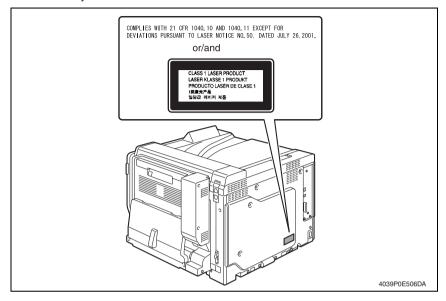• **Dersom apparatet brukes på annen måte enn spesifisert i denne bruksanvisning, kan brukeren utsettes för unsynlig laserstrålning, som overskrider grensen for laser klass 1.**

halvleder laser	
Maksimal effekt till laserdiode	10 mW
bølgelengde	775-800 nm
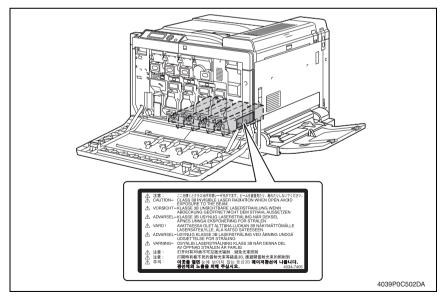
6.2 Laser Safety Label

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

COMPLIES WITH 21 CFR 1040.10 AND 1040.11 EXCEPT FOR
DEVIATIONS PURSUANT TO LASER NOTICE NO.50, DATED JULY 26,2001.

or/and

CLASS 1 LASER PRODUCT
LASER KLASSE 1 PRODUKT
PRODUCTO LASER DE CLASE 1
1类激光产品
1등급 레이저 제품

4039P0E506DA

6.3 Laser Caution Label

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

注意： ここを開くとクラス3B不可視レーザ光が出ます。ビームを直接見たり、触れたりしないでください。
CAUTION– CLASS 3B INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO THE BEAM
VORSICHT– KLASSE 3B UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
ADVARSEL– KLASSE 3B USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARO！ AVATTAESSA OLET ALTTIINA LUOKAN 3B NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN
ADVARSEL– USYNLIG KLASSE 3B LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
VARNING– OSYNLIG LASERSTRÅLNING KLASS 3B NÄR DENNA DEL AV ÖPPNAD STRÅLEN ÄR FARLIG
注意： 打开时有3B类不可见激光辐射 避免光束照射
注意： 打开时有看不见的雷射光束等级3B. 应避閉雷射光束的照射到
주의： 이곳을 열면 눈에 보이지 않는 등급3B 레이저광선이 나옵니다. 광선에의 노출을 피해 주십시오.　4034-740S

4039P0C502DA

6.4 PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT
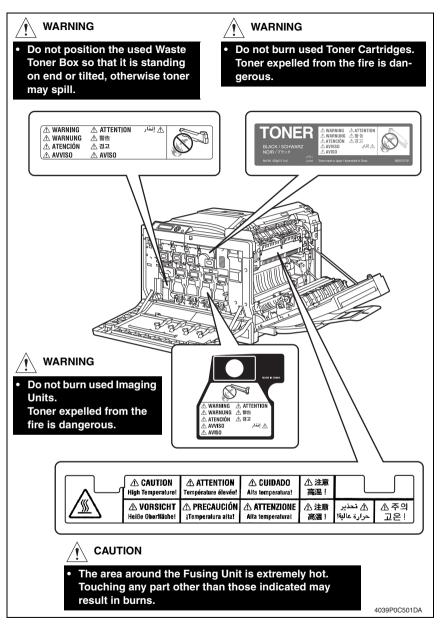
• When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
• When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the printer OFF.
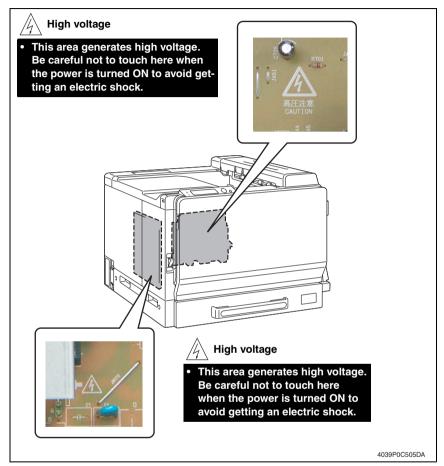• If the job requires that the printer be left ON, take off your watch and ring and wear laser protective goggles.
• A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.
• The Print Head is not to be disassembled 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.

WARNING INDICATIONS ON THE MACHINE

Caution labels shown 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.

High voltage

- **This area generates high voltage. Be careful not to touch here when the power is turned ON to avoid getting an electric shock.**

高圧注意
CAUTION

High voltage

- **This area generates high voltage. Be careful not to touch here when the power is turned ON to avoid getting an electric shock.**

4039P0C505DA

⚠ **WARNING**

• **Do not position the used Waste Toner Box so that it is standing on end or tilted, otherwise toner may spill.**

⚠ **WARNING**

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

⚠ WARNING   ⚠ ATTENTION   إنذار ⚠
⚠ WARNUNG   ⚠ 警告
⚠ ATENCIÓN ⚠ 경고
⚠ AVVISO   ⚠ AVISO

TONER
BLACK / SCHWARZ
NOIR / ブラック
Net Wt. 430g(15.1oz)
⚠ WARNING ⚠ ATTENTION
⚠ WARNUNG ⚠ 警告
⚠ ATENCIÓN ⚠ 경고
⚠ AVVISO   إنذار ⚠
⚠ AVISO
>PS<
Label   Toner made in Japan / Assembled in China.   8022757701

⚠ **WARNING**

• **Do not burn used Imaging Units.
Toner expelled from the fire is dangerous.**

MADE IN CHINA

⚠ WARNING   ⚠ ATTENTION
⚠ WARNUNG   ⚠ 警告
⚠ ATENCIÓN ⚠ 경고
⚠ AVVISO   إنذار ⚠
⚠ AVISO

⚠ **CAUTION** High Temperature!	⚠ **ATTENTION** Température élevée!	⚠ **CUIDADO** Alta temperatura!	⚠ 注意 高温！		
⚠ **VORSICHT** Heiße Oberfläche!	⚠ **PRECAUCIÓN** ¡Temperatura alta!	⚠ **ATTENZIONE** Alta temperatura!	⚠ 注意 高温！	تحذير ⚠ حرارة عالية！	⚠ 주의 고온！

⚠ **CAUTION**

• **The area around the Fusing Unit is extremely hot. Touching any part other than those indicated may result in burns.**

4039P0C501DA

⚠ **CAUTION:**

• **You may be burned or injured if you touch any area that you are advised not to touch by any caution label. Do not remove caution labels. If any caution label has come off or soiled and therefore the caution cannot be read, contact our Service Office.**

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 KMBT 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 KMBT.
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\>

GENERAL:	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) PWB-P: Controller Board

(2) magicolor 7450:   Main unit

(3) Microsoft Windows 95:   Windows 95

    Microsoft Windows 98:   Windows 98

    Microsoft Windows Me: Windows Me

    Microsoft Windows NT 4.0:   Windows NT 4.0 or Windows NT

    Microsoft Windows 2000:   Windows 2000

    Microsoft Windows XP: Windows XP

    When the description is made in combination of the OS's mentioned above:

                        Windows 95/98/Me

                        Windows NT 4.0/2000

                        Windows NT/2000/XP

                        Windows 95/98/Me/ NT/2000/XP

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

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

magicolor ® 7450

Main Unit

Revision history

After publication of this service manual, the parts and mechanism may be subject to change for improvement of their performance.
Therefore, the descriptions given in this service manual may not coincide with the actual machine.

When any change has been made to the descriptions in the service manual, a revised version will be issued with a revision mark added as required.

Revision mark:
- To indicate clearly a section revised, show $\triangle$ to the left of the revised section.
  A number within $\triangle$ represents the number of times the revision has been made.

- To indicate clearly a section revised, show ▲ in the lower outside section of the corresponding page.
  A number within ▲ represents the number of times the revision has been made.

NOTE
Revision marks shown in a page are restricted only to the latest ones with the old ones deleted.
- When a page revised in Ver. 2.0 has been changed in Ver. 3.0:
  The revision marks for Ver. 3.0 only are shown with those for Ver. 2.0 deleted.
- When a page revised in Ver. 2.0 has not been changed in Ver. 3.0:
  The revision marks for Ver. 2.0 are left as they are.

Date	Service manual Ver.	Revision mark	Descriptions of revision
2006/05	1.0	—	Issue of the first edition

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General

1.   System configuration

4039T1J101AA

[1]	Main Body	[5]	Caster Base
[2]	Duplex Option	[6]	DIMM
[3]	Banner Tray	[7]	Hard Disk Kit
[4]	Lower Feeder Unit (500 sheets)	[8]	Compact Flash Card

NOTE
- **Use the Desk or the paper feed cabinet without fail when installing on the floor in order to keep the function and quality of the unit.**

magicolor 7450

General

2.   Product specifications

A.   Type

Type	Desktop tandem full color A3 laser beam printer
Printing System	Electrostatic dry-powdered image transfer to plain paper
PC Drum Type	OPC (organic photo conductor)
Paper Feeding Separation System	Tray 1 (Manual bypass) : Small diameter roller separation system Tray 2 : Small diameter roller separation system
Exposure System	• Four-multi array PH unit system • Two-beam LD + polygon mirror exposure system for Y, M, C, and K (8 beams in total)
Exposure Density	600 dpi $\times$ 600 dpi $\times$ 4 bit
Developing System	HMT developing system
Charging System	DC comb electrode Scorotron system
Image Transfer System	Intermediate transfer belt system
Paper Separating System	Selection either application of nonwoven fabric bias or resistor grounding + lower-pressure paper separate claws
Fusing System	Roller fusing
Paper Exit System	Face down

B. Functions

Warm-up Time	99 sec. or less (at ambient temperature of 23° C/73.4° F and rated source voltage)		
Image Loss	Leading edge: 4.2 mm, Trailing edge: 4.2 mm, Rear edge: 4.0 mm, Front edge: 4.0 mm		
First Print Time (Tray2)	Monochrome print	A4	8.1 sec. or less
		8.5 x 11	8.2 sec. or less
	Color print	A4	11.4 sec. or less
		8.5 x 11	11.4 sec. or less
Processing Speed	Plain Paper (64 to 90 g/m^2 / 16 to 24 lb)	111 mm/sec	
	Thick Paper (91 to 256 g/m^2 /24.25 to 68 lb), OHP, Post card, Envelope, Label sheet	55.5 mm/sec	
Printing Speed for Multi-print Cycle (crosswise feeding)	Monochrome print/ Color print	A4	1-sided: 25 prints/min. 2-sided: 23.5 prints/min.
		8.5 x 11	1-sided: 24.5 prints/min. 2-sided: 23.0 prints/min.
Print Paper Size	Tray1, Tray2	Metric Area:	A3 to A5, B6R, A3 Wide (12.25×18), A6R, Thick Paper, Postcards
		Inch Area:	11×17 to 5.5×8.5, A3 Wide (12.25×18), 4×6R, Thick Paper, Postcards
	Tray3, Tray4, Tray5	Metric Area:	A3 to B5, A5R
		Inch Area:	11×17 to 8.5×11, 8.5×11R
	Banner paper (127 to 160 g/m^2) * Tray 1 only * The Expanded Memory Unit is needed.	Minimum: 210 × 458 mm Maximum: 297 × 1200 mm	
Print Exit Tray Capac- ity	Plain Paper, A4	350 sheets	

C. Types of Paper

Type		Paper Source (maximum tray capacity)		
		Tray1 (Multiple Bypass)	Tray2	Tray3, 4, 5 (Option) *2
Print paper type	Plain paper (64 to 90 g/m² / 16 to 24 lb)	❍ (100 sheets)	❍ (250 sheets)	❍ (500 sheets)
	Translucent paper	–	–	–
	OHP transparencies (crosswise feeding only)	❍ (10 sheets or less)	❍ (50 sheets or less)	–
	Thick paper 1 (91 to 150 g/m² / 24.25 to 40 lb)			–
	Thick paper 2 (151 to 209 g/m² / 40.25 to 55.5 lb)			–
	Thick paper 3 (210 to 256 g/m² / 55.75 to 68 lb) *1		❍ (10 sheets or less)	–
	Postcards			–
	Envelopes			–
	Labels		❍ (50 sheets or less)	–
Print paper dimensions	Width	90 to 311 mm 3.5 to 12.25 inch	90 to 311 mm 3.5 to 12.25 inch	140 to 297 mm 5.5 to 11.75 inch
	Length	140 to 457 mm 5.5 to 18 inch	140 to 457 mm 5.5 to 18 inch	182 to 432 mm 7.25 to 17 inch
	Long size paper (Width x Length)	210 to 297 mm x 1200 mm or less 8.25 to 11.75 inch x 47.25 inch or less	–	–

*1: Image is not guaranteed when thick paper 3 is used.
*2: Optional Lower Feeder Unit : Only the Plain paper weighing 64 to 90 g/m² (17 to 24 lb) is reliably fed.

D. Maintenance

Machine Durability	600,000 prints or 5 years, whichever is earlier	
No. of pages printed per month (Average)	Color print/ Mono-chrome print	1,500 prints
Standard print mode	Color print/ Mono-chrome print	3 pages/job
Standard Original Density	Color print	C, M, Y, K 5%
	Monochrome print	K 5%

E. Machine Specifications

Power Requirements	Voltage:	AC 110 V, 120 V, 127 V, 220-240 V
	Frequency:	50/60 Hz ± 3.0 Hz
Max Power Consumption		Less than 1450 W (120 V, 12 A / 220 - 240 V, 6.5 A)
Dimensions		648 *1 (W) × 606 (D) × 477 (H) mm 25.5 *1 (W) × 23.9 (D) × 18.8 (H) inch
Space Requirements		966 *2 (W) × 606 (D) mm 38.0 *2 (W) × 23.9 (D) inch
Weight	Main Unit	Approx. 50.5 kg / 111.3 lb (without IU and TC)
	IU and TC	8.9 kg

*1: width when the bypass tray is closed
*2: Space Requirements are the values, the bypass tray is opened to the maximum.

F. Operating Environment

Temperature	10 to 30 °C / 50 to 86° F (with a fluctuation of 10° C / 18° F or less per hour)
Humidity	15 to 85% (Relative humidity with a fluctuation of 20%/h)
Levelness	Difference between front and back, right and left should be 1 degree or under.

G. Print Functions

Type	Built-in PS/PCL controller
RAM	Standard 256 MB, max 1,024 MB
HDD	40 GB (Option)
Compact Flash Card	256 MB or 512 MB (commercially available)
Interface	Ethernet: 10 Base-T, 100 Base-TX, 1000 Base-T USB 2.0 (High-speed) IEEE 1284 (Parallel) PictBridge (digital camera direct connection)
Supported Protocols	TCP/IP, IPX/SPX, NetBEUI, AppleTalk (EtherTalk), UDP
Printer Language	PCL5e/c Emulation PCL6 (XL Ver. 2.1) Emulation PostScript 3 Emulation (3011) PDF Emulation (1.4 Command Level) (When HDD or Compact Flash Card is mounted) Direct Print (JPEG/TIFF) (When HDD or Compact Flash Card is mounted)
Printer Fonts	PCL: Japanese 4 fonts, Latin 80 Fonts Postscript: Japanese 2 fonts, Emulation Latin 136 Fonts
Supported Operating Systems	Windows 98 SE/Me, Windows NT 4.0 (SP6a) Windows 2000 SP4 or later, Windows XP SP2 or later Windows 2003 Server Mac OS 9.2 or later, Mac OS X 10.2, 10.3 or 10.4 Redhat Linux v9.0, Susse Linux v8.2 Netware 4, 5, 6, or later

NOTE
• **These specifications are subject to change without notice.**

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Maintenance

3.   Periodical check

3.1   Maintenance items

3.1.1   Parts to be replaced by users (CRU)

No.	Class	Parts to be replaced	Cycle	Clean	Replace	Descriptions
1	Processing sections	Imaging Unit C/M/Y	30 K		●	
2		Imaging Unit K	50 K		●	
3		Dust filter/Cooling Fan	18 K		●	*1
4		Toner cartridge Y/M/C (After consumable)	6 K/12 K		●	
5		Toner cartridge Y/M/C (Prepackaged)	3 K		●	
6		Toner cartridge K (After consumable)	7.5 K/15 K		●	*2
7		Toner cartridge K (Prepackaged)	3 K		●	
8	Fusing section	Deodorant filter	7.5 K/15 K		●	*2
9	Image Transfer section	Waste Toner Bottle	(18 K)		●	*1, 3

*1: Also replace the Dust Filter/Cooling Fan packed in the Waste Toner Bottle at the same time when the Waste Toner Bottle is replaced.

*2: Also replace the Deodorant Filter packed in the Toner Cartridge K at the same time when 15 K is reached.

*3: A waste toner full condition is detected with detecting the actual waste toner emissions.

3.1.2   Periodical parts replacement 1 (per 120,000-print)

No.	Class	Parts to be replaced	Quantity	Check	Clean	Replace	Lubrica-tion	Descriptions
1	Overall	Paper feed and image conditions		●				
2		Appearance		●	●			
3	Fusing section	Fusing Unit	1			●		
4	Conveyance sec-tion	Transfer Roller5	1			●		*1
5		Dust Filter/Vertical Conveyance	1			●		
6	Image Transfer section	Transfer Belt	1			●		
7	Processing sec-tion	Ozone Filter	1			●		

*1: Replace those four parts at the same time.

3.1.3   Periodical parts replacement 2 (per 200,000-print)

No.	Class	Parts to be replaced	Quantity	Check	Clean	Replace	Lubrica-tion	Descrip-tions
1	Overall	Paper feed and image conditions		●				
2		Appearance		●	●			
3	Tray 1, 2	Feed Roller	1			●		
4		Separation Roller	1			●		

3.1.4   Periodical parts replacement 3 (per 300,000-print)

No.	Class	Parts to be replaced	Quantity	Check	Clean	Replace	Lubrica-tion	Descrip-tions
1	Overall	Paper feed and image conditions		●				
2		Appearance		●	●			
3	Lower Feeder Unit	Pick-up Roller	1			●		
4		Feed Roller	1			●		
5		Separation Roller	1			●		

3.2   Maintenance parts

- To ensure that the machine produces good prints and to extend its service life, it is rec-ommended that the maintenance jobs described in this schedule be carried out as instructed.
- The replacing time is to be determined by the Total Counter value.
- Maintenance conditions are based on the case of A4 or 8.5 × 11, Standard mode and Energy Saver OFF.

3.2.1   Replacement parts

A. Main unit

No.	Classification	Parts name	Quantity	Actual durable cycle	Parts No.	Descriptions
1	Tray 2	Tray 2 Feed Roller (Standard)	1	200 K	4034 3012 ##	
2		Tray 2 Separation Roller	1	200 K	4034 0151 ##	
3	Tray 1	Tray 1 Feed Roller (Bypass)	1	200 K	4131 3001 ##	
4		Tray 1 Separation Roller	1	200 K	4034 0151 ##	
5	Conveyance section	Transfer Roller	1	120 K	—	*1
6		Dust Filter/ Vertical Conveyance	1	120 K	—	*1
7	Fusing section	Fusing Unit	1	120 K		
8		Deodorant Filter	1	7.5 K/15 K	—	*2
9		Imaging Unit Y/M/C	1	30 K	—	
10		Imaging Unit K	1	50 K	—	
11		Ozone Filter	1	120 K	—	*1
12		Toner Cartridge Y/M/C (Prepackaged)	1	3 K	—	
13	Processing section	Toner Cartridge Y/M/C (After consumable)	1	6 K/12 K	—	
14		Toner Cartridge K (Prepackaged)	1	3 K	—	
15		Toner Cartridge K (After consumable)	1	7.5K/15 K	—	*2
16		Dust Filter/Cooling Fan	1	18 K	—	*3
17	Image transfer section	Transfer Belt	1	120 K	4039 R716 00	*1
18		Waste Toner Bottle	1	(18 K)		*3, 6

*1: Also replace the Transfer Roller, Dust Filter/Vertical Conveyance and Ozone Filter packed in the Transfer Belt at the same time when 120 K is reached. (Part No. of the Transfer Kit: 4039 R716 00)
*2: Also replace the Deodorant Filter packed in the Toner Cartridge K at the same time when 15 K is reached.
*3: Also replace the Dust Filter/Cooling Fan packed in the Waste Toner Bottle at the same time when the Waste Toner Bottle is replaced.
*4: 220-240 V areas only.
*5: 110 V to 120 V areas only.
*6: A waste toner full condition is detected with detecting the actual waste toner emissions.

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Maintenance

B. Option

No.	Classification	Parts name	Qua ntity	Actual durable cycle	Parts No.	Descriptions
1	Lower Feeder Unit	Feed Roller	1	300 K		*1
2		Separation Roller	1	300 K		
3		Pick-up Roller	1	300 K		

*2: See the Lower Feeder Unit Service Manual.

3.3 Concept of parts life

	Description	Near Life value	Life value / Max. number of printed pages
Waste Toner Bottle	A waste toner full condition is detected when about 2,500 printed pages have been produced after a waste toner near full condition has been detected. When the maximum number of printed pages is reached, the print is inhibited.	—	18 K *1, 2

	Description	Life value (Specification value)	Max. number of printed pages
Fusing unit	The number of prints made is counted. *3 The number of prints made is compared with the value of the number of hours through which the Fusing Drive Motor has turned translated to a corresponding value of the number of prints made and the value, whichever reaches the life specification value, is detected. When the maximum number of printed pages is reached, the print is inhibited.	120 K	150 K
Transfer Belt	It is detected by counting the number of hours the Transfer Belt turns. The printing is prohibited when it reaches to the maximum printed pages.	120 K	150 K
Imaging Unit C/M/Y	The hours which the PC drum has turned is compared with the value of the number of hours through which the Imaging roller has turned translated to a corresponding value of hours and the value, whichever reaches the life specification value, is detected.	30 K	32 K
Imaging Unit /K	* The hours which the PC drum has turned is the value of the number of distance through which the PC drum has run translated to a corresponding value of the number of hours and the value.	50 K	52 K

*1: A waste toner full condition is detected with detecting the actual waste toner emissions.

*2: Once the Toner-Full is detected, it has to be replaced with the new Waste Toner Bottle in order to reset.

*3: The count condition is different according to the media length of the sub scanning direction.

Length of the sub scanning direction	Number of counts
216 mm or less	1 count
216 mm to 432 mm	2 counts
432 mm to 648 mm	3 counts
648 mm to 864 mm	4 counts
over 864 mm	5 counts

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Maintenance

A. Conditions for Life Specifications Values
• The life specification values represent the number of prints made or figures equivalent to it when given conditions (see the Table given below) are met. They can be more or less depending on the machine operating conditions of each individual user.

Item	Description
Job Type	Monochrome: Making 3 prints per job Color: Making 3 prints per job
Paper Size	A4/Letter
Color Ratio	Black to Color = 1:1
CV/M	Black: 1,500 / Color: 1,500
Original Density	B/W = 5 % for each color, 5 % for Monochrome
No. of Operating Days per Month	20 days (Main Power Switch turned ON and OFF 20 times per month)
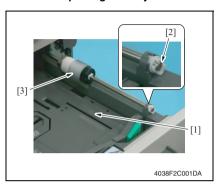
3.4   Maintenance procedure (Periodical check parts)
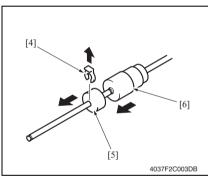
NOTE
- **The alcohol described in the cleaning procedure of Maintenance represents the isopropyl alcohol.**

3.4.1   Replacing the Tray 2 Feed Roller (Standard)

4038F2C001DA

1. Slide out the Tray 2.
2. Lock the Paper Lifting Plate [1] into position.
3. Snap off the C-clip [2] from the Tray 2 Feed Roller (Standard) Assy [3].
4. Remove the shaft for the Tray 2 Feed Roller (Standard) Assy [3] from the front Bushing.

4037F2C003DB

5. Snap off the C-clip [4], one collar [5] and remove the Tray 2 Feed Roller (Standard) [6].
6. To reinstall, reverse the order of removal.
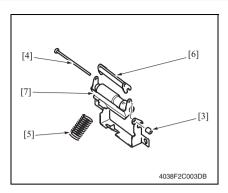
NOTE
- **Replace the Tray 2 Feed Roller (Standard) and Tray 2 Separation Roller at the same time.**
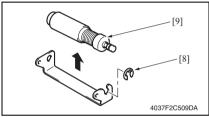
3.4.2   Replacing the Tray 2 Separation Roller

4038F2C002DB

1. Slide out the Tray 2.
2. Remove two Screws [1] and the Tray 2 Separation Roller mounting bracket Assy [2].

4038F2C003DB

3. Take off the rubber stopper [3], shaft [4], spring [5], and guide plate [6] to remove the Tray 2 Separation Roller fixing bracket Assy [7].

4037F2C509DA
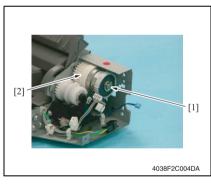
4. Snap off the E-ring [8] and the Tray 2 Separation Roller Assy [9].
5. To reinstall, reverse the order of removal.

NOTE
• **Replace the Tray 2 Feed Roller (Standard) and Tray 2 Separation Roller at the same time.**

3.4.3   Replacing the Tray 1 Feed Roller (Bypass)

4038F2C004DA
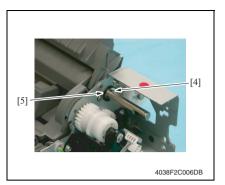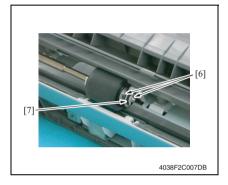
1. Remove the Multi Bypass Unit.
2. Snap off the E-ring [1], and remove Tray 1 Paper Feed Clutch [2].

4038F2C005DA

3. Remove the Gear [3].

4038F2C006DB

4. Snap off the E-ring [4] and remove the Bearing [5].

4038F2C007DB
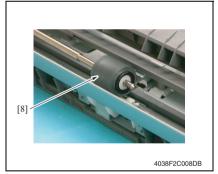
5. Snap off two C-ring [6], and remove the Bearing [7].

4038F2C008DB
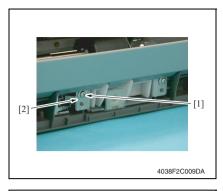
6. Remove the Tray 1 Feed Roller (Bypass) [8].
7. To reinstall, reverse the order of removal.
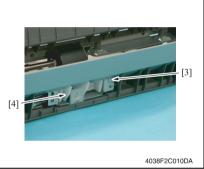
NOTE

• **Replace the Tray 1 Feed Roller (Bypass) and the Tray 1 Separation Roller at the same time.**
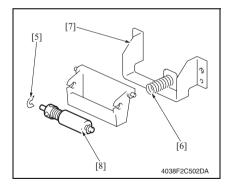
3.4.4 Replacing the Tray 1 Separation Roller

4038F2C009DA

1. Remove the Multi Bypass Unit.
   See P.57
2. Remove the Screw [1], and remove the Ground terminal [2].

4038F2C010DA

3. Remove the Screw [3], and remove the Tray 1 Separation Roller Assy [4].

4038F2C502DA
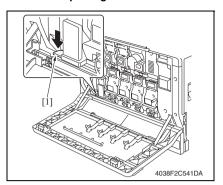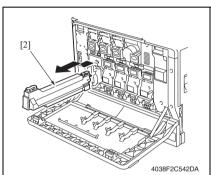
4. Snap off the C-clip [5], and remove the spring [6] and the guide plate [7]. Remove the Tray 1 Separation Roller [8].
5. To reinstall, reverse the order of removal.
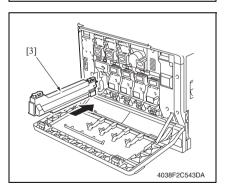
NOTE
- **Replace the Tray 1 Feed Roller (Bypass) and the Tray 1 Separation Roller at the same time.**

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Maintenance

3.4.5 Replacing the Waste Toner Bottle

[1]

4038F2C541DA

1. Open the Front Door.
2. Press the Waste Toner Bottle release lever [1].

[2]

4038F2C542DA

3. Remove the Waste Toner Bottle [2].
NOTE
• **Raise the Waste Toner Bottle gently before removing it.**
• **If scattered toner has accumulated in the vicinity of the toner collecting port, do not tilt the Waste Toner Bottle when removing it.**
• **Do not leave the Waste Toner Bottle in a tilted condition after removing it.**

[3]

4038F2C543DA

4. Clean the surface around the waste toner collecting port.
   See P.76
5. Remove the Waste Toner Bottle from its box, and remove the packing material.
6. Set the Waste Toner Bottle [3] in place.
7. Close the Front Door.
NOTE
• **Replace the Dust Filter/Cooling Fan supplied with the Waste Toner Bottle at the same time.**
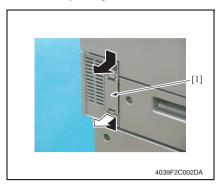
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Maintenance

3.4.6   Replacing the Ozone Filter

4039F2C002DA
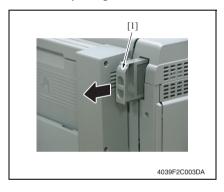
1. Holding onto the hook, remove the Ozone Filter [1].

NOTE
• **The Ozone Filter is supplied with the Transfer Belt.
    Replace it when replacing the Transfer Belt.**

3.4.7   Replacing the Deodorant Filter

4039F2C003DA
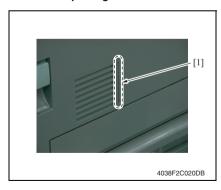
1. Holding onto the hook, take out the Deodorant Filter [1].

NOTE
• **The Deodorant Filter is supplied with the Toner Cartridge (Black).
    Replace it when replacing the Toner Cartridge (Black).**

3.4.8   Replacing the Dust Filter/Vertical Conveyance

4038F2C020DB

1. If the optional Automatic Duplex Unit is mounted, remove it.
    See Duplex Option Service Manual.
2. Remove the Dust Filter/Vertical Conveyance [1].
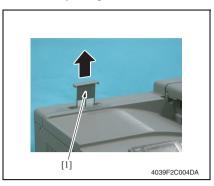
NOTE
• **The Dust Filter/Vertical Conveyance is supplied with the Transfer Belt.
    Replace it when replacing the Transfer Belt.**

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Maintenance

3.4.9   Replacing the Dust Filter/Cooling Fan

[1]

4039F2C004DA
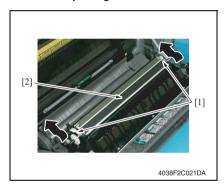
1. If the Dust Filter/Cooling Fan is con-
   taminated by dust or foreign matter,
   clean it up.
2. Remove the Dust Filter/Cooling Fan
   [1].
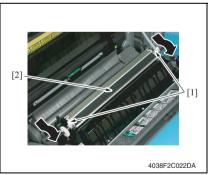
NOTE
- **The Dust Filter/Cooling Fan is sup-
  plied with the Waste Toner Bottle.
  Replace it when replacing the
  Waste Toner Bottle.**

3.5   Replacing the unit

3.5.1   Replacing the Transfer Roller

[2]

[1]

4038F2C021DA

A. Removal Procedure
1. Open the Front Door and turn OFF
   the Main Power Switch.
2. Open the Right Door.
3. Unlock the Lock levers [1] (at two
   places).
4. Holding onto the Lock levers [1] (at
   two places), remove the Transfer
   Roller [2].

[2]

[1]

4038F2C022DA

B. Reinstallation Procedure
1. Holding onto the Lock levers [1] (at
   two places), mount the Transfer
   Roller [2].
2. Lock the Lock levers [1](at two
   places).
3. Close the Right Door.

NOTE
- **Make sure that the door is locked in
  position both at front and rear.**
4. Close the Front Door.
5. Turn ON the Main Power Switch.
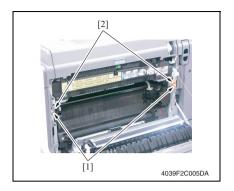
NOTE
- **The Transfer Roller is supplied with
  the Transfer Belt.
  Replace it when replacing the
  Transfer Belt.**

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Maintenance

3.5.2 Replacing the Transfer Belt

A. Removal Procedure

4039F2C005DA
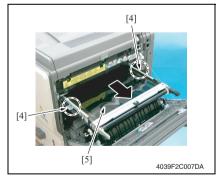
1. Open the Right Door.
2. Remove two Screws [1] and release the Lock of the Transfer Belt [2].

4039F2C006DA

3. Hold the both sides and lift it to take out the Transfer Belt [3] a little.

4039F2C007DA

4. Hold the position [4] as shown in the left and remove the Transfer Belt [5].
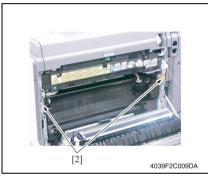
NOTE
- **Do not touch the surface of the Transfer Belt.**
- **Cover the Transfer Belt with something such shade cloth to protect its surface from dust or foreign matter.**

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Maintenance

B. Reinstallation Procedure

[1]

4039F2C008DA
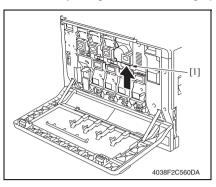
1. Insert the Transfer Belt [1].
NOTE
- **Insert the Transfer Belt with care not to allow its docking gear to be damaged by hitting it against the rail or associated part.**
- **Do not touch the surface of the Transfer Belt.**
- **Cover the Transfer Belt with something such shade cloth to protect its surface from dust or foreign matter.**

[2]

4039F2C009DA

2. Install the Transfer Belt with two Screws [2].
NOTE
- **Replace the Transfer Roller, the Ozone Filter and the Dust Filter/Vertical Conveyance, which are supplied with the Transfer Belt, at the same time.**
3. Close the Right Door.
4. Reinstall the Imaging Unit and the Waste Toner Bottle.
5. Close the Front Door.
6. Turn ON the Main Power Switch.
7. Select [QUALITY MENU] → [CALIBRATION] → [TONE CALIBRATION] and carry out TONE CALIBRATION.
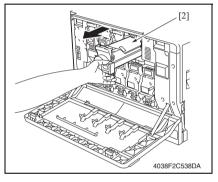
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Maintenance

3.5.3 Replacing the Toner Cartridge (C, M, Y, K)

4038F2C560DA
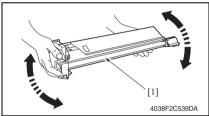
A. Removal Procedure
1. Open the Front Door.
2. Pressing the Toner Cartridge Lock Claw [1], pull it toward.

4038F2C538DA
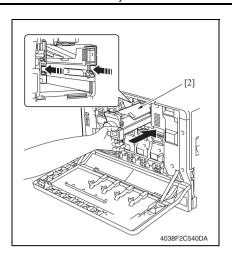
3. Pull the Toner Cartridge [2] toward to remove it.

4038F2C539DA

B. Reinstallation Procedure
1. Take out the new Toner Cartridge [1] from the unitary packing box and shake it well up and down 5 to 10 times.
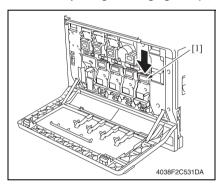
2. Insert the Toner Cartridge [2] by fit-
    ting it to the groove on the main unit.
NOTE
*   **Make sure the colors are matched
    between the Toner Cartridge and
    label on the machine.**
*   **Make sure the Toner Cartridge is
    inserted all the way.**
*   **When replacing the Toner Cartridge
    (black), replace the Deodorant Filter
    supplied with it at the same time.**
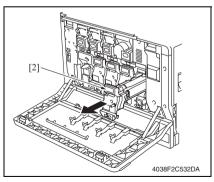
4038F2C540DA
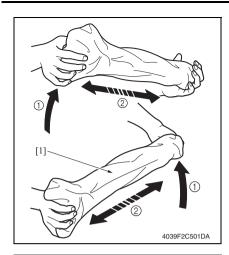
3.5.4   Replacing the Imaging Unit (C, M, Y, K)

4038F2C531DA

A. Removal Procedure
1. Turn OFF the Main Power Switch
    and open the Front Door.
2. Unplug the power cord.
3. Press the unlocking knob [1] of
    Imaging Unit.

4038F2C532DA
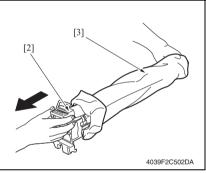
4. Pull out the Imaging Unit [2], and
    remove it from main body.

4039F2C501DA

4039F2C502DA

4039F2C503DA

B. Reinstallation Procedure
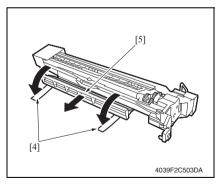
1. Hold the Imaging Unit [1] with both hands and tilt it to the left as shown on the illustration.
Shake it twice lightly. Tilt it to the right and shake it twice again lightly.
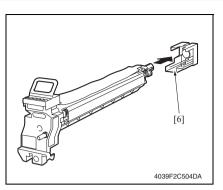
2. Take the Imaging Unit [2] out from the black plastic bag [3].
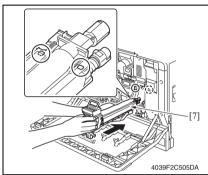
3. Peel off the Tape [4] so that the Mounting Bracket [5] can be removed. Then, remove the Mounting Bracket [5].
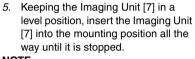
NOTE
• **Since the Imaging Unit is highly susceptible to light, keep it shielded from light up to the time it is installed.**
• **Carefully unseal the plastic bag (black).**
• **If the Imaging Unit is packed in the plastic bag (black) again, seal the package using tape or another means.**

4039F2C504DA
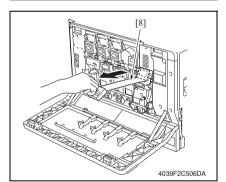
4. Remove the Caps [6] on the end of the Imaging Unit and the bottom packing material.

4039F2C505DA

5. Keeping the Imaging Unit [7] in a level position, insert the Imaging Unit [7] into the mounting position all the way until it is stopped.
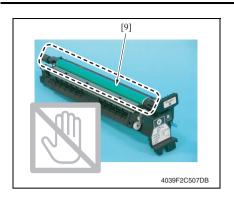
NOTE
- **Install them by fitting the blue label position of Imaging Unit and one of the machine.**
- **Do not allow the Imaging Unit to become tilted while installing them into the Main Unit, as damage to the PC Drum can result.**

4039F2C506DA

6. Pull out the PC Drum protective sheet [8] while pressing the Imaging Unit.
7. Insert the Imaging Unit all the way.

NOTE
- **Make sure that the Imaging Unit is inserted all the way.**
8. Plug in the power cord.
9. Close the Front Door.
10. Turn ON the Main Power Switch.

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[9]

4039F2C507DB
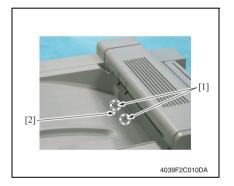
NOTE
- **When removing / installing the Imaging Unit, use care not to touch the surface of the PC Drum [9].**
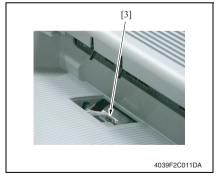
3.5.5 Replacing the Fusing Unit

⚠ **CAUTION**
- **Before replacing the Fusing Unit, ensure that it has had time to cool down.**

[1]

[2]

4039F2C010DA
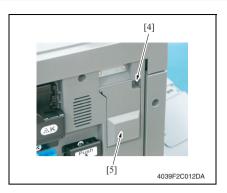
1. Turn OFF the Main Power Switch and unplug the power cord from the power outlet, then wait for about 20 minutes.
2. Open the Front Door.
3. Remove two Claws [1], and remove the Exit Tray Connector protective cover [2].

[3]

4039F2C011DA

4. Disconnect the Connector [3].

[4]

[5]

4039F2C012DA
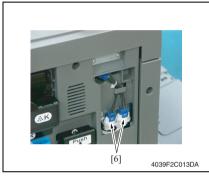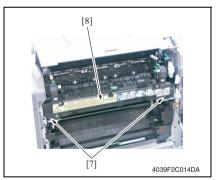
5. Remove the Screw [4], and remove the Connector protective cover [5].

[6]

4039F2C013DA

6. Disconnect two Connectors [6].

[8]

[7]

4039F2C014DA

7. Open the Right Cover.
8. Open the Fusing Unit Cover.
9. Remove two Screws [7], and remove the Fusing unit [8].

NOTE

• **Do not leave the Right Door open.**

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4. Service tool

4.1 CE Tool list

Tool name	Shape	Personnel	Parts No.	Remarks
PH Window Cleaning Jig	4038F2C557DA	1	4038 2083 xx	
PH Window Cleaning Jig Pad	4038F2C558DA	1	4038 2084 xx	

Maintenance

4.2   Print materials

4.2.1   Imaging Unit Single Parts (IU)

Also replace the Dust filter packed in the Imaging Unit Black at the same time.

Parts name	Replacing period
IU Black	50,000 prints
IU Yellow	30,000 prints
IU Magenta	30,000 prints
IU Cyan	30,000 prints

4.2.2   Toner Cartridge Single Parts (T/C)

Also replace the Deodorant filter packed in the T/C Black at the same time.

Parts name	Replacing period *1
T/C Black	7,500/15,000 prints
T/C Yellow	6,000/12,000 prints
T/C Magenta	6,000/12,000 prints
T/C Cyan	6,000/12,000 prints

*1: Life value that can be achieved with a probability of 90% even with product-to-product variations and fluctuating operating environmental conditions taken into consideration, when the T/C is used under the conditions of B/W ratio 5% for each color

4.2.3   Waste Toner Bottle

• Replace the Dust Filter/Cooling Fan supplied with the Waste Toner Bottle at the same time.

Parts name	Replacing period
Waste Toner Bottle	18,000 prints *1

*1: A waste toner full condition is detected with detecting the actual waste toner emissions.

4.2.4   Maintenance Kit

There is no setting for the Maintenance Kit.

Maintenance

5.   Firmware upgrade

5.1   Firmware rewriting

5.1.1   Upgrade procedure
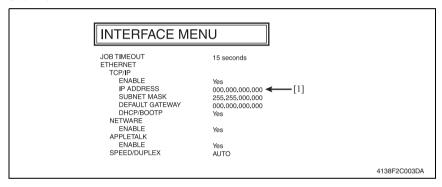
A. How to upgrade using the Network Interface
1. Connect the machine to the PC using an Ethernet cable.

NOTE
- **For connections via a HUB, use a straight cable.**
- **For direct connections between the printer and PC, use the crossover cable.**
- **For PCs that support 1000BASE-T (Gigabit Ethernet), use a 1000BASE-T-enabled Ethernet cable (over category 5e.) If a cable that is not compatible with 1000BASE-T is used, communication may not be made correctly.**
- **Check that printing is available over the network.**

2. From the Menu, select [PRINT MENU] → [CONFIGURATION PG] and execute the function. Then, check the IP address [1] of the machine.

INTERFACE MENU

JOB TIMEOUT	15 seconds
ETHERNET	
TCP/IP	
ENABLE	Yes
IP ADDRESS	000.000.000.000 ⟵ [1]
SUBNET MASK	255.255.000.000
DEFAULT GATEWAY	000.000.000.000
DHCP/BOOTP	Yes
NETWARE	
ENABLE	Yes
APPLETALK	
ENABLE	Yes
SPEED/DUPLEX	AUTO

4138F2C003DA

3. Copy the firmware data and upgrading program to any directory on the PC.
4. Start the Command Prompt and go to the directory in which the firmware data is stored.
5. Execute the following command to start the transfer of the firmware data to the printer. (The screen shown below indicates that the firmware data resides on the C drive.)

```
Command Prompt                                    _ □ ×
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\>lpr -S 1██.██.██.██1 -P lp -ol ██████████.prn

C:\>
```

4138F2C004DA

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Data to be upgraded	Command
FW upgraded data	> lpr -S XXX.XXX.XXX.XXX -P lp -o l 4039**********.prn

XXX.XXX.XXX.XXX : IP address of the machine
******   : File name of FW upgrade data
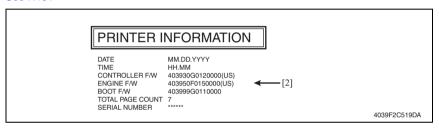
6. Wait until all of the data is sent.
   While the data is being sent, [FIRMWARE UPDATE] and [PROCESSING] are alter-
   nately displayed on the screen.

NOTE
• **NEVER turn the printer Power Switch OFF and ON while data is being sent.**

7. After the data has finished being sent, the message [REBOOTING] appears in the con-
   trol panel message display and the printer restarts.
8. After the printer has restarted, check that a [READY] message is displayed.
9. From the Menu, select [PRINT MENU] → [CONFIGURATION PG] and execute the
   function. Then, check that the firmware [2] has been upgraded.

PRINTER INFORMATION

```
DATE                MM.DD.YYYY
TIME                HH.MM
CONTROLLER F/W      403930G0120000(US)
ENGINE F/W          403950F0150000(US)  ←——— [2]
BOOT F/W            403999G0110000
TOTAL PAGE COUNT    7
SERIAL NUMBER       ******
```

4039F2C519DA
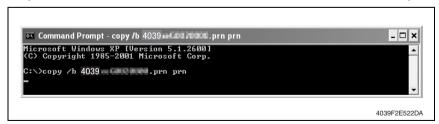
B. How to upgrade using the Parallel Interface
1. Connect the machine to the PC using a parallel cable.

NOTE
• **Check that printing is available through the parallel cable.**

2. Copy the firmware data and upgrading program to any directory on the PC.
3. Start the Command Prompt and go to the directory in which the firmware data is
   stored.
4. Execute the following command to start the transfer of the firmware data to the printer.
   (The screen shown below indicates that the firmware data resides on the C drive.)


```
Command Prompt - copy /b 4039          .prn prn          _ □ ×
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\>copy /b 4039          .prn prn
```

4039F2E522DA

Data to be upgraded	Command
FW upgraded data	> copy /b 4039**********.prn prn

******: File name of FW upgrade data

Maintenance

5. Wait until all of the data is sent. (This takes approximately 2 minutes.)
While the data is being sent, [FIRMWARE UPDATE] and [PROCESSING] are alter-
nately displayed on the screen.

NOTE
• **NEVER turn the printer Power Switch OFF and ON while data is being sent.**

6. After the data has finished being sent, the following message appears on the screen of
the Command Prompt.


```
Command Prompt                                                    - □ ×
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\>copy /b 4039▉▉▉▉▉.prn prn
        1 file(s) copied.

C:\>
```

4039F2E523DA
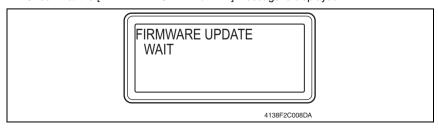
7. A "REBOOTING" message appears in the control panel message display, and the
printer restarts.
8. After the printer has restarted, check that a [READY] message is displayed.
9. From the Menu, select [PRINT MENU] → [CONFIGURATION PG] and execute the
function. Then, check that the firmware [2] has been upgraded.

PRINTER INFORMATION

DATE	MM.DD.YYYY
TIME	HH.MM
CONTROLLER F/W	403930G0120000(US)
ENGINE F/W	403950F0150000(US) ← [2]
BOOT F/W	403999G0110000
TOTAL PAGE COUNT	7
SERIAL NUMBER	******

4039F2C519DA

C. What to do if the firmware upgrade fails
• **Use the following procedure if the firmware upgrade process is suspended for any
reason. (The printer cannot start until the firmware upgrade process completes
correctly.)**

1. Turn OFF the Main Power Switch of the printer.
2. Connect the machine to the PC using a parallel cable.
3. Turn ON the Main switch of the printer while holding down the Down Arrow key▽. Con-
tinue holding down the Down Arrow key until the printer starts and "INITIALIZING" is
displayed.
4. Check that the [FIRMWARE UPDATE/WAIT] message is displayed.

FIRMWARE UPDATE
 WAIT

4138F2C008DA
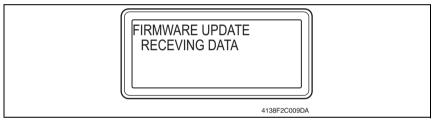
5. Copy the firmware data and upgrading program to any directory on the PC.
6. Start the Command Prompt and go to the directory in which the firmware data is stored.
7. Execute the following command to start the transfer of the firmware data to the printer. (The screen shown below indicates that the firmware data resides on the C drive.)

Data to be upgraded	Command
FW upgraded data	> copy /b 4039**********.prn prn
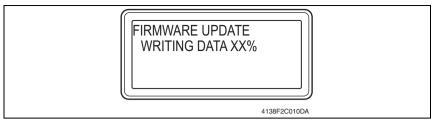
******: File name of FW upgrade data

8. Wait until all of the data is sent. (This takes approximately 2 minutes.) While the data is being sent, [FIRMWARE UPDATE] and [RECEIVING DATA] are alternately displayed on the screen.
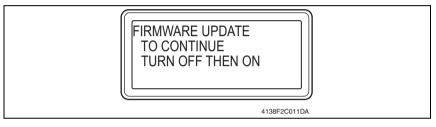
FIRMWARE UPDATE
RECEIVING DATA

4138F2C009DA

NOTE
- **Never turn the printer power switch OFF and ON while data is being sent.**

9. After the data has finished being sent, the following message appears on the screen of the Command Prompt.

4039F2E523DA

10. Then the firmware upgrade starts. Wait until all the upgrade procedure is complete.

```
FIRMWARE UPDATE
 WRITING DATA XX%
```

4138F2C010DA
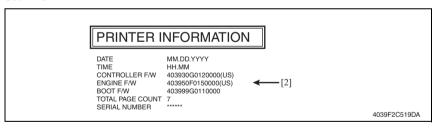
NOTE
- **Never turn the printer Power Switch OFF and ON while the firmware is being upgraded.**

11. After the firmware upgrade is complete, [FIRMWARE UPDATE TO CONTINUE TURN OFF THEN ON] is displayed.

```
FIRMWARE UPDATE
 TO CONTINUE
 TURN OFF THEN ON
```

4138F2C011DA

12. Turn the printer's Main Switch OFF and then ON.
13. After the printer has restarted, check that a [READY] message is displayed.
14. From the Menu, select [PRINT MENU] → [CONFIGURATION PG] and execute the function. Then, check that the firmware [2] has been upgraded.

```
PRINTER INFORMATION

DATE                MM.DD.YYYY
TIME                HH.MM
CONTROLLER F/W      403930G0120000(US)
ENGINE F/W          403950F0150000(US)    ◄──── [2]
BOOT F/W            403999G0110000
TOTAL PAGE COUNT    7
SERIAL NUMBER       ******
```

4039F2C519DA

6.   Other

6.1   Disassembly/Adjustment prohibited items

A. Screws to which blue paint or green paint is applied
- **Blue paint or green paint is applied to some screws to prevent them from coming loose.**
- **As a general rule, screws to which blue paint or green paint is applied should not be removed or loosened.**

B. Red-painted screws
- **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.**

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Maintenance

6.2 Disassembly/Assembly/Cleaning list (Other parts)

6.2.1 Disassembly/Assembly parts list
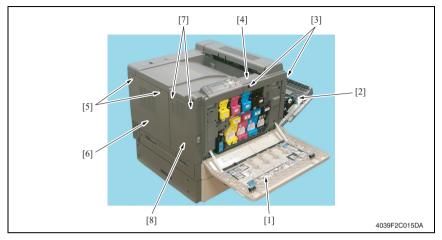
No.	Section	Part name	Ref.Page
1	Exterior parts	Rear Left Cover	P.38
2		Front Left Cover	P.38
3		Upper Front Cover	P.38
4		Rear Right Cover	P.38
5		Rear Cover	P.38
6		Tray 1 Left Cover	P.39
7		Tray 1 Right Cover	P.39
8		Tray 1 Upper Cover	P.39
9		Front Door	P.39
10		Exit Tray	P.40
11		Control Panel	P.41
12		Tray 2	P.42
13		Front Cover	P.44
14	Board and etc.	Controller Board	P.46
15		Memory (DIMM0)	P.47
16		Hard Disk Kit (option)	P.48
17		Mechanical Control Board	P.48
18		RTC Board	P.51
19		DC Power Supply	P.51
20		High Voltage Unit	P.53
21		Tray 2 Paper Size Board	P.54
22		PH Interface Board	P.55
23	Unit	Multi Bypass Unit	P.57
24		PH Unit	P.58
25		Transport Drive Assy	P.62
26		Hopper Drive Assy	P.64
27		Right Door Assy	P.65
28	Others	Cooling Fan Motor/2 Assy	P.67
29		Color Developing Motor	P.68
30		Color PC Drum Motor	P.68
31		Toner Supply Motor C/K	P.68
32		Toner Supply Motor Y/M	P.69
33		Main Motor	P.69
34		Fusing Drive Motor	P.69
35		IDC/Registration Sensor/1, IDC/Registration Sensor/2	P.70

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6.2.2   Cleaning parts list

No.	Section	Part name	Ref.Page
1	PH	PH Window	P.72
2	Processing section	Transfer Belt	P.73
3	Tray 2	Tray 2 Feed Roller (Standard)	P.73
4		Tray 2 Separation Roller	P.73
5	Tray 1	Tray 1 Feed Roller (Bypass)	P.74
6		Tray 1 Separation Roller	P.74
7	Conveyance section	Registration Roller	P.75
8	Image transfer section	Area around the Waste Toner Collecting Port	P.76
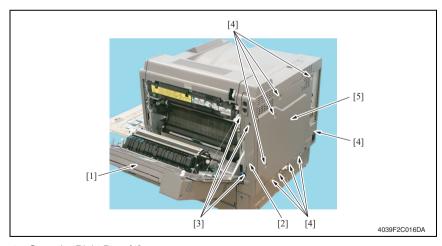
6.3   Disassembly/Assembly procedure

6.3.1   Rear Left Cover/Front Left Cover/Upper Front Cover

4039F2C015DA
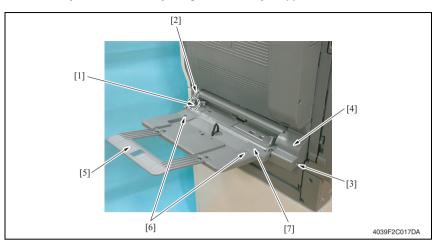
1.   Open the Front Door [1].
2.   Open the Right Door [2].
3.   Remove two Screws [3], and remove the Upper Front Cover [4].
4.   Remove two Screws [5], and remove the Rear Left Cover [6].
5.   Remove two Screws [7], and remove the Front Left Cover [8].

6.3.2   Rear Right Cover/Rear Cover

4039F2C016DA
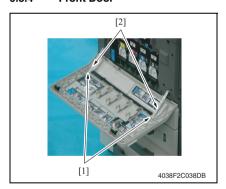
1.   Open the Right Door [1].
2.   Remove three Screws [2], and remove the Rear Right Cover [3].
3.   Remove nine Screws [4], and remove the Rear Cover [5].

6.3.3   Tray 1 Left Cover /Tray 1 Right Cover /Tray 1 Upper Cover

4039F2C017DA
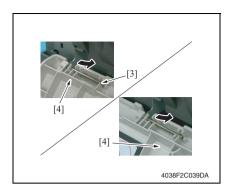
1. Unhook the tab [1], and remove the Tray 1 Left Cover [2].
2. Remove the Screws [3], and remove the Tray 1 Right Cover [4].
3. Remove the Tray Extension [5].
4. Remove two Screws [6], and remove the Tray 1 Upper Cover [7].

6.3.4   Front Door

4038F2C038DB
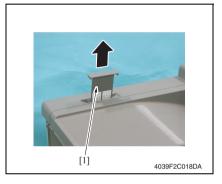
1. Open the Front Door.
2. Remove the Screw [1] each to remove the Right and Left Stoppers [2].

4038F2C039DA
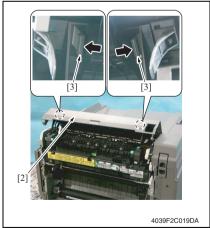
3. Pull out the Right and Left Pins [3] to remove the Front Door [4].

6.3.5   Exit Tray

4039F2C018DA
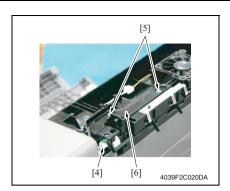
1. Remove the Rear Left Cover, Front Left Cover and Rear Cover.
    See P.38
2. Remove the Dust Filter/Cooling Fan [1].

4039F2C019DA

3. Open the Upper Fusing Cover [2].
4. Remove two Claws [3], and remove the Upper Fusing Cover [2].

4039F2C020DA
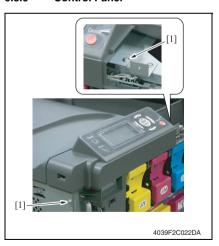
5. Disconnect the Connector [4].
6. Remove two Screws [5], and remove the Exit Sensor Assy [6].

4039F2C021DA
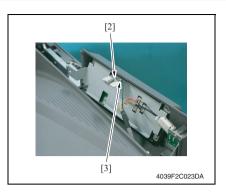
7. Remove three Screws [7], and remove the Exit Tray [8].

6.3.6   Control Panel

4039F2C022DA
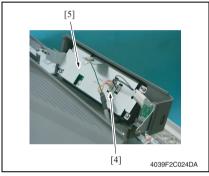
1. Remove the Upper Front Cover. See P.38
2. Remove two Screws [1].

4039F2C023DA

3. Remove the Screw [2], and remove the Ground terminal [3].

4039F2C024DA
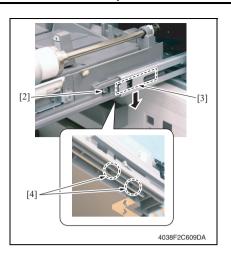
4. Disconnect the Connector [4], and remove the Control Panel [5].

6.3.7 Tray 2

4039F2C025DA
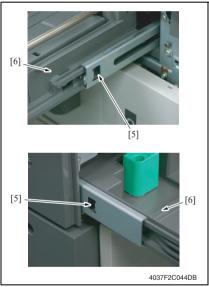
1. Slide out the Tray 2 [1].

4038F2C609DA

2. Loosen the screw [2], hold two tabs [3] and remove the spacer [4].

4037F2C044DB

3. Slide out the Tray 2 [6] while pressing the Slide Locks [5] at both ends.

6.3.8 Front Cover

1. Remove the Front Door.
2. Remove the Front Left Cover, Upper Front Cover and Control Panel.
3. Remove the Toner Cartridges (C, M, Y, K).
4. Remove the Waste Toner Bottle.
5. Remove the imaging Units (C, M, Y, K).
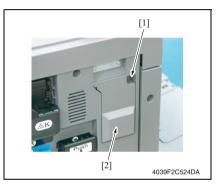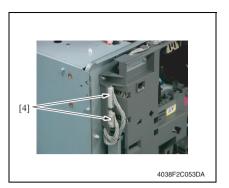
NOTE
- **After the Imaging Unit has been removed from the main unit wrap it in the light shielding cloth and store it in a dark place. DO NOT leave the Imaging Unit exposed to light for a extended period of time as it will become damaged.**

4039F2C524DA

6. Remove the Screw [1], and remove the Connector protective cover [2].

4039F2C525DA

7. Disconnect two Connectors [3].

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4038F2C053DA

8. Disconnect two Connectors [4].

4039F2C026DA
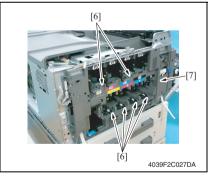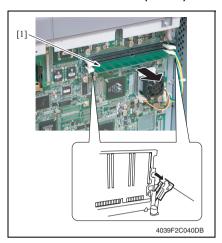
9. Remove four Screws [5].

4039F2C027DA

10. Unhook six tabs [6], and remove the Front Cover [7].

6.3.9   Controller Board (PWB-P)

[1]

4039F2C040DB
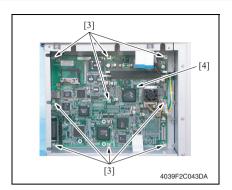
1. Remove the Rear Left Cover.
   See P.38
2. Remove the Memory [1].

4039F2C041DA

3. Remove all the Connectors and Flat Cables on the Controller Board.

[2]

4039F2C042DA

4. Remove three Screws [2].

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4039F2C043DA
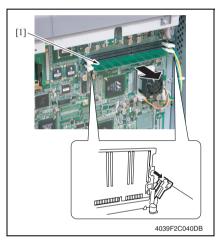
5. Remove nine Screws [3], and remove the Controller Board [4].

NOTE
• **When the Controller Board is replaced, make sure to update the firmware.**
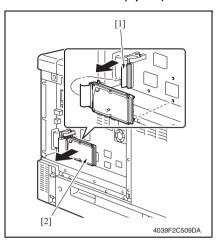
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6.3.10   Memory (DIMM0)

4039F2C040DB

1. Remove the Rear Left Cover.
2. Remove the Memory [1].

Maintenance

6.3.11   Hard Disk Kit (Option)

4039F2C509DA

1. Remove the Rear Left Cover.
   See P.38
2. Disconnect the Connector [1], and
   remove the Hard Disk [2].
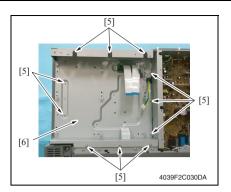
6.3.12   Mechanical Control Board (PWB-M)

4039F2C028DA

1. Remove the Exit Tray.
   See P.40
2. Remove the Controller Board.
   See P.46
3. Remove six Screws [1], and remove
   the Interface Cover [2].

4039F2C029DA
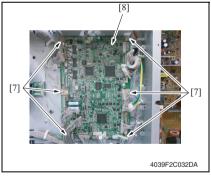
4. Remove two Screws [3], and remove
   the Flat Cable Cover [4].

[5]

[5]

[5]

[6]

[5]

4039F2C030DA

5. Remove eleven Screws [5], and remove the Controller Board mounting bracket [6].

4039F2C031DA

6. Remove all the Connectors and Flat Cables on the Mechanical Control Board.

[8]

[7]

[7]

4039F2C032DA
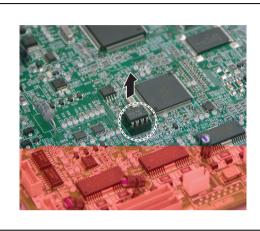
7. Remove six Screws [7], and remove the Mechanical Control Board [8].

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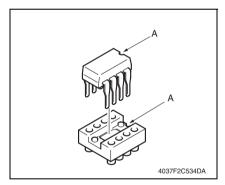
NOTE
• **When Mechanical Control Board (PWB-M) is replaced, relocate the Parameter Chip (IC6).**
  Mount the Parameter Chip (IC6) of old Mechanical Control Board onto the new Mechanical Control Board.

4037F2C061DB

4037F2C534DA
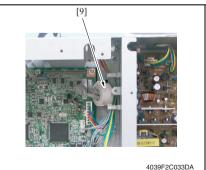
NOTE
• **When the Parameter Chip (IC6) is mounted, precisely fit the directions of each "A."**

NOTE
• **When the Control Board is to be replaced, rewriting the Firmware to the latest one.**
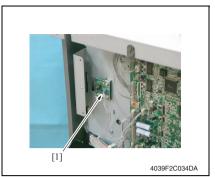
[9]

4039F2C033DA
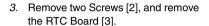
NOTE
• **When mounting the Mechanical Control Board, mount it so that the Ferrite Core [9] will be between two wire saddles. Be careful that the Ferrite Core [9] will not go over the Control Board.**

6.3.13   RTC Board (PWB-R)

[1]

4039F2C034DA
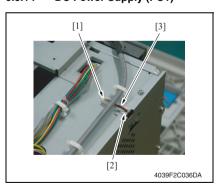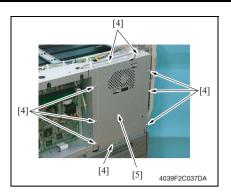
1. Remove the Controller Board mounting bracket.
   See P.46
2. Disconnect the Connector [1].

[3]

[2]

4039F2C035DA

3. Remove two Screws [2], and remove the RTC Board [3].

6.3.14   DC Power Supply (PU1)

[1]   [3]

[2]

4039F2C036DA
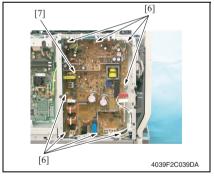
1. Remove the Exit Tray.
   See P.40
2. Remove the Control Panel.
   See P.41
3. Disconnect the Connector [1], and remove the Harness [3] from the Edge cover [2].

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[4]

[4]

[4]

[4]

[5]

4039F2C037DA

4. Remove nine Screws [4], and remove the protective sheet of DC Power Supply [5].

4039F2C038DA
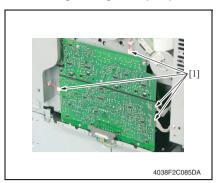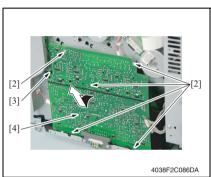
5. Remove all the Connectors on the DC Power Supply.

[7]

[6]

[6]

4039F2C039DA
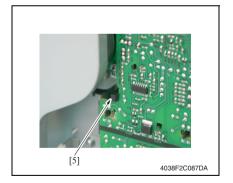
6. Remove eight Screws [6], and remove the DC Power Supply [7].

6.3.15   High Voltage Unit (HV1)

4038F2C085DA

1. Remove the Rear Cover.
2. Disconnect four Connectors [1].

4038F2C086DA

3. Remove five Screws [2] and the tab [3], and remove the High Voltage Unit [4].
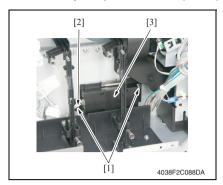
NOTE
• **When installing the High Voltage Unit, make sure that the terminal end surely contacts.**

4038F2C087DA

NOTE
• **When installing the High Voltage Unit, make sure that the claw [5] shown in the left illustration is surely set up.**

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53

6.3.16   Tray 2 Paper Size Board (PWB-I)

[2]   [3]

[1]

4038F2C088DA
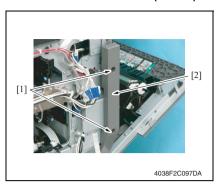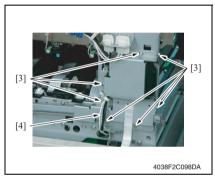
1. Slide out the Tray 2.
2. Remove the Rear Cover.
    See P.38
3. Remove two Screws [1] and Connector [2], and remove the Tray 2 Paper Size Board Assy [3].

[5]

[4]

4038F2C516DA

4. Remove the Lever [4].
5. Remove the Tray 2 Paper Size Board [5].
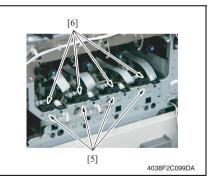
6.3.17   PH Interface Board (PWB-D)
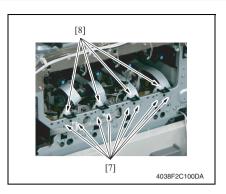
4038F2C097DA

1. Remove the Front Cover.
2. Remove the Transfer Belt.
3. Remove two Screws [1], and remove the Front Right Cover [2].

4038F2C098DA

4. Remove seven Screws [3], and remove the Right Door Switch Assy [4].

4038F2C099DA
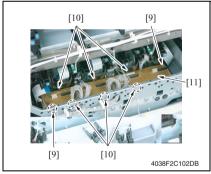
5. Remove the Screw [5] each, and remove the Imaging Unit contact Assy [6] of each color.

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[8]

[7]   4038F2C100DA

6. Remove two Screws [7] each, and remove the Imaging Unit Roll Assy [8] of each color.

4038F2C101DA
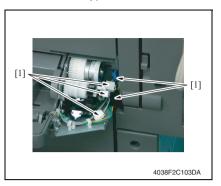
7. Remove all the Connectors and the Flat Cables on the PH Interface Board.

[10]   [9]

[11]

[9]   [10]
                        4038F2C102DB
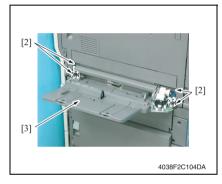
8. Remove two Screws [9] and six tabs [10], and remove the PH Interface Board [11].

6.3.18　Multi Bypass Unit

4038F2C103DA

1. Remove the Tray 1 Right Cover and the Tray 1 Left Cover.
   See P.39
2. Disconnect five Connectors [1].

4038F2C104DA

3. Remove four Screws [2], and remove the Multi Bypass Unit [3].

4038F2C105DA

NOTE
- **When installing the Multi Bypass Unit, fit the position of dowel shown in the left illustration.**

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6.3.19   PH Unit
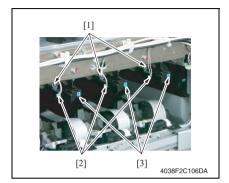
A.   Removal Procedure

1.   Remove the Front Cover.
2.   Remove the Transfer Belt.

[1]

[2]   [3]   4038F2C106DA
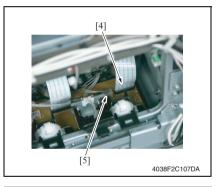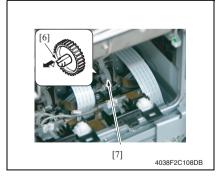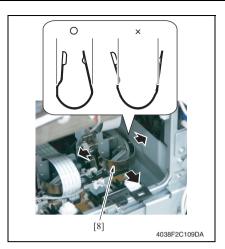
3.   Remove the Screw [1] and disconnect the Connector [2] respectively, and remove three Imaging Unit Guide rails [3].

[4]

[5]   4038F2C107DA

4.   Disconnect the Flat Cable [4] and the Connector [5] of the PH Unit (Black).

[6]

[7]   4038F2C108DB
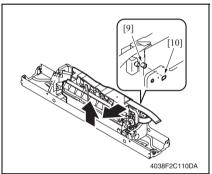
5.   Unhook the tab [6], and remove the Gear [7] of the PH Unit (Black).

[8]

4038F2C109DA

6. Remove the Stopper [8] of the PH Unit (Black).

NOTE
• **When removing the Stopper, use care so that both ends of the Stopper will not open but stay parallel as shown on the left.**
Keep using the Stopper after once stretched out may cause uneven pitch or other image troubles.
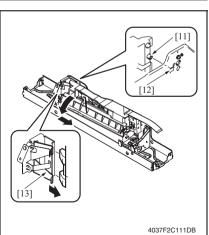
[9]

[10]

4038F2C110DA

7. Remove the PH Unit (Black).
Move the front side of the PH Unit to left a little, and remove the boss [9] from the locating hole [10].
Lift up the front side of the PH Unit a little.
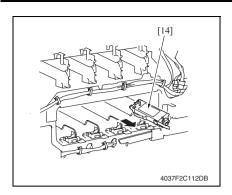
[11]

[12]

[13]

4037F2C111DB

Remove the boss [11] at the rear side of the PH Unit from the locating hole [12].

NOTE
Since the back of the PH Unit is pushed to the right with the two plate springs [13], remove it by tilting the backside of the PH Unit to the left as shown in the left illustration.
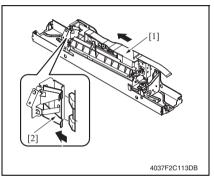
4037F2C112DB
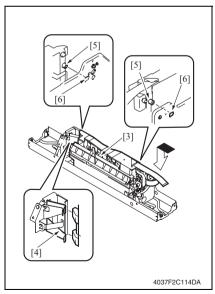
Remove the PH Unit [14].

8. Follow the same procedures to remove all PH Units.
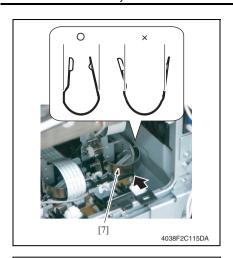
B.   Reinstall Procedure

4037F2C113DB

1. Fit the back of the PH Unit [1] into the plate spring [2] of installation plate.

4037F2C114DA

2. Push the PH Unit [3] along the right side line of PH Unit installation plate all the way and fit it into the plate spring [4].
3. Make sure that the two bosses [5] at front and rear side of the PH Unit fit in the locating hole [6].

[7]

4038F2C115DA
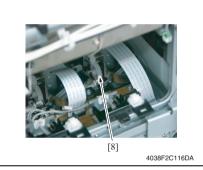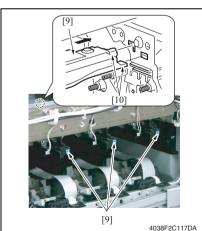
4. Reinstall the Stopper [7].

NOTE

• **When reinstalling the Stopper, use care so that both ends of the Stopper will not open but stay parallel as shown on the left.**
  Keep using the Stopper after once stretched out may cause uneven pitch or other image troubles.

[8]

4038F2C116DA

5. Reinstall the Gear [8].

NOTE

• **Make sure that the gear claw is fit in.**

6. Connect the Connector and the Flat Cable.

NOTE

• **Make sure the Harness is installed along with the Harness guide.**

7. Follow the same procedures to install all the PH Units.

[9]

[10]

[9]

4038F2C117DA

8. Install the Imaging Unit Guide Rail [9].

NOTE

• **Make sure that the two claws [10] at rear end of the rail are fit in the locating hole on the main unit.**

9. Reinstall the Transfer Belt.

10. Reinstall the Front Cover.

11. Make skew adjustment of the PH Unit.
   See P.175

NOTE

• **When replacing the PH Unit, make sure to conduct PH Unit skew adjustment.**

6.3.20   Transport Drive Assy

1. Remove the Rear Cover.
2. Remove the High Voltage Unit.
3. Remove the Color Developing Motor.
4. Remove the Color PC Drum Motor.
5. Remove the Main Motor.
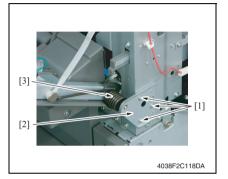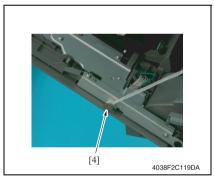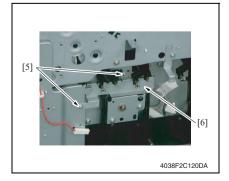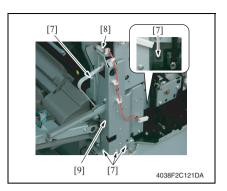
4038F2C118DA

6. Remove three Screws [1], and remove the Reinforcement plate [2] of the Right Door and spring [3].

4038F2C119DA

7. Remove the Shoulder Screw [4].
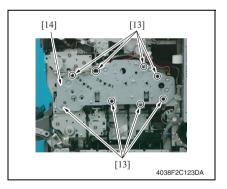
4038F2C120DA

8. Remove two Screws [5], and remove the Metal blanking plate [6].

4038F2C121DA

9. Remove five Screws [7] and the Connector [8], and remove the Rear Handle Assy [9].

4038F2C122DA

10. Disconnect the Connector [10].
11. Remove the Harnesses [12] from five Wire Saddles [11].

4038F2C123DA
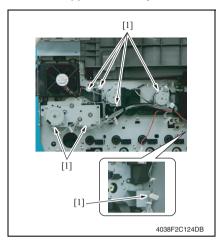
12. Remove eight Screws [13], and remove the Transport Drive Assy [14].
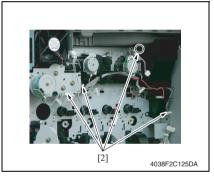
NOTE

• **The Screw is fixed at the position with the triangle markers.**

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Maintenance
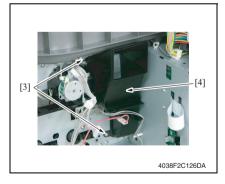
6.3.21 Hopper Drive Assy

4038F2C124DB
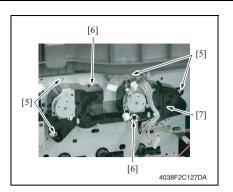
1. Remove the Transfer Drive Assy.
2. Disconnect seven Connectors [1].

4038F2C125DA

3. Remove the Harness from four Wire Saddles [2].

4038F2C126DA
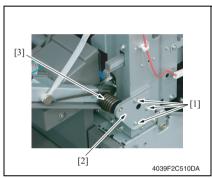
4. Remove two Screws [3], and remove the Duct [4].

4038F2C127DA
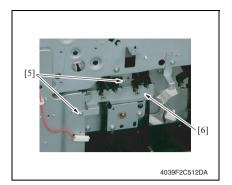
5. Remove four Screws [5] and two Claws [6], and remove the Hopper Drive Assy [7].

6.3.22　Right Door Assy

4039F2C510DA
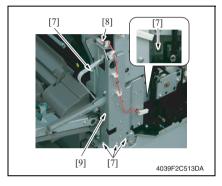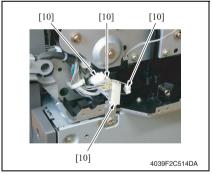
1. Remove the Rear Cover.
   See P.38
2. Remove the High Voltage Unit.
   See P.53
3. Open the Right Door.
4. Remove three Screws [1], and remove the Reinforcement plate [2] of the right door and spring [3].

4039F2C511DA

5. Remove the Shoulder Screw [4].
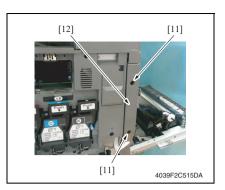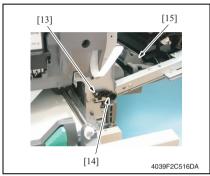
magicolor 7450

Maintenance

magicolor 7450

Maintenance

[5]

[6]

4039F2C512DA

6. Remove two Screws [5], and remove the Metal blanking plate [6].

[7]   [8]   [7]

[9]   [7]

4039F2C513DA

7. Remove five Screws [7] and the Connector [8], and remove the Rear Handle Assy [9].

[10]   [10]   [10]

[10]

4039F2C514DA
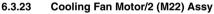
8. Disconnect four Connectors [10].

4039F2C515DA
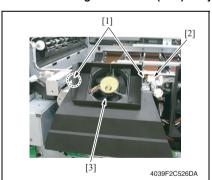
9. Remove the Front Door.
   See P.39
10. Slide out the Tray 1.
11. Remove two Screws [11], and remove the Front Right Cover [12].

4039F2C516DA
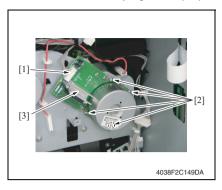
12. Remove the Screw [13], and remove the Shaft [14].
13. Remove the Right Door Assy [15].

6.3.23 Cooling Fan Motor/2 (M22) Assy

4039F2C526DA
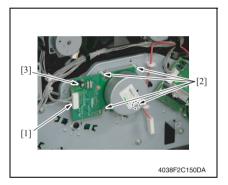
1. Remove the Rear Cover.
   See P.38
2. Remove the Exit Tray.
   See P.40
3. Remove the Connector [2] and two Screws [1], and remove the Cooling Fan Motor/2 (M22) Assy [3].

6.3.24   Color Developing Motor (M3)
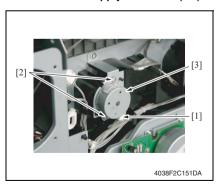
4038F2C149DA

1. Remove the Cooling Fan Motor/2 Assy.
   See P.67
2. Remove the Connector [1] and four Screws [2], and remove the Color Developing Motor [3].

6.3.25   Color PC Drum Motor (M2)
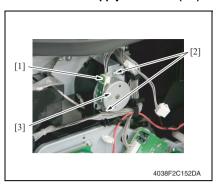
4038F2C150DA

1. Remove the Cooling Fan Motor/2 Assy.
   See P.67
2. Remove the Connector [1] and four Screws [2], and remove the Color PC Drum Motor [3].

6.3.26   Toner Supply Motor C/K (M7)
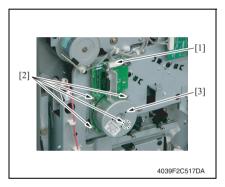
4038F2C151DA

1. Remove the Cooling Fan Motor/2 Assy.
   See P.67
2. Remove the Connector [1] and two Screws [2], and remove the Toner Supply Motor C/K [3].
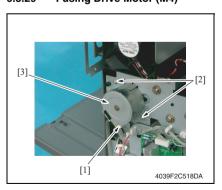
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6.3.27   Toner Supply Motor Y/M (M6)

4038F2C152DA

1. Remove the Cooling Fan Motor/2 Assy.
    See P.67
2. Remove the Connector [1] and two Screws [2], and remove the Toner Supply Motor Y/M [3].

6.3.28   Main Motor (M1)

4039F2C517DA
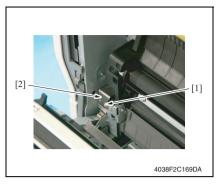
1. Remove the Rear Cover.
    See P.38
2. Remove the Connector [1] and four Screws [2], and remove the Main Motor [3].

6.3.29   Fusing Drive Motor (M4)

4039F2C518DA
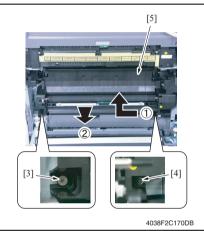
1. Remove the Rear Cover.
    See P.38
2. Remove the Connector [1] and two Screws [2], and remove the Fusing Drive Motor [3].

6.3.30 IDC/Registration Sensor/1, IDC/Registration Sensor/2 (SE1/SE2)

4038F2C169DA
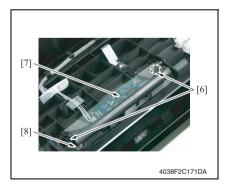
1. Remove the Transfer Belt.
   See P.20
2. Remove the Multi Bypass Unit.
   See P.57
3. Remove the Screw [1], and remove the Plate spring [2].

4038F2C170DB

4. Remove the Shoulder Screw [3] and the Screw [4].
5. Remove the Vertical transport unit [5] in manner of the left illustration.

NOTE
- **Since multiple Connectors are connected to the backside of the Vertical Transport Assy, do not pull it by force.**
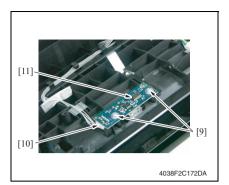
4038F2C171DA

6. Remove the Claws [6] of both sides, and remove the Sensor cover [7].

NOTE
- **Use care not to miss the spring [8].**

4038F2C172DA

7. Remove two Screws [9] and Connector [10], and remove the IDC/Registration Sensor/1 [11].

4038F2C173DA
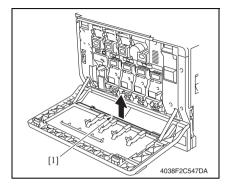
8. Repeat the step 6 and 7, and remove the IDC/Registration Sensor/2 (rear side) [12].

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Maintenance

6.4   Cleaning procedure
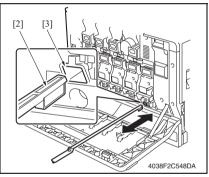
NOTE
• **The alcohol described in the cleaning procedure represents the isopropyl alcohol.**

6.4.1   PH Window

[1]

4038F2C547DA

1. Open the Front Door.
2. Remove the PH Window Cleaning
    Jig [1].

[2]   [3]

4038F2C548DA

3. Insert the PH Window Cleaning Jig
    [2] to the cleaning port [3] and clean
    it by putting the jig back and forth a
    couple times.
NOTE
• **Clean every PH Window of CMYK.**

6.4.2 Transfer Belt

4038F2C174DA

1. Remove the Transfer Belt.
2. Using a dried soft cloth, wipe the Transfer Belt [1].
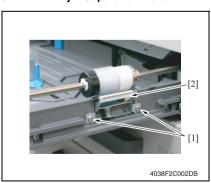
NOTE
- **If it is difficult to clean with dried soft cloth, dampen a soft cloth with a solvent.**
- **Do not wipe out with water.**
- **When solvent is used to dampen a cloth, do not use the ones other than shown below:**
  isopropyl alcohol, ethyl alcohol, PPC Cleaner, Sol mix AP-7.

6.4.3 Tray 2 Feed Roller (Standard)

4038F2C175DA
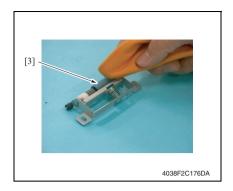
1. Slide out the Tray 2.
2. Using a soft cloth dampened with alcohol, wipe the Tray 2 Feed Roller (Standard) [1] clean of dirt.

6.4.4 Tray 2 Separation Roller

4038F2C002DB
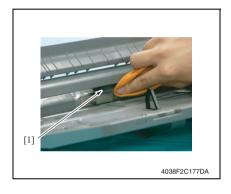
1. Slide out the Tray 2.
2. Remove two Screws [1], and remove the Tray 2 Paper Separation Roller mounting bracket Assy [2].

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[3]

4038F2C176DA
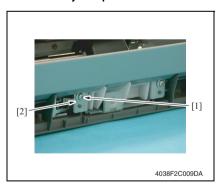
3. Using a soft cloth dampened with alcohol, wipe the Tray 2 Separation Roller [3] clean of dirt.

6.4.5   Tray 1 Feed Roller (Bypass)
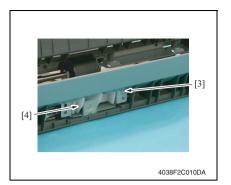
[1]

4038F2C177DA

1. Remove the Multi Bypass Unit. See P.57
2. Using a soft cloth dampened with alcohol, wipe the Tray 1 Feed Roller (Bypass) [1].

6.4.6   Tray 1 Separation Roller

[2]   [1]

4038F2C009DA

1. Remove the Multi Bypass Unit. See P.57
2. Remove the Screws [1], and remove the Ground terminal [2].

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4038F2C010DA

3. Remove the Screw [3], and remove the Tray 1 Separation Roller Assy [4].

4038F2C178DA
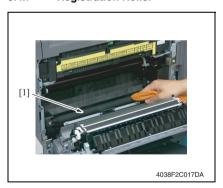
4. Using the soft cloth dampened with alcohol, wipe the Tray 1 Paper Separation Roller [5].

6.4.7　Registration Roller

4038F2C017DA

1. Open the Right Door.
2. Using a soft cloth dampened with alcohol, wipe the Registration Rollers [1] clean of dirt.

6.4.8   Area around the Waste Toner Collecting Port

[1]

4039F2C001DA

1. Remove the Waste Toner Bottle.
   See P.17
2. Wipe the areas around the Waste
   Toner Collecting Port [1] clean of
   spilled toner and dirt using a soft
   cloth dampened with water or alco-
   hol.

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Maintenance

Adjustment/Setting

7. How to Use the Adjustment Section

- This section contains detailed information on the adjustment items and procedures for this machine.
- Throughout this section the default settings are indicated by "   ".

Advance Checks
Before attempting to solve the customer's problem, the following advance checks must be made:

- Does the power supply voltage meet the specifications?
- Is the power supply is properly grounded?
- Does the machine share a power supply with any other machine that draws a large current intermittently (for example, an elevator or air conditioner that generates electrical noise)?
- Is the installation site level and environmentally appropriate (for example, away from high temperatures, high humidity, direct sunlight, direct ventilation, etc.?
- Does the original have a problem that may cause a defective image?
- Is the density properly selected?
- Is the Original Glass, slit glass, or a related part dirty?
- Is the correct media being used for printing?
- Are the units, parts, and supplies used for printing (developer, PC Drum, etc.) properly replenished and replaced when they reach the end of their useful service life?
- Is there an adequate supply of toner in the toner cartridges?

⚠ **CAUTION**
- **Unplug the machine's power cord before starting a service job procedure.**
- **If it is unavoidably necessary to service the machine with its power turned ON, use the utmost care not to get caught in the Scanner Cables or gears of the Exposure Unit.**
- **Use special care 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 your bare hands.**
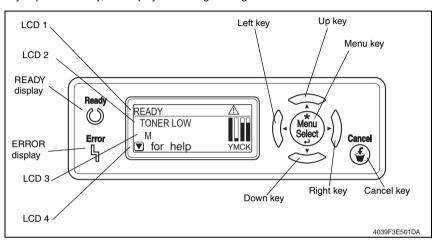
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Adjustment / Setting

8. Description of the Control Panel

8.1 Control Panel Display

8.1.1 Parts of the Control Panel Display

- The following shows the names of each part of the control panel. These names are used throughout this manual.
  From the top, the panel is divided into LCD 1, LCD 2, LCD 3, and LCD 4.
- LCD 4 may display a message instructing you to press a key on the control panel. When you press that key, the displayed message changes.

4039F3E501DA
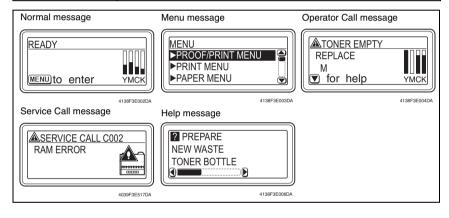
NOTE
- **The display screen is not designed for touch panel operation; therefore, do not touch the icons on the screen. If it is pushed too hard, the LCD (Liquid Crystal Display) may be damaged.**

8.1.2   Message structure

There are five types of messages.
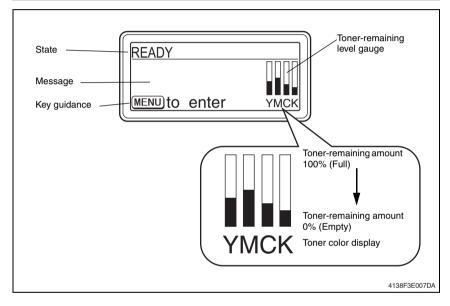
Message	Description
Normal messages	These messages are displayed after warmup has been completed: • Toner remaining gauge • Data-receiving message • Printing message • Firmware update messages • Warnings
Menu messages	These messages are displayed after the MENU key is pressed.
Operator Call messages	These messages are displayed when minor error(s) that can be handled by users occur.
Service Call messages	These messages are displayed when error(s) that cannot be handled by users occur.
Help messages	These messages are displayed when the Down key $\triangledown$ is pressed when a Normal message/Warning or Operator Call message is displayed.

Normal message

READY

MENU to enter   YMCK

4138F3E002DA

Menu message

MENU
▶PROOF/PRINT MENU
▶PRINT MENU
▶PAPER MENU

4138F3E003DA

Operator Call message

⚠TONER EMPTY
 REPLACE
 M
▼ for help   YMCK

4138F3E004DA

Service Call message

⚠SERVICE CALL C002
 RAM ERROR

4039F3E517DA

Help message

? PREPARE
NEW WASTE
TONER BOTTLE

4138F3E006DA

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Adjustment / Setting

8.1.3   Normal messages

The Basic Screen is displayed after warm-up has been completed.
The "READY LED○" lights up while the message is displayed.

Display	Description
LCD 1	Printer mode is displayed. (Normally, [READY] is displayed.)
LCD 2	The message is displayed. (Normally, no message is displayed.)
LCD 3	
LCD 4	Key guidance is displayed. • Normally [MENU to enter] is displayed. When the MENU key is pressed, the panel displays the MENU screen. • When a WARNING message is displayed, [▽ for help] is also displayed. When the Down key ▽ is pressed, the panel displays the HELP screen.

4138F3E007DA
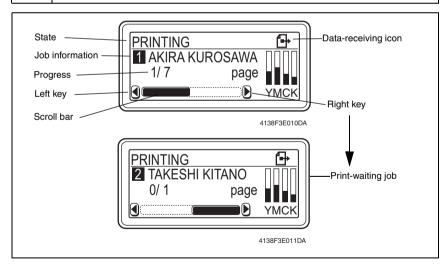
A. Toner-remaining level gauge
• The amount of each color of toner remaining is graphed in 10% increments (11 scales.)
  However, it's not displayed during the following states:

   - Operator Call
   - Service Call
   - Menu
   - Help menu
   - BOOT message
   - When the toner remaining amount is not determined immediately after start-up.

B. Data receiving message/Print

The Control Panel displays the following description at data receiving message/Print.
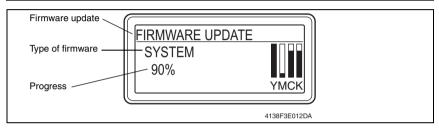
Display	Description
LCD 1	Printer mode is displayed (for example, PRINTING). • PROCESSING is displayed during data receiving or printer startup. • PRINTING is displayed during printing. • When printing in sets, [COPYING] is displayed after the second set starts printing. • The normal printing data-receiving icon "⊕" is displayed on the right during data receiving. • The Camera-Direct connecting icon "▣" is displayed on the right when the digital camera is connected to the machine. • The Camera-Direct printing data-receiving icon "∧∕" is displayed on the right during data receiving.
LCD 2	Job information is displayed (for example, 1 AKIRA KUROSAWA). • The job owner name, etc. set with PJL commands is displayed. • When multiple jobs are set, the number is displayed to the left of the owner name.
LCD 3	Job progress is displayed (for example, 1/7 page). • In normal print mode, Number of processed print / Total number of print is displayed. • When printing in sets, Number of processed print/Total number of a set print is displayed while the first set is copying. After the second set starts printing, the LCD 1 state is changed to COPYING and Number of processed print /Total number of print is displayed.
LCD 4	Scroll bar is displayed. • When multiple jobs are sent, a scroll bar is displayed. • By pressing the Left key◁/Right key▷, the jobs waiting to be printed are displayed. The following example shows the scroll bar in the case of two jobs. By pressing the Right key, the panel displays the job waiting to be printed. To return to the display of the job currently processing, press the Left key.

4138F3E010DA

4138F3E011DA

C. Firmware update

The Control Panel displays the following description at firmware update.
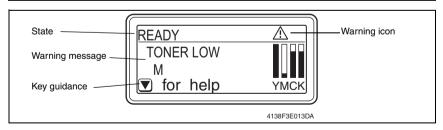
Display	Description
LCD 1	FIRMWARE UPDATE is displayed.
LCD 2	LCD 2 displays the type of firmware (for example, SYSTEM). • SYSTEM: Controller firmware • BOOT: Boot firmware • RESOURCE: Resource file • CONFIGURATION: Equipment configuration file • ENGINE: Engine firmware
LCD 3	Progress of the update is displayed (for example, 90%).
LCD 4	No display

Firmware update
Type of firmware
Progress

FIRMWARE UPDATE
SYSTEM
90%
YMCK

4138F3E012DA

D. Warning

This message is displayed when the print is available but some user manipulation(s) are required. The Control Panel displays the following description for warning.

Display	Description
LCD 1	Print mode is displayed and warning icon is displayed on the right (for example, READY).
LCD 2	Warning message is displayed (for example, TONER LOW M).
LCD 3	
LCD 4	Key guidance is displayed (for example, ▽ for help: By pressing the Down key ▽, the screen displays the Help screen).

State
Warning message
Key guidance

READY   ⚠
TONER LOW
M
▼ for help   YMCK

Warning icon

4138F3E013DA

E. Job cancellation
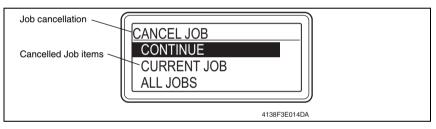
By pressing the CANCEL key after the job is sent, the Control Panel displays the Job Cancel Menu.
When no job is has been sent, pressing the CANCEL key has no effect.
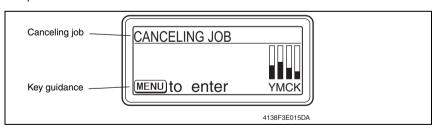
The Control Panel displays the following description at the Job Cancel Menu.

Display	Description
LCD 1	CANCEL JOB is displayed.
LCD 2	CONTINUE is displayed. • Function: Continue the print of currently processing job.
LCD 3	CURRENT JOB is displayed. • Function: Stop the print of currently processing job.
LCD 4	ALL JOBS is displayed • Stop the printing of all jobs, including the job currently being processed and all jobs waiting to be printed.

• By pressing the Up key△/Down key▽, the item can be selected.
• The selected item is displayed with highlighted text. The default setting is CONTINUE.
• By pressing the MENU key, the selected item is entered.
• By pressing the CANCEL key, the Job Cancel menu is closed.

Job cancellation

Cancelled Job items

CANCEL JOB
CONTINUE
CURRENT JOB
ALL JOBS

4138F3E014DA

• By selecting CURRENT JOB or ALL JOB and pressing the MENU key, job cancellation is implemented.

Canceling job

Key guidance

CANCELING JOB

[MENU] to enter   YMCK

4138F3E015DA

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Adjustment / Setting
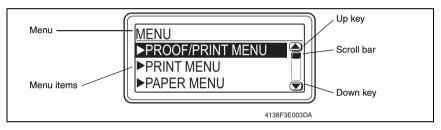
8.1.4 Menu

The Menu is displayed when the MENU key is pressed.
The Control Panel displays the following description at the Menu screen.

Display	Description
LCD 1	Menu items that are above this will be displayed.
LCD 2	Menu items are displayed (3 items/ 7 items). • By pressing the Up key△/Down key▽, the item is selected. • The Menu consists of the following 7 items: - PROOF/ PRINT MENU
LCD 3	- PRINT MENU - PAPER MENU - QUALITY MENU - CAMERA DIRECT
LCD 4	- INTERFACE MENU - SYS DEFAULT MENU - MAINTENANCE MENU - SERVICE MENU

Menu — MENU
▶PROOF/PRINT MENU — Up key / Scroll bar
Menu items — ▶PRINT MENU
▶PAPER MENU — Down key

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• For the details of each item, see "Menu."

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Adjustment / Setting
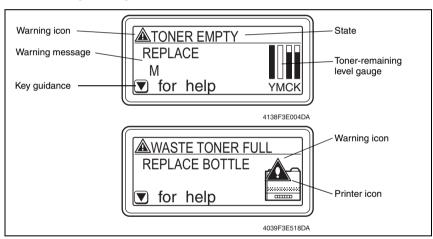
8.1.5   Operator Call messages

These messages are displayed when minor error(s) that can be handled by user occur.
The "Error LED ╷" lights while the message is displayed on the Control Panel.
The "Ready LED ☉" on Control Panel turns OFF during Operator Call.

The Control Panel displays the following when an Operator Call message is displayed.

Display	Description
LCD 1	A Warning icon " ⚠ " is displayed and the state is displayed on the right (for example, TONER EMPTY).
LCD 2	Message is displayed (for example, REPLACE M).
LCD 3	
LCD 4	"▽ for help" is displayed. • By pressing the Down key, the panel displays the Help screen.

• In the case of an Operator Call message related to a Toner Cartridge, the toner-remaining level gauge is displayed, and the gauge of the appropriate color flashes (for example, the M gauge).
• In the case of an Operator Call message for another reason, the printer icon is displayed with a flashing "Warning icon ⚠ ."

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• For the details of each item, see "Operator Call messages."

Adjustment / Setting
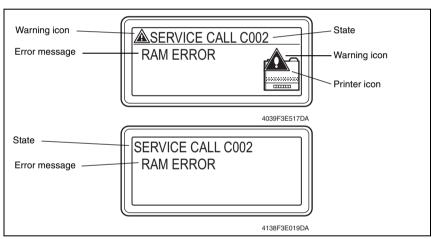
8.1.6   Service Call messages

These messages are displayed when error(s) that cannot be handled by the user occur.
The "Error LED ⌐" turns ON while the message is displayed on the Control Panel.
The "Ready LED ⟳" on Control Panel turns OFF while an Service Call message is displayed on the Control Panel.

The Control Panel displays the following description at Service Call.

Display	Description
LCD 1	A "Warning icon ⚠ " is displayed and the Service Call message and a 4-digit-Service Call ID are displayed on the right (for example, SERVICE CALL C002).
LCD 2	The error description is displayed (for example, RAM ERROR).
LCD 3	
LCD 4	No display

- A printer icon is displayed with a flashing "Warning icon ⚠ ."
- A Service Call detected during start-up of the printer is displayed as shown in the bottom of the following picture.

Warning icon — ⚠SERVICE CALL C002 — State
Error message — RAM ERROR — Warning icon
Printer icon

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State — SERVICE CALL C002
Error message — RAM ERROR

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- For the details of each item, see "Service Call messages."
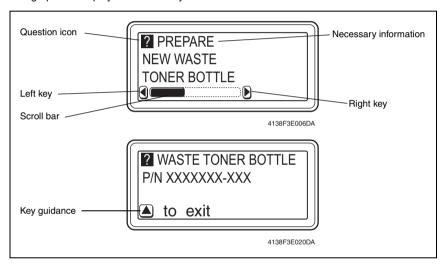
8.1.7 Help screen

This screen is displayed when the Down key ▽ is pressed when a Normal message/Warning or Operator Call message is displayed.
The Control Panel displays the following description at the help screen.

Display	Description
LCD 1	A "Question icon ❓" is displayed and the necessary information is displayed on the right (for example, PREPARE NEW WASTE TONER BOTTLE).
LCD 2	
LCD 3	
LCD 4	A scroll bar or "△ to exit" message is displayed. • If there are several messages, a scroll bar is displayed. • By pressing the Left key◁/Right key▷, a previous/next screen message is displayed. • If all messages are displayed, "△ to exit" displays on the screen.

• A graphic is displayed if necessary.

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Adjustment / Setting

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8.2   List of Control Panel Messages

NOTE
- **When two or more messages are to be displayed, the message with the higher priority will be displayed.**
- **When a message concerning Consumables/Periodic Replacement Parts (Units) is displayed, print a Statistics Page from the [PRINT MENU] → [STATISTICS] menu and check the status of the other consumables, too.**

8.2.1   Normal messages

A. Normal messages

Message (LCD1)	Description
INITIALIZING	The printer is being initialized
READY	Print enabled (Data not being printed)
ENERGY SAVER	Machine in Energy Saver mode
PROCESSING	Print data processing (Data receiving - printer is started)
PRINTING	Data being printed (Printer is started)
COPYING	Data being printed in sets
WARMING UP	During warmup
CALIBRATING	Color shift correction in progress
CANCELING JOB	Job canceled
REBOOTING	The printer is restarting
FIRMWARE UPDATE	The printer's firmware is being upgraded

Adjustment / Setting

B. Warning messages

Priority	Message (LCD2/LCD3)	Description
High 1	UNABLE TO COLLATE JOB	Print in sets disabled (Full hard disk) (This warning message is also displayed during printing.)
2	HDD NEAR FULL	The hard disk space will run out soon.
3	MEMORY CARD NEAR FULL	The compact flash space will run out soon.
4	I-UNIT END X	Service life of the Imaging Unit (X) has been reached. (END status) • Executing the color printing with one of YMCK being at the END will make the Operator Call.
5	TONER EMPTY X	Toner (X) is empty. • Executing the color printing with one of YMCK being empty will make the Operator Call.
6	I-UNIT LIFE X	Service life of the Imaging Unit has been reached. • Printing is available until the END status when the [IMAGING UNIT LIFE] is set to [CONTINUE] on MENU. When it is set to [STOP], executing the color printing with one of YMCK having been reached its service life will make the operator call. • Monochrome printing is available unless the Imaging Unit K reached its service life. (but not under warranty)
7	TRANS. BELT END OF LIFE	Transfer Belt Unit service life has been reached.
8	FUSER UNIT END OF LIFE	Fusing Unit service life has been reached.
9	WASTE TONER NEAR FULL	The Waste Toner Bottle needs replacement soon.
10	TONER LOW X	The specified color toner cartridge will run out soon.
11	I-UNIT LOW X	The specified color Imaging Unit will run out soon.
12	UNKNOWN PAPER TRAY X	Paper which size cannot be automatically detected has been inserted.
13	PAPER EMPTY TRAY X	No media in the specified Tray. The specified tray is not installed, but it is set in the printer driver.
14	INCORRECT TONER X	The specified color toner cartridge is not the correct type. A print cycle can be initiated, but is run at 1/3 the normal print speed.
15	INCORRECT I-UNIT X	The specified color Imaging Unit is not the correct type.
16	ILLEGAL INSTALLATION	The Compact Flash card has been inserted into the card slot after initialization is completed. The Compact Flash card will be invalid.
17	NON SUPPORT CARD	A Compact Flash card which is inserted is not supported. The Compact Flash card will be invalid.
18	INCORRECT HDD	A Hard Disk which was formatted by other unit is installed.
Low 19	INCORRECT MEMORY CARD	A Compact Flash card which was formatted by other unit is installed.

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8.2.2   Operator Call messages

Priority	Message		Description
	LCD1	LCD2/LCD3	
High 1	COVER OPEN	FRONT COVER	The Front Door of the machine is open.
		SIDE COVER	The Right Door of the machine is open.
		DUPLEX COVER	The Duplex Option door is open.
		TRAY3 COVER	The Right Cover of Tray 3 is open.
		TRAY4 COVER	The Right Cover of Tray 4 is open.
		TRAY5 COVER	The Right Cover of Tray 5 is open.
2	PAPER JAM	FUSER/EXIT	A media jam has occurred at the Fusing section.
		SECOND TRANS	A media jam has occurred at the Second Transfer section.
		VERTICAL TRANS	A media jam has occurred at the Vertical Conveyance.
		DUPLEX1	A media jam has occurred at the Duplex Transport section of the Duplex Option.
		DUPLEX2	A media jam has occurred at the Duplex Paper Feed section of the Duplex Option.
		TRAY1	A media jam has occurred at Tray 1 (Manual Feed Tray).
		TRAY2	A media jam has occurred at Tray 2.
		TRAY3	A media jam has occurred at Tray 3.
		TRAY4	A media jam has occurred at Tray 4.
		TRAY5	A media jam has occurred at Tray 5.
3	I-UNIT MISSING	CHECK X	The specified color Imaging Unit is not installed.
4	TONER MISSING	CHECK X	The specified color Toner Cartridge is not installed.
5	NO WASTE BOTTLE	—	The Waste Toner Bottle is not installed.
6	TRANS. BELT LIFE	REPLACE TRANS. BELT	Transfer Belt service life has been reached.
7	FUSER UNIT LIFE	REPLACE FUSER UNIT	Fusing Unit service life has been reached.
8	WASTE TONER FULL	REPLACE BOTTLE	The Waste Toner Bottle is full.
9	I-UNIT END	REPLACE Y	The specified color Imaging Unit has reached its life. • This message will be displayed when performing the color printing while the [IMAGING UNIT LIFE] is set to [CONTINUE] on MENU, and Warning Message [I-UNIT END] is being displayed.
		REPLACE M	
		REPLACE C	
		REPLACE K	

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Priority	Message		Description
	LCD1	LCD2/LCD3	
10	TONER EMPTY	REPLACE Y	The specified color Toner Cartridge has run out.
		REPLACE M	
		REPLACE C	
		REPLACE K	
11	I-UNIT LIFE	REPLACE Y	Service life of the Imaging Unit has been reached. • This message will be displayed when performing the color printing while the [IMAGING UNIT LIFE] is set to [STOP] on MENU, and Warning Message [I-UNIT LIFE] is being displayed. • Monochrome printing is available unless the Imaging Unit K is at the END. (but not under warranty)
		REPLACE M	
		REPLACE C	
		REPLACE K	
12	TRAYX SIZE ERR	ADD SSSS *	The media size set in the printer driver does not match that of the media loaded in the specified tray. • Load "SSSS" size media in the specified tray.
13	TRAYX TYPE ERROR	ADD TTTT *	The media size set in the printer driver does not match that of the media loaded in the specified tray. • Load "TTTT" type media in the specified tray.
14	MANUAL FEED	SSSS * TTTT *	• During print start-up, media has been loaded in Multi Bypass Tray and is waiting for a print start command. After the user confirms the media and gives the print start command, printing starts. How to start printing: 1. Press the Up keyr. 2. Press the Down keys, select Tray with Help Menu and press the MENU key. 3. Set the media loaded in the Tray 1 again.
15	PAPER EMPTY	SSSS * TTTT *	• No specified media in Trays 1 to 5. • Tray 3/4 is loaded with the specified media but is not set appropriately. • Displays when [TRAY CHAINING] is set to [ON].
	TRAYX EMPTY	SSSS * TTTT *	• No specified media in the specified Tray or Tray 3/4 is not set appropriately. • Displays when [TRAY CHAINING] is set to [OFF].
16	PAPER ERROR	SSSS * TTTT *	• The size and type of media specified in the driver is not loaded in any Tray. • A different size of media from the one specified in the driver is loaded in the Tray at paper feeding. • Displays when [TRAY CHAINING] is set to [ON].
	TRAYX PAPER ERR	SSSS * TTTT *	• The size and type of media specified in the driver is not loaded in the specified Tray. • A different size of media from the one specified in the driver is loaded in the specified tray at paper feeding. • Displays when [TRAY CHAINING] is set to [OFF].

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Priority	Message		Description
	LCD1	LCD2/LCD3	
17	OUTPUT FULL	REMOVE PAPER	The printed media volume has reached maximum capacity in the Exit Tray.
18	MEMORY FULL	PRESS CANCEL	The volume of data to be printed exceeds the permissible amount of data to be processed by the machine's memory.
19	HOLD JOB ERROR	UNABLE TO STORE JOB	The specified data of the held job is being received, but an optional HDD is not installed.

* SSSS represents the media size while TTTT shows the media type.

Adjustment / Setting

8.2.3   Service Call messages

• For troubleshooting procedures, see "Troubleshooting."

Message		Description
LCD1 (Service Call ID)	LCD2/LCD3 (Error description)	
0001	M MOTOR 2	Main Motor's turning at abnormal timing
0018	P MOTOR COLOR 1	Color PC Drum Motor's failure to turn
0019	P MOTOR COLOR 2	Color PC Drum Motor's turning at abnormal timing
001A	D MOTOR COLOR 1	Color Developing Motor's failure to turn
001B	D MOTOR COLOR	Color Developing Motor's turning at abnormal timing
0040	SUCTION FAN	Suction Fan Motor's failure to turn
0043	INSIDE FAN 1	Cooling Fan Motor/1's failure to turn
0046	FUSER FAN	Fusing Cooling Fan Motor/1's failure to turn
0048	FUSER COVER FAN	Fusing Cooling Fan Motor/2's failure to turn
004C	OZONE FAN	Ozone Ventilation Fan Motor's failure to turn
004E	POWER FAN	Power Supply Cooling Fan Motor/1's failure to turn
004F	INSIDE FAN 2	Cooling Fan Motor/2's failure to turn
0094	XFER DETACH2	2nd Image Transfer Roller Separation
0096	XFER DETACH1	Transfer Belt Separation
0301	POLYGON MOTOR C	Polygon Motor/C failure to turn
0302	POLYGON MOTOR M	Polygon Motor/M failure to turn
0303	POLYGON MOTOR Y	Polygon Motor/Y failure to turn
0304	POLYGON MOTOR K	Polygon Motor/K failure to turn
0311	LASER ERROR C	Laser malfunction (Cyan)
0312	LASER ERROR M	Laser malfunction (Magenta)
0313	LASER ERROR Y	Laser malfunction (Yellow)
0314	LASER ERROR K	Laser malfunction (Black)
0500	FUSER ERROR	Heating Roller warm-up failure
0501	FUSER ERROR	Fusing Pressure Roller warm-up failure
0510	FUSER ERROR	Abnormally low Heating Roller temperature
0511	FUSER ERROR	Abnormally low Fusing Pressure Roller temperature
0520	FUSER ERROR	Abnormally high Heating Roller temperature
0521	FUSER ERROR	Abnormally high Fusing Pressure Roller temperature
0900	TRAY4 LIFT	Tray 4 Elevator failure
0910	TRAY3 LIFT	Tray 3 Elevator failure
0950	TRAY5 LIFT	Tray 5 Elevator failure
0960	TRAY1 SENSOR	Manual Tray Rise Descent Error
0F30	DENSITY LOW C	Abnormally low toner density detected Cyan TCR Sensor
0F31	DENSITY HIGH C	Abnormally high toner density detected Cyan TCR Sensor
0F32	DENSITY LOW M	Abnormally low toner density detected Magenta TCR Sensor
0F33	DENSITY HIGH M	Abnormally high toner density detected Magenta TCR Sensor

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Message		Description
LCD1 (Service Call ID)	LCD2/LCD3 (Error description)	
0F34	DENSITY LOW Y	Abnormally low toner density detected Yellow TCR Sensor
0F35	DENSITY HIGH Y	Abnormally high toner density detected Yellow TCR Sensor
0F36	DENSITY LOW K	Abnormally low toner density detected Black TCR Sensor
0F37	DENSITY HIGH K	Abnormally high toner density detected Black TCR Sensor
0F3A	TCR SENSOR C	Cyan TCR Sensor adjustment failure
0F3B	TCR SENSOR M	Magenta TCR Sensor adjustment failure
0F3C	TCR SENSOR Y	Yellow TCR Sensor adjustment failure
0F3D	TCR SENSOR K	Black TCR Sensor adjustment failure
13B0	RTC ERROR	RTC failure
13C8	TRANS. CLEAR	Transfer Unit New Article Release
13CA	FUSER CLEAR	Fusing Unit New Article Release
13D0	EEPROM1	Parameter Chip failure
13D1	EEPROM PU C	Cyan Print Unit EEPROM access error
13D2	EEPROM PU M	Magenta Print Unit EEPROM access error
13D3	EEPROM PU Y	Yellow Print Unit EEPROM access error
13D4	EEPROM PU K	Black Print Unit EEPROM access error
13D9	EEPROM TC C	Cyan Toner Cartridge EEPROM access error
13DA	EEPROM TC M	Magenta Toner Cartridge EEPROM access error
13DB	EEPROM TC Y	Yellow Toner Cartridge EEPROM access error
13DC	EEPROM TC K	Black Toner Cartridge EEPROM access error
13E2	FLASH WRITE	Flash ROM write error
3000	M MOTOR 1	Main Motor's failure to turn
C002	RAM ERROR	RAM (standard) error at start-up
C003	RAM ERROR	RAM (option) error at start-up
C013	H/W ADDRESS	MAC address error at startup (MAC address is invalid)
C015	BOOT ROM	Boot ROM error at startup
C022	NVRAM ERROR	NVRAM access error
C025, C026, C027	CONTROLLER ROM	Controller ROM error
C050	HDD ERROR	HDD access error
C051 *1	HDD DISK FULL	HDD full error
C052	CARD ERROR	Compact Flash access error
C053 *1	CARD FULL	Compact Flash full error
C054	CARD ERROR	Compact Flash uninstallation
C060	UPDATE ERROR	Firmware update error
C061	HOLD JOB ERROR DUPLEX	Hold job error/No Duplex unit
C062	HOLD JOB ERROR TRAY3	Hold job error/No Tray 3
C063	HOLD JOB ERROR TRAY4	Hold job error/No Tray 4

Message		Description
LCD1 (Service Call ID)	LCD2/LCD3 (Error description)	
C064	HOLD JOB ERROR MEMORY	Hold job error/No Memory
C065	HOLD JOB ERROR TRAY5	Hold job error/No Tray 5
FFFF	I/F COMM ERROR	Interface Communication error
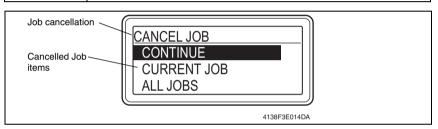
*1: After a trouble occurred, an automatic format will be carried out when restarting the printer.

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8.3   Cancelling a Print Job

• A print job being processed or printed can be cancelled by pressing the CANCEL key.
• When no job has been sent, pressing the CANCEL key has no effect.

1. If the CANCEL key is pressed while a print job is being printed, a message appears on the Control Panel.
2. Select the job to be cancelled using the Up key△/ Down key▽ and press the MENU/ SELECT key.
    By pressing the CANCEL key, the Job Cancel menu is closed.

Panel Display (LCD2-LCD4)	Description
CONTINUE	Continue printing the currently processing job.
CURRENT JOB	Stop printing the currently processing job.
ALL JOB	Stop printing all jobs, including the currently processing job and all jobs waiting to be printed.

Job cancellation

Cancelled Job items

CANCEL JOB
CONTINUE
CURRENT JOB
ALL JOBS

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9. Menu

9.1 List of Menu Functions

Menu				Ref. Page
PROOF/PRINT MENU *1				P.101
PRINT MENU	CONFIGURATION PG			P.101
	DEMO PAGE			P.102
	STATISTICS PAGE			P.102
	FONT LIST	POSTSCRIPT		P.102
		PCL		P.102
	MENU MAP			P.102
	DIRECTORY LIST *2			P.102
PAPER MENU	PAPER SOURCE	DEFAULT TRAY		P.103
		TRAY1		P.103
		TRAY2		P.105
		TRAY3		P.107
		TRAY4		
		TRAY5		
		TRAY CHAINING		P.107
		TRAY MAPPING		P.107
	DUPLEX *3			P.108
	COPIES			P.108
	COLLATE *4			P.109
QUALITY MENU	COLOR MODE			P.109
	BRIGHTNESS			P.109
	PCL SETTING	CONTRAST		P.109
		IMAGE PRINTING	RGB SOURCE	P.109
			RGB INTENT	P.110
			RGB GRAY	P.110
			HALFTONE	P.110
		TEXT PRINTING	RGB SOURCE	P.110
			RGB INTENT	P.111
			RGB GRAY	P.111
			HALFTONE	P.111
		GRAPHICS PRINTING		P.111
	PS SETTING	IMAGE PRINTING	RGB SOURCE	P.112
			RGB INTENT	P.112
			RGB GRAY	P.112
			DESTINATION PROF	P.112
			HALFTONE	P.113
		TEXT PRINTING	RGB SOURCE	P.113
			RGB INTENT	P.113
			RGB GRAY	P.113

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Menu				Ref. Page
QUALITY MENU	PS SETTING	TEXT PRINTING	DESTINATION PROF	P.114
			HALFTONE	P.114
		GRAPHICS PRINTING	RGB SOURCE	P.114
			RGB INTENT	P.114
			RGB GRAY	P.115
			DESTINATION PROF	P.115
			HALFTONE	P.115
		SIMULATION	SIMULATION PROF	P.115
			SIMULATION INTENT	P.115
			CMYK GRAY	P.116
	CALIBRATION	TONE CALIBRATION		P.116
		AIDC PROCESS		P.116
		CMYK DENSITY	CYAN	P.116
			MAGENTA	P.116
			YELLOW	P.117
			BLACK	P.117
	COLOR SEPARATION			P.117
CAMERA DIRECT *5	PAPER SOURCE			P.117
	LAYOUT			P.118
	PAPER MARGIN			P.118
	IMAGE QUALITY	BRIGHTNESS		P.118
		CONTRAST		P.118
		RGB SOURCE		P.118
		RGB INTENT		P.119
		RGB GRAY		P.119
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INTERFACE MENU	JOB TIMEOUT			P.119
	ETHERNET	TCP/IP	ENABLE	P.120
			IP ADDRESS	P.120
			SUBNET MASK	P.120
			DEFAULT GATEWAY	P.121
			DHCP/BOOTP	P.121
			TELNET	P.121
		NETWARE	ENABLE	P.121
		APPLETALK	ENABLE	P.122
		SPEED/DUPLEX		P.122
	CAMERA DIRECT			P.122
SYS DEFAULT MENU	LANGUAGE			P.122
	EMULATION	DEF. EMULATION		P.123
		POSTSCRIPT	WAIT TIMEOUT	P.123
			PS ERROR PAGE	P.123
			PS PROTOCOL	P.123

Menu					Ref. Page
SYS DEFAULT MENU	EMULATION	PCL	CR/LF MAPPING		P.123
			LINES PER PAGE		P.124
			FONT SOURCE	FONT NUMBER	P.124
				PITCH SIZE	P.124
				(POINT SIZE)	
				SYMBOL SET	P.125
	PAPER	DEFAULT PAPER	PAPER SIZE		P.125
			CUSTOM SIZE		P.126
			PAPER TYPE		P.126
		DETECT PAPER SIZE			P.126
		UNIT OF MEASURE			P.127
	STARTUP OPTIONS	DO STARTUP PAGE			P.127
	AUTO CONTINUE				P.127
	HOLD JOB TIMEOUT *6				P.127
	ENERGY SAVER				P.128
	ENERGY SAVER TIME *6				P.128
	MENU TIMEOUT				P.128
	LCD BRIGHTNESS				P.128
	SECURITY	CHANGE PASSWORD			P.129
		LOCK PANEL			P.129
	CLOCK	DATE			P.130
		TIME			P.130
	HDD FORMAT *7	USER AREA ONLY			P.130
		ALL			
	CARD FORMAT *8				P.131
	RESTORE DEFAULTS	RESTORE NETWORK			P.131
		RESTORE PRINTER			
		RESTORE ALL			
	ENABLE WARNING	PAPER EMPTY			P.138
		TONER LOW			P.139
		I-UNIT LOW			P.139
	IMAGING UNIT LIFE				P.140
MAINTENANCE MENU	PRINT MENU	EVENT LOG			P.141
		HALFTONE 64			P.141
		HALFTONE 128			P.141
		HALFTONE 256			P.142
		GRADATION			P.142

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Menu			Ref. Page
MAINTENANCE MENU	ALIGNMENT	TOP ADJUSTMENT	P.142
		LEFT ADJUSTMENT	P.142
		LEFT ADJ DUPLEX	P.143
		TRANSFER POWER	SIMPLEX PASS	P.143
			DUPLEX PASS	P.144
		IMG ADJ THICK	P.144
		IMG ADJ BLACK	P.144
		FUSER LOOP ADJ	P.145

*1: It is displayed only when the optional Hard Disk is mounted.
*2: It is displayed only when the optional Hard Disk is mounted.
*3: It is displayed only when the optional Duplex Unit is installed.
*4: It is displayed only when the optional Hard Disk is mounted.
*5: It is displayed only when INTERFACE MENU/CAMERA DIRECT is set to "ENABLE."
*6: It is displayed only when the [ENERGY SAVER] setting is set besides "OFF."
*7: It is displayed only when the optional Hard Disk is mounted.
*8: It is displayed only when the optional Compact Flash is mounted.

Adjustment / Setting

9.2   PROOF/PRINT MENU

Function	• Selects and prints the job held temporarily in the printer. • Selects and deletes the job held temporarily in the printer. **NOTE** • **This menu is available only when an optional Hard Disk Kit is installed.**
Use	• To proof one copy of a print job before printing the rest of the copies.
Setting /procedure	How to print the held job *1.* Select [PROOF/PRINT MENU] and press the MENU/SELECT key. *2.* Select user name and press the MENU/SELECT key. *3.* Select desired print job and press the MENU/SELECT key. *4.* Select [PRINT] and press the MENU/SELECT key. *5.* If the hold job is set as PRIVATE JOB, enter the pin number (Personal Identification Number) with the Up key△/Down key▽. *6.* Set "Print number" with the Up key△/Down key▽ and press the MENU/SELECT key. **NOTE** • **The held job cannot be printed until the correct pin number is entered at the printer control panel.** • **The held job is deleted automatically after the period of time specified in the "SYSTEM DEFAULT MENU/HOLD JOB TIMEOUT" menu.**
	How to delete the held job *1.* Select [PROOF/PRINT MENU] and press the MENU/SELECT key. *2.* Select user name and press the MENU/SELECT key. *3.* Select desired print job and press the MENU/SELECT key. *4.* Select [DELETE] and press the MENU/SELECT key. *5.* If the hold job is set as PRIVATE JOB, enter the pin number (Personal Identification Number) with the Up key△/Down key▽. *6.* Select [YES] and press the MENU/SELECT key. **NOTE** • **The held job cannot be deleted until the correct pin number is entered.**

9.3   PRINT MENU

9.3.1   CONFIGURATION PG

Function	• Prints a Configuration Page.

Use	• To check the configuration of the machine. The following items can be checked:
	    Printer information
	    Options
	    Interface menu
	    Paper menu
	    System default menu
	    Quality menu
	    CAMERA DIRECT

Setting /procedure	• Select [PRINT] and press the MENU/SELECT key.

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Adjustment / Setting

9.3.2   DEMO PAGE

Function	• Prints a Demo Page.
Use	• To prints a Demo Page.
Setting /procedure	• Select [PRINT] and press the MENU/SELECT key.

9.3.3   STATISTICS PAGE

Function	• Prints a Statistics Page.

Use	• To check consumable status and the usage of the machine. The following items can be checked:
	
	    Supplies
	    Page information

Setting /procedure	• Select [PRINT] and press the MENU/SELECT key.

9.3.4   FONT LIST

A.   POSTSCRIPT

Function	• Prints a PostScript Font List.
Use	• To determine which PostScript fonts are available on the printer.
Setting /procedure	• Select [PRINT] and press the MENU/SELECT key.

B.   PCL

Function	• Prints a PCL Font List.
Use	• To determine which PCL fonts are available on the printer.
Setting /procedure	• Select [PRINT] and press the MENU/SELECT key.

9.3.5   MENU MAP

Function	• Prints a Menu Map.
Use	• To see the printer's menu structure.
Setting /procedure	• Select [PRINT] and press the MENU/SELECT key.

9.3.6   DIRECTORY LIST

Function	• Prints a Directory List of the Hard Disk Kit's contents.
Use	• To check the data saved in the optional Hard Disk Kit.
Setting /procedure	• Select [PRINT] and press the MENU/SELECT key. **NOTE** • **This menu is available only when an optional Hard Disk Kit is installed.**

9.4   PAPER MENU

9.4.1   PAPER SOURCE

A. DEFAULT TRAY

Function	• Sets the priority feed tray.
Use	• To set the priority media feed tray.
Setting /procedure	*1.* Select [DEFAULT TRAY] and press the MENU/SELECT key. *2.* Select desired tray and press the MENU/SELECT key. • The default setting is TRAY 2. TRAY 1 "TRAY 2" TRAY 3 TRAY 4 TRAY 5 **NOTE** • **TRAY 3/TRAY 4/TRAY 5 can be selected only when one or more optional Lower Feeder Units are installed.**

B. TRAY 1
(1) PAPER SIZE

Function	• Sets the size of the media in Tray 1.
Use	• To specify the size of the media loaded in Tray 1.
Setting /procedure	*1.* Select [PAPER SIZE] and press the MENU/SELECT key. *2.* Select desired paper size and press the MENU/SELECT key. For North America • The default setting is LETTER. For other destinations • The default setting is A4. ANY /"LETTER" /LETTER-R /11x17 /LEGAL /EXECUTIVE /A3WIDE /A3 /"A4" /A4-R / A5 /A6 /B4(JIS) /B5(JIS) /B5(JIS)-R /B6(JIS) /GOVT LETTER /STATEMENT /FOLIO / SP FOLIO /UK QUARTO /FOOLSCAP /GOVT LEAGAL /16K /12x18 /11x14 /4x6 /D8K / KAI8 /KAI 16 /KAI 32 /ENV C5 /ENV C6 /ENV DL /ENV MONARCH / ENV CHOU#3 /ENV CHOU#4 /B5(ISO) /ENV #10 /ENV YOU#4 /JPOST /JPOST-D / CUSTOM **NOTE** • **ANY specifies any media size.** • **CUSTOM is used to set a "CUSTOM media size."**

(2)   CUSTOM SIZE

Function	• Sets the CUSTOM SIZE of media in Tray 1.
Use	• To specify the custom size media loaded in Tray 1.
Setting /procedure	*1.* Select [CUSTOM SIZE] and press the MENU/SELECT key. *2.* Select [WIDTH] or [LENGTH] and press MENU/SELECT key. *3.* Set desired number with the Up key△/Down key▽ and press the MENU/SELECT key. For North America • The default setting of WIDTH is 8.50 inches. WIDTH: 3.55 inches to 12.25 inches. • The default setting of LENGTH is 11.00 inches. LENGTH: 5.52 inches to 47.24 inches. For other destinations • The default setting of WIDTH is 210 mm. WIDTH: 90 mm to 311 mm. • The default setting of LENGTH is 297 mm. LENGTH: 140 mm to 1200 mm. **NOTE** • **By changing the [UNIT OF MEASURE] setting (INCHES/MILLIMETERS), the custom size units are changed.**

(3)   PAPER TYPE

Function	• Sets the media type for Tray 1.
Use	• To specify the type of media loaded in Tray 1.
Setting /procedure	*1.* Select [PAPER TYPE] and press the MENU/SELECT key. *2.* Select desired paper type and press MENU/SELECT key. • The default setting is PLAIN PAPER. ANY / "PLAIN PAPER" /RECYCLED /THICK 1 /THICK 2 /THICK 3 /LABEL /TRANSPARENCY /TRANSPARENCY 2 /ENVELOPE /POSTCARD /LETTERHEAD / GLOSSY **NOTE** • **ANY identifies any media type.**

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Adjustment / Setting

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C. TRAY 2
(1) PAPER SIZE

Function	• Sets the size of the media in Tray 2.
Use	• To specify the size of the media loaded in Tray 2.
Setting /procedure	*1.* Select [PAPER SIZE] and press the MENU/SELECT key. *2.* Select desired paper size and press the MENU/SELECT key. For North America • The default setting is LETTER. For other destinations • The default setting is A4. ANY /"LETTER" /LETTER-R /11x17 /LEGAL /EXECUTIVE /A3WIDE /A3 /"A4" /A4-R / A5 /A6 /B4(JIS) /B5(JIS) /B5(JIS)-R /B6(JIS) /GOVT LETTER /STATEMENT /FOLIO / SP FOLIO /UK QUARTO /FOOLSCAP /GOVT LEAGAL /16K /12x18 /11x14 /4x6 /D8K / KAI8 /KAI 16 /KAI 32 /ENV C5 /ENV C6 /ENV DL /ENV MONARCH / ENV CHOU#3 /ENV CHOU#4 /B5(ISO) /ENV #10 /ENV YOU#4 /JPOST /JPOST-D / CUSTOM **NOTE** • **ANY specifies any media size.** • **CUSTOM is used to set a "CUSTOM media size."** • **When The [SIZE SETTING] for Tray 2 is set to "AUTO", the detected paper size will be displayed.**

Adjustment / Setting

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(2) CUSTOM SIZE

Function	• Sets the CUSTOM SIZE of media in Tray 2.
Use	• To specify the custom size media loaded in Tray 2.
Setting /procedure	*1.* Select [CUSTOM SIZE] and press the MENU/SELECT key. *2.* Select [WIDTH] or [LENGTH] and press MENU/SELECT key. *3.* Set desired number with the Up key△/Down key▽ and press the MENU/SELECT key. For North America • The default setting of WIDTH is 8.50 inches. WIDTH: 3.55 inches to 12.25 inches. • The default setting of LENGTH is 11.00 inches. LENGTH: 5.52 inches to 18.00 inches. For other destinations • The default setting of WIDTH is 210 mm. WIDTH: 90 mm to 311 mm. • The default setting of LENGTH is 297 mm. LENGTH: 140 mm to 457 mm. **NOTE** • **By changing the "UNIT OF MEASURE" setting (INCHES/MILLIMETERS), the custom size units are changed.**

(3) PAPER TYPE

Adjustment / Setting

Function	• Sets the media type for Tray 2.
Use	• To specify the type of media loaded in Tray 2.
Setting /procedure	*1.* Select [PAPER TYPE] and press the MENU/SELECT key. *2.* Select desired paper type and press MENU/SELECT key. • The default setting is PLAIN PAPER. ANY / "PLAIN PAPER" /RECYCLED /THICK 1 /THICK 2 /THICK 3 /LABEL /TRANSPARENCY /TRANSPARENCY 2 /ENVELOPE /POSTCARD /LETTERHEAD / GLOSSY **NOTE** • **ANY identifies any media type.**

(4)　SIZE SETTING

Function	• Sets the method to select the paper size for Tray 2.
Use	• To set the paper size for Tray 2 at user's option.
Setting /procedure	• The default setting is AUTO. 　　　　　　　　"AUTO"　　　　　　　　　　　USER SELECT **NOTE** • **When selecting "USER SELECT", the paper size will be set with [PAPER SIZE] setting.**

D.　TRAY 3 / TRAY 4 / TRAY 5
(1)　PAPER SIZE

Function	• Automatically detects the set paper size and displays it.
Use	• To check the paper size.
Setting /procedure	*1.* Select [PAPER SOURCE] and press the MENU/SELECT key. *2.* Select desired feed tray (TRAY 3-5) and press the MENU/SELECT key. *3.* Select [PAPER SIZE] and press the MENU/SELECT key. **NOTE** • **TRAY3/TRAY4/TRAY5 can be selected only when one or more optional Lower Feeder Units are installed.**

(2)　PAPER TYPE

Function	• Sets the paper type for Trays 3 to 5.
Use	• To specify the type of media loaded in Trays 3 to 5.
Setting /procedure	• The default setting is "PLAIN PAPER." 　　　　　ANY　　　　　　　"PLAIN PAPER"　　　　　RECYCLED **NOTE** • **TRAY3/TRAY4/TRAY5 can be selected only when one ore more optional Lower Feeder Units are installed.** • **ANY identifies any media type.**

E.　TRAY CHAINING

Function	• Sets auto tray switching.
Use	• To specify that the printer should pull media from another tray when the specified tray runs is empty.
Setting /procedure	• The default setting is "ON." 　　　　　　　"ON"　　　　　　　　　　　　　　OFF

F.　TRAY MAPPING
(1)　TRAY MAPPING 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 OFF. 　　　　　　　ON　　　　　　　　　　　　　　　"OFF"

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Adjustment / Setting

(2) LOGICAL TRAY0-9

Function	• Specifies whether jobs received from another manufacturer's printer driver are printed using Tray 1 to Tray 5.
Use	• To specify the media source for print jobs using another manufacturer's printer driver.
Setting /procedure	• Only the default for LOGICAL TRAY 1 is PHYSICAL TRAY 1. PHYSICAL TRAY 2 is the default for all trays other than LOGICAL TRAY 1. PHYSICAL TRAY 1 "PHYSICAL TRAY 2" PHYSICAL TRAY 3 PHYSICAL TRAY 4 PHYSICAL TRAY 5 **NOTE** • **Only the mounted Tray can be selected.**

9.4.2   DUPLEX

Function	• Sets duplex printing mode.

Use	• To specify duplex printing.
	    OFF : Duplex print is OFF
	    LONG EDGE : Duplex print is ON, long edge
	    SHORT EDGE : Duplex print is ON, short edge

Setting /procedure	• The default setting is "OFF." "OFF" LONG EDGE SHORT EDGE **NOTE** • **This menu is available only when a Duplex Option is installed.** • **The setting in the printer driver overrides the setting in this menu.**

9.4.3   COPIES

Function	• Sets the number of prints.
Use	• To specify the number of copies of the job to be printed.
Setting /procedure	*1.* Select [COPIES] and press the MENU/SELECT key. *2.* Select desired print number with the Up key△/Down key▽ and press the MENU/ SELECT key. • The default setting is "1" copy. "1" copy to 9999 copies. **NOTE** • **The setting in the printer driver overrides the setting in this menu.**

9.4.4 COLLATE

Function	• Sets printing in sets.

Use	• To print several sets of multiple pages.
	    ON : Print in sets.
	    OFF : Print in page.

Setting /procedure	• The default setting is OFF. ON "OFF" **NOTE** • **This menu is available only when an optional Hard Disk Kit is installed.** • **The setting in the printer driver overrides the setting in this menu.**

9.5 QUALITY MENU

9.5.1 COLOR MODE

Function	• Sets the color mode for printing.
Use	• To specify whether jobs should be printed in color or grayscale.
Setting /procedure	• The default setting is COLOR. "COLOR" GRAYSCALE

9.5.2 BRIGHTNESS

Function	• Sets the brightness of the printed image.
Use	• To adjust the brightness of the printed image.
Setting /procedure	• The default setting is 0 %. -15 % -10 % -5 % "0 %" +5 % +10 % +15 %

9.5.3 PCL SETTING

A. CONTRAST

Function	• Sets the contrast of a PCL printed image.
Use	• To adjust the contrast of a PCL printed image.
Setting /procedure	• The default setting is 0%. -15 % -10 % -5 % "0 %" +5 % +10 % +15 %

B. IMAGE PRINTING
(1) RGB SOURCE

Function	• Sets the RGB color space of the image to be printed.

Use	• To set the input RGB color space that is used for printing the image (picture).
	    sRGB : Profile that has been preset to the printer.
	    DVICE COLOR : It uses the Device color in the color space.

Setting /procedure	• The default setting is sRGB. DEVICE COLOR "sRGB"

(2) RGB INTENT

Function	• Sets the RGB characteristics of the image to be printed.
Use	• To set the color conversion characteristic from input RGB to device CMYK that is used for printing the image (picture). 　　VIVID　　　　　　　: Color conversion characteristic suited to the image emphasizing on color vividness. 　　PHOTOGRAPHIC: Color conversion characteristic suited to the image emphasizing on color image.
Setting /procedure	• The default setting is PHOTOGRAPHIC. 　　　　　　　　　　VIVID　　　　　　　　　　　　"PHOTOGRAPHIC"

(3) RGB GRAY

Function	• Sets the RGB gray reproduction of the image to be printed.
Use	• To set the gray print method that is used for the printed image (picture). 　　COMPOSITE BLACK : Print gray with the toner of 4 colors CMYK. 　　BLACK AND GRAY　: Print black (R=G=B=0) only with K toner and print gray with toner of 4 colors CMYK. 　　BLACK ONLY　　　 : Print gray only with K toner.
Setting /procedure	• The default setting is COMPOSITE BLACK. 　"COMPOSITE BLACK"　　　BLACK AND GRAY　　　BLACK ONLY

(4) HALFTONE

Function	• Sets the halftone characteristic of image to be printed.
Use	• To set the halftone characteristic that is used for the printed image (picture.) 　　LINE ART : HALFTONE characteristic that emphasizes the resolution of the print image. 　　DETAIL　 : HALFTONE characteristic that emphasizes the balance between the resolution and the tone reproducibility of the print image. 　　SMOOTH : HALFTONE characteristic that emphasizes the tone reproducibility of the print image.
Setting /procedure	• The default setting is DETAIL. 　　　　　　LINE ART　　　　　　"DETAIL"　　　　　　SMOOTH

C. TEXT PRINTING
(1) RGB SOURCE

Function	• Sets the RGB color space of the text to be printed.
Use	• To set the input RGB color space that is used for printing text (letter). 　　sRGB　　　　　 : Profile that has been preset to the printer. 　　DVICE COLOR : It uses the Device color in the color space.
Setting /procedure	• The default setting is sRGB. 　　　　　　　DEVICE COLOR　　　　　　　　　"sRGB"

(2) RGB INTENT

Function	• Sets the RGB characteristic of the text to be printed.
Use	• To set the color conversion characteristic from input RGB to device CMYK that is used for printing text (letter). 　　　VIVID　　　　　　　　: Color conversion characteristic suited to the image emphasizing on color vividness. 　　　PHOTOGRAPHIC: Color conversion characteristic suited to the image emphasizing on color image.
Setting /procedure	• The default setting is VIVID. 　　　　　　　　"VIVID"　　　　　　　　　　　　PHOTOGRAPHIC

(3) RGB GRAY

Function	• Sets the RGB gray reproduction of the text to be printed.
Use	• To set the gray print method that is used for printing text (letter). 　　COMPOSITE BLACK : Print gray with the toner of 4 colors CMYK. 　　BLACK AND GRAY　 : Print black (R=G=B=0) only with K toner and print gray with toner of 4 colors CMYK. 　　BLACK ONLY　　　　 : Print gray only with K toner.
Setting /procedure	• The default setting is BLACK AND GRAY. 　COMPOSITE BLACK　　　　　"BLACK AND GRAY"　　　　BLACK ONLY

(4) HALFTONE

Function	• Sets the halftone characteristic of the text to be printed.
Use	• To set the halftone characteristic that is used for printing text (letter). 　　LINE ART : HALFTONE characteristic that emphasizes the resolution of the print image. 　　DETAIL　　 : HALFTONE characteristic that emphasizes the balance between the resolution and the tone reproducibility of the print image. 　　SMOOTH : HALFTONE characteristic that emphasizes the tone reproducibility of the print image.
Setting /procedure	• The default setting is LINE ART. 　　　　　"LINE ART"　　　　　DETAIL　　　　　　SMOOTH

D. GRAPHICS PRINTING

Function	• Sets the RGB characteristics for graphics printing.
Use	• To set each characteristic for printing graphics (figures).
Setting /procedure	• The default setting is AS TEXT. 　　　　　　AS IMAGE　　　　　　　　　　　"AS TEXT"

9.5.4 PS SETTING

A. IMAGE PRINTING
(1) RGB SOURCE

Function	• Sets the RGB color space of the image to be printed.
Use	• To set the input RGB color space that is used for printing the image (picture). 　　sRGB...BlueAdjustRGB　: Profile that has been preset to the printer. 　　DVICE COLOR　　　　　: It uses the Device color in the color space.
Setting /procedure	• The default setting is sRGB. DEVICE COLOR / "sRGB" /AppleRGB /AdobeRGB1998 /ColorMatchRGB / BlueAdjustRGB

(2) RGB INTENT

Function	• Sets the RGB characteristics of the image to be printed.
Use	• To set the color conversion characteristic from input RGB to device CMYK that is used for printing the image (picture). 　　VIVID　　　　　　　　: Color conversion characteristic suited to the image emphasizing on color vividness. 　　PHOTOGRAPHIC　　: Color conversion characteristic suited to the image emphasizing on color image. 　　RELATIVE COLOR　: Reproduce the color that minimize the color difference between original and print by adjusting the basic color (white.) 　　ABSOLUTE COLOR : Reproduce the color that maintains the absolute color within the device reproduced color.
Setting /procedure	• The default setting is PHOTOGRAPHIC. VIVID　　　"PHOTOGRAPHIC"　　　RELATIVE COLOR　　　ABSOLUTE COLOR

(3) RGB GRAY

Function	• Sets the RGB gray reproduction of the image to be printed.
Use	• To set the gray print method that is processed by the printer for the printed image (picture). 　　COMPOSITE BLACK : Print gray with the toner of 4 colors CMYK. 　　BLACK AND GRAY　 : Print black (R=G=B=0) only with K toner and print gray with toner of 4 colors CMYK. 　　BLACK ONLY　　　　: Print gray only with K toner.
Setting /procedure	• The default setting is COMPOSITE BLACK. "COMPOSITE BLACK"　　　BLACK AND GRAY　　　BLACK ONLY

(4) DESTINATION PROF

Function	• Sets the output profile.
Use	• To set the custom profile used for output. 　　AUTO　　　　　: Select automatically appropriate output profile that has been preset at the printer with other print conditions. 　　Custom Profile : Custom profile that has been downloaded to the printer by user.
Setting /procedure	• The default setting is AUTO. 　　　　　　　　　　"AUTO"　　　　　　　　　　Custom Profile...

(5) HALFTONE

Function	Sets the halftone characteristic of image to be printed.
Use	• To set the halftone characteristic that is used for the printed image (picture.) 　　LINE ART : HALFTONE characteristic that emphasizes the resolution of the print image. 　　DETAIL　　 : HALFTONE characteristic that emphasizes the balance between the resolution and the tone reproducibility of the print image. 　　SMOOTH : HALFTONE characteristic that emphasizes the tone reproducibility of the print image.
Setting /procedure	• The default setting is DETAIL. 　　LINE ART　　　　　　　　"DETAIL"　　　　　　　　SMOOTH

B. TEXT PRINTING
(1) RGB SOURCE

Function	• Sets the RGB color space of the text to be printed.
Use	• To set the input RGB color space that is used for printing text (letter). 　　sRGB...BlueAdjustRGB : Profile that has been preset to the printer. 　　DVICE COLOR　　　　　　 : It uses the Device color in the color space.
Setting /procedure	• The default setting is sRGB. DEVICE COLOR / "sRGB" /AppleRGB /AdobeRGB1998 /ColorMatchRGB / BlueAdjustRGB

(2) RGB INTENT

Function	• Sets the RGB characteristic of the text to be printed.
Use	• To set the color conversion characteristic from input RGB to device CMYK that is used for printing text (letter). 　　VIVID　　　　　　　　　　 : Color conversion characteristic suited to the image emphasizing on color vividness. 　　PHOTOGRAPHIC　 : Color conversion characteristic suited to the image emphasizing on color image. 　　RELATIVE COLOR : Reproduce the color that minimize the color difference between original and print by adjusting the basic color (white.) 　　ABSOLUTE COLOR : Reproduce the color that maintains the absolute color within the device reproduced color.
Setting /procedure	• The default setting is VIVID. 　　"VIVID"　　　PHOTOGRAPHIC　　　RELATIVE COLOR　　　ABSOLUTE COLOR

(3) RGB GRAY

Function	• Sets the RGB gray reproduction of the text to be printed.
Use	• To set the gray print method that is used for printing text (letter). 　　COMPOSITE BLACK : Print gray with the toner of 4 colors CMYK. 　　BLACK AND GRAY　 : Print black (R=G=B=0) only with K toner and print gray with toner of 4 colors CMYK. 　　BLACK ONLY　　　　 : Print gray only with K toner.
Setting /procedure	• The default setting is BLACK AND GRAY. 　　COMPOSITE BLACK　　　　　"BLACK AND GRAY"　　　　　BLACK ONLY

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Adjustment / Setting

(4) DESTINATION PROF

Function	• Sets the output profile.

Use	• To set the custom profile used for output.
	    AUTO : Select automatically appropriate output profile that has been pre-
	                      set at the printer with other print conditions.
	    Custom Profile : Custom profile that has been downloaded to the printer by user.

Setting /procedure	• The default setting is AUTO. "AUTO" Custom Profile...

(5) HALFTONE

Function	• Sets the halftone characteristic of the text to be printed.

Use	• To set the halftone characteristic that is used for printing text (letter).
	    LINE ART : HALFTONE characteristic that emphasizes the resolution of the print
	                    image.
	    DETAIL : HALFTONE characteristic that emphasizes the balance between the
	                    resolution and the tone reproducibility of the print image.
	    SMOOTH : HALFTONE characteristic that emphasizes the tone reproducibility of
	                    the print image.

Setting /procedure	• The default setting is LINE ART. "LINE ART" DETAIL SMOOTH

C. GRAPHICS PRINTING
(1) RGB SOURCE

Function	• Sets the RGB color space of the graphics to be printed.

Use	• To set the input RGB color space that is used for printing graphics (figures).
	    sRGB...BlueAdjustRGB : Profile that has been preset to the printer.
	    DVICE COLOR : It uses the Device color in the color space.

Setting /procedure	• The default setting is sRGB. DEVICE COLOR / "sRGB" /AppleRGB /AdobeRGB1998 /ColorMatchRGB / BlueAdjustRGB

(2) RGB INTENT

Function	• Sets the RGB characteristic of the graphics to be printed.

Use	• To set the color conversion characteristic from input RGB to device CMYK that is
	  used for printing graphics (figures).
	    VIVID : Color conversion characteristic suited to the image empha-
	                            sizing on color vividness.
	    PHOTOGRAPHIC : Color conversion characteristic suited to the image empha-
	                            sizing on color image.
	    RELATIVE COLOR : Reproduce the color that minimize the color difference
	                            between original and print by adjusting the basic color
	                            (white.)
	    ABSOLUTE COLOR: Reproduce the color that maintains the absolute color within
	                            the device reproduced color.

Setting /procedure	• The default setting is VIVID. "VIVID" PHOTOGRAPHIC RELATIVE COLOR ABSOLUTE COLOR

(3) RGB GRAY

Function	• Sets the RGB gray reproduction of the graphics to be printed.
Use	• To set the gray print method that is used for printing graphics (figures). 　COMPOSITE BLACK : Print gray with the toner of 4 colors CMYK. 　BLACK AND GRAY　 : Print black (R=G=B=0) only with K toner and print gray with 　　　　　　　　　　　　　　toner of 4 colors CMYK. 　BLACK ONLY　　　　 : Print gray only with K toner.
Setting /procedure	• The default setting is BLACK AND GRAY. 　COMPOSITE BLACK　　　　　"BLACK AND GRAY"　　　　BLACK ONLY

(4) DESTINATION PROF

Function	• Sets the output profile.
Use	• To set the custom profile used for output. 　AUTO　　　　　 : Select automatically appropriate output profile that has been pre- 　　　　　　　　　　set at the printer with other print conditions. 　Custom Profile : Custom profile that has been downloaded to the printer by user.
Setting /procedure	• The default setting is AUTO. 　　　　　　　　　"AUTO"　　　　　　　　　　　Custom Profile...

(5) HALFTONE

Function	• Sets the RGB characteristics for graphics printing.
Use	• To set each characteristic for printing graphics (figures).
Setting /procedure	• The default setting is AS TEXT. 　　　　　　　　AS IMAGE　　　　　　　　　　　"AS TEXT"

D. SIMULATION
(1) SIMULATION PROF

Function	• Sets the simulation profile.
Use	• To set a CMYK simulation profile at implementation of the simulation. 　SWOP...DIC　 : Profile that has been preset at the printer. 　Custom profile : Custom profile that has been downloaded to the printer by users.
Setting /procedure	• The default setting is NONE. "NONE" /SWOP /Euroscale /CommercialPress /TOYO /DIC /Custom Profile...

(2) SIMULATION INTENT

Function	• Sets the color characteristics.
Use	• To set the color characteristics at the implementation of the simulation. 　RELATIVE COLOR　 : Reproduce the color that minimizes the color difference 　　　　　　　　　　　　between original and print by adjusting the basic color 　　　　　　　　　　　　(white.) 　ABSOLUTE COLOR : Reproduce the color that maintains the absolute color within 　　　　　　　　　　　　the device reproduced color.
Setting /procedure	• The default setting is RELATIVE COLOR. 　　　　　　　　"RELATIVE COLOR"　　　　　　　　ABSOLUTE COLOR

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Adjustment / Setting

(3) CMYK GRAY

Function	• Sets CMYK gray reproduction.
Use	• To set the CMYK data K maintain method at the implementation of the simulation. 　　COMPOSITE BLACK : Print according to the result of color conversion with profile. 　　BLACK AND GRAY　　: Print by maintaining the value only for black (C=M=Y=0, 　　　　　　　　　　　　　　K=255) 　　BLACK ONLY　　　　　: Print by maintaining the value only for gray (C=M=Y=0, 　　　　　　　　　　　　　　K=any)
Setting /procedure	• The default setting is COMPOSITE BLACK. 　　"COMPOSITE BLACK"　　　　BLACK AND GRAY　　　　BLACK ONLY

9.5.5   CALIBRATION

A. TONE CALIBRATION

Function	• Sets the gradation adjustment (Image stabilization with the controller).
Use	• To use for a particular calibration made by users. 　　ON　: Gradation adjustment is ON. 　　OFF : Gradation adjustment is OFF.
Setting /procedure	• The default setting is "ON." 　　　　　　　　"ON"　　　　　　　　　　　　　　OFF

B. AIDC PROCESS

Function	• Controls the image stability.
Use	• To be used to adjust image quality. • To be used when the Transfer Belt unit and/or the Transfer roller are replaced.
Setting /procedure	• The default setting is "CANCEL." 　　　　　　　EXCUTE　　　　　　　　　　　"CANCEL"

C. CMYK DENSITY
(1) CYAN

Function	• Sets the Cyan level for the HIGHLIGHT, MIDDLE, and SHADOW area respectively.
Use	• To set the Cyan level for the HIGHLIGHT, MIDDLE, and SHADOW are respectively.
Setting /procedure	• The default setting is "0." 　　　　　　　　　　　　-3 to +3

(2) MAGENTA

Function	• Sets the Magenta level for the HIGHLIGHT, MIDDLE, and SHADOW area respectively.
Use	• To set the Magenta level for the HIGHLIGHT, MIDDLE, and SHADOW are respectively.
Setting /procedure	• The default setting is "0." 　　　　　　　　　　　　-3 to +3

(3) YELLOW

Function	• Sets the Yellow level for the HIGHLIGHT, MIDDLE, and SHADOW area respectively.
Use	• To set the Yellow level for the HIGHLIGHT, MIDDLE, and SHADOW are respectively.
Setting /procedure	• The default setting is "0." -3 to +3

(4) BLACK

Function	• Sets the Black level for the HIGHLIGHT, MIDDLE, and SHADOW area respectively.
Use	• To set the Black level for the HIGHLIGHT, MIDDLE, and SHADOW are respectively.
Setting /procedure	• The default setting is "0." -3 to +3

9.5.6 COLOR SEPARATION

Function	• Sets the color separation function.
Use	• To create color separations.
Setting /procedure	• The default setting is OFF. ON "OFF"

9.6 CAMERA DIRECT

9.6.1 PAPER SOURCE

Function	• Sets the tray using for Camera Direct Photo Printing.
Use	• To change the tray using for Camera Direct Photo Printing.
Setting /procedure	• The default setting is TRAY 2. TRAY1" "TRAY2" TRAY3 TRAY4 TRAY5 **NOTE** • **Only the mounted Tray can be selected.**

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Adjustment / Setting

9.6.2   LAYOUT

Function	• Sets the number of images printed on one page for Camera Direct Photo Printing.
Use	• To specify the number of Camera Direct Photo Printing images to be printed on each sheet.
Setting /procedure	• The default setting is 1-UP.

"1-UP"   [1]   2-UP   [1] [2]   3-UP   [1] [2] [3]

4-UP   [1] [2] [3] [4]   6-UP   [1] [2] [3] [4] [5] [6]   8-UP   [1] [2] [3] [4] [5] [6] [7] [8]

9.6.3   PAPER MARGIN

Function	• Sets the Paper Margin for Direct Photo Printing.
Use	• To perform Direct Photo Printing with the minimum paper margin.
Setting /procedure	• The default setting is STANDARD. "STANDARD" MINIMUM

9.6.4   IMAGE QUALITY

A. BRIGHTNESS

Function	• Sets the brightness of the printed image for Camera Direct Photo Printing.
Use	• To adjust the brightness of the printed image for Camera Direct Photo Printing.
Setting /procedure	• The default setting is 0 %. -15 % -10 % -5 % "0 %" +5 % +10 % +15 %

B. CONTRAST

Function	• Sets the contrast of the printed image for Camera Direct Photo Printing.
Use	• To adjust the contrast of the printed image for Camera Direct Photo Printing.
Setting /procedure	• The default setting is 0%. -15 % -10 % -5 % "0 %" +5 % +10 % +15 %

C. RGB SOURCE

Function	• Sets the RGB color space of the printed image for Camera Direct Photo Printing.

Use	• To set the input RGB color space that is used for Camera Direct Photo Printing.
	    sRGB : Profile that has been preset to the printer.
	    DVICE COLOR : It uses the Device color in the color space.

Setting /procedure	• The default setting is sRGB. DEVICE COLOR "sRGB"

D. RGB INTENT

Function	• Sets the RGB characteristics of the printed image for Camera Direct Photo Printing.

Use	• To set the color conversion characteristic from input RGB to device CMYK that is used for Camera Direct Photo Printing.
	  VIVID : Color conversion characteristic suited to the image emphasizing on color vividness.
	  PHOTOGRAPHIC : Color conversion characteristic suited to the image emphasizing on color image.

Setting /procedure	• The default setting is PHOTOGRAPHIC. VIVID　　　　　　　　　　　"PHOTOGRAPHIC"

E. RGB GRAY

Function	• Sets the RGB gray reproduction of the printed image for Camera Direct Photo Printing.

Use	• To set the gray print method that is processed by the printer for Camera Direct Photo Printing.
	  COMPOSITE BLACK : Print gray with the toner of 4 colors CMYK.
	  BLACK AND GRAY : Print black (R=G=B=0) only with K toner and print gray with toner of 4 colors CMYK.
	  BLACK ONLY : Print gray only with K toner.

Setting /procedure	• The default setting is COMPOSITE BLACK. "COMPOSITE BLACK"　　　BLACK AND GRAY　　　BLACK ONLY

F. HALFTONE

Function	Sets the halftone characteristic of the printed image for Camera Direct Photo Printing.

Use	• To set the halftone characteristic that is used for Camera Direct Photo Printing.
	  LINE ART : HALFTONE characteristic that emphasizes the resolution of the print image.
	  DETAIL : HALFTONE characteristic that emphasizes the balance between the resolution and the tone reproducibility of the print image.
	  SMOOTH : HALFTONE characteristic that emphasizes the tone reproducibility of the print image.

Setting /procedure	• The default setting is DETAIL. LINE ART　　　　　"DETAIL"　　　　　SMOOTH

9.7　INTERFACE MENU

9.7.1　JOB TIMEOUT

Function	• Sets the time to activate JOB TIMEOUT.
Use	• To specify the amount of time before a print job times out.
Setting /procedure	• The default setting is 15 seconds. 5 seconds to 300 seconds

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Adjustment / Setting

9.7.2   ETHERNET

NOTE
* **When the ETHERNET setting is changed, the printer restarts automatically.**

A.   TCP/IP
(1)   ENABLE

Function	• Enables TCP/IP

Use	• To specify that the printer is connected to a TCP/IP network.
	    YES : Enable TCP/IP. Print can be made at TCP/IP environment.
	    NO : Disable TCP/IP. Print cannot be made at TCP/IP environment.

Setting
/procedure
	• The default setting is YES.
	
	                    "YES" NO
	
	NOTE
	• **The screen displays [IP ADDRESS], [SUBNET MASK], [DEFAULT GATEWAY],
	    and [DHCP/BOOTP] only when [ENABLE/YES] is selected.**

(2)   IP ADDRESS

Function	• Sets the IP address of the printer used for the network.
Use	• To set the printer's IP address.

Setting
/procedure
	1. Select [IP ADDRESS] and press the MENU/SELECT key.
	2. Set desired IP ADDRESS (first bite) with the Up key△/Down key▽ and press the
	    Right key▷.
	3. Repeat the above procedures and set the IP address up to fourth bite.
	4. Press the MENU/SELECT key.
	
	NOTE
	• **When setting the IP address manually, [DHCP/BOOTP] (IP auto acquisition
	    function) setting is set to [OFF] automatically.**
	• **When IP address is not allocated from the server, the IP address is set auto-
	    matically within the range "169.254.0.0. to 169.254.255.255."**

(3)   SUBNET MASK

Function	• Sets the subnet mask of the printer used in the network.
Use	• To set the printer's subnet mask.

Setting
/procedure
	1. Select [SUBNET MASK] and press the MENU/SELECT key.
	2. Set desired SUBNET MASK (first bite) with the Up key△/Down key▽ and press the
	    Right key ▷.
	3. Repeat the above procedures and set the SUBNET MASK up to fourth bite.
	4. Press the MENU/SELECT key.
	
	• The default setting is "255.255.000.000."
	
	                    000.000.000.000 to 255.255.255.255

(4) DEFAULT GATEWAY

Function	• Sets the gateway address of the printer used in the network.
Use	• To set the printer's gateway address.
Setting /procedure	*1.* Select [DEFAULT GATEWAY] and press the MENU/SELECT key. *2.* Set desired DEFAULT GATEWAY ADDRESS (first bite) with the Up key△/Down key▽ and press the Right key▷. *3.* Repeat the above procedures and set the DEFAULT GATEWAY ADDRESS up to fourth bite. *4.* Press the MENU/SELECT key. • The default setting is "000.000.000.000." 000.000.000.000 to 255.255.255.255

(5) DHCP/BOOTP

Function	• DHCP: Automatically acquires an IP address from the DHCP server, if there is one in the network, and specifies whether to load other network information. • BOOTP: Automatically acquires an IP address from BOOTP and specifies whether to load other network information.

Use	• To automatically acquire an IP address and load other network information.
	    YES : Enable IP auto acquisition setting.
	    No : Disable IP auto acquisition setting.

Setting /procedure	• The default setting is ON. "ON" OFF **NOTE** • **When [TCP/IP/IP ADDRESS] is enabled, the [DHCP/BOOTP] setting is changed to [OFF]."** • **When IP address is not allocated from the server, [TCP/IP/IP ADDRESS] is set automatically set within the range "169.254.0.0. to 169.254.255.255."**

(6) TELNET

Function	• Select whether to enable or disable TELNET transmissions.
Use	• To specify that the printer is connected by TELNET transmissions.
Setting /procedure	• The default setting is ENABLE. "ENABLE" DISABLE

B. NETWARE
(1) ENABLE

Function	• Enables NetWare.

Use	• To specify that the printer is connected to a NetWare network.
	    YES : Enable NetWare. Printing can be done via NetWare.
	    No : Disable NetWare. Printing cannot be done via NetWare.

Setting /procedure	• The default setting is YES. "YES" "NO"

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Adjustment / Setting

C. APPLETALK
(1) ENABLE

Function	• Enables AppleTalk.
Use	• To specify that the printer is connected to an AppleTalk network. 　　YES : Enable AppleTalk. Printing can be done via AppleTalk. 　　No　: Disable Apple Talk. Printing cannot be done via AppleTalk.
Setting /procedure	• The default setting is YES. 　　　　　　"YES"　　　　　　　　　　　　　　NO

D. SPEED/DUPLEX

Function	• Sets the communication speed and method of Network.
Use	• To set the network communication speed and method.
Setting /procedure	• Setting items Network speed (SPEED): AUTO, 10Mbps, 100Mbps, 1,000Mbps Duplex mode (DUP): AUTO, Full-duplex mode, Half-duplex mode • The default setting is AUTO. 　　"AUTO"　　　　　10BASE FULL　　　　　10BASE HALF 　　100BASE FULL　　100BASE HALF　　　　1000BASE FULL

9.7.3 CAMERA DIRECT

Function	• Select whether to enable or disable camera direct printing.
Use	ENABLE : CAMERA DIRECT menu is appeared, and camera direct printing is 　　　　　　　enabled. 　　DISABLE : CAMERA DIRECT menu is disappeared, and camera direct printing is 　　　　　　　disabled.
Setting /procedure	• The default setting is ENABLE. 　　　　"ENABLE"　　　　　　　　　　DISABLE

9.8 SYS DEFAULT MENU

9.8.1 LANGUAGE

Function	• Sets the language of the Control Panel display.
Use	• To change the language of the Control Panel display at user's option.
Setting /procedure	• The default setting is "ENGLISH." "ENGLISH" / FRENCH / GERMAN / SPANISH / ITALIAN / PORTUGUESE / CZECH / JAPANEASE / KOREAN / CHINESE (SHIMPLIFIELD) / CHINESE (TRADITIONAL) / DUTCH

9.8.2 EMULATION

A. DEF. EMULATION

Function	• To set the PDL (Page Description Language).
Use	• To fix the PDL as necessary. It usually switches automatically.
Setting /procedure	• The default setting is AUTO. "AUTO" POSTSCRIPT PCL

B. POSTSCRIPT
(1) WAIT TIMEOUT

Function	• Sets the amount of time to wait for a PostScript file.
Use	• To set the amount of time to wait for a PostScript file before the print job times out.
Setting /procedure	*1.* Select [WAIT TIMEOUT] and press the MENU/SELECT key. *2.* Select desired time with the Up key△/Down key▽ and press the MENU/SELECT key. • The default setting is 0 second. "0" second to 300 seconds.

(2) PS ERROR PAGE

Function	• Specifies whether error pages are printed at the time of a PostScript error.

Use	• To specify whether error pages are printed after a PostScript error occurs.
	    ON : Error pages are printed at the time of PostScript error.
	    OFF : Error pages are not printed at the time of PostScript error.

Setting /procedure	• The default setting is OFF. ON "OFF"

(3) PS PROTOCOL

Function	• Sets the protocol to be used for PostScript printing.

Use	• To use the protocol when printing by PostScript printing.
	    AUTO : Automatic recognition
	    NORMAL : ASCII letter code data
	    BINARY : Binary data

Setting /procedure	• The default setting is AUTO. "AUTO" NORMAL BINARY

C. PCL
(1) CR/LF MAPPING

Function	• Sets the linefeed code for PCL printing.
Use	• To specify the type of linefeed to be used for PCL printing.
Setting /procedure	• The default setting is "CR=CR LF=LF." "CR=CR LF=LF" CR=CRLF LF=LF CR=CR LF=LFCR CR=CRLF LF=LFCR

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(2) LINES PER PAGE

Function	• Sets the lines per page for PCL printing.
Use	• To set the number of lines to be printed per page for PCL jobs.
Setting /procedure	*1.* Select [LINES PER PAGE] and press the MENU/SELECT key. *2.* Select desired line number with the Up key△/Down key▽ and press the MENU/ SELECT key. • The default setting is 60 lines. 5 lines to 128 lines

(3) FONT SOURCE
\<FONT NUMBER\>

Function	• Sets the PCL font to be used for PCL printing.
Use	• To set the font to be used for printing PCL jobs.
Setting /procedure	*1.* Select [FONT NUMBER] and press the MENU/SELECT key. *2.* Select desired font with the Up key△/Down key▽ and press the MENU/SELECT key. • The default setting is 0. "0" to 102 **NOTE** • **According to the selected [FONT NUMBER], [PITCH SIZE] or [POINT SIZE] setting is available.** • **Details on the Font which corresponds to the Font No. can be checked by the PCL Font list.** P.102

\<PITCH SIZE\>

Function	• Sets the pitch size of the PCL font for PCL printing.
Use	• To set the pitch size of the font to be used for printing PCL jobs.
Setting /procedure	*1.* Select [PITCH SIZE] and press the MENU/SELECT key. *2.* Select desired pitch size with the Up key△/Down key▽ and press the MENU/ SELECT key. • The default setting is 10.00 pt. 0.44 pt to 99.99 pt **NOTE** • **When one of the following "FONT NUMBERs" is selected, "PITCH SIZE" setting is available.** **FONT NUMBER: 0 to 5, 21 to 23, 54 to 57, 81, 82.**

Adjustment / Setting

<SYMBOL SET>

Function	• Sets the symbol set for PCL printing.
Use	• To set the symbol set to be used for printing PCL jobs.
Setting /procedure	• The default setting is PC8. "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 / ARABIC8 / HPWARA / PC864ARA / HEBREW7 / HEBREW8 / ISOHEB / PC862HEB / ISOCYR / PC866CYR / WINCYR / PC866UKR / GREEK8 / WINGRK / PC851GRK / PC8GRK / ISOGRK

9.8.3 PAPER

A. DEFAULT PAPER
(1) PAPER SIZE

Function	• Sets the default media size.
Use	• To set the default media size.
Setting /procedure	For North America • The default setting is LETTER. For other destinations • The default setting is A4. "LETTER" /11x17 /LEGAL /EXECUTIVE /A3WIDE /A3 /"A4" /A5 /A6 /B4(JIS) /B5(JIS) / B6(JIS) /GOVT LETTER /STATEMENT /FOLIO /SP FOLIO /UK QUARTO /FOOLSCAP /GOVT LEAGAL /16K /12x18 /11x14 /4x6 /D8K /KAI8 /KAI 16 /KAI 32 /ENV C5 /ENV C6 /ENV DL /ENV MONARCH /ENV CHOU#3 /ENV CHOU#4 /B5(ISO) /ENV #10 / ENV YOU#4 /JPOST /JPOST-D /CUSTOM

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Adjustment / Setting

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(2) CUSTOM SIZE

Function	• Sets the custom media width and length.
Use	• To set the width and length of the custom media size.
Setting /procedure	*1.* Select [CUSTOM SIZE] and press the MENU/SELECT key. *2.* Select [WIDTH] or [LENGTH] and press MENU /SELECT key. *3.* Set desired number with the Up key△/Down key▽ and press the MENU/SELECT key. For North America • The default setting of WIDTH is 8.50 inches. WIDTH: 3.55 inches to 12.25 inches. • The default setting of LENGTH is 11.00 inches. LENGTH: 5.52 inches to 18.00 inches. For other destinations • The default setting of WIDTH is 210 mm. WIDTH: 90 mm to 311 mm. • The default setting of LENGTH is 297 mm. LENGTH: 140 mm to 457 mm. **NOTE** • **By changing the [UNIT OF MEASURE] setting (INCHES/MILLIMETERS), the custom size units are changed.**

(3) PAPER TYPE

Adjustment / Setting

Function	• Sets the default media type.
Use	• To set the default media type.
Setting /procedure	• The default setting is PLAIN PAPER. "PLAIN PAPER" /RECYCLED /THICK 1 /THICK 2 /THICK 3 /LABEL /TRANSPARENCY /TRANSPARENCY 2 /ENVELOPE /POSTCARD /LETTERHEAD / GLOSSY

B. DETECT PAPER SIZE

Function	• Sets the standard for the automatic paper size detection.
Use	• To switch the criteria for the automatic paper size detection from Inch to Milli Meter.
Setting /procedure	For North America • The default setting of WIDTH is INCHE SIZE. For other destinations • The default setting of WIDTH is MILLIMETER SIZE. 　　　　　　　INCHE SIZE　　　　　　　　　　　　MILLIMETER SIZE

C. UNIT OF MEASURE

Function	• Sets the measurement units for CUSTOM SIZE mode. • Sets the measurement units for SYS DEFAULT MENU/DEFAULT PAPER/CUSTOM SIZE mode.
Use	• To change media measurement units.
Setting /procedure	For North America • The default setting is INCHES. For other destinations • The default setting is MILLIMETERS. INCHES MILLIMETERS

9.8.4 STARTUP OPTIONS

A. DO STARTUP PAGE

Function	• Sets whether a startup page is printed at startup of the printer.

Use	• To specify whether a startup page is printed.
	    ON : Start up page is printed at startup the printer.
	    OFF : Start up page is not printed at startup of the printer.

Setting /procedure	• The default setting is ON. "ON" OFF

9.8.5 AUTO CONTINUE

Function	• At the time of the following Operator Call, continues auto printing by ignoring the media type or size. • "PAPER EMPTY" (except "MANUAL FEED"), "xxxx SIZE ERROR", "xxxx TYPE ERROR".

Use	• To specify whether printing should continue when the specified media size and type are not available.
	    ON : Auto continuous printing is ON.
	    OFF : Auto continuous printing is OFF.

Setting /procedure	• The default setting is OFF. ON "OFF"

9.8.6 HOLD JOB TIMEOUT

Function	• Sets the amount of time before a job saved temporarily in the printer is automatically deleted.
Use	• To change the amount of time a job is held before being deleted.
Setting /procedure	• The default setting is DISABLE (No auto delete.). "DISABLE" 1 hour 4 hours 1 day 1 week **NOTE** • **This menu is available only when an optional Hard Disk Kit is installed.**

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Adjustment / Setting

9.8.7   ENERGY SAVER

Function	• Sets whether the printer should go into Energy Saver mode when not printing or processing a print job and when the Control Panel is not being used. To set the amount of time before Energy Saver mode is activated, use the "ENERGY SAVER TIME" menu.
	• Energy Saver mode is automatically canceled when any of the following operations is performed:
	    The machine is restarted.
	    A print job is received.
	    Any of the keys on the Control Panel is pressed.

Use	• To specify whether Energy Saver mode is to be used.
Setting /procedure	• The default setting is DEEP SLEEP. "DEEP SLEEP" LIGHT SLEEP OFF

9.8.8   ENERGY SAVER TIME

Function	• Sets the amount of time before the machine enters Energy Saver mode after the last print is received or the last key operated.
Use	• To change the amount of time before the machine enters Energy Saver mode.
Setting /procedure	• The default setting is 30 minutes. 15 minutes "30 minutes" 1 hour 3 hours **NOTE** • **This menu is available only when [ENERGY SAVER] is not set to [OFF].**

9.8.9   MENU TIMEOUT

Function	• Sets the amount of time before the Control Panel returns to the status screen from menu mode and the help display.
Use	• To set the amount of the time before the Control Panel returns to the status screen from the menu and the help display.
Setting /procedure	• The default setting is 2 minutes. OFF 1 minute "2 minutes"

9.8.10   LCD BRIGHTNESS

Function	• Sets the brightness of the Control Panel LCD display.
Use	• To set the brightness of the Control Panel LCD display.
Setting /procedure	The default setting is 0. -3 -2 -1 "0" +1 +2 +3

9.8.11 SECURITY

A. CHANGE PASSWORD

Function	• Sets the password used for the LOCK PANEL function.

Use	• To change the password used for the LOCK PANEL function.
	    0000 : Panel lock function is OFF.
	    0001 to FFFF : Valid password for panel lock function.

Setting /procedure	*1.* Select [CHANGE PASSWORD] and press the MENU/SELECT key. *2.* Set desired password (first digit) with the Up key△/Down key▽ and press the Right key▷. *3.* Repeat the above procedures to set up to fourth digit password. • The default setting is 0000. "0000" to FFFF **NOTE** • **Make sure to set the password to something other than "0000" when the [LOCK PANEL] function is set to [ON].** • **If you forget the password, it can be initiated (0000) with [SERVICE MENU/ RESTORE PASSWORD].** P.172

B. LOCK PANEL

Function	• Protects the Menu (except the Service menu) with a password.

Use	• To make the Menu (except the Service menu) impossible to change unless the correct password is entered.
	    OFF : Panel Lock function is OFF.
	    MINIMUM : Panel Lock function is ON. Protect the operation of [INTERFACE MENU], [SYS DEFAULT MENU].
	    ON : Panel Lock function is ON.
	                     Protect the operation of [PROF/PRINT MENU], [PRINT MENU], [PAPER MENU], [QUALITY MENU], [INTERFACE MENU], [SYS DEFAULT MENU], [CANCEL JOB MENU].

Setting /procedure	• The default setting is "OFF." "OFF" MINIMUM ON

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Adjustment / Setting

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9.8.12 CLOCK

A. DATE

Function	• Sets the date of the printer's built-in clock.
Use	• To change the date of the printer's built-in clock.
Setting /procedure	DATE (DD.MM.YY): For Europe DATE (MM.DD.YY): For North America DATE(YY.MM.DD): For Japan, Asia, China The following shows how to set DATE (DD.MM.YY). *1.* Select [CLOCK] and press the MENU/SELECT key. *2.* Select [DATE (DD.MM.YY)] and press the MENU/SELECT key. *3.* Set date with the Up key△/Down key▽ and press the Right key▷. *4.* Repeat the above procedures to set month and year. *5.* Press the MENU/SELECT key. DD : 01 to 31 MM : 01 to 12 YY : 2005 to 2032

B. TIME

Function	• Sets the time of the printer's built-in clock.
Use	• To change the time of the printer's built-in clock.
Setting /procedure	*1.* Select [CLOCK] and press the MENU/SELECT key. *2.* Select [TIME] and press the MENU/SELECT key. *3.* Set hour with the Up key△/Down key▽ and press the Right key▷. *4.* Repeat the above procedures to set Minute. *5.* Press the MENU/SELECT key.

9.8.13 HDD FORMAT

Adjustment / Setting

Function	• Initializes the format of the optional Hard Disk Kit.

Use	• To initialize the format of the optional Hard Disk Kit.
	    USER AREA ONLY : Initialize only user area
	    ALL : Initialize all area

Setting /procedure	*1.* Select [HDD FORMAT] and press the MENU/SELECT key. *2.* Select desired initialization method and press the MENU/SELECT key. *3.* [ARE YOU SURE?] is displayed. *4.* By pressing the MENU/SELECT key, initialization starts. By pressing the CANCEL key without pressing the MENU/SELECT key, the start of initialization can be cancelled. *5.* The printer restarts and the hard disk is initialized. Once the initialization starts, it cannot be cancelled. • The default setting is USER AREA ONLY. USER AREA ONLY ALL **NOTE** **• This menu is available only when an optional Hard Disk Kit is installed.**

9.8.14   CARD FORMAT

Function	• Initializes the format of the optional Compact Flash card.
Use	• To initialize the format of the optional Compact Flash card.
Setting /procedure	*1.* Select [CARD FORMAT] and press the MENU/SELECT key. *2.* [ARE YOU SURE?] is displayed. *3.* By pressing the MENU/SELECT key, initialization starts. By pressing the CANCEL key without pressing the MENU/SELECT key, the start of initialization can be cancelled. *4.* The printer restarts and the hard disk is initialized. Once the initialization starts, it cannot be cancelled. **NOTE** • **This menu is available only when an optional Compact Flash card is installed.**

9.8.15   RESTORE DEFAULTS

Function	• Restores the factory default of each setting.

Use	• To restore the defaults of all settings.
	  RESTORE NETWORK : Restore the default for [INTERFACE MENU/ETHERNET] setting.
	  RESTORE PRINTER : Restore the default for [PAPER MENU], [QUALITY MENU], [SYS DEFAULT MENU] and [CAMERA DIRECT] setting.
	  RESTORE ALL : Restore defaults for all settings.

Setting /procedure	*1.* Select [RESTORE DEFFAULTS] and press the MENU/SELECT key. *2.* Select desired mode and press the MENU/SELECT key. *3.* [ARE YOU SURE?] is displayed. *4.* By pressing the MENU/SELECT key, initialization starts. By pressing the CANCEL key without pressing the MENU/SELECT key, the start of initialization can be cancelled. *5.* The printer restarts and the hard disk is initialized. Once the initialization starts, it cannot be cancelled. • The default setting is RESTORE NETWORK. RESTORE NETWORK RESTORE PRINTER RESTORE ALL

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Adjustment / Setting

List of reset items 1

Item			Reset Item			Initial Value	Ref. Page
			RESTORE NETWORK	RESTORE PRINTER	RESTORE ALL		
PAPER MENU	PAPER SOURCE	DEFAULT TRAY	-	Reset	Reset	TRAY2	P.103
		TRAY1 PAPER SIZE	-	Reset	Reset	Letter	P.103
		TRAY1 CUSTOM SIZE	-	Reset	Reset	WIDTH: 8.5inches LENGTH: 11inches	P.104
			-	Reset	Reset	WIDTH:210mm LENGTH:297mm	
		TRAY1 PAPER TYPE	-	Reset	Reset	PLAIN PAPER	P.104
		TRAY2 PAPER SIZE	-	Reset	Reset	Letter	P.105
		TRAY2 CUSTOM SIZE	-	Reset	Reset	WIDTH: 8.5inches LENGTH: 11inches	P.106
			-	Reset	Reset	WIDTH:210mm LENGTH:297mm	
		TRAY2 PAPER TYPE	-	Reset	Reset	PLAIN PAPER	P.106
		TRAY2 SIZE SETTING	-	Reset	Reset	AUTO	P.107
		TRAY 3 to 5 PAPER TYPE	-	Reset	Reset	PLAIN PAPER	P.107
		TRAY CHAINING	-	Reset	Reset	ON	P.107
		DUPLEX	-	Reset	Reset	OFF	P.108
		COPIES	-	Reset	Reset	1	P.108
		COLLATE	-	Reset	Reset	OFF	P.109

*: Destination items. For details, see the page referenced.

List of reset items 2

Item			Reset Item			Initial Value	Ref. Page
			RESTORE NETWORK	RESTORE PRINTER	RESTORE ALL		
QUALITY MENU	COLOR MODE		-	Reset	Reset	COLOR	P.109
	BRIGHTNESS		-	Reset	Reset	0 %	P.109
	PCL SETTING	CONTRAST	-	Reset	Reset	0 %	P.109
		IMAGE PRINTING	RGB SOURCE	-	Reset	Reset	sRGB	P.109
			RGB INTENT	-	Reset	Reset	PHOTO-GRAPHIC	P.110
			RGB GRAY	-	Reset	Reset	COMPOSITE BLACK	P.110
			HALFTONE	-	Reset	Reset	DETAIL	P.110
		TEXT PRINTING	RGB SOURCE	-	Reset	Reset	sRGB	P.110
			RGB INTENT	-	Reset	Reset	VIVID	P.111
			RGB GRAY	-	Reset	Reset	BLACK AND GRAY	P.111
			HALFTONE	-	Reset	Reset	LINE ART	P.111
		GRAPHICS PRINTING	-	Reset	Reset	AS IMAGE	P.111
	PS SETTING	IMAGE PRINTING	RGB SOURCE	-	Reset	Reset	sRGB	P.112
			RGB INTENT	-	Reset	Reset	PHOTO-GRAPHIC	P.112
			RGB GRAY	-	Reset	Reset	COMPOSITE BLACK	P.112
			DESTINA-TION PROF	-	Reset	Reset	AUTO	P.112
			HALFTONE	-	Reset	Reset	DETAIL	P.113
		TEXT PRINTING	RGB SOURCE	-	Reset	Reset	sRGB	P.113
			RGB INTENT	-	Reset	Reset	VIVID	P.113
			RGB GRAY	-	Reset	Reset	BLACK AND GRAY	P.113
			DESTINA-TION PROF	-	Reset	Reset	AUTO	P.114
			HALFTONE	-	Reset	Reset	LINE ART	P.114
		GRAPHICS PRINTING	RGB SOURCE	-	Reset	Reset	sRGB	P.114
			RGB INTENT	-	Reset	Reset	VIVID	P.114
			RGB GRAY	-	Reset	Reset	BLACK AND GRAY	P.115
			DESTINA-TION PROF	-	Reset	Reset	AUTO	P.115
			HALFTONE	-	Reset	Reset	AS IMAGE	P.115

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Item				Reset Item			Initial Value	Ref. Page
				RESTORE NETWORK	RESTORE PRINTER	RESTORE ALL		
QUALITY MENU	PS SETTING	SIMULA-TION	SIMULA-TION PROF	-	Reset	Reset	NONE	P.115
			SIMULA-TION INTENT	-	Reset	Reset	RELATIVE COLOR	P.115
			CMYK GRAY	-	Reset	Reset	COMPOSITE BLACK	P.116
	CALIBRA-TION	TONE CALIBRATION		-	Reset	Reset	ON	P.116
		CMYK DENSITY	CYAN	-	Reset	Reset	0	P.116
			MAGENTA	-	Reset	Reset	0	P.116
			YELLOW	-	Reset	Reset	0	P.117
			BLACK	-	Reset	Reset	0	P.117
	COLOR SEPARATION			-	Reset	Reset	OFF	P.117

*: Destination items. For details, see the page referenced.

List of reset items 3

Item			Reset Item			Initial Value	Ref. Page
			RESTORE NETWORK	RESTORE PRINTER	RESTORE ALL		
CAMERA DIRECT	PAPER SOURCE		-	Reset	Reset	TRAY2	P.117
	LAYOUT		-	Reset	Reset	1-UP	P.118
	PAPER MARGIN		-	Reset	Reset	STANDARD	P.118
	IMAGE QUALITY	BRIGHTNESS	-	Reset	Reset	0 %	P.118
		CONTRAST	-	Reset	Reset	0 %	P.118
		RGB SOURCE	-	Reset	Reset	sRGB	P.118
		RGB INTENT	-	Reset	Reset	PHOTO-GRAPHIC	P.119
		RGB GRAY	-	Reset	Reset	COMPOS-ITE BLACK	P.119
		HALFTONE	-	Reset	Reset	DETAIL	P.119

Adjustment / Setting

List of reset items 4

Item				Reset Item			Initial Value	Ref. Page
				RESTORE NETWORK	RESTORE PRINTER	RESTORE ALL		
INTER-FACE MENU	JOB TIMEOUT			Reset	-	Reset	15 seconds	P.119
	ETHERNET	TCP/IP	ENABLE	Reset	-	Reset	YES	P.120
			IP ADDRESS	Reset	-	Reset	000.000. 000.000	P.120
			SUBNET MASK	Reset	-	Reset	255.255. 000.000	P.120
			DEFAULT GATEWAY	Reset	-	Reset	000.000. 000.000	P.121
			DHCP/ BOOTP	Reset	-	Reset	ON	P.121
			TELNET	Reset	-	Reset	ENABLE	P.121
		NETWARE		Reset	-	Reset	YES	P.121
		APPLE TALK		Reset	-	Reset	YES	P.122
		SPEED/DUPLEX		Reset	-	Reset	AUTO	P.122
	CAMERA DIRECT			Reset	-	Reset	ENABLE	P.122

*: Destination items. For details, see the page referenced.

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List of reset items 5

Item			Reset Item			Initial Value	Ref. Page
			RESTORE NETWORK	RESTORE PRINTER	RESTORE ALL		
SYS DEFAULT MENU	LANGUAGE		-	Reset	Reset	ENGLISH	P.122
	EMULA-TION	DEF. EMULATION	-	Reset	Reset	AUTO	P.123
		POST-SCRIPT	WAIT TIM-EOUT	-	Reset	Reset	0	P.123
			PS ERROR PAGE	-	Reset	Reset	OFF	P.123
			PS PRO-TOCOL	-	Reset	Reset	AUTO	P.123
		PCL	CR/LF MAPPING	-	Reset	Reset	CR=CR LF=LF	P.123
			LINES PER PAGE	-	Reset	Reset	60	P.124
			FONT SOURCE/ FONT NUMBER	-	Reset	Reset	0	P.124
			FONT SOURCE/ PITCH SIZE	-	Reset	Reset	10.00	P.124
			FONT SOURCE/ SYMBOL SET	-	Reset	Reset	PC8	P.124
	PAPER	DEFAULT PAPER	PAPER SIZE	-	Reset	Reset	LETTER	P.125
			CUSTOM SIZE/ WIDTH	-	Reset	Reset	8.5 inches	P.126
			CUSTOM SIZE/ LENGTH	-	Reset	Reset	11.00 inches	
			PAPER TYPE	-	Reset	Reset	PLAIN PAPER	P.126
		DETECT PAPER SIZE		-	Reset	Reset	INCHE SIZE	P.126
		UNIT OF MEASURE		-	Reset	Reset	INCHES	P.127
	STARTUP OPTIONS	DO STARTUP PAGE		-	Reset	Reset	ON	P.127
	AUTO CONTINUE		-	Reset	Reset	ON	P.127
	HOLD JOB TIMEOUT		-	Reset	Reset	DISABLE	P.127
	ENERGY SAVER		-	Reset	Reset	ON	P.128
	ENERGY SAVER TIME		-	Reset	Reset	30 minutes	P.128
	MENU TIMEOUT		-	Reset	Reset	2 minutes	P.128
	LCD BRIGHTNESS		-	Reset	Reset	0	P.128
	SECURITY	CHANGE PASSWORD	-	Reset	Reset	0000	P.129
		LOCK PANEL	-	Reset	Reset	OFF	P.129
	HDD FORMAT		-	Reset	Reset	USER AREA ONLY	P.130

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Item				Reset Item			Initial Value	Ref. Page
				RESTORE NETWORK	RESTORE PRINTER	RESTORE ALL		
SYS DEFAULT MENU	CARD FORMAT			-	Reset	Reset	USER AREA ONLY	P.131
	RESTORE DEFAULTS			-	Reset	Reset	RESTORE NETWORK	P.131
	ENABLE WARNING	PAPER EMPTY	TRAY 1	-	Reset	Reset	OFF	P.138
			TRAY 2	-	Reset	Reset	ON	
			TRAY 3	-	Reset	Reset	ON	
			TRAY 4	-	Reset	Reset	ON	
			TRAY 5	-	Reset	Reset	ON	
		TONER LOW		-	Reset	Reset	ON	P.139
		I-UNIT LOW		-	Reset	Reset	ON	P.139
	IMAGING UNIT LIFE			-	Reset	Reset	STOP	P.140

List of reset items 6

Item		Reset Item			Initial Value	Ref. Page
		RESTORE NETWORK	RESTORE PRINTER	RESTORE ALL		
Page-Scope Web Connection	Admin Password	-	Reset	Reset	administrator	-
	Refresh Rate	-	Reset	Reset	30 sec.	-
	Contact Name	-	Reset	Reset	KONICA MINOLTA Customer Support	-
	Contact Information	-	Reset	Reset	http://printer.konicaminolta.com/	-
	Contact Utility Link	-	Reset	Reset	http://pagescope.com/	-
	Corporate URL	-	Reset	Reset	http://printer.konicaminolta.com/	-
	Supplies and Accessories	-	Reset	Reset	http://www.q-shop.com/	-
	Product Help URL	-	Reset	Reset	http://printer.konicaminolta.com/	-
	Auto IP	Reset	-	Reset	DHCP	-
	WINS/NetBIOS Resolution	Reset	-	Reset	Checked	-
	** NetBIOS Name	Reset	-	Reset	MC7450-XXXXXX	-
	Domain/Workgroup	Reset	-	Reset	WORK-GROUP	-
	Use DHCP	Reset	-	Reset	Checked	-
	IPP Config Printer Name	Reset	-	Reset	Blank	-
	IPP Config Printer Location	Reset	-	Reset	Blank	-

*: Destination items. For details, see the page referenced.
**: XXXXXX are the final 6 digits of the printer's MAC address.

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Adjustment / Setting

9.8.16   ENABLE WARNING

A. PAPER EMPTY
(1)   TRAY1

Function	• Specifies whether a [TRAY 1 Paper Empty] (Manual Feed Tray) is displayed as a Normal message when it is empty.

Use	• To specify whether to display a [TRAY 1 Paper Empty] message as a Normal message.
	    ON : Paper empty message is displayed on Normal message when Tray is empty.
	    OFF : Paper empty message is not displayed on Normal message when Tray is empty.

Setting /procedure	• The default setting is OFF. "OFF" ON

(2)   TRAY2

Function	• Specifies whether a [TRAY 2 Paper Empty] is displayed as a Normal message when it is empty.

Use	• To specify whether to display a [TRAY 2 Paper Empty] message as a Normal message.
	    ON : Paper empty message is displayed on Normal message when Tray is empty.
	    OFF : Paper empty message is not displayed on Normal message when Tray is empty.

Setting /procedure	• The default setting is ON. OFF "ON"

(3)   TRAY3

Function	• Specifies whether a [TRAY 3 Paper Empty] is displayed as a Normal message when it is empty.

Use	• To specify whether to display a [TRAY 3 Paper Empty] message as a Normal message.
	    ON : Paper empty message is displayed on Normal message when Tray is empty.
	    OFF : Paper empty message is not displayed on Normal message when Tray is empty.

Setting /procedure	• The default setting is ON. OFF "ON" **NOTE** • **This menu is available only when an optional Lower Feeder Unit is installed.**

(4) TRAY4

Function	• Specifies whether a [TRAY 4 Paper Empty] is displayed as a Normal message when it is empty.
Use	• To specify whether to display a [TRAY 4 Paper Empty] message as a Normal message. 　　ON : Paper empty message is displayed on Normal message when Tray is empty. 　　OFF : Paper empty message is not displayed on Normal message when Tray is empty.
Setting /procedure	• The default setting is ON. 　　　　　　　OFF　　　　　　　　　　　ON **NOTE** • **This menu is available only when an optional Lower Feeder Unit is installed.**

(5) TRAY5

Function	• Specifies whether a [TRAY 5 Paper Empty] is displayed as a Normal message when it is empty.
Use	• To specify whether to display a [TRAY 5 Paper Empty] message as a Normal message. 　　ON : Paper empty message is displayed on Normal message when Tray is empty. 　　OFF : Paper empty message is not displayed on Normal message when Tray is empty.
Setting /procedure	• The default setting is ON. 　　　　　　　OFF　　　　　　　　　　　ON **NOTE** • **This menu is available only when an optional Lower Feeder Unit is installed.**

B. TONER LOW

Function	• Specifies whether or not a warning appears when the toner is about to run out.
Use	
Setting /procedure	• The default setting is ON. 　　　　"ON"　　　　　　　　　　　OFF

C. I-UNIT LOW

Function	• Specifies whether or not a warning appears when the Imaging Unit is about to reach the end of its service life.
Use	
Setting /procedure	• The default setting is ON. 　　　　"ON"　　　　　　　　　　　OFF

9.8.17   IMAGING UNIT LIFE

Function	• Specifies whether printing stops or continues when a Imaging Unit service life has been reached.

Use	• To specify whether printing should stop or continue printing when a Imaging Unit service life has been reached.
	  STOP : Print stops when a Imaging Unit service life has been reached. Print cannot be started until the Imaging Unit is exchanged.
	  CONTINUE: Print continues even if a Imaging Unit service life has been reached. Print is available, however the printing with proper image is impossible.

Setting /procedure	• The default setting is STOP. "STOP" CONTINUE

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Adjustment / Setting

9.9   MAINTENANCE MENU

9.9.1   How to enter the MAINTENANCE MENU

A. Procedure

1. Display [MAINTENANCE MENU] on the menu screen and press the MENU/SELECT key.
2. [ENTER PASSWORD] message is displayed.
3. Set the first digit of user password with the Up key△/Down key▽ and press the Right key▷.
4. Repeat the above procedures to set up to fourth digit of password.
   (The initial setting for user password is [0000].)
5. Press the MENU/SELECT key.

B. Exiting

• Press the CANCEL key.

9.9.2   PRINT MENU

A. EVENT LOG

Function	• Prints the EVENT LOG.

Use	• To check the jams/troubles that occurred, and history of replacing the consumables, etc.
	  The items that can be checked are as follows.
	
	  Paper Jam Error : The number of jams occurred and its history
	  Engine Fatal Error : The history of troubles which caused Service Call
	  Fuser Unit : The history of replacing the Fusing Unit
	  Transfer Belt : The history of replacing the Transfer Belt
	  Toner Cartridge : The history of replacing the Toner Cartridge
	  Imaging Unit : The history of replacing the Imaging Unit
	  Trouble Counter : Troubles counted at each section

Setting /procedure	1. Select [EVENT LOG] and press the MENU/SELECT key. 2. Select [PRINT] and press the MENU/SELECT key.

B. HALFTONE 64

Function	• Prints the halftone pattern with 25 % level for CMYK respectively.
Use	• To check the unevenness of the density and the pitch.
Setting /procedure	1. Set the A3 or 11 x 18 paper on the Tray. 2. Select [HALFTONE 64] and press the MENU/SELECT key. 3. Select desired color with the Up key△/Down key▽ and press the MENU/SELECT key. 4. Select [PRINT] and press the MENU/SELECT key.

C. HALFTONE 128

Function	• Prints the halftone pattern with 50 % level for CMYK respectively.
Use	• To check the unevenness of the density and the pitch.
Setting /procedure	1. Set the A3 or 11 x 18 paper on the Tray. 2. Select [HALFTONE 128] and press the MENU/SELECT key. 3. Select desired color with the Up key△/Down key▽ and press the MENU/SELECT key. 4. Select [PRINT] and press the MENU/SELECT key.

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D. HALFTONE 256

Function	• Prints the halftone pattern with 100 % level for CMYK respectively.
Use	• To check the unevenness of the density and the pitch.
Setting /procedure	1. Set the A3 or 11 x 18 paper on the Tray. 2. Select [HALFTONE 256] and press the MENU/SELECT key. 3. Select desired color with the Up key△/Down key▽ and press the MENU/SELECT key. 4. Select [PRINT] and press the MENU/SELECT key.

E. GRADATION

Function	• Prints the Gradation pattern.
Use	• To check the gradation reproductively.
Setting /procedure	1. Set the A3 or 11 x 18 paper on the Tray. 2. Select [GRADATION] and press the MENU/SELECT key. 3. Select [PRINT] and press the MENU/SELECT key.

9.9.3   ALIGNMENT

A. 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.
	  THICK1 : Adjust the head margin of thick paper 1.
	  THICK2 : Adjust the head margin of thick paper 2.
	  THICK3 : Adjust the head margin of thick paper 3.
	  ENVELOPE : Adjust the head margin of envelope.
	  TRANSPARENCY: Adjust the head margin of transparency.

Setting /procedure	1. Select [TOP ADJUSTMENT] and press the MENU/SELECT key. 2. Select desired paper type and press the MENU/SELECT key. 3. Select desired adjustment amount with the Up key△/Down key▽ and press the MENU/SELECT key. • The default setting is "0." -15 to +15 (1 step: 0.1 mm)

B. LEFT ADJUSTMENT

Function	• Adjusts the left margin of media for single-sided printing.

Use	• To correct a misaligned print image.
	  LEFT ADJ TRAY 1: Adjust the left margin of paper fed from Tray 1 (Manual tray.)
	  LEFT ADJ TRAY 2: Adjust the left margin of paper fed from Tray 2.
	  LEFT ADJ TRAY 3: Adjust the left margin of paper fed from Tray 3.
	  LEFT ADJ TRAY 4: Adjust the left margin of paper fed from Tray 4.
	  LEFT ADJ TRAY 5: Adjust the left margin of paper fed from Tray 5.

Setting /procedure	1. Select [LEFT ADJUSTMENT] and press the MENU/SELECT key. 2. Select desired tray and press the MENU/SELECT key. 3. Select desired adjustment amount with the Up key△/Down key▽ and press the MENU/SELECT key. • The default setting is "0." -15 to +15 (1 step: 0.1 mm)

C. LEFT ADJ DUPLEX

Function	• Adjusts the left margin of media for double-sided printing.

Use	• To correct a misaligned print image.
	    LEFT ADJ TRAY 1: Adjust the left margin of duplex print paper fed from Tray 1
	                      (Manual tray.)
	    LEFT ADJ TRAY 2: Adjust the left margin of duplex print paper fed from Tray 2.
	    LEFT ADJ TRAY 3: Adjust the left margin of duplex print paper fed from Tray 3.
	    LEFT ADJ TRAY 4: Adjust the left margin of duplex print paper fed from Tray 4.
	    LEFT ADJ TRAY 5: Adjust the left margin of duplex print paper fed from Tray 5.

Setting /procedure	*1.* Select [LEFT ADJ DUPLEX] and press the MENU/SELECT key. *2.* Select desired tray and press the MENU/SELECT key. *3.* Select desired adjustment amount with the Up key△/Down key▽ and press the MENU/SELECT key. • The default setting is "0." -15 to +15 (1 step: 0.1 mm)

D. TRANSFER POWER
(1) SIMPLEX PASS

Functions	• Adjust the 2nd image transfer output (ATVC) on the single-sided pages for each paper type.
Use	• To use when the transfer failure at the trailing edge occurs.
Adjustment Range	• The default setting is 0. "0" (-5 to +5)
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.* Select [TRANSFER POWER] and press the MENU/SELECT key. *2.* Select [SIMPLEX PASS] and press the MENU/SELECT key. *3.* Select desired paper type with the Up key△/Down key▽ and press the MENU/ SELECT key. *4.* Select desired setting value with the Up key△/Down key▽ and press the MENU/ SELECT key.

(2) DUPLEX PASS

Functions	• Adjust the 2nd image transfer output (ATVC) on the duplexed pages for each paper type.
Use	• To use when the transfer failure at the trailing edge occurs.
Adjustment Range	• The default setting is 0. "0" (-5 to +5)
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. Select [TRANSFER POWER] and press the MENU/SELECT key. 2. Select [DUPLEX PASS] and press the MENU/SELECT key. 3. Select desired paper type with the Up key△/Down key▽ and press the MENU/ SELECT key. 4. Select desired setting value with the Up key△/Down key▽ and press the MENU/ SELECT key.

E. IMG ADJ THICK

Functions	• To fine-adjust density of printed images of each color for thick paper and OHP transparencies.
Use	• To change the density of the printed image for each color with thick paper and OHP transparencies.
Adjustment Range	• The default setting is 0. "0" (-5 to +5)
Adjustment Instructions	Light color: increase the setting value Dark color: decrease the setting value
Setting/ Procedure	1. Select [IMG ADJ THICK] and press the MENU/SELECT key. 2. Select desired color with the Up key△/Down key▽ and press the MENU/SELECT key. 3. Select desired setting value with the Up key△/Down key▽ and press the MENU/ SELECT key.

F. IMG ADJ BLACK

Functions	• To fine-adjust the density of the printed image for a black printing.
Use	• To vary the density of the printed image of a black printing.
Adjustment Range	• The default setting is 0. "0" (-2 to +2)
Adjustment Instructions	If the black is light, increase the setting value. If the black is dark, decrease the setting value.
Setting/ Procedure	1. Select [IMG ADJ BLACK] and press the MENU/SELECT key. 2. Select desired setting value with the Up key△/Down key▽ and press the MENU/ SELECT key.

G. FUSER LOOP ADJ

Functions	• To vary the timing to start fusing loop processing and adjust the fusing loop size at Envelope printing.
Use	• To be used when paper wrinkle or transfer misalignment occur at Envelope printing.
Adjustment Range	• The default setting is 0. "0" (-2 to +2)
Adjustment Instructions	Adjustment in +: Delay the timing to start fusing loop processing Adjustment in -: Put ahead the timing to start fusing loop processing
Setting/ Procedure	*1.* Select [FUSER LOOP ADJ] and press the MENU/SELECT key. *2.* Select desired setting value with the Up key△/Down key▽ and press the MENU/ SELECT key.

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Adjustment / Setting

10. Adjustment Item List

Adjustment/Setting Items				No	Change Paper (Tray 1) Kind	Install Lower Feeder Unit	Install Duplex Option	Replace Transfer Belt	Replace PH Unit	Replace Mechanical Control Board	Replace Controller Board	Replace IDC/Registration Sensor/1,2	RESTORE DEFAULTS	Execute F/W update
MENU	QUALITY MENU	CALIBRATION	AIDC PROCESS	1				○						
	SERVICE MENU	FIRMWARE VERSION	CONTROLLER EW	2							(2)			○
			ENGINE F/W	3						(3)				○
			BOOT F/W	4										○
		ALIGNMENT	TOP ADJUSTMENT	5	○	○			(2)					
			LEFT ADJUSTMENT	6		○			(3)					
			LEFT ADJ DUPLEX	7			○							
Re-entry				8									○	
PH Skew Adjustment				9					(1)					
F/W Update				10						(2)	(1)			
Remounting of Parameter Chip (PWB-M)				11						(1)				
Replace Transfer Belt				12								○		

* This table shows the adjustment items that are required when a part of the machine has been replaced. Priority order, if applicable, during the adjustment procedures is indicated by the corresponding number.

11. SERVICE MENU

11.1 How to Enter the SERVICE MENU

NOTE
• **Make sure not to reveal the password of the Service Menu to any unauthorized person.**

A. Procedure
1. Display [SERVICE MENU] on the menu screen and press the MENU/SELECT key.
2. [ENTER PASSWORD] message is displayed.
3. Set first digit of password with the Up key△/Down key▽ and press the Right key▷.
4. Repeat the above procedures to set up to seventh digit of password. Enter "KMM7450" for Service password. Press the MENU/SELECT key.
5. Press the MENU/SELECT key.

B. Exiting
• Press the CANCEL key.

11.2 Service mode function tree

SERVICE MENU			Ref. Page
SERIAL NUMBER			P.149
FIRMWARE VERSION	CONTROLLER F/W		P.149
	ENGINE F/W		
	BOOT F/W		
ALIGNMENT	TOP ADJUSTMENT		P.149
	LEFT ADJUSTMENT		P.150
	LEFT ADJ DUPLEX		P.150
	TRANSFER POWER	SIMPLEX PASS	P.151
		DUPLEX PASS	P.151
	IMAGE ADJ PARAM		P.151
	1'ST TRANSFER		P.152
	ELECTRIFICATION		P.152
	IMG ADJ THICK		P.153
	IMG ADJ BLACK		P.153
	FUSER SPEED	HIGH SPEED	P.153
		LOW SPEED	P.154
	TEMPERATURE 1		P.154
	TEMPERATURE 2		P.155
	FUSER LOOP ADJ		P.155
	MAXIMUM DENSITY		P.156
	REGISTRATION (CD)		P.157
	REGISTRATION (FD)		P.158
DIAGNOSIS MENU	PRINT MENU	MAINTENANCE INFO	P.159
		EVENT LOG	P.159
		CONFIGURATION PG	P.160

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SERVICE MENU				Ref. Page
DIAGNOSIS MENU	PRINT MENU	ELEMENT PAGE		P.160
		HALFTONE 64		P.167
		HALFTONE 128		P.167
		HALFTONE 256		P.167
		GRADATION		P.167
	FUNCTION	TRAY1 ADJ-MIN		P.167
		TRAY1 ADJ-MAX		P.168
		TONER REPLENISH		P.168
		PH SKEW ADJ	CAUTION STATUS	P.168
			ADJUSTMENT PRINT	P.171
			PH REGIST VALUE	P.171
RESTORE PASSWORD				P.172

Adjustment / Setting

11.3 SERVICE MENU Setting/Adjustment

11.3.1   SERIAL NUMBER

Function	• Displays the serial number of the printer.
Use	• To confirm the printer's serial number.
Setting /procedure	*1.* Select [SERVICE MENU] and press the MENU/SELECT key. *2.* Select [SERIAL NUMBER] and press the MENU/SELECT key. *3.* The serial number of the printer is displayed.

11.3.2   FIRMWARE VERSION

Function	• Displays the version number of the printer firmware.

Use	• To use when the firmware is updated.
	• To confirm the version number of the printer firmware.
	    CONTROLLER F/W: Firmware of controller
	    ENGINE F/W : Firmware of engine
	    BOOT/F/W : Boot firmware

Setting /procedure	*1.* Select [FIRMWARE VERSION] and press the MENU/SELECT key. *2.* Select desired firmware and press the MENU/SELECT key. *3.* Version number of firmware is displayed.

11.3.3   ALIGNMENT

A. 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.
	    THICK1 : Adjust the head margin of thick paper 1.
	    THICK2 : Adjust the head margin of thick paper 2.
	    THICK3 : Adjust the head margin of thick paper 3.
	    ENVELOPE : Adjust the head margin of envelope.
	    TRANSPARENCY: Adjust the head margin of transparency.

Setting /procedure	*1.* Select [TOP ADJUSTMENT] and press the MENU/SELECT key. *2.* Select desired paper type and press the MENU/SELECT key. *3.* Select desired adjustment amount with the Up key△/Down key▽ and press the MENU/SELECT key. • The default setting is "0." -15 to +15 (1 step: 0.1 mm)

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B.   LEFT ADJUSTMENT

Function	• Adjusts the left margin of media for single-sided printing.

Use	• To correct a misaligned print image.
	   LEFT ADJ TRAY 1: Adjust the left margin of paper fed from Tray 1 (Manual tray.)
	   LEFT ADJ TRAY 2: Adjust the left margin of paper fed from Tray 2.
	   LEFT ADJ TRAY 3: Adjust the left margin of paper fed from Tray 3.
	   LEFT ADJ TRAY 4: Adjust the left margin of paper fed from Tray 4.
	   LEFT ADJ TRAY 5: Adjust the left margin of paper fed from Tray 5.

Setting /procedure	*1.* Select [LEFT ADJUSTMENT] and press the MENU/SELECT key. *2.* Select desired tray and press the MENU/SELECT key. *3.* Select desired adjustment amount with the Up key△/Down key▽ and press the MENU/SELECT key. • The default setting is "0." -15 to +15 (1 step: 0.1 mm)

C.   LEFT ADJ DUPLEX

Function	• Adjusts the left margin of media for double-sided printing.

Use	• To correct a misaligned print image.
	   LEFT ADJ TRAY 1: Adjust the left margin of duplex print paper fed from Tray 1
	                                (Manual tray.)
	   LEFT ADJ TRAY 2: Adjust the left margin of duplex print paper fed from Tray 2.
	   LEFT ADJ TRAY 3: Adjust the left margin of duplex print paper fed from Tray 3.
	   LEFT ADJ TRAY 4: Adjust the left margin of duplex print paper fed from Tray 4.
	   LEFT ADJ TRAY 5: Adjust the left margin of duplex print paper fed from Tray 5.

Setting /procedure	*1.* Select [LEFT ADJ DUPLEX] and press the MENU/SELECT key. *2.* Select desired tray and press the MENU/SELECT key. *3.* Select desired adjustment amount with the Up key△/Down key▽ and press the MENU/SELECT key. • The default setting is "0." -15 to +15 (1 step: 0.1 mm)

Adjustment / Setting

D. TRANSFER POWER
(1) SIMPLEX PASS

Functions	• Adjust the 2nd image transfer output (ATVC) on the single-sided pages for each paper type.
Use	• To use when the transfer failure at the trailing edge occurs.
Adjustment Range	• The default setting is "0." -5 to +5
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.* Select [TRANSFER POWER] and press the MENU/SELECT key. *2.* Select [SIMPLEX PASS] and press the MENU/SELECT key. *3.* Select desired paper type with the Up key△/Down key▽ and press the MENU/ SELECT key. *4.* Select desired setting value with the Up key△/Down key▽ and press the MENU/ SELECT key.

(2) DUPLEX PASS

Functions	• Adjust the 2nd image transfer output (ATVC) on the duplexed pages for each paper type.
Use	• To use when the transfer failure at the trailing edge occurs.
Adjustment Range	• The default setting is "0." -5 to +5
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.* Select [TRANSFER POWER] and press the MENU/SELECT key. *2.* Select [DUPLEX PASS] and press the MENU/SELECT key. *3.* Select desired paper type with the Up key△/Down key▽ and press the MENU/ SELECT key. *4.* Select desired setting value with the Up key△/Down key▽ and press the MENU/ SELECT key.

E. IMAGE ADJ PARAM

Function	• Adjusts the Printer in case of an image quality problem (uneven density)
Use	• To correct image quality problems (uneven density) due to the Printer being operated at a high altitude.
Setting /procedure	• The default setting is "0." "0" 1 **NOTE** • **When the setting has been changed, be sure to run a CALIBRATION/AIDC process.** P.116

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Adjustment / Setting

F. 1'st TRANSFER

Functions	• Adjust the output value for the 1st image transfer voltage.
Use	• To use when white spots appeared.
Adjustment Range	• The default setting is "0." -5 to +5
Adjustment Instructions	Adjust the output value for the 1st image transfer voltage by; Increasing it: Increase the setting value (white spots will decrease) Decreasing it: Decrease the setting value

Setting/ Procedure	1. Select [1'st TRANSFER] and press the MENU/SELECT key.
	2. Select desired setting value with the Up key△/Down key▽.
	3. Press the MENU/SELECT key to set the adjustment value.
	   Gradually increase the adjustment value to the acceptable white spots level while checking the test pattern.
	
	NOTE
	• **PC Drum memory (94mm pitch) may occur by taking measure to white spots occurred by increasing the 1st image transfer voltage to adjust it.**
	  Check the image on the test print or the color chart when adjusting.

G. ELECTRIFICATION

Functions	• To adjust the highlight portion (fog level) to the target reproduction level by making an auxiliary manual fine-adjustment of γ of each color after Gradation Adjust.
Use	• Use when a foggy background occurs due to a printer problem
Adjustment Range	• The default setting is "0." -5 to +5
Adjustment Instructions	To make the background level foggier, increase the setting value. To make the background level less foggy, decrease the setting value.
Setting/ Procedure	1. Select [ELECTRIFICATION] and press the MENU/SELECT key. 2. Select desired color with the Up key△/Down key▽ and press the MENU/SELECT key. 3. Select desired setting value with the Up key△/Down key▽ and press the MENU/SELECT key. **NOTE** • **When the setting has been changed, be sure to run a CALIBRATION/AIDC process.** P.116

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Adjustment / Setting

H. IMG ADJ THICK

Functions	• To fine-adjust density of printed images of each color for thick paper and OHP transparencies.
Use	• To change the density of the printed image for each color with thick paper and OHP transparencies.
Adjustment Range	• The default setting is "0." -5 to +5
Adjustment Instructions	Light color: increase the setting value Dark color: decrease the setting value
Setting/ Procedure	1. Select [IMG ADJ THICK] and press the MENU/SELECT key. 2. Select desired color with the Up key△/Down key▽ and press the MENU/SELECT key. 3. Select desired setting value with the Up key△/Down key▽ and press the MENU/SELECT key.

I. IMG ADJ BLACK

Functions	• To fine-adjust the density of the printed image for a black printing.
Use	• To vary the density of the printed image of a black printing.
Adjustment Range	• The default setting is "0." -2 to +2
Adjustment Instructions	If the black is light, increase the setting value. If the black is dark, decrease the setting value.
Setting/ Procedure	1. Select [IMG ADJ BLACK] and press the MENU/SELECT key. 2. Select desired setting value with the Up key△/Down key▽ and press the MENU/SELECT key.

J. FUSER SPEED
(1) HIGH SPEED

Functions	• To adjust the speed of the Fusing Drive Motor when the transport speed is 110 mm/s (When feeding Plain paper and Recycled paper.) so as to match the fusing speed with transport speed.
Use	• Brush effect or blurred image is evident as a result of changes in environmental conditions or degraded durability.
Variable Range	• The default setting is "0." -20 to +20 (1 step: 0.1 %)
Adjustment Instructions	If brush effect is evident, vary the setting value and check for image. If a blurred image occurs, decrease the setting.
Setting/ Procedure	1. Select [FUSER SPEED] and press the MENU/SELECT key. 2. Select [HIGH SPEED] and press the MENU/SELECT key. 3. Select desired setting value with the Up key△/Down key▽ and press the MENU/SELECT key.

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(2) LOW SPEED

Functions	• To adjust the speed of the Fusing Drive Motor when the transport speed is 110 mm/s (When feeding Thick paper, OHP film, Envelope, Postcard, and Labels.) so as to match the fusing speed with transport speed.
Use	• Brush effect or blurred image is evident as a result of changes in environmental conditions or degraded durability.
Variable Range	• The default setting is "0." -20 to +20 (1 step: 0.1 %)
Adjustment Instructions	If brush effect is evident, vary the setting value and check for image. If a blurred image occurs, decrease the setting.
Setting/ Procedure	*1.* Select [FUSER SPEED] and press the MENU/SELECT key. *2.* Select [LOW SPEED] and press the MENU/SELECT key. *3.* Select desired setting value with the Up key△/Down key▽ and press the MENU/ SELECT key.

K. TEMPERATURE 1

Functions	• To adjust individually the temperature of the Heating Roller for each type of paper, thereby printing with varying fusing performance under changing 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. • By setting the temperature higher (+), gloss of print or OHP transparencies can be improved. • By setting the temperature lower (-), Exit Roller mark or uneven transparencies of OHP can be reduced.
Adjustment Range	• The default setting is 0 °C. THICK 3 : 0 °C to +10 °C (1 step: 5 °C) Others :-10 °C to +10 °C (1 step: 5 °C)
Adjustment Instructions	If fusing performance is poor, increase the setting. If wax streaks occur, decrease the setting. If offset is poor, decrease the setting.
Setting/ Procedure	*1.* Select [TEMPERATURE 1] and press the MENU/SELECT key. *2.* Select desired paper type with the Up key△/Down key▽ and press the MENU/ SELECT key. *3.* Select desired setting value with the Up key△/Down key▽ and press the MENU/ SELECT key.

Adjustment / Setting

L. TEMPERATURE 2

Functions	• To adjust individually the temperature of the Fusing Pressure Roller for each type of paper, thereby coping with varying fusing performance under changing 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. • By setting the temperature higher (+), gloss of print or OHP transparencies can be improved. • By setting the temperature lower (-), Exit Roller mark or uneven transparencies of OHP can be reduced.
Adjustment Range	• The default setting is 0 °C. THICK 3 : 0 °C to +10 °C (1 step: 5 °C) Others :-10 °C to +10 °C (1 step: 5 °C)
Adjustment Instructions	If fusing performance is poor, increase the setting. If wax streaks occur, decrease the setting. If offset is poor, decrease the setting.
Setting/ Procedure	*1.* Select [TEMPERATURE 2] and press the MENU/SELECT key. *2.* Select desired paper type with the Up key△/Down key▽ and press the MENU/ SELECT key. *3.* Select desired setting value with the Up key△/Down key▽ and press the MENU/ SELECT key.

M. FUSER LOOP ADJ

Functions	• To vary the timing to start fusing loop processing and adjust the fusing loop size at Envelope printing.
Use	• To be used when paper wrinkle or transfer misalignment occur at Envelope printing.
Adjustment Range	• The default setting is "0." -2 to +2
Adjustment Instructions	Adjustment in +: Delay the timing to start fusing loop processing Adjustment in -: Put ahead the timing to start fusing loop processing
Setting/ Procedure	*1.* Select [FUSER LOOP ADJ] and press the MENU/SELECT key. *2.* Select desired setting value with the Up key△/Down key▽ and press the MENU/ SELECT key.

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Adjustment / Setting

N. MAXIMUM DENSITY

Functions	• To adjust gradation, color, and image density to target reproduction levels by varying the maximum amount of toner sticking to paper through auxiliary manual fine-adjustment of gamma of each color after Gradation Adjust.
Use	• An image quality problem is not corrected even after Gradation Adjust has been run.
Adjustment Range	• The default setting is "0." -10 to +10
Adjustment Instructions	To increase the maximum amount of toner sticking, increase the setting value. To decrease the maximum amount of toner sticking, decrease the setting value.
Setting/ Procedure	*1.* Select [MAXIMUM DENSITY] and press the MENU/SELECT key. *2.* Select desired color with the Up key△/Down key▽ and press the MENU/SELECT key. *3.* Select desired setting value with the Up key△/Down key▽ and press the MENU/ SELECT key. **NOTE** • **When the setting has been changed, be sure to run a CALIBRATION/AIDC process.** P.116

O. REGISTRATION (CD)

Functions	• To adjust color shift (CD direction) if it occurs with plain or thick paper.
Use	• To correct any color shift.
Adjustment Range	• The default setting is "0." -6 to +6 dot
Adjustment Instructions	If the cross deviates in the direction of C, increase the setting. If the cross deviates in the direction of D, decrease the setting.
Setting/ Procedure	*1.* Select [SERVICE MENU] → [DIAGNOSIS MENU] → [FUNCTION MENU] → [PH SKEW ADJ] → [ADJUSTMENT PRINT]. *2.* Load Tray 2 with A3/11 x 17 or A4/8 $^1/_2$ x 11 Plain paper. *3.* Select [EXECUTE] and press the MENU/SELECT key. *4.* On the test pattern produced, check for deviation between the black line and the line of each color at position Y. *5.* Select [REGISTRATION (CD)] and press the MENU/SELECT key. *6.* Select desired color with the Up key△/Down key▽ and press the MENU/SELECT key. *7.* Using the Up key△/Down key▽, change the setting value as necessary. (At this time, only the line of the selected color moves.) *8.* Produce another test pattern and make sure that there is no deviation. Check Procedure 4039F3C510DA If the cross deviates in the direction of C, decrease the setting. If the cross deviates in the direction of D, increase the setting. Direction of C Direction of D 4039F3C511DA 4039F3C512DA

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Adjustment / Setting

P. REGISTRATION (FD)

Functions	• To adjust color shift (FD direction) if it occurs with plain or thick paper.
Use	• To correct any color shift.
Adjustment Range	• The default setting is "0." -6 to +6 dot
Adjustment Instructions	If the cross deviates in the direction of A, increase the setting. If the cross deviates in the direction of B, decrease the setting.
Setting/ Procedure	1. Select [SERVICE MENU] → [DIAGNOSIS MENU] → [FUNCTION MENU] → [PH SKEW ADJ] → [ADJUSTMENT PRINT]. 2. Load Tray 2 with A3/11 x 17 or A4/8 ¹/₂ x 11 Plain paper. 3. Select [EXECUTE] and press the MENU/SELECT key. 4. On the test pattern produced, check for deviation between the black line and the line of each color at position X. 5. Select [REGISTRATION (FD)] and press the MENU/SELECT key. 6. Select desired color with the Up key△/Down key▽ and press the MENU/SELECT key. 7. Using the Up key△/Down key▽, change the setting value as necessary. (At this time, only the line of the selected color moves.) 8. Produce another test pattern and make sure that there is no deviation. Check Procedure 4039F3C507DA If the cross deviates in the direction of A, decrease the setting. If the cross deviates in the direction of B, increase the setting. Direction of A Direction of B 4039F3C508DA 4039F3C509DA

11.3.4   DIAGNOSIS MENU

A.   PRINT MENU
(1)   MAINTENANCE INFO

Functions	• To produce an output of a list of setting values, adjustment values, Total Counter values, and others.

Use	• To check the maintenance information.
	  The items which can be checked are as follows.
	
	  Device Caution Information : Information concerning the Device Caution
	  Dot Count (total) : Dot Count value for each color
	  Coverage (total) : Coverage rate for each color
	  Replace count (total) : Number of times IU, TC, Transfer Belt, and Fusing
	                                                    Unit have been replaced.
	  Imaging Unit Information : Information concerning the Imaging Unit
	  Toner Cartridge Information: Information concerning the Toner Cartridge

Setting/ Procedure	1. Select [MAINTENANCE INFO] and press the MENU/SELECT key. 2. Select [PRINT] and press the MENU/SELECT key.

(2)   EVENT LOG

Functions	• To print the EVENT LOG.

Use	• To check the jams/troubles which occurred, and the history of replacing the consumables.
	  The items which can be checked are as follows.
	
	  Paper Jam Error : The number of times jam have occurred and its history
	  Engine Fatal Error : The history of the troubles which required Service Call
	  Fuser Unit : The history of replacing the Fusing Unit
	  Transfer Belt : The history of replacing the Transfer Unit
	  Toner Cartridge : The history of replacing the Toner Cartridge
	  Imaging Unit : The history of replacing the Imaging Unit
	  Trouble Counter : Trouble Counting for each section

Setting/ Procedure	1. Select [EVENT LOG] and press the MENU/SELECT key. 2. Select [PRINT] and press the MENU/SELECT key.

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Adjustment / Setting

(3) CONFIGURATION PG

Functions	• Prints the information concerning the Configuration.
Use	• To check the adjustment values set by the Maintenance Menu and Service Menu. The items which can be checked are as follows. TOP ADJUSTMENT LEFT ADJUSTMENT LEFT ADJ DUPLEX TRANSFER POWER IMAGE ADJ PARAM 1'ST TRANSFER ELECTRIFICATION IMG ADJ THICK IMG ADJ BLACK FUSER SPEED TEMPERATURE 1 TEMPERATURE 2 FUSER LOOP ADJ MAXIMUM DENSITY REGISTRATION(CD) REGISTRATION(FD)
Setting/ Procedure	*1.* Select [CONFIGURATION PG] and press the MENU/SELECT key. *2.* Select [PRINT] and press the MENU/SELECT key.

(4) ELEMENT PAGE

Functions	• Prints the element information.
Use	• To check the Element Data. • See the attached chart listed below for details.
Setting/ Procedure	*1.* Select [ELEMENT PAGE] and press the MENU/SELECT key. *2.* Select [PRINT] and press the MENU/SELECT key.

<Engine Element Data Information>

Element Data Name	Description
INSIDE HUMIDITY	• Displays the inside humidity.
ABSOLUTE HUMIDITY	• Displays the absolute humidity.
INSIDE TEMPERATURE	• Displays the inside temperature.
SENSOR INFORMATION1	• Displays the input port status of the sensors and switches in hexadecimal numbers. • To be used for troubleshooting when troubles/jams occur. • For allocating Bits for SENSOR INFORMATION 1 to 6, see the attached chart, "Sensor Information List." P.163
SENSOR INFORMATION2	
SENSOR INFORMATION3	
SENSOR INFORMATION4	
SENSOR INFORMATION5	
SENSOR INFORMATION6	
FUSER HEATER1 TEMPERATURE	• Shows the temperature of the Heating Roller (in 1 ºC increments). • Relevant Components: Fusing Unit
FUSER HEATER2 TEMPERATURE	• Shows the temperature of the Fusing Pressure Roller (in 1 ºC increments). • Relevant Components: Fusing Unit

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Element Data Name	Description
IDC REGIST SENSOR1	• Shows the IDC bare surface output reading taken last (in 0.01 V increments). • It should normally be around 4.3 V.
IDC REGIST SENSOR2	• The output range is 0 V to 9.99 V. • "Reading taken last" means: Latest toner density • Relevant Components: IDC Sensor, Transfer Belt Unit
TCR SENSOR C	• Shows the T/C ratio (in 0.01 % increments).
TCR SENSOR M	• Standard value: 8 ± 2 %
TCR SENSOR Y	• Relevant Components: PH Unit, TCR Sensor K
TCR SENSOR K	• Shows the T/C ratio (in 0.01 % increments). • Standard value: 7 ± 2 % • Relevant Components: PH Unit, TCR Sensor K
VG VOLT C	• Shows the grid voltage value of each color of toner when an image is produced.
VG VOLT M	• Standard values: Around 500 V • A correction is made to make the image lighter when the numeric value is greater.
VG VOLT Y	• A correction is made to make the image darker when the numeric value is smaller.
VG VOLT K	• Relevant Components: Imaging Unit, High Voltage Unit (Developing Bias)
VB VOLT C	• Shows the developing bias value of each color of toner when an image is produced.
VB VOLT M	• Standard values: Around 400 V • A correction is made to make the image lighter when the numeric value is greater.
VB VOLT Y	• A correction is made to make the image darker when the numeric value is smaller.
VB VOLT K	• Relevant Components: Imaging Unit, High Voltage Unit (Developing Bias)
IDC BASE REFLECTION1	• Shows the IDC intensity adjustment value. • It should normally be around 40 and can range from 0 to 255.
IDC BASE REFLECTION2	• The value becomes greater as the Transfer Belt Unit has been used more. • Relevant Components: IDC Sensor, Transfer Belt Unit
THICKSTOCK VG VOLT C	• Displays the Grid voltage value of each color when printing the image on the thick paper.
THICKSTOCK VG VOLT M	• Standard values: Around 500 V • A correction is made to make the image lighter when the numeric value is greater.
THICKSTOCK VG VOLT Y	• A correction is made to make the image darker when the numeric value is smaller.
THICKSTOCK VG VOLT K	• Relevant Components: Imaging Unit, High Voltage Unit (Developing Bias)

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Element Data Name	Description
THICKSTOCK VB VOLT C	• Displays the developing bias value of each color when printing the image on the thick paper.
THICKSTOCK VB VOLT M	• Standard values: Around 400 V • A correction is made to make the image lighter when the numeric value is greater.
THICKSTOCK VB VOLT Y	• A correction is made to make the image darker when the numeric value is smaller.
THICKSTOCK VB VOLT K	• Relevant Components: Imaging Unit, High Voltage Unit (Developing Bias)
MONOCHROME VG VOLT C	• Displays the Grid voltage value of each color when printing in monochrome.
MONOCHROME VG VOLT M	• Standard values: Around 400 V • A correction is made to make the image lighter when the numeric value is greater.
MONOCHROME VG VOLT Y	• A correction is made to make the image darker when the numeric value is smaller.
MONOCHROME VG VOLT K	• Relevant Components: Imaging Unit, High Voltage Unit (Developing Bias)
MONOCHROME VB VOLT C	• Displays the developing bias value of each color when printing in monochrome.
MONOCHROME VB VOLT M	• Standard values: Around 300 V • A correction is made to make the image lighter when the numeric value is greater.
MONOCHROME VB VOLT Y	• A correction is made to make the image darker when the numeric value is smaller.
MONOCHROME VB VOLT K	• Relevant Components: Imaging Unit, High Voltage Unit (Developing Bias)
TRANS CURRENT1	• Displays the latest output value for the 1st Image transfer. • Range: -1000 to 2000 V
TRANS CURRENT2	• Displays the latest output value for the 2nd Image transfer. • Range: -1000 to 4800 V • Relevant Components: Transfer Belt, High Voltage Unit (Transfer, Neutralization) • "TRANS CURRENT2" is not displayed not to print one sheet or more after the Main Power Switch is turned ON.
REGIST SKEW C	
REGIST SKEW M	• Displays the PH Skew adjustment value.
REGIST SKEW Y	

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Sensor Information List
(SENSOR INFORMATION 1)

BIT	Part Name	Operation Characteristics	
		1	0
0	Tray 2 Device Detection Sensor	In position	Out of position
1	Tray 2 Paper Empty Sensor	Paper not present	Paper present
2	Tray 2 Paper Near-Empty Sensor	Blocked	Unblocked
3	Set Sensor (Tray 3)	In position	Out of position
4	Paper Empty Sensor (Tray 3)	Paper not present	Paper present
5	Paper Near-Empty Sensor (Tray 3)	Blocked	Unblocked
6	Vertical Transport Sensor (Tray 3)	Paper present	Paper not present
7	Set Sensor (Tray 4)	In position	Out of position
8	Paper Empty Sensor (Tray 4)	Paper not present	Paper present
9	Paper Near-Empty Sensor (Tray 4)	Blocked	Unblocked
10	Vertical Transport Sensor (Tray 4)	Paper present	Paper not present
11	Set Sensor (Tray 5)	In position	Out of position
12	Paper Empty Sensor (Tray 5)	Paper not present	Paper present
13	Paper Near-Empty Sensor (Tray 5)	Blocked	Unblocked

(SENSOR INFORMATION 2)

BIT	Part Name	Operation Characteristics	
		1	0
0	Vertical Transport Sensor (Tray 5)	Paper present	Paper not present
1	Tray 1 Paper Empty Sensor	Paper not present	Paper present
2	Registration Roller Sensor	Paper present	Paper not present
3	Exit Sensor	Paper present	Paper not present
4	Tray 1 Lift-Up Sensor	At raised position	Not at raised position
5	Duplex Unit Door Set Sensor	Close	Open
6	—	—	—
7	—	—	—
8	OHP Sensor	OHP	Not OHP
9	—	—	—
10	Paper Take-Up Sensor (Tray 3)	Paper present	Paper not present
11	Paper Take-Up Sensor (Tray 4)	Paper present	Paper not present
12	Paper Take-Up Sensor (Tray 5)	Paper present	Paper not present
13	Fusing Loop Detect Sensor	Loop present	Loop not present

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(SENSOR INFORMATION 3)

BIT	Part Name	Operation Characteristics	
		1	0
0	—	—	—
1	Duplex Unit Transport Sensor1	Paper present	Paper not present
2	Duplex Unit Transport Sensor2	Paper present	Paper not present
3	—	—	—
4	—	—	—
5	—	—	—
6	—	—	—
7	—	—	—
8	—	—	—
9	—	—	—
10	—	—	—
11	—	—	—
12	—	—	—
13	—	—	—

(SENSOR INFORMATION 4)
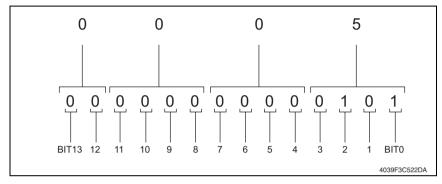
BIT	Part Name	Operation Characteristics	
		1	0
0	—	—	—
1	—	—	—
2	—	—	—
3	—	—	—
4	—	—	—
5	—	—	—
6	—	—	—
7	—	—	—
8	Waste Toner Full Sensor	Blocked	Unblocked
9	—	—	—
10	—	—	—
11	—	—	—
12	—	—	—
13	—	—	—

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(SENSOR INFORMATION 5)

BIT	Part Name	Operation Characteristics	
		1	0
0	1st Image Transfer Pressure/Retraction Position Sensor	Not Retracted	Retracted
1	2nd Image Transfer Pressure Position Sensor	Not Retracted	Retracted
2	—	—	—
3	—	—	—
4	Color PC Drive Main Sensor	Blocked	Unblocked
5	Color PC Drive Sub Sensor	Blocked	Unblocked
6	Black PC Drive Main Sensor	Blocked	Unblocked
7	Black PC Drive Sub Sensor	Blocked	Unblocked
8	—	—	—
9	—	—	—
10	—	—	—
11	Lift-Up Sensor (Tray 3)	At raised position	Not at raised position
12	Lift-Up Sensor (Tray 4)	At raised position	Not at raised position
13	Lift-Up Sensor (Tray 5)	At raised position	Not at raised position

(SENSOR INFORMATION 6)

BIT	Part Name	Operation Characteristics	
		1	0
0	—	—	—
1	—	—	—
2	—	—	—
3	—	—	—
4	Exit Full Sensor	Unblocked	Blocked
5	—	—	—
6	—	—	—
7	—	—	—
8	—	—	—
9	—	—	—
10	—	—	—
11	—	—	—
12	—	—	—
13	—	—	—

Adjustment / Setting

<How to Read Sensor Information>
• Convert the numerical value of the hexadecimal number printed on [ELEMENT DATA] into the binary number, it compares with the allocation of each BIT, and the status of the sensor is confirmed.

ex. When Sensor Information1 is displayed as 0x0005.
1. Convert four end digits "0005" of 0x0005 into the binary number (14 digits).
2. The BIT number is allocated in converted value "00000000000101."
   (BIT0 to BIT13 is sequentially allocated from the first digit.)

3. In this case, because BIT No. "0" and "2" become "1", so it can be confirmed that the Tray 2 Device Detection Sensor is "In position" state and the Tray 2 Paper Near-Empty Sensor is "Blocked" states from the Sensor Information table.

(SENSOR INFORMATION 1)

BIT	Part Name	Operation Characteristics	
		1	0
0	Tray 2 Device Detection Sensor	In position	Out of position
2	Tray 2 Paper Near-Empty Sensor	Blocked	Unblocked

Conversion method from hexadecimal number to binary number
1. The hexadecimal number (four digits) is converted in each digit based on the following table.

Hexadeci-mal number	Binary number	Hexadeci-mal number	Binary number	Hexadeci-mal number	Binary number	Hexadeci-mal number	Binary number
0	0000	4	0100	8	1000	C	1100
1	0001	5	0101	9	1001	D	1101
2	0010	6	0110	A	1010	E	1101
3	0011	7	0110	B	1011	F	1111

2. Match the converted numerical value of four digits, then two head digits are excluded and it is assumed the binary number of 14 digits.

(5) HALF TONE 64

Functions	• Prints the halftone pattern with 25 % level for CMYK respectively.
Use	• To check the unevenness of the density and the pitch.
Setting/ Procedure	*1.* Set the A3 or 11 x 18 paper on the Tray. *2.* Select [HALF TONE 64] and press the MENU/SELECT key. *3.* Select desired color with the Up key△/Down key▽ and press the MENU/SELECT key. *4.* Select [PRINT] and press the MENU/SELECT key.

(6) HALF TONE 128

Functions	• Prints the halftone pattern with 50 % level for CMYK respectively.
Use	• To check the unevenness of the density and the pitch.
Setting/ Procedure	*1.* Set the A3 or 11 x 18 paper on the Tray. *2.* Select [HALF TONE 128] and press the MENU/SELECT key. *3.* Select desired color with the Up key△/Down key▽ and press the MENU/SELECT key. *4.* Select [PRINT] and press the MENU/SELECT key.

(7) HALF TONE 256

Functions	• Prints the halftone pattern with 100 % level for CMYK respectively.
Use	• To check the unevenness of the density and the pitch.
Setting/ Procedure	*1.* Set the A3 or 11 x 18 paper on the Tray. *2.* Select [HALF TONE 256] and press the MENU/SELECT key. *3.* Select desired color with the Up key△/Down key▽ and press the MENU/SELECT key. *4.* Select [PRINT] and press the MENU/SELECT key.

(8) GRADATION

Functions	• Prints the Gradation pattern.
Use	• To check the gradation reproductively.
Setting/ Procedure	*1.* Set the A3 or 11 x 18 paper on the Tray. *2.* Select [GRADATION] and press the MENU/SELECT key. *3.* Select [PRINT] and press the MENU/SELECT key.

B. FUNCTION MENU
(1) TRAY1 ADJ-MIN

Functions	• To set the minimum width for the Manual Bypass Paper Size Unit of the Manual Bypass Guide.
Use	• Use when the Manual Bypass Paper Size Unit of the Manual Bypass Guide has been changed. • Use when a false paper size is displayed when the Tray 1 is used.
Setting/ Procedure	*1.* Select [TRAY1 ADJ-MIN] and press the MENU/SELECT key. *2.* Load the Tray 1 with paper having a width of 90 mm or 3.55 inches. *3.* Select [EXECUTE] and press the MENU/SELECT key.

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(2) TRAY1 ADJ-MAX

Functions	• To set the maximum width for the Manual Bypass Paper Size Unit of the Manual Bypass Guide.
Use	• Use when the Manual Bypass Paper Size Unit of the Manual Bypass Guide has been changed. • Use when a false paper size is displayed when the Tray 1 is used.
Setting/ Procedure	*1.* Select [TRAY1 ADJ-MAX] and press the MENU/SELECT key. *2.* Load the Tray 1 with paper having a width of 311 mm or 12.25 inches. *3.* Select [EXECUTE] and press the MENU/SELECT key.

(3) TONER REPLENISH

Functions	• To adjust the set T/C level by replenishing an auxiliary supply of toner when a low ID occurs due to a lowered T/C after large numbers of prints have been made of origi-nals having a high image density.
Use	• When there is a drop in T/C.
Setting/ Procedure	*1.* Select [TONER REPLENISH] and press the MENU/SELECT key. *2.* Select desired color with the Up key/Down keys and press the MENU/SELECT key. (Select [ALL COLORS] for supplying toner for all colors at one time.) *3.* Touching the MENU/SELECT key will detect the current toner density, and supplies the toner when the level is lower than the standard. It will then be stirred. *4.* Operation described on step 3 will be repeated maximum of four times until it reaches to the standard value. When the value is above the standard, it only stirs. *5.* [TONER REPLENISH COMPLETED] will be displayed when the toner is normally supplied.

(4) PH SKEW ADJ
• This menu will not displayed during Error, Warming up, and Calibration.

<CAUTION STATUS>

Functions	• Displays the Device Caution Information in hexadecimal number.
Use	• To check the Device Caution Information before performing the [ADJUSTMENT PRINT] when adjusting the PH Skew. See P.175 For allocating each Bit to the Device Caution Information 1, 2, see the following "Device Caution Information List."
Setting/ Procedure	*1.* Select [CAUTION STATUS] and press the MENU/SELECT key. *2.* CAUTION STATUS is displayed in hexadecimal number.

CAUTION STATUS 1

BIT	Item	Description	
0	—	—	
1	—	—	
2	—	—	
3	—	—	
4	—	—	
5	IDC Sensor (Front) failure	1	• All outputs of Sensor photoreceiver section from the detection point (unprinted surface on the Image Transfer Belt) are 0.5 V or less or 4.3 V or more at output checking during IDC/Registration Sensor adjustment. • All outputs of Sensor photoreceiver section from the detection point (unprinted surface on the Image Transfer Belt) are 1.9 V or less or 4.4 V or more at density setting during IDC/Registration Sensor adjustment. • The output of Sensor photoreceiver section from the detection point (toner pattern on the Image Transfer Belt) is 1.0 V or less after the adjustment.
		0	• Front Door Open/Close, Main Power Switch OFF/ON, and Normal Image Stabilization are complete besides the ones listed above.
6	Cyan Imaging Unit failure	1	• All density readings taken from the density pattern produced on the Transfer Belt are 0.5 g/m^2 (IDC Sensor photoreceiver output) or less during max. density adjustment (Vg/Vdc adjustment). • All density readings taken from the density pattern produced on the Transfer Belt are 4.5 g/m^2 (IDC Sensor Photoreceiver output) or more during max. density adjustment (Vg/Vdc adjustment.)
7	Magenta Imaging Unit failure		
8	Yellow Imaging Unit failure	0	• Front Door Open/Close, Main Power Switch OFF/ON, and Normal Image Stabilization are complete besides the ones listed above.
9	Black Imaging Unit failure		
10	IDC Sensor (Back) failure	1	• All outputs of Sensor photoreceiver section from the detection point (unprinted surface on the Image Transfer Belt) are 0.5 V or less or 4.3 V or more at output checking during IDC/Registration Sensor adjustment. • All outputs of Sensor photoreceiver section from the detection point (unprinted surface on the Image Transfer Belt) are 1.9 V or less or 4.4 V or more at density setting during IDC/Registration Sensor adjustment. • The output of Sensor photoreceiver section from the detection point (toner pattern on the Image Transfer Belt) is 1.0 V or less after the adjustment.
		0	• Front Door Open/Close, Main Power Switch OFF/ON, and Normal Image Stabilization are complete besides the ones listed above.

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BIT	Item		Description
11	Color Shift Test Pattern failure	1	• The number of points detected in the main scan direction is more or less than the specified value during main scan direction registration correction. • The number of points detected in the Sub Scan Direction is more or less than the specified value during sub scan direction registration correction.
		0	• Front Door Open/Close, Main Power Switch OFF/ON, and Normal Image Stabilization are complete besides the ones listed above.
12	Color Shift Adjust failure	1	• The color shift amount is greater than the specified range during main scan direction registration correction. • The color shift amount is greater than the specified range during sub scan direction registration correction. • The skew correction amount is greater than the specified value.
		0	• Front Door Open/Close, Main Power Switch OFF/ON, and Normal Image Stabilization are complete besides the ones listed above.
13	—		—

CAUTION STATUS 2

BIT	Item		Description
0	—		—
1	—		—
2	—		—
3	1st Image Transfer ATVC (K) failure	1	• An abnormal average value is detected during an adjustment of the first image transfer ATVC value of Black.
		0	• Front Door Open/Close, Main Power Switch OFF/ON, and ATVC Adjustment are normally completed besides the ones listed above.
4	1st Image Transfer ATVC (color) failure	1	• An abnormal average value is detected during an adjustment of the first image transfer ATVC value of color.
		0	• Front Door Open/Close, Main Power Switch OFF/ON, and ATVC Adjustment are normally completed besides the ones listed above.
5	—		—
6	—		—
7	—		—
8	2nd Image Transfer ATVC failure	1	• An abnormal average value is detected during an adjustment of the second image transfer ATVC value.
		0	• Front Door Open/Close, Main Power Switch OFF/ON, and ATVC Adjustment are normally completed besides the ones listed above.
9	—		—
10	—		—

BIT	Item		Description
11	Color PC Drum Sensor malfunction	1	• The output from the Color PC Drive Main and Sub Sensors remains unchanged for a continuous period of 1,000 ms while the Color PC Drum Motor is turning stably and the Lock signal is active (LOW-0).
		0	• Front Door Open/Close, Main Power Switch OFF/ON, Color PC Drive Main and Sub Sensors Error Detection are normally completed besides the ones listed above.
12	Black PC Drum Sensor malfunction	1	• The output from the Black PC Drive Main and Sub Sensors remains unchanged for a continuous period of 1,000 ms while the Main Motor is turning stably and the Lock signal is active (LOW-0).
		0	• Front Door Open/Close, Main Power Switch OFF/ON, Black PC Drive Main and Sub Sensors Error Detection are normally completed besides the ones listed above.
13	—		—

NOTE
• **Refer to "How to read Sensor Information" for how to read CAUTION STATUS.**

<ADJUSTMENT PRINT>

Functions	• Image Stabilization for PH Skew adjustment, and performing the test printing for confirming the adjustment.
Use	• Use for adjustment of PH skew.
Setting/ Procedure	1. Set the A3 or 11 x 18 paper on the Tray. 2. Select [ADJUSTMENT PRINT] and press the MENU/SELECT key. 3. Select [EXECUTE] and press the MENU/SELECT key. 4. Pressing the MENU/SELECT Key will perform Image Stabilization and the test printing for confirming the adjustment. (Key operation will be invalid while performing.)

<PH REGIST VALUE>

Functions	• Displays the adjustment value during PH Skew adjustment.
Use	• Use for adjustment of PH skew.
Setting/ Procedure	1. Select [PH REGIST VALUE] and press the MENU/SELECT key. 2. Displays adjustment values for Y, M, and C colors.

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Adjustment / Setting

11.3.5   RESTORE PASSWARD

Function	• Reinitializes the user password used for the "INTERFACE MENU / SYSTEM DEFAULT MENU / MAINTENANCE MENU" set by user.
Use	• To reinitialize the user password when the menu cannot be opened even when entering the correct password. • To reinitialize the user password when the user forgets the password. 　　YES : Initialize password 　　NO : Not initialize password
Setting /procedure	*1.* Select "RESTORE PASSWORD" and press the MENU/SELECT key. *2.* Select "YES" and press the MENU/SELECT key. *3.* Return the password set at "INTERFACE MENU / SYSTEM DEFAULT MENU / MAINTENANCE MENU" to "0000." • The default setting is NO. 　　　　　　　YES　　　　　　　　　　　　　　"NO"
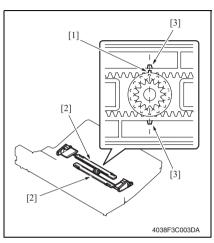
12. Mechanical adjustment

12.1 Mechanical adjustment of the Tray 1
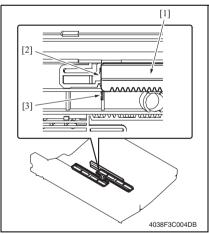
12.1.1 Adjustment of the Tray 1 Paper Size Unit

This adjustment must be made in the following case:
* **The Tray 1 Paper Size Unit has been removed.**
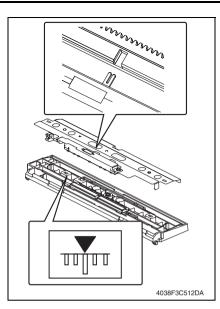
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1. Install the gear so that the protrusion of the gear [1] and the mark [3] on the Tray 1 Guide Rack Gear [2] are aligned in a straight line.

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2. Install the Tray 1 Unit Cover so that part A (edge) [2] of the Rack Gear [1] for the Tray 1 Paper Size Unit and part B [3] of the Tray 1 Unit Cover are aligned in a straight line.

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3. When the Tray 1 Paper Size Unit base is mounted, align the lever position of the Tray 1 Paper Size Unit with the tab at the center in a straight line.

4. After the Tray 1 Paper Size Unit base has been mounted, check that the lever of the Tray 1 Paper Size Unit moves smoothly in a manner operatively connected to the Tray 1 Guide.

5. Call the SERVICE MENU to the screen and carry out [DIAGNOSIS MENU] → [FUNC-TION MENU] → [TRAY1 ADJ-MIN] / [TRAY1 ADJ-MAX].

12.2 PH Unit Mechanical Adjustment

12.2.1   Skew Adjustment
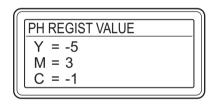
This adjustment must be made in the following case:
- **When PH Unit is replaced.**

1. Turn on the Main Power Switch.
2. Select the items described below to display [CAUTION STATUS] on the control panel.
   [SERVICE MENU] → [DIAGNOSIS MENU] → [FUNCTION MENU] → [PH SKEW ADJ]
   → [CAUTION STATUS]
3. Check that Bit number 11 "Color Shift Test Pattern failure", and Bit number 12 "Color
   Shift Adjust failure" on [CAUTION STATUS 1] did not occur.
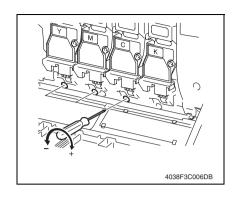
4. Set A3 or 11 x 17 paper on the Tray.
   (The paper to be set depends on the setting on [SYS DEFAULT MENU] → [PAPER] →
   [UNIT OF MEASURE].)
5. Select [SERVICE MENU] → [DIAGNOSIS MENU] → [FUNCTION MENU] → [PH
   SKEW ADJ] → [ADJUSTMENT PRINT] and output the test pattern.
6. Display [SERVICE MENU]] → [DIAGNOSIS MENU] → [FUNCTION MENU] → [PH
   SKEW ADJ] → [PH REGIST VALUE] and check if the Regist Value is within the specifi-
   cation.

Specification: within ± 4

```
PH REGIST VALUE
 Y  = -5
 M  = 3
 C  = -1
```

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Adjustment / Setting

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- If either value is out of the specification, follow the procedures shown below to adjust it to satisfy the specification.
- If the value of all color, C, M, Y, K, satisfy the specification, proceed to step 11.
7. Open the Front Door.
8. Turn the Skew adjustment dial of the corresponding PH with flathead screwdriver.
- To the left: When the step value goes - direction
- To the right: When the step value goes + direction

<Adjustment sample>
If the yellow value, among the step values confirmed in step 6, is [-5], which means out of the specification, turn the skew adjustment dial of PH (Yellow) to the left (- direction) for 5 clicks.

9. Close the Front door and select [SERVICE MENU] → [DIAGNOSIS MENU] → [FUNC-TION MENU] → [PH SKEW ADJ] → [ADJUSTMENT PRINT] and output the test pattern.
10. After ADJUSTMENT PRINT is completed, display [SERVICE MENU]] → [DIAGNOSIS MENU] → [FUNCTION MENU] → [PH SKEW ADJ] → [PH REGIST VALUE] again and check if the Regist Value of each color C, M, Y, is within the specification.

NOTE
- **Each color's Regist Value displayed on [PH REGIST VALUE] changes every time the image stabilization is conducted. Therefore the value may change even if skew adjustment is not made.**
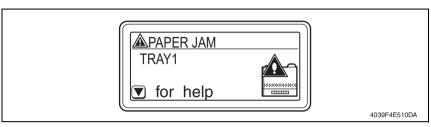
- If either value is out of the specification, repeat step 7 to 10 to continue the adjustment until all CMYK colors satisfy the specification.
11. Finish the adjustment.

Troubleshooting

13. Jam Display

13.1 Misfeed Display
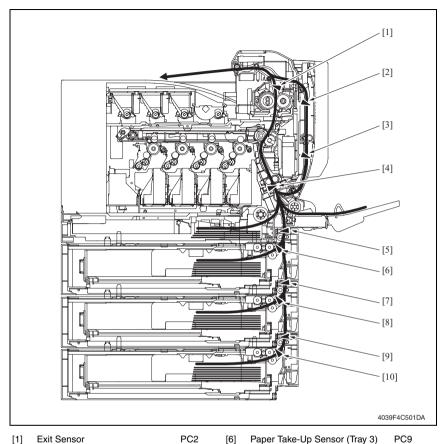
• When a media misfeed occurs a message is displayed on the Control Panel.


```
⚠ PAPER JAM
  TRAY1
                              ⚠
  ▼  for  help
```

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Display		Misfeed Location	Misfeed processing location	Action
LCD 1	LCD 2			
PAPER JAM	FUSER/EXIT	• Fusing/exit section	• Right Door (Main Unit) • Fusing Unit	P.179
	SECOND TRANS	• Transfer section	• Right Door (Main Unit)	P.180
	VERTICAL TRANS	• Vertical Conveyance	• Right Door (Main Unit) • Tray 3 Right Door • Tray 4 Right Door • Tray 5 Right Door	P.185
	DUPLEX1	• Duplex transport section	• Duplex Option door	P.181
	DUPLEX2	• Duplex pre-registration section		P.182
	TRAY1	• Tray 1 paper feed (Manual Feed Tray)	• Tray 1 • Right Door (Main Unit)	P.183
	TRAY2	• Tray 2 paper feed	• Tray 2 • Right Door (Main Unit)	P.184
	TRAY3	• Tray 3 take-up • Vertical Conveyance	• Tray 3 • Tray 3 Right Door	P.185
	TRAY4	• Tray 4 take-up • Vertical Conveyance	• Tray 4 • Tray 4 Right Door	
	TRAY5	• Tray 5 take-up • Vertical Conveyance	• Tray 5 • Tray 5 Right Door	

13.2 Misfeed Display Resetting Procedure

• Open the relevant door, clear the sheet of misfed media, and close the door.

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Troubleshooting

13.3 Sensor layout

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[1]	Exit Sensor	PC2	[6]	Paper Take-Up Sensor (Tray 3)	PC9
[2]	Duplex Unit Transport Sensor 1	PC1	[7]	Vertical Transport Sensor (Tray 4)	PC8
[3]	Duplex Unit Transport Sensor 2	PC2	[8]	Take-up Sensor (Tray 4)	PC9
[4]*1	Registration Roller Sensor	PC1	[9]	Vertical Transport Sensor (Tray 5)	PC8
[4]*1	OHP Sensor	PC4	[10]	Take-up Sensor (Tray 5)	PC9
[5]	Vertical Transport Sensor (Tray 3)	PC8			

*1: Two different types of sensors are located in the area near [4].

13.4   Solution

13.4.1   Initial Check Items

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

Check Item	Action
Does paper meet product specifications?	Change paper.
Is paper curled, wavy, or damp.	Change paper. Instruct user in correct paper storage.
Is a foreign object present along the paper path, or is the paper path deformed or worn?	Clean or change the paper path.
Are the Paper Separator Fingers dirty, deformed, or worn?	Clean or change the defective Paper Separator Finger.
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 paper?	Set as necessary.
Are actuators found operational as checked for correct operation?	Correct or change the defective actuator.

13.4.2   Misfeed at Fusing/Exit section

A.   Detection Timing

Type	Description
Detection of misfeed at Fusing/ Exit Section	PC2 is not unblocked even after the lapse of a given period of time after the paper has blocked the Exit Sensor (PC2).
	The Duplex Unit Transport Sensor 1 (PC1) is not blocked even after the lapse of a given period of time after the Exit Sensor (PC2) has been unblocked by the paper during a switchback sequence.
Detection of paper left in Exit Section	Exit Sensor (PC2) is blocked when the Main Power Switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

B.   Action

Relevant Electrical Parts	
Exit Sensor (PC2) Duplex Unit Transport Sensor 1 (PC1)	Duplex Control Board (PWB-A) Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Initial check items	—	—
2	PC2 I/O check, Sensor check	PWB-M CNTH2-8 (ON)	C-14
3	PC1 I/O check, Sensor check	—	
4	Change PWB-A	—	—
5	Change PWB-M	—	—

13.4.3   Misfeed at 2nd Image Transfer section

A. Detection Timing

Type	Description
Detection of misfeed at 2nd Image Transfer section	The leading edge of the paper does not block the Exit Sensor (PC2) even after the lapse of a given period of time after the Registration Roller Clutch (CL1) has been energized.
	The Registration Roller Sensor (PC1) is not unblocked even after the lapse of a given period of time after it has been blocked by the paper.
Detection of paper left in 2nd Image Transfer section	The Registration Roller Sensor (PC1) is blocked when the Main Power Switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
	The OHP Sensor (PC4) is blocked when the Main Power Switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
	The Exit Sensor (PC2) is blocked when the Image Transfer Belt Unit is being cleaned.
Misfeed detected as a result of delayed deactivation of sensor	Registration Roller Sensor (PC1) does not transmit the paper even after the lapse of a given period of time after the paper has blocked PC1 at Tray 1 feed.
2nd Image Transfer section Loop Registration Reversing JAM	Rise timing of load for registration is earlier than the one for making loop at front of the Registration Roller when the sensor at front of the Registration Roller is blocked at Paper feed.

B. Action

Relevant Electrical Parts	
Registration Roller Sensor (PC1) Exit Sensor (PC2) OHP Sensor (PC4) Registration Roller Clutch (CL1)	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Initial check items	—	—
2	PC1 I/O check, Sensor check	PWB-M CNSEN-3 (ON)	C-3 to 4
3	PC2 I/O check, Sensor check	PWB-M CNTH2-8 (ON)	C-14
4	PC4 I/O check, Sensor check	PWB-M CNSEN-6 (ON)	C-4
5	CL1 operation check	PWB-M CNSEN-18 (ON)	C-5
6	Change PWB-M	—	—

13.4.4　Misfeed at Duplex transport section (Duplex Option)

A.　Detection Timing

Type	Description
Detection of misfeed at Duplex Transport section	The Duplex Unit Transport Sensor 2 (PC2) is not blocked even after the lapse of a given period of time after the paper has blocked the Duplex Unit Transport Sensor 1 (PC1).
	The Duplex Unit Transport Sensor 1 (PC1) is not unblocked even after the lapse of a given period of time after it has been blocked by the paper.
	The Duplex Unit Transport Sensor 2 (PC2) is not unblocked even after the lapse of a given period of time after it has been blocked by the paper.
Detection of paper left in Duplex Transport Section	Duplex Unit Transport Sensor 1 (PC1) or Duplex Unit Transport Sensor 2 (PC2) is blocked when the Main Power Switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

B.　Action

Relevant Electrical Parts	
Duplex Unit Transport Sensor 1 (PC1) Duplex Unit Transport Sensor 2 (PC2) Duplex Unit Switchback Motor (M1) Duplex Unit Transport Motor (M2)	Duplex Control Board (PWB-A) Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Initial check items	—	—
2	PC1 I/O check, Sensor check	—	U-18
3	PC2 I/O check, Sensor check	—	U-18
4	M1 operation check	PWB-A PJ4A DU-1 to 4	V-19
5	M2 operation check	PWB-A PJ5A DU-1 to 4	V-19
6	Change PWB-A	—	—
7	Change PWB-M	—	—

13.4.5   Misfeed at Duplex Unit pre-registration section (Duplex Option)

A. Detection Timing

Type	Description
Detection of misfeed at Duplex pre-registration section	The Registration Roller Sensor (PC1) is not blocked even after the lapse of a given period of time after a Duplex paper feed sequence has been started.
Duplex Unit Pre-registration section Loop Registration Reversing JAM detection	Rise timing of load for registration is earlier than the one for making the loop at front of the Registration Roller at pre-registration feed.

B. Action

Relevant Electrical Parts	
Registration Roller Sensor (PC1) Duplex Unit Switchback Motor (M1) Duplex Unit Transport Motor (M2)	Duplex Control Board (PWB-A) Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Initial check items	—	—
2	PC1 I/O check, Sensor check	—	U-18
3	M1 operation check	PWB-A PJ4A DU-1 to 4	V-19
4	M2 operation check	PWB-A PJ5A DU-1 to 4	V-19
5	Change PWB-A	—	—
6	Change PWB-M	—	—

13.4.6   Misfeed at Tray 1 paper feed section

A. Detection Timing

Type	Description
Detection of misfeed at Tray 1 paper feed section	The leading edge of the paper does not block the Registration Roller Sensor (PC1) even after the lapse of a given period of time after the Tray 1 Feed Clutch (CL5) has been energized.
Tray 1 paper feed section Loop Registration Reversing JAM	Rise timing of load for registration is earlier than the one for making the loop at front of the Registration Roller at Tray 1 feed.

B. Action

Relevant Electrical Parts	
Registration Roller Sensor (PC1) Tray 1 Feed Clutch (CL5)	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Initial check items	—	—
2	PC1 I/O check, Sensor check	PWB-M CNSEN-3 (ON)	C-3 to 4
3	CL5 operation check	PWB-M CNTRY1-2 (ON)	C-9
4	Change PWB-M	—	—

13.4.7 Misfeed at Tray 2 paper feed section

A. Detection Timing

Type	Description
Detection of misfeed at Tray 2 paper feed section	The leading edge of the paper does not block the Registration Roller Sensor (PC1) even after the lapse of a given period of time after the Tray 2 Paper Feed Clutch (CL2) has been energized.
Tray 2 paper feed section Loop Registration Reversing JAM	Rise timing of load for registration is earlier than the one for making the loop at front of the Registration Roller at Tray 2 feed.

B. Action

Relevant Electrical Parts	
Tray 2 Paper Feed Clutch (CL2) Registration Roller Sensor (PC1)	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Initial check items	—	—
2	PC1 I/O check, Sensor check	PWB-M CNSEN-3 (ON)	C-3 to 4
3	CL2 operation check	PWB-M CNLP-13 (ON)	C-11
4	Change PWB-M	—	—

13.4.8   Misfeed at Tray 3 to 5 paper feed, Tray 3 to 5 vertical transport section

A. Detection Timing

Type	Description
Detection of misfeed at Tray 3 to 5 paper feed section	The leading edge of the paper does not block the Vertical Transport Sensor (PC8) even after the lapse of a given period of time after the Paper Feed Motor (M1) has been energized.
Detection of misfeed at Tray 3 to 5 vertical transport section	The Registration Roller Sensor (PC1) is not blocked even after the lapse of a given period of time after the paper has blocked the Vertical Transport Sensor (PC8).
	Vertical Transport Sensor (PC8) does not transmit the paper even after the lapse of a given period of time after the paper has blocked PC8.
Tray 3 to 5 Vertical Transport section Loop Registration Reversing JAM	Rise timing of load for registration is earlier than the one for making the loop at front of the Registration Roller at Tray 3 to 5 feed.
Detection of paper left in Tray 3 to 5	Vertical Transport Sensor (PC8) is blocked when the Main Power Switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
	Paper Take-Up Sensor (PC9) is blocked when the Main Power Switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant Electrical Parts	
Paper Take-Up Sensor (PC9) Vertical Transport Sensor (PC8) Registration Roller Sensor (PC1) Paper Feed Motor (M1)	Control Board (PWB-Z) Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Initial check items	—	—
2	PC9 I/O check, Sensor check	PWB-Z PC PJ6Z PC-8 (ON)	V-22
3	PC8 I/O check, Sensor check	PWB-Z PC PJ6Z PC-11 (ON)	V-22
4	PC1 I/O check, Sensor check	PWB-M CNSEN-3 (ON)	C-3 to 4
5	M1 operation check	PWB-Z PC PJ5Z PC-1 to 4	Q-22
6	Change PWB-Z	—	—
7	Change PWB-M	—	—

14. Service call message

14.1 Trouble Codes

- The printer's CPU performs a self-diagnostics function that, on detecting a malfunction, gives the corresponding malfunction code and service call message on the Control Panel.

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14.1.1 Trouble code list

* For the details of the malfunction codes of the options, see the Service Manual for the corresponding option.

Code	Item	Description
0001	Main Motor turning at abnormal timing	• The Motor Lock signal remains LOW for a predetermined continuous period of time while the Motor remains stationary.
0018	Color PC Drum Motor's failure to turn	• The Motor Lock signal remains HIGH for a predetermined continuous period of time while the Motor is turning.
0019	Color PC Drum Motor's turning at abnormal timing	• The Motor Lock signal remains LOW for a predetermined continuous period of time while the Motor remains stationary.
001A	Color Developing Motor's failure to turn	• The Motor Lock signal remains HIGH for a predetermined continuous period of time while the Motor is turning.
001B	Color Developing Motor's turning at abnormal timing	• The Motor Lock signal remains LOW for a predetermined continuous period of time while the Motor remains stationary.
0040	Suction Fan Motor's failure to turn	• The Fan Lock signal remains HIGH for a predetermined continuous period of time while the Motor remains stationary.
0043	Cooling Fan Motor/1's failure to turn	• The Fan Lock signal remains HIGH for a predetermined continuous period of time while the Motor remains stationary.
0046	Fusing Cooling Fan Motor/1's failure to turn	• The Fan Lock signal remains HIGH for a predetermined continuous period of time while the Motor remains stationary.
0048	Fusing Cooling Fan Motor/2's failure to turn	• The Fan Lock signal remains HIGH for a predetermined continuous period of time while the Motor remains stationary.
004C	Ozone Ventilation Fan Motor's failure to turn	• The Fan Lock signal remains HIGH for a predetermined continuous period of time while the Motor remains stationary.

Code	Item	Description
004E	Power Supply Cooling Fan Motor/1's failure to turn	• The Fan Lock signal remains HIGH for a predetermined continuous period of time while the Motor remains stationary.
004F	Cooling Fan Motor 2's failure to turn	• The Fan Lock signal remains HIGH for a predetermined continuous period of time while the Motor remains stationary.
0094	2nd Image Transfer Roller Separation	• The 2nd Image Transfer Pressure Position Sensor doesn't turn ON (Retracting) even after the lapse of a given period of time after the 2nd Image Transfer Pressure/Retraction Motor has started rotating during the 2nd Image Transfer Roller is retracting. • The 2nd Image Transfer Pressure Position Sensor doesn't turn OFF (Pressuring) even after the lapse of a given period of time after the 2nd Image Transfer Pressure/Retraction Motor has started rotating during the 2nd Image Transfer Roller is pressuring.
0096	Transfer Belt Separation	• The 1st Image Transfer Pressure/Retraction Position Sensor doesn't turn ON (Retracting) even after the lapse of a given period of time after the 1st Image Transfer Pressure/Retraction Clutch has turned ON during the Transfer Belt is retracting. • The 1st Image Transfer Pressure/Retraction Position Sensor doesn't turn OFF (Pressuring) even after the lapse of a given period of time after the 1st Image Transfer Pressure/Retraction Clutch has turned ON during the Transfer Belt is pressuring.
0301	Polygon Motor/C failure to turn	• The Polygon motor fails to turn stably even after the lapse of a given period of time after activating the Polygon motor. • Motor Lock signal detects H for a given period time consecutively during the Polygon motor is rotating.
0302	Polygon Motor/M failure to turn	
0303	Polygon Motor/Y failure to turn	
0304	Polygon Motor/K failure to turn	
0311	Laser malfunction (Cyan)	• SOS signal is not detected even after the lapse of a given period of time after staring the laser output. • SOS signal is not detected for a given period of time during printing or IDC sensor adjustment.
0312	Laser malfunction (Magenta)	
0313	Laser malfunction (Yellow)	
0314	Laser malfunction (Black)	
0500	Heating Roller warm-up failure	• The Heating Roller Thermistor/1 (TH1) and the Heating Roller Thermistor/2 (TH3) fails to raise a given degree of temperature even after the lapse of a given period of time after the Heating Roller Heater lamp/1 (H1) is turned ON. • The detected temperature of the Heating Roller Thermistor/1 (TH1) is lower for a given level of degree than one of the Fusing Pressure Roller Thermistor/1 (TH2) after the Front Door is opened or closed, the Main Power Switch is turned ON or TROUBLE RESET is implemented. • The counter value of zero cross signal input is not updated for a given period of time.

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Code	Item	Description
0501	Fusing Pressure Roller warm-up failure	• The Fusing Pressure Roller Thermistor/1 (TH2) fails to raise a given degree of temperature even after the lapse of a given period of time after the Fusing Pressure Heater Lamp (H3) is turned ON. • The detected temperature of the Fusing Pressure Roller Thermistor/1 (TH2) is lower for a given level of degree than one of the Heating Roller Thermistor/1 (TH1) after the Front Door is opened or closed, the Main Power Switch is turned ON or TROUBLE RESET is implemented.
0510	Abnormally low Heating Roller temperature	• The temperature of the Heating Roller Thermistor/1 (TH1) is lower than a given level of degree for 1 second or more uninterruptedly during Ready mode, Low Power mode or printing. • The temperature of the Heating Roller Thermistor/2 (TH3) is lower than a given level of degree for 1 second or more uninterruptedly during Ready mode, Low Power mode or printing.
0511	Abnormally low Fusing Pressure Roller temperature	• The temperature of the Fusing Pressure Roller Thermistor /1 (TH2) is lower than a given level of degree for 1 second or more uninterruptedly during Ready mode, Low Power mode or printing.
0520	Abnormally high Heating Roller temperature	• The temperatures of the Heating Roller Thermistor/1 (TH1) and the Heating Roller Thermistor/2 (TH3) are higher than a given level of degree for 1 second or more uninterruptedly. • The Heater Relay is OFF.
0521	Abnormally high Fusing Pressure Roller temperature	• The temperature of the Fusing Pressure Roller Thermistor/1 (TH2) is higher than a given level of degree for 1 second or more uninterruptedly before the Heater temperature control starts. • The temperature of the Fusing Pressure Roller Thermistor/1 (TH2) is higher than a given level of degree for 1 second or more uninterruptedly after the Heater temperature control starts.
0900	Tray 4 Elevator failure	• The Lift-Up Sensor is not blocked even after the lapse of a given period of time after the lifting motion has been started.
0910	Tray 3 Elevator failure	• The Lift-Up Sensor is not blocked even after the lapse of a given period of time after the lifting motion has been started.
0950	Tray 5 Elevator failure	• The Lift-Up Sensor is not blocked even after the lapse of a given period of time after the lifting motion has been started.

Code	Item	Description
0960	Manual Tray Rise Descent Error	• The Bypass Lift-Up Sensor is not blocked even when the Tray 2 Vertical Transport Motor has turned for a given number of pulses after the sequence to move the Paper Lifting Plate from the standby position to the feed position was started. • The Bypass Lift-Up Sensor is not unblocked even when the Tray 2 Vertical Transport Motor has turned for a given number of pulses after the sequence to move the Paper Lifting Plate from the feed position to the standby position was started.
0F30	Abnormally low toner density detected Cyan TCR Sensor	• TC ratio in the developing machine, which is determined by Toner replenishing amount control mechanism, is 5 % or less for a given number of times consecutively.
0F31	Abnormally high toner density detected Cyan TCR Sensor	• TC ratio in the developing machine, which is determined by Toner replenishing amount control mechanism, is 12 % or more for a given number of times consecutively.
0F32	Abnormally low toner density detected Magenta TCR Sensor	• TC ratio in the developing machine, which is determined by Toner replenishing amount control mechanism, is 5 % or less for a given number of times consecutively.
0F33	Abnormally high toner density detected Magenta TCR Sensor	• TC ratio in the developing machine, which is determined by Toner replenishing amount control mechanism, is 12 % or more for a given number of times consecutively.
0F34	Abnormally low toner density detected Yellow TCR Sensor	• TC ratio in the developing machine, which is determined by Toner replenishing amount control mechanism, is 5 % or less for a given number of times consecutively.
0F35	Abnormally high toner density detected Yellow TCR Sensor	• TC ratio in the developing machine, which is determined by Toner replenishing amount control mechanism, is 12 % or more for a given number of times consecutively.
0F36	Abnormally low toner density detected Black TCR Sensor	• TC ratio in the developing machine, which is determined by Toner replenishing amount control mechanism, is 4 % or less for a given number of times consecutively.
0F37	Abnormally high toner density detected Black TCR Sensor	• TC ratio in the developing machine, which is determined by Toner replenishing amount control mechanism, is 12 % or more for a given number of times consecutively.
0F3A	Cyan TCR Sensor adjustment failure	• TCR Sensor automatic adjustment does not function properly, failing to adjust to an appropriate value.
0F3B	Magenta TCR Sensor adjustment failure	
0F3C	Yellow TCR Sensor adjustment failure	
0F3D	Black TCR Sensor adjustment failure	
13B0	RTC failure	• When correct access to the RTC Board is failed during access.
13C8	Transfer Unit New Article Release	• A new installation is not detected when a new Transfer Cleaner Unit (Image Transfer Belt Unit) is installed.
13CA	Fusing Unit New Article Release	• A new installation is not detected when a new Fusing Unit is installed.
13D0	Trouble related to Security	• Contact the responsible people of KONICA MINOLTA before taking some countermeasures.

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Code	Item	Description
13D1	Cyan Imaging Unit EEPROM access error	• The re-written data, which has been read out, checked and founded as error, is read out again and found as error. • The error was found when reading out the counter value.
13D2	Magenta Imaging Unit EEPROM access error	
13D3	Yellow Imaging Unit EEPROM access error	
13D4	Black Imaging Unit EEPROM access error	
13D9	Cyan Toner Cartridge EEPROM access error	• The re-written data, which has been read out, checked and founded as error, is read out again and found as error. • The error was found when reading out the counter value.
13DA	Magenta Toner Cartridge EEPROM access error	
13DB	Yellow Toner Cartridge EEPROM access error	
13DC	Black Toner Cartridge EEPROM access error	
13E2	Flash ROM write error	• Flash ROM writing is found faulty during a check.
3000	Main Motor's failure to turn	• The Motor Lock signal remains HIGH for a predetermined continuous period of time while the Motor is turning.
C002	RAM (standard) error at startup	• RAM error at Standard Memory is detected during printer start-up.
C003	RAM (option) error at startup	• RAM error at Extension Memory is detected during printer start-up.
C013	MAC address error at startup (MAC address is invalid)	• Invalid Mac address is detected during printer start-up.
C015	Boot ROM error at startup	• Boot ROM error is detected during printer start-up.
C022	NVRAM access error	• Correct access to NVRAM is failed during the printer starting.
C025	Controller ROM error	• Lead error of destination setting file is detected during the printer starting.
C026		• Flash ROM access error is detected during the printer starting.
C027		• Final check sum error is detected during the printer starting.
C050	HDD access error	• When correct access to the Hard Disk Kit is failed during access.
C051 *1	HDD full error	• Range for user space is full during access to the Hard Disk Kit.
C052	Compact Flash access error	• When correct access to the Compact Flash is failed during access.
C053 *1	Compact Flash full error	• Range for user space is full during access to the Compact Flash.
C054	Compact Flash uninstallation	• Compact Flash is not installed while accessing to the Compact Flash.
C060	Firmware update error	• Firmware update fails to complete correctly during update.

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Code	Item	Description
C061	Hold job error/No Duplex unit	• The Duplex Option is not installed, but it is required for printing the job held in the HDD.
C062	Hold job error/No Tray 3	• Tray 3 is not set when the tray 3 is required for printing of the job hold in HDD.
C063	Hold job error/No Tray 4	• Tray 4 is not set when the tray 4 is required for printing of the job hold in HDD.
C064	Hold job error/No Memory	• Expansion memory is not set when the expansion memory is required for printing of the job hold in HDD.
C065	Hold job error/No Tray 5	• Tray 5 is not set when the tray 5 is required for printing of the job hold in HDD.
FFFF	Interface Communication error	• Correct communication is failed when receiving/sending the command between PWB-A and PWB-P.

*1: After a trouble occurred, an automatic format will be carried out when restarting the printer.

14.2 How to reset

• To reset a malfunction, turn off the Main Power Switch and turn it on again more than 10 seconds after.

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14.3 Solution

14.3.1   0001: Main Motor Turning at abnormal timing

Relevant Electrical Parts	
Main Motor (M1)	Mechanical Control Board (PWB-M) DC Power Supply (PU1)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	M1 operation check	PWB-M CNDM1-5 (REM) PWB-M CNDM1-8 (LOCK)	K to L-2
2	Change PWB-M	—	—
3	Change PU1	—	—

14.3.2   0018: Color PC Drum Motor's failure to turn

Relevant Electrical Parts	
Color PC Drum Motor (M2)	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the connector of motor for proper connection and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling and correct as necessary.	—	—
3	Check the PWB-M connector for proper connection and correct as necessary.	—	—
4	M2 operation check	PWB-M CNDM3-5 (REM) PWB-M CNDM3-8 (LOCK)	C-23
5	Change PWB-M	—	—

14.3.3   0019: Color PC Drum Motor's turning at abnormal timing

Relevant Electrical Parts	
Color PC Drum Motor (M2)	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	M2 operation check	PWB-M CNDM3-5 (REM) PWB-M CNDM3-8 (LOCK)	C-23
2	Change PWB-M	—	—

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14.3.4   001A: Color Developing Motor's failure to turn

Relevant Electrical Parts	
Color Developing Motor (M3)	DC Power Supply (PU1) Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the connector of motor for proper connection and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling and correct as necessary.	—	—
3	Check the PU1 connector for proper connection and correct as necessary.	—	—
4	Check the PWB-M connector for proper connection and correct as necessary.	—	—
5	M3 operation check	PWB-M CNDM2-5 (REM) PWB-M CNDM2-8 (LOCK)	C-22
6	Change PU1	—	—
7	Change PWB-M	—	—

14.3.5   001B: Color Developing Motor's turning at abnormal timing

Relevant Electrical Parts	
Color Developing Motor (M3)	DC Power Supply (PU1) Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	M3 operation check	PWB-M CNDM2-5 (REM) PWB-M CNDM2-8 (LOCK)	C-22
2	Change PU1	—	—
3	Change PWB-M	—	—

14.3.6   0040: Suction Fan Motor's failure to turn

Relevant Electrical Parts	
Mechanical Control Board (PWB-M)	Right Door Assy

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the connector of motor for proper connection and correct as necessary.	—	—
2	Change the Right Door Assy	—	—
3	Change PWB-M	—	—

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14.3.7 0043: Cooling Fan Motor/1's failure to turn

Relevant Electrical Parts	
Cooling Fan Motor/1 (M12)	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the connector of motor for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	M12 operation check	PWB-M CNDM2-15 (ON) PWB-M CNDM2-16 (LOCK)	C-22
4	Change PWB-M	—	—

14.3.8 0046: Fusing Cooling Fan Motor /1's failure to turn

Relevant Electrical Parts	
Fusing Cooling Fan Motor/1 (M11)	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the connector of motor for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	M11 operation check	PWB-M CNDM1-12 (ON) PWB-M CNDM1-14 (LOCK)	K to L-1 to 2
4	Change PWB-M	—	—

14.3.9 0048: Fusing Cooling Fan Motor /2's failure to turn

Relevant Electrical Parts	
Fusing Cooling Fan Motor/2 (M13)	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the connector of motor for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	M13 operation check	PWB-M CNDM1-14 (ON) PWB-M CNDM1-17 (LOCK)	K to L-1
4	Change PWB-M	—	—

14.3.10 004C: Ozone Ventilation Fan Motor's failure to turn

Relevant Electrical Parts	
Ozone Ventilation Fan Motor (M14)	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the connector of motor for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	M14 operation check	PWB-M CNLP-9 (ON) PWB-M CNLP-11 (LOCK)	C-11
4	Change PWB-M	—	—

14.3.11 004E: Power Supply Cooling Fan Motor's failure to turn

Relevant Electrical Parts	
Power Supply Cooling Fan Motor/1 (M8)	DC Power Supply (PU1)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the connector of motor for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	M8 operation check	PWB-M CNLV-2 (ON) PWB-M CNLV-3 (LOCK)	C-27
4	Change PU1	—	—

14.3.12 004F: Cooling Fan Motor 2's failure to turn

Relevant Electrical Parts	
Cooling Fan Motor/2 (M22)	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the connector of motor for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	M22 operation check	PWB-M CNR2FAN-4 (ON) PWB-M CNR2FAN-6 (LOCK)	L-22
4	Change PWB-M	—	—

14.3.13   0094: 2nd Image Transfer Roller Separation

Relevant Electrical Parts	
Mechanical Control Board (PWB-M)	Right Door Assy

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the connector of motor for proper connection and correct as necessary.	—	—
2	Change the Right Door Assy	—	—
3	Change PWB-M	—	—

14.3.14   0096: Transfer Belt Separation

Relevant Electrical Parts	
1st Image Transfer Pressure/Retraction Position Sensor (PC6) 1st Image Transfer Pressure/Retraction Clutch (CL3)	Main Motor (M1) Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the M1 connector for proper connection and correct as necessary.	—	—
2	PC6 I/O check, Sensor check	—	—
3	CL3 operation check	PWB-M CNDM1-11 (ON)	K to L-2
4	M1 operation check	PWB-M CNDM1-5 (REM) PWB-M CNDM1-8 (LOCK)	K to L-2
5	Change PWB-M	—	—

14.3.15   0301: Polygon Motor/C failure to turn

14.3.16   0302: Polygon Motor/M failure to turn

14.3.17   0303: Polygon Motor/Y failure to turn

14.3.18   0304: Polygon Motor/K failure to turn

Relevant Electrical Parts	
PH Unit	PH Interface Board (PWB-D) Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the connector for proper connection and correct as necessary.	—	—
2	Change PH Unit	—	—
3	Change PWB-D	—	—
4	Change PWB-M	—	—

14.3.19   0311: Laser malfunction (Cyan)

14.3.20   0312: Laser malfunction (Magenta)

14.3.21   0313: Laser malfunction (Yellow)

14.3.22   0314: Laser malfunction (Black)

Relevant Electrical Parts	
PH Unit	PH Interface Board (PWB-D) Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the connector for proper connection and correct as necessary.	—	—
2	Change PH Unit	—	—
3	Change PWB-D	—	—
4	Change PWB-M	—	—

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14.3.23   0500: Heating Roller warm-up failure

14.3.24   0501: Fusing Pressure Roller warm-up failure

14.3.25   0510: Abnormally low Heating Roller temperature

14.3.26   0511: Abnormally low Fusing Pressure Roller temperature

14.3.27   0520: Abnormally high Heating Roller temperature

14.3.28   0521: Abnormally high Fusing Pressure Roller temperature

Relevant Electrical Parts	
Fusing Unit	DC Power Supply (PU1) Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the Fusing Unit for correct installation (whether it is secured in position).	—	—
2	Check the Fusing Unit, PWB-M and PU1 for proper connection and correct or change as necessary.	—	—
3	Change Fusing Unit	—	—
4	Change PWB-M	—	—
5	Change PU1	—	—

14.3.29   0900: Tray 4 Elevator failure

14.3.30   0910: Tray 3 Elevator failure

14.3.31   0950: Tray 5 Elevator failure

Relevant Electrical Parts	
Lift-Up Sensor (PC7) Lift-Up Motor (M3)	Control Board (PWB-Z)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the M3 connector for proper connection and correct as necessary.	—	—
2	Check the connector of M3 for proper drive coupling and correct as necessary.	—	—
3	PC7 I/O check, Sensor check	PWB-Z PJ6Z PC-3 (ON)	V-21 to 22
4	M3 operation check	PWB-Z PJ4Z PC-4 to 5	Q-24
5	Change PWB-Z	—	—

14.3.32   0960: Manual Tray Rise Descent Error

Relevant Electrical Parts	
Tray 1 Lift-Up Sensor (PC14) Vertical Transport Motor (M2)	Control Board (PWB-Z)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the M2 connector for proper connection and correct as necessary.	—	—
2	Check the connector of M2 for proper drive coupling and correct as necessary.	—	—
3	PC14 I/O check, Sensor check	PWB-M CNTRY1-10 (ON)	C-10
4	M2 operation check	PWB-Z PJ5Z PC-5 to 8	Q-22
5	Change PWB-Z	—	—

14.3.33   0F30: Abnormally low toner density detected Cyan TCR Sensor

14.3.34   0F32: Abnormally low toner density detected Magenta TCR Sensor

14.3.35   0F34: Abnormally low toner density detected Yellow TCR Sensor

Relevant Electrical Parts	
Imaging Unit /C Imaging Unit /M Imaging Unit /Y Toner Supply Motor C/K (M6) Toner Supply Motor Y/M (M7)	Mechanical Control Board (PWB-M) Controller Board (PWB-P)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Perform image troubleshooting procedure if image density is low.	—	—
2	Clean the TCR Sensor window on the underside of the Imaging Unit if dirty	—	—
3	M6, M7 operation check	PWB-M CNDM2-10 to 13 (M6) PWB-M CNDM3-10 to 13 (M7)	C-22 C-23
4	Reinstall Imaging Unit	—	—
5	Change Imaging Unit	—	—
6	Change PWB-M	—	—
7	Change PWB-P.	—	—

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14.3.36   0F31: Abnormally high toner density detected Cyan TCR Sensor

14.3.37   0F33: Abnormally high toner density detected Magenta TCR Sensor

14.3.38   0F35: Abnormally high toner density detected Yellow TCR Sensor

Relevant Electrical Parts	
Imaging Unit /C Imaging Unit /M Imaging Unit /Y	Mechanical Control Board (PWB-M) Controller Board (PWB-P)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Clean the TCR Sensor window on the underside of the Imaging Unit if dirty	—	—
2	Reinstall Imaging Unit	—	—
3	Change Imaging Unit	—	—
4	Change PWB-M	—	—
5	Change PWB-P	—	—

14.3.39   0F36: Abnormally low toner density detected Black TCR Sensor

Relevant Electrical Parts	
Imaging Unit /K Toner Supply Motor C/K (M7)	Mechanical Control Board (PWB-M) Controller Board (PWB-P)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Perform image troubleshooting procedure if image density is low.	—	—
2	Clean the TCR Sensor window on the underside of the Imaging Unit if dirty	—	—
3	M7 operation check	PWB-M CNDM3-10 to 13	C-23
4	Reinstall Imaging Unit	—	—
5	Change Imaging Unit /K	—	—
6	Change PWB-M	—	—
7	Change PWB-P	—	—

14.3.40   0F37: Abnormally high toner density detected Black TCR Sensor

Relevant Electrical Parts	
Imaging Unit /K	Mechanical Control Board (PWB-M) Controller Board (PWB-P)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Correct the TCR connection on the underside of the Imaging Unit if faulty.	—	—
2	Reinstall Imaging Unit	—	—
3	Change Imaging Unit	—	—
4	Change PWB-M	—	—
5	Change PWB-P	—	—

14.3.41   0F3A: Cyan TCR Sensor adjustment failure

14.3.42   0F3B: Magenta TCR Sensor adjustment failure

14.3.43   0F3C: Yellow TCR Sensor adjustment failure

Relevant Electrical Parts	
Imaging Unit /C Imaging Unit /M Imaging Unit /Y Toner Supply Motor Y/M (M6) Toner Supply Motor C/K (M7)	Mechanical Control Board (PWB-M) Controller Board (PWB-P)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Clean the TCR Sensor window on the underside of the Imaging Unit if dirty	—	—
2	M6, M7 operation check	PWB-M CNDM2-10 to 13 (M6) PWB-M CNDM3-10 to 13 (M7)	C-22 C-23
3	Reinstall Imaging Unit	—	—
4	Change Imaging Unit	—	—
5	Change PWB-M	—	—
6	Change PWB-P	—	—

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14.3.44 0F3D: Black TCR Sensor adjustment failure

Relevant Electrical Parts	
Imaging Unit /K	Mechanical Control Board (PWB-M)
Toner Supply Motor C/K (M7)	Controller Board (PWB-P)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Clean or correct each contact of the Imaging Unit if faulty.	—	—
2	M7 operation check	PWB-M CNDM3-10 to 13	C-23
3	Reinstall Imaging Unit /K	—	—
4	Change Imaging Unit /K	—	—
5	Change PWB-M	—	—
6	Change PWB-P	—	—

14.3.45 13B0: RTC failure

Relevant Electrical Parts	
RTC Board (PWB-R)	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the connector for proper connection and correct as necessary.	—	—
2	Change PWB-R	—	—
3	Change PWB-M	—	—

14.3.46 13C8: Transfer Unit New Article Release

Relevant Electrical Parts	
Mechanical Control Board (PWB-M)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Reinstall Unit	—	—
2	Change PWB-M	—	—

14.3.47 13CA: Fusing Unit New Article Release

Relevant Electrical Parts	
Fusing Unit	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the Fusing Unit for correct installation (whether it is secured in position).	—	—
2	Check the Fusing Unit, PWB-M for proper connection and correct or change as necessary.	—	—
3	Reinstall Fusing Unit	—	—
4	Change Fusing Unit	—	—
5	Change PWB-M	—	—

14.3.48 13D1: Cyan Imaging Unit EEPROM access error

14.3.49 13D2: Magenta Imaging Unit EEPROM access error

14.3.50 13D3: Yellow Imaging Unit EEPROM access error

14.3.51 13D4: Black Imaging Unit EEPROM access error

Relevant Electrical Parts	
Imaging Unit /C Imaging Unit /M Imaging Unit /Y Imaging Unit /K	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Clean the connection between the Imaging Unit and the machine if dirty	—	—
2	Reinstall Imaging Unit	—	—
3	Change Imaging Unit	—	—
4	Change PWB-M	—	—

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Troubleshooting

14.3.52   13D9: Cyan Toner Cartridge EEPROM access error

14.3.53   13DA: Yellow Toner Cartridge EEPROM access error

14.3.54   13DB: Magenta Toner Cartridge EEPROM access error

14.3.55   13DC: Black Toner Cartridge EEPROM access error

Relevant Electrical Parts	
Toner Cartridge /C Toner Cartridge /M Toner Cartridge /Y Toner Cartridge /K	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Clean the connection between the Toner Cartridge and the machine if dirty	—	—
2	Reinstall Toner Cartridge	—	—
3	Change Toner Cartridge	—	—
4	Change PWB-M	—	—

14.3.56   13E2: Flash ROM write error

Relevant Electrical Parts	
Mechanical Control Board (PWB-M)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Change PWB-M.	—	—

14.3.57   3000: Main Motor's failure to turn

Relevant Electrical Parts	
Main Motor (M1)	Mechanical Control Board (PWB-M) DC Power Supply (PU1)

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 PWB-M connector for proper connection and correct as necessary.	—	—
4	M1 operation check	PWB-M CNDM1-5 (REM) PWB-M CNDM1-8 (LOCK)	K to L-2
5	Change PWB-M	—	—
6	Change PU1	—	—

14.3.58   C002: RAM (standard) error at startup

14.3.59   C003: RAM (option) error at startup

Relevant Electrical Parts	
Controller Board (PWB-P)	Extension memory

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Turn OFF the Power Switch of the printer and turn it ON again (Restart of the printer.)	—	—
2	Check connection state of the extension memory and correct as necessary.	—	—
3	Check the PWB-P connector for proper connection and correct as necessary.	—	—
4	Change the extension memory.	—	—
5	Change PWB-P	—	—

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Troubleshooting

14.3.60 C013: MAC address error

14.3.61 C015: BOOT ROM error

14.3.62 C022: NVRAM error

Relevant Electrical Parts	
Controller Board (PWB-P)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Turn OFF the Power Switch of the printer and turn it ON again (Restart of the printer.)	—	—
2	Check the PWB-P connector for proper connection and correct as necessary.	—	—
3	Change PWB-P	—	—

14.3.63 C025, C026, C027: Controller ROM error

Relevant Electrical Parts	
Controller Board (PWB-P)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Turn OFF the Power Switch of the printer and turn it ON again (Restart of the printer.)	—	—
2	Check the PWB-P connector for proper connection and correct as necessary.	—	—
3	If this error message is displayed after update of firmware, conduct the firmware update procedures again.	—	—
4	Change PWB-P	—	—

14.3.64   C050: Hard disk access error

Relevant Electrical Parts	
Controller Board (PWB-P)	Hard Disk Kit (HDD)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Turn OFF the Power Switch of the printer and turn it ON again (Restart of the printer.)	—	—
2	Check the HDD connector for proper connection and correct as necessary.	—	—
3	Check the PWB-P connector for proper connection and correct as necessary.	—	—
4	Change HDD	—	—
5	Change PWB-P	—	—

14.3.65   C051: Hard disk full error

Relevant Electrical Parts	
Controller Board (PWB-P)	Hard Disk Kit (HDD)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Turn OFF the Power Switch of the printer and turn it ON again (Restart of the printer.)	—	—
2	Check the HDD connector for proper connection and correct as necessary.	—	—
3	Change HDD	—	—

14.3.66   C052: Compact Flash access error

Relevant Electrical Parts	
Controller Board (PWB-P)	Compact Flash

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Turn OFF the Power Switch of the printer and turn it ON again (Restart of the printer.)	—	—
2	Check the Compact Flash for proper connection and correct as necessary.	—	—
3	Check the PWB-P connector for proper connection and correct as necessary.	—	—
4	Change Compact Flash.	—	—
5	Change PWB-P	—	—

14.3.67   C051: Compact Flash full error

Relevant Electrical Parts	
Controller Board (PWB-P)	Compact Flash

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Turn OFF the Power Switch of the printer and turn it ON again (Restart of the printer.)	—	—
2	Check the Compact Flash for proper connection and correct as necessary.	—	—
3	Change Compact Flash.	—	—

14.3.68   C054: Compact Flash uninstallation

Relevant Electrical Parts	
Controller Board (PWB-P)	Compact Flash

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Turn OFF the Power Switch of the printer and turn it ON again (Restart of the printer.)	—	—
2	Check the Compact Flash for proper connection and correct as necessary.	—	—
3	Check the PWB-P connector for proper connection and correct as necessary.	—	—
4	Change Compact Flash	—	—
5	Change PWB-P	—	—

14.3.69   C060: Firmware Update error

Relevant Electrical Parts	
Controller Board (PWB-P)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Turn OFF the Power Switch of the printer and turn it ON again (Restart of the printer.)	—	—
2	Check the cable that has been used for update of the firmware for proper connection and correct as necessary.	—	—
3	Update the firmware again.	—	—
4	Check the PWB-P connector for proper connection and correct as necessary.	—	—
5	Change PWB-P	—	—

14.3.70   C061: Hold job error/No Duplex unit

14.3.71   C062: Hold job error/No Tray 3

14.3.72   C063: Hold job error/No Tray 4

14.3.73   C064: Hold job error/No Memory

14.3.74   C065: Hold job error/No Tray5

Relevant Electrical Parts	
Controller Board (PWB-P)	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Turn OFF the Power Switch of the printer and turn it ON again (Restart of the printer.)	—	—
2	Return to the same state as the device configuration when job was held.	—	—
3	Check the options that are mounted on the printer for proper connection and correct as necessary.	—	—
4	Check the PWB-M connector for proper connection and correct as necessary.	—	—
5	Delete the job hold in [PROOF/PRINT MENU].	—	—

14.3.75   FFFF: Interface Communication error

Relevant Electrical Parts	
Print Control Board (PWB-P)	Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Turn OFF the Power Switch of the printer and turn it ON again (Restart of the printer.)	—	—
2	Check the PWB-P connector for proper connection and correct as necessary	—	—
3	Check the PWB-M connector for proper connection and correct as necessary.	—	—
4	Change PWB-M.	—	—

15. Power supply trouble

15.1 Machine is not Energized at All (PU1 Operation Check)

Relevant Electrical Parts	
Main Power Switch (S1) Mechanical Control Board (PWB-M)	DC Power Supply (PU1)

Step	Check Item	WIRING DIAGRAM (Location)	Result	Action
1	Is a power voltage supplied across CN1PU1-1 and 2 on PU1?	S to T-2	NO	Check the WIRING from the wall outlet to S1 CN1PU1.
2	Are the fuses on PU1 conducting ?	—	NO	Change PU1.
3	Is DC3.3 V being output from CN6PU1-1 on PU1?	R-4	NO	Change PU1.
4	Is "Low" being output from CN7PU1-2 on PU1?	R-5	NO	Check the WIRING from the PWB-P to PWB-M to CN1PU1.
5	Is DC24 V being output from CN5PU1-2 on PU1?	R-6	NO	Change PU1.
6	Is DC5 V being input to CN5PU1-3 on PU1?	R-4	NO	Change PU1.
5	Is DC5 V being input to CNPOW-2 on the Control Board? (LED on PWB-M does not blink.)	I-6	NO	Change PU1.
			YES	Change PWB-M

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15.2   Control panel indicators do not light.

Relevant Electrical Parts	
Controller Board (PWB-P) Control Panel (PWB-OP)	DC Power Supply (PU1)

Step	Check Item	WIRING DIAGRAM (Location)	Result	Action
1	Is a power voltage being applied across CN1PU1-1 and 2 on PU1 ?	S to T-2	NO	Check the WIRING from the wall outlet to S1 to CN1PU1.
2	Is the fuse on PU1 conducting ?	—	NO	Change PU1.
3	Is DC3.3 V being output from CN6PU1-1 on PU1?	R-4	NO	Change PU1.
4	Is "Low" being output from CN7PU1-2 on PU1?	R-5	NO	Check the WIRING from the PWB-P to PWB-M to CN1PU1.
5	Is DC5 V being output from CN6PU1-2 on PU1?	R-4	NO	Change PU1.
6	Is J22P on PWB-P securely connected ?	T-10	NO	Reconnect. Check the WIRING from the PWB-P to PWB-M.
7	Is CN20P on PWB-OP securely connected ?	V to W-10	NO	Reconnect.
			YES	Change PWB-OP. Change PWB-P.

15.3   Fusing Heaters do not Operate

Relevant Electrical Parts	
Primary Interlock Switch (S2) Fusing Unit	DC Power Supply (PU1)

Step	Check Item	WIRING DIAGRAM (Location)	Result	Action
1	Is the power source voltage applied across CN2PU1-1 to 2 on PU1 ? During this time, the Right Door should be closed.	S to T-2	NO	Check wiring from power outlet to S2 to CN2PU1.
2	Is the power source voltage applied across CN30-1 and 3, or across 2 and 3 ?	U-6	YES	Fusing Unit
			NO	Change PU1.

Troubleshooting

15.4 Power is not Supplied to Option

15.4.1   Optional Lower Feeder Unit

Step	Check Item	WIRING DIAGRAM (Location)	Result	Action
1	Is DC24 V being applied to hookup connector CN44-2 ?	O-21	NO	Malfunction in Lower Feeder Unit
2	Is DC24 V being output from CNCST-2 on PWB-M ?	I-21	NO	Check wiring from PWB-M to CN44 to Lower Feeder Unit.
3	Is DC24 V being output from CN5PU1-2 on PU1 ?	—	YES	Change PU1.
			NO	Malfunction in Lower Feeder Unit

15.4.2   Power is not Supplied to Duplex Option
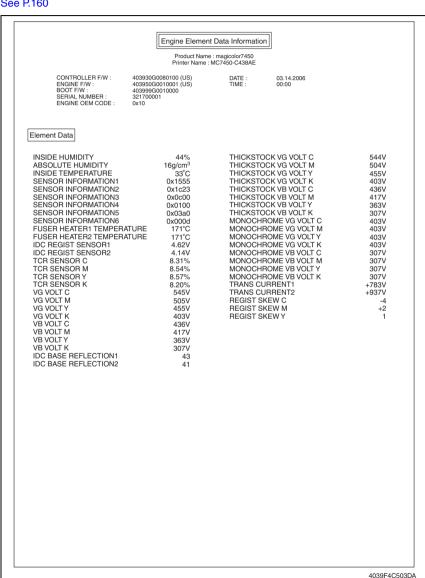
Step	Check Item	WIRING DIAGRAM (Location)	Result	Action
1	Is DC24 V being output from CN19-2 on Duplex ?	O-19	NO	Malfunction in Duplex Option.
2	Is DC24 V being output from CNDUP-2 on PWB-M ?	I-19	NO	Check wiring from PWB-M to CN19 to Duplex.
3	Is DC24 V being output from CNCOP-3 on PWB-M ?	—	YES	Change PU1.
			NO	Malfunction in Duplex Option.

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Troubleshooting

16. Image quality problem

16.1 How to read Element date

- Utilize the Element data which is output by selecting [DIAGNOSIS MENU] → [PRINT MENU] → [ELEMENT PAGE] on the SERVICE MENU to specify the cause for the trouble.
- For details on Element data for each item, see "Adjustment/Setting."

Engine Element Data Information

Product Name : magicolor7450
Printer Name : MC7450-C438AE

CONTROLLER F/W :	403930G0080100 (US)	DATE :	03.14.2006
ENGINE F/W :	403950G0010001 (US)	TIME :	00:00
BOOT F/W :	403999G0010000		
SERIAL NUMBER :	321700001		
ENGINE OEM CODE :	0x10		

Element Data

INSIDE HUMIDITY	44%	THICKSTOCK VG VOLT C	544V
ABSOLUTE HUMIDITY	16g/cm^3	THICKSTOCK VG VOLT M	504V
INSIDE TEMPERATURE	33°C	THICKSTOCK VG VOLT Y	455V
SENSOR INFORMATION1	0x1555	THICKSTOCK VG VOLT K	403V
SENSOR INFORMATION2	0x1c23	THICKSTOCK VB VOLT C	436V
SENSOR INFORMATION3	0x0c00	THICKSTOCK VB VOLT M	417V
SENSOR INFORMATION4	0x0100	THICKSTOCK VB VOLT Y	363V
SENSOR INFORMATION5	0x03a0	THICKSTOCK VB VOLT K	307V
SENSOR INFORMATION6	0x000d	MONOCHROME VG VOLT C	403V
FUSER HEATER1 TEMPERATURE	171°C	MONOCHROME VG VOLT M	403V
FUSER HEATER2 TEMPERATURE	171°C	MONOCHROME VG VOLT Y	403V
IDC REGIST SENSOR1	4.62V	MONOCHROME VG VOLT K	403V
IDC REGIST SENSOR2	4.14V	MONOCHROME VB VOLT C	307V
TCR SENSOR C	8.31%	MONOCHROME VB VOLT M	307V
TCR SENSOR M	8.54%	MONOCHROME VB VOLT Y	307V
TCR SENSOR Y	8.57%	MONOCHROME VB VOLT K	307V
TCR SENSOR K	8.20%	TRANS CURRENT1	+783V
VG VOLT C	545V	TRANS CURRENT2	+937V
VG VOLT M	505V	REGIST SKEW C	-4
VG VOLT Y	455V	REGIST SKEW M	+2
VG VOLT K	403V	REGIST SKEW Y	1
VB VOLT C	436V		
VB VOLT M	417V		
VB VOLT Y	363V		
VB VOLT K	307V		
IDC BASE REFLECTION1	43		
IDC BASE REFLECTION2	41		

4039F4C503DA

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Troubleshooting

16.2   How to identify problematic part

- This chapter is divided into two parts: "Initial Check Items" and "Troubleshooting Proce-dure by a Particular Image Quality Problem."
- When an image quality problem occurs, first go through the "Initial Check Items" and, if the cause is yet to be identified, go to "Troubleshooting Procedure by a Particular Image Quality Problem."

16.2.1   Initial Check Items

- If the printer is responsible for the image problem, let the machine produce a test print and determine whether the image problem occurs in a specific single color or four colors

4 Colors

Mono Color

4039F4C505DA
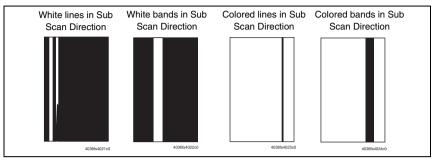
- Evaluation Procedure

Image Problem	Action	Result	Cause	Next Step
Lines, bands	From [Service Menu], select [DIAGNOSIS MENU] → [PRINT MENU] → [GRADATION], and produce a test print. Is image problem evident in each of all four colors?	YES	Printer, 4 colors	P.228
		NO	Printer, single color	P.215

16.3   Solution

16.3.1   Monocolor: white lines in Sub Scan Direction, white bands in Sub Scan Direction, colored lines colored bands in Sub Scan Direction
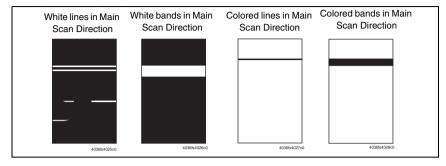
A.   Typical Faulty Images

White lines in Sub Scan Direction	White bands in Sub Scan Direction	Colored lines in Sub Scan Direction	Colored bands in Sub Scan Direction
4036fs4021c0	4036fs4022c0	4036fs4023c0	4036fs4024c0

B.   Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Imaging Unit	The surface of the PC Drum is scratched.	YES	Change Imaging Unit.
2		Dirty on the outside.	YES	Clean.
3		Contact terminals make good connection between each IU and machine.	NO	Clean contact terminals.
4		Developing bias contact terminal makes good connection.	NO	Clean contact terminal and check terminal position.
5	PH Unit	The surface of the PH Window is dirty.	YES	Clean with cleaning jig.
6		The problem has been eliminated through the checks of steps up to 5.	NO	Change Imaging Unit. → Change Image Transfer Belt. → Change PH Unit.

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Troubleshooting

16.3.2 Monocolor: white lines in Main Scan Direction, white bands in Main Scan Direction, colored lines in Main Scan Direction, colored bands in Main Scan Direction

A. Typical Faulty Images

White lines in Main Scan Direction

White bands in Main Scan Direction

Colored lines in Main Scan Direction

Colored bands in Main Scan Direction

4036fs4025c0   4036fs4026c0   4036fs4027c0   4036fs4028c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Imaging Unit	The surface of the PC Drum is scratched.	YES	Change Imaging Unit.
2		Dirty on the outside.	YES	Clean.
3		Contact terminals make good connection between each IU and machine.	NO	Clean contact terminals.
4		Developing bias contact terminal makes good connection.	NO	Clean contact terminal and check terminal position.
5	PH Unit	The surface of the PH Window is dirty.	YES	Clean with cleaning jig.
6		The problem has been eliminated through the checks of steps up to 6.	NO	Change Imaging Unit. → Change Transfer Belt. → Change PH Unit.

16.3.3 Monocolor: uneven density in sub scan direction

A. Typical Faulty Images

4036fs4043c0   4036fs4044c0   4036fs4045c0

B. Troubleshooting Procedure
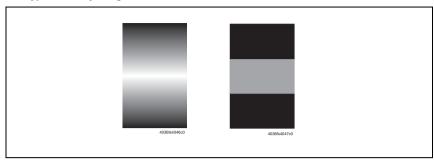
Step	Section	Check Item	Result	Action
1	High image density original	Uneven density in Sub Scan Direction occurs at a pitch of 40 mm to 50 mm when a multi-print cycle is run using an original with high image density (50% or more).	YES	Feed 10 to 20 blank sheets of paper with no originals placed, as the IU fails to keep up with a high demand for toner.
2	Imaging Unit	The surface of the PC Drum is scratched.	YES	Change Imaging Unit.
3		Dirty on the outside.	YES	Clean.
4	PH Unit	The surface of the PH Window is dirty.	YES	Clean with cleaning jig.
5	Transfer Belt	Cam gear operates properly.	NO	Change Transfer Belt.
6		The problem has been eliminated through the checks of steps up to 5.	NO	Change IU. → Change PH Unit. → Change Controller Board. → Change High Voltage Unit (Image Transfer, Neutralizing).

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Troubleshooting

16.3.4 Monocolor: uneven density in main scan direction

A. Typical Faulty Images

4036fs4046c0

4036fs4047c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Imaging Unit	The surface of the PC Drum is scratched.	YES	Change Imaging Unit.
2		Dirty on the outside.	YES	Clean.
3	PH Unit	The surface of the PH Window is dirty.	YES	Clean with cleaning jig.
4	Transfer Belt	Transfer Belt makes positive contact with plates on rails.	NO	Check and correct contacts.
5		Cam gear operates properly.	NO	Change Transfer Belt.
6		The problem has been eliminated through the checks of steps up to 5.	NO	Change Imaging Unit. → Change PH Unit. → Change High Voltage Unit (Image Transfer, Neutralizing).

16.3.5   Monocolor: low image density
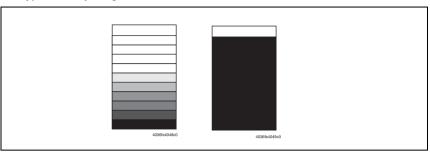
A.   Typical Faulty Images

ABCDE
ABCDE
ABCDE
ABCDE
ABCDE

4036fs4036c0

B.   Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	[SERVICE MENU] →[DIAGNOSIS MENU] → [PRINT MENU] → [ELE-MENT PAGE]	Check data for Vg and Vdc. Color Vdc: Around 400 V Vg : Around 500 V Black Vdc: Around 400 V Vg : Around 500 V	NO	Go to next step.
2		Check TCR data.	NO	Go to next step.
3		IDC output value is around 4.3 V.	NO	Clean IDC Sensor. Check Image Transfer Belt for damage.
4	Element data check results	Low TCR and low Vg and Vdc	YES	Go to step 8.
5		Low TCR and high Vg and Vdc	YES	Go to step 13.
6		TCR falling within specified range and low Vg and Vdc	YES	Go to step 8.
7		TCR falling within specified range and high Vg and Vdc	YES	Go to step 13.
8	Imaging Unit	Dirty on the outside.	YES	Clean.
9	PH Unit	The surface of the PH Window is dirty.	YES	Clean with cleaning jig.
10	TCR Sensor window	The color TCR Sensor window on the LED Assy is dirty.	YES	Clean.
11	Transfer Belt	Transfer Belt makes positive contact with plates on rails.	NO	Check and correct contacts.
12		Cam gear operates properly.	NO	Change Transfer Belt.
13	Hopper Unit	Connectors are loose.	YES	Reconnect.
14		Gear is cracked.	YES	Change gear.
15	[SERVICE MENU] →[DIAGNOSIS MENU] → [FUNC-TION MENU] → [TONER REPLEN-ISH]	Toner is properly supplied when TONER REPLENISH is run.	NO	Go to next step.

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Step	Section	Check Item	Result	Action
16	[SERVICE MENU] →[ALIGNMENT] → [MAXIMUM DENSITY]	The problem has been eliminated through the adjust of MAXIMUM DENSITY.	NO	Go to next step.
17		The problem has been eliminated through the checks of steps up to 16.	NO	Change Imaging Unit. → Change Controller Board → Change PH Unit. → Change High Voltage Unit (Image Transfer, Neutralizing).

Troubleshooting

16.3.6   Monocolor: gradation reproduction failure

A. Typical Faulty Images

4036fs4048c0

4036fs4049c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Imaging Unit	Dirty on the outside.	YES	Clean.
2	PH Unit	The surface of the PH Window is dirty.	YES	Clean with cleaning jig.
3	TCR Sensor window	TCR Sensor window is dirty.	YES	Clean.
4	[SERVICE MENU] →[DIAGNOSIS MENU] → [PRINT MENU] → [ELEMENT PAGE]	IDC output value is around 4.3 V.	NO	Clean IDC Sensor. Check Transfer Belt for damage.
5	[SERVICE MENU] →[ALIGN-MENT] → [MAX-IMUM DENSITY]	The problem has been eliminated through the adjust of MAXIMUM DENSITY.	NO	Go to next step.
6		The problem has been eliminated through the checks of steps up to 5.	NO	Change Imaging Unit. → Change Controller Board → Change PH Unit. → Change High Voltage Unit (Image Transfer, Neutralizing).

16.3.7 Monocolor: foggy background
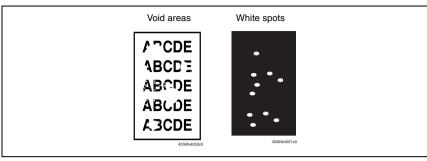
A. Typical Faulty Images

ABCD
ABCD
ABCD
ABCD
ABCD

4036fs4030c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	[SERVICE MENU] →[DIAGNOSIS MENU] → [PRINT MENU] → [ELEMENT PAGE]	Check data for Vg and Vb. Color Vdc: Around 400 V Vg : Around 500 V Black Vdc: Around 400 V Vg : Around 500 V	NO	Go to next step.
2		Check TCR data.	NO	Go to next step.
3		IDC output value is around 4.3 V.	NO	Clean IDC Sensor. Check Transfer Belt for damage.
4	Element data check results	Low TCR and low Vg and Vdc	YES	Go to step 8.
5		Low TCR and high Vg and Vdc	YES	Go to step 11.
6		TCR falling within specified range and low Vg and Vdc	YES	Go to step 8.
7		TCR falling within specified range and high Vg and Vdc	YES	Go to step 11.
8	Imaging Unit	Dirty on the outside.	YES	Clean.
9	PH Unit	The surface of the PH Window is dirty.	YES	Clean with cleaning jig.
10	TCR Sensor window	The color TCR Sensor window is dirty.	YES	Clean.
11	[SERVICE MENU] →[ALIGNMENT] → [ELECTRIFICATION]	The problem is eliminated after ELECTRIFICATION has been adjusted.	NO	Go to next step.
12	[SERVICE MENU] →[ALIGNMENT] → [MAXIMUM DENSITY]	The problem has been eliminated through the adjust of MAXIMUM DENSITY.	NO	Go to next step.
13		The problem has been eliminated through the checks of steps up to 12.	NO	Change Imaging Unit. → Change Controller Board → Change PH Unit. → Change High Voltage Unit (Image Transfer, Neutralizing).

16.3.8   Monocolor: void areas, white spots
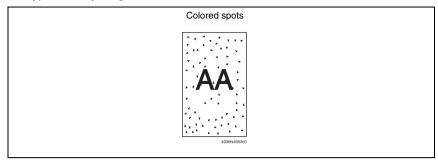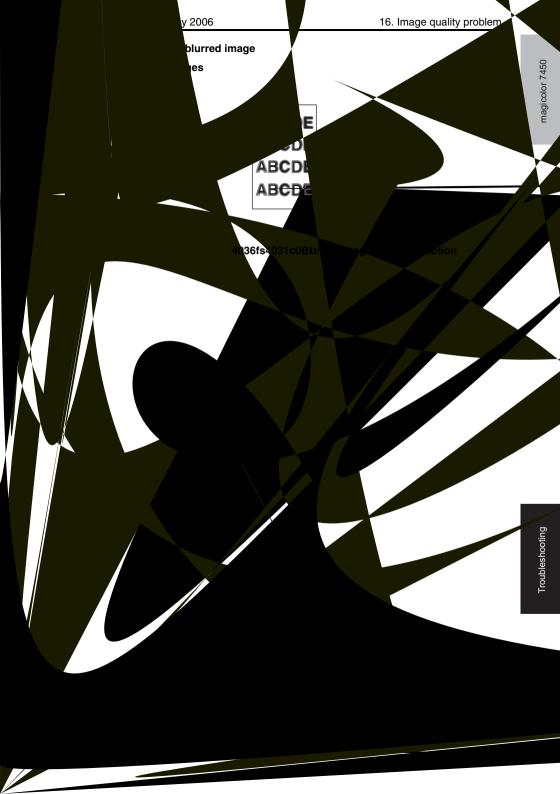
A. Typical Faulty Images

Void areas   White spots

4036fs4050c0   4036fs4051c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Image Check	There are void areas at the front side or high density section.	YES	P.219
2		There is void area at the rear side section.	YES	Perform [TRANSFER POWER]/ [1'ST TRANSFER] under Service Menu.
3	Imaging Unit	The surface of the PC Drum is scratched.	YES	Change Imaging Unit.
4		Dirty on the outside.	YES	Clean.
5	Toner Cartridge	Foreign matter or caked toner in the Toner Cartridge.	YES	Remove foreign matter.

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Troubleshooting

16.3.9   Monocolor: colored spots

A.   Typical Faulty Images

Colored spots

4036fs4052c0

B.   Troubleshooting Procedure
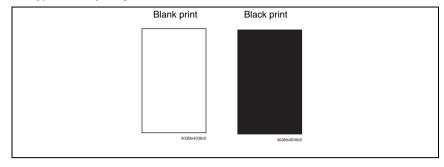
Step	Section	Check Item	Result	Action
1	Imaging Unit	Developing bias contact terminal makes good connection.	NO	Clean contact terminal and check terminal position.
2		The surface of the PC Drum is scratched.	YES	Change Imaging Unit.
3		Dirty on the outside.	YES	Clean.

blurred image

es

ABCDE
ABCD
ABCDE
ABCDE

4936fs4031c0Blur...g...ction

magicolor 7450

Troubleshooting

16.3.11 Monocolor: blank print, black print

A. Typical Faulty Images

Blank print   Black print

4036fs4038c0   4036fs4039c0

B. Troubleshooting Procedure
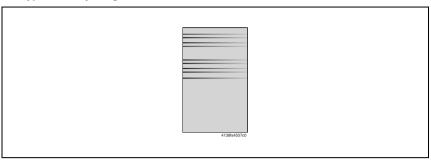
Step	Section	Check Item	Result	Action
1	Image Check	A blank print occurs.	YES	Check PH Unit connector for proper connection.
2	Imaging Unit	Coupling of IU drive mechanism is installed properly.	NO	Check and correct drive transmitting coupling. Change IU.
3		The PC Drum Charge Corona voltage contact or PC Drum ground contact of the Imaging Unit is connected properly.	NO	Check, clean, or correct the contact.
4	High Voltage Unit (Image Transfer, Neutralizing)	Connector is connected properly.	NO	Reconnect.
5		The problem has been eliminated through the check of step 4.	NO	Change High Voltage Unit (Image Transfer, Neutralizing). → Change Controller Board → Change PH Unit.

16.3.12 Monocolor: uneven image

A. Typical Faulty Images

4138fs4507c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Toner Cartridge	The Toner Cartridge of every color is surely installed.	NO	Re-install it.
2	PH Unit	The PH Unit is surely installed.	NO	Re-install it.
3		Uneven pitch occurs in 3.0 mm pitch.	YES	Replace the PH Unit Holder.
4	Toner Cartridge	There is any stain or breakage on the Drive section of the Toner Cartridge.	YES	Clean/replace the Toner Cartridge.
5	Imaging Unit	There is any stain, damage or abrasion on the PC drum.	YES	Replace the Imaging Unit.
6	Transfer Roller	There is any stain, damage, deformation or abrasion on the Transfer roller.	YES	Replace the Transfer Roller.
7	Fusing Unit	There is any stain, damage, deformation or abrasion on the Roller and Drive section of the Fusing Unit.	YES	Replace the Fusing unit.
8		The problem has been eliminated through the check of step 7.	NO	Replace the Transfer Belt.

16.3.13   4-Color: white lines in sub scan direction, white bands in sub scan direction, colored lines in sub scan direction, and colored bands in sub scan direction
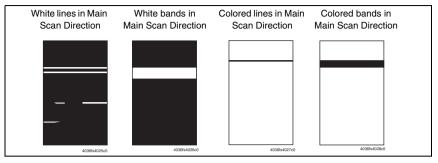
A. Typical Faulty Images

White lines in Sub Scan Direction	White bands in Sub Scan Direction	Colored lines in Sub Scan Direction	Colored bands in Sub Scan Direction
4036fs4021c0	4036fs4022c0	4036fs4023c0	4036fs4024c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Transfer Belt	Fingerprints, oil, or other foreign matter is evident on the Transfer Belt.	YES	Clean with specified solvent. (See Maintenance.)
2		Transfer Belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change Transfer Belt if belt is damaged.
3		Cleaning Blade is not effective in removing toner completely.	YES	Clean Cleaning blade. Change Transfer Belt.
4	Transfer Roller	Transfer Roller is dirty or scratched.	YES	Change Transfer Roller.
5	Paper path	There is foreign matter on paper path.	YES	Remove foreign matter.
6		Image Transfer Paper Separator Fingers are damaged or dirty.	YES	Clean or change.
7	Fusing Unit	Fusing Entrance Guide Plate is dirty or damaged.	YES	Clean. Change Fusing Unit.
8		Fusing Paper Separator Fingers are dirty.	YES	Clean.
9		The problem has been eliminated through the checks of steps up to 8.	NO	Change Controller Board

16.3.14   4-Color: white lines in main scan direction, white bands in main scan direction, colored lines in main scan direction, and colored bands in main scan direction
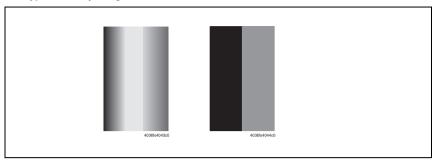
A. Typical Faulty Images

White lines in Main Scan Direction	White bands in Main Scan Direction	Colored lines in Main Scan Direction	Colored bands in Main Scan Direction

4036fs4025c0   4036fs4026c0   4036fs4027c0   4036fs4028c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Transfer Belt	Fingerprints, oil, or other foreign matter is evident on the Transfer Belt.	YES	Clean with specified solvent. (See Maintenance.)
2		Transfer Belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change Transfer Belt if belt is damaged.
3		Cleaning Blade is not effective in removing toner completely.	YES	Clean Cleaning Blade. change Image Transfer Belt Unit.
4	Transfer Roller	Transfer Roller is dirty or scratched.	YES	Change Transfer Roller.
5	Paper path	There is foreign matter on paper path.	YES	Remove foreign matter.
6		Image Transfer Paper Separator Fingers are damaged or dirty.	YES	Clean or change.
7	Fusing Unit	Fusing Entrance Guide Plate is dirty or damaged.	YES	Clean. Change Fusing Unit.
8		Fusing Paper Separator Fingers are dirty.	YES	Clean.
9	Neutralizing Brush	The resistance values between the Neutralizing brush and the ground terminal is not ∞.	NO	Check the contact. Modify. Change Neutralizing brush.
10		The problem has been eliminated through the checks of steps up to 9.	NO	Change Controller Board

16.3.15   4-Color: uneven density in sub scan direction
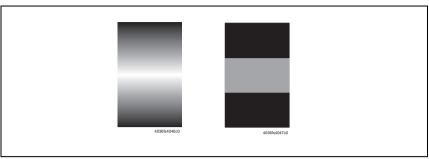
A. Typical Faulty Images

4036fs4043c0   4036fs4044c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Transfer Belt	Fingerprints, oil, or other foreign matter is evident on the Transfer Belt.	YES	Clean with specified solvent. (See Maintenance.)
2		Transfer Belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change Transfer Belt if belt is damaged.
3		Terminal is dirty.	YES	Clean.
4	Transfer Roller	Transfer Roller is installed properly.	NO	Reinstall.
5		Transfer Roller is dirty or scratched.	YES	Change Transfer Roller Unit.
6		The problem has been eliminated through the checks of steps up to 5.	NO	Change Transfer Belt.

16.3.16   4-Color: uneven density in main scan direction

A. Typical Faulty Images

4036fs4046c0

4036fs4047c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Transfer Belt	Fingerprints, oil, or other foreign matter is evident on the Transfer Belt.	YES	Clean with specified solvent. (See Maintenance.)
2		Transfer Belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change Transfer Belt if belt is damaged.
3		Terminal is dirty.	YES	Clean.
4	Transfer Roller	Transfer Roller is installed properly.	NO	Reinstall.
5		Transfer Roller is dirty or scratched.	YES	Change Transfer Roller.
6		The problem has been eliminated through the checks of steps up to 5.	NO	Change Transfer Belt. → Change High Voltage Unit (Image Transfer, Neutralizing).

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Troubleshooting

16.3.17   4-Color: low image density

A.   Typical Faulty Images

ABCDE
ABCDE
ABCDE
ABCDE
ABCDE

4036fs4036c0

B.   Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Paper	Paper is damp.	YES	Change paper to one just unwrapped from its package. Install Paper Dehumidifying Heater.
2	Transfer Belt	Terminal is dirty.	YES	Clean.
3	Transfer Roller	Transfer Roller is installed properly.	NO	Reinstall.
4		Transfer Roller is dirty or scratched.	NO	Change Transfer Roller.
5	IDC Sensor	Sensor is dirty.	YES	Clean with blower brush.
6	[SERVICE MENU] →[ALIGNMENT] → [MAXIMUM DENSITY]	The problem has been eliminated through the adjust of MAXIMUM DENSITY.	NO	Go to next step.
7		The problem has been eliminated through the checks of steps up to 6.	NO	Change Transfer Belt. → Change Controller Board → Change High Voltage Unit (Image Transfer, Neutralizing).

16.3.18   4-Color: poor color reproduction

A. Typical Faulty Images

4036fs4058c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Paper	Paper is damp.	YES	Change paper to one just unwrapped from its package. Install Paper Dehumidifying Heater.
2	Transfer Belt	Terminal is dirty.	YES	Clean.
3	Transfer Roller	Transfer Roller is installed properly.	NO	Reinstall.
4		Transfer Roller is dirty or scratched.	NO	Change Transfer Roller.
5	IDC Sensor	Sensor is dirty.	YES	Clean with blower brush.
6	[SERVICE MENU] →[ALIGNMENT] → [MAXIMUM DENSITY]	The problem has been eliminated through the adjust of MAXIMUM DENSITY.	NO	Go to next step.
7		The problem has been eliminated through the checks of steps up to 6.	NO	Change Transfer Belt. → Change Controller Board → Change High Voltage Unit (Image Transfer, Neutralizing).

Troubleshooting

16.3.19   4-Color: incorrect color image registration

A. Typical Faulty Images

4036fs4032c0

B. Troubleshooting Procedure
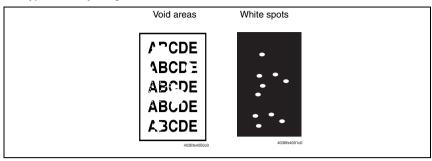
Step	Section	Check Item	Result	Action
2	Machine condition	Vibration is given to the machine after main power switch has been turned ON.	YES	Turn off the Main Power Switch and turn it on again more than 10 seconds after.
3	Transfer Belt	Fingerprints, oil, or other foreign matter is evident on the Image Transfer Belt.	YES	Clean with specified solvent. (See Maintenance.)
4		Transfer Belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change Transfer Belt if belt is damaged.
5		Drive coupling to the machine is dirty.	YES	Clean.
6	Imaging Unit	The surface of the PC Drum is scratched.	YES	Change Imaging Unit.
7	Transfer Roller	Transfer Roller is installed properly.	NO	Reinstall.
8		Transfer Roller is dirty or scratched.	YES	Change Transfer Roller.
9	[SERVICE MENU] →[ALIGN-MENT] → [FUSER SPEED]	Brush effect or blurred image occurs.	YES	Readjust Fusing Transport Speed.
10	[SERVICE MENU] →[ALIGN-MENT] → [REGISTRA-TION]	Check the specific color in which color shift occurs.	YES	Perform "REGISTRATION." If color shift is not corrected even with a correction of ± 1 dot, go to next step.
11		The problem has been eliminated through the checks of steps up to 10.	NO	Change Transfer Belt. → Change Controller Board

16.3.20 4-Color: void areas, white spots
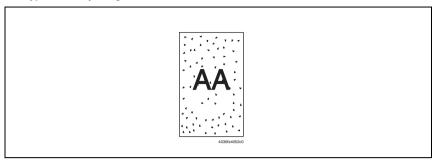
A. Typical Faulty Images

Void areas   White spots

4036fs4050c0   4036fs4051c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Image Check	There are void areas at the front side or high density section.	YES	P.233
2		There are void areas in the trailing edge.	YES	Perform [TRANSFER POWER]/ [1'ST TRANSFER] under Service Menu.
3	Transfer Belt	Fingerprints, oil, or other foreign matter is evident on the Transfer Belt.	YES	Clean with specified solvent. (See Maintenance.)
4		Transfer Belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change Transfer Belt belt is damaged.
5	Transfer Roller	Transfer Roller is dirty or scratched.	YES	Change Image Transfer Roller.
6		Charge Neutralizing Cloth is not separated and ground terminal is connected properly.	NO	Correct or change.
7	Paper path	There is foreign matter on paper path.	YES	Remove foreign matter.
8		Pre-Image Transfer Guide Plate is damaged or dirty.	YES	Clean or change.
9		The problem has been eliminated through the checks of steps up to 8.	NO	Change Transfer Belt.

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Troubleshooting

16.3.21   4-Color: colored spots
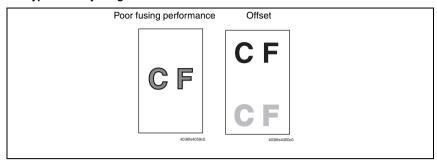
A. Typical Faulty Images

4036fs4052c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Imaging Unit	The surface of the PC Drum is scratched.	YES	Change Imaging Unit.
2	Transfer Belt	Fingerprints, oil, or other foreign matter is evident on the Transfer Belt.	YES	Clean with specified solvent. (See Maintenance.)
3		Transfer Belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change Transfer Belt if belt is damaged.
4	Transfer Roller	Transfer Roller is dirty or scratched.	YES	Change Transfer Roller Unit.
5	Paper path	There is foreign matter on paper path.	YES	Remove foreign matter.
6	Fusing Unit	Fusing Belt is dirty or scratched.	YES	Change Fusing Unit.
7		The problem has been eliminated through the checks of steps up to 6.	NO	Change Transfer Belt.

16.3.22 4-Color: poor fusing performance, offset

A. Typical Faulty Images

Poor fusing performance   Offset

C F

C F

C F

4036fs4059c0   4036fs4060c0

B. Troubleshooting Procedure
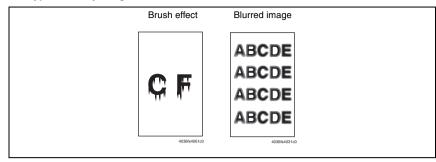
Step	Section	Check Item	Result	Action
1	Paper	Paper type does not match.	YES	Change the setting.
2	[SERVICE MENU] →[ALIGNMENT] →[TEMPERATURE1/2]	Changing fusing temperature eliminates the problem of poor fusing performance and offset.	YES	Readjust Fusing Temperature.
3		The problem has been eliminated through the checks of steps up to 2.	NO	Change Fusing Unit.

16.3.23   4-Color: brush effect, blurred image
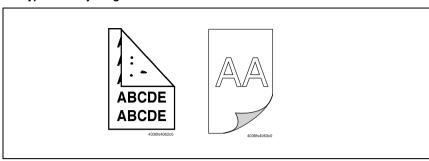
A. Typical Faulty Images

Brush effect   Blurred image

C F

4036fs4061c0

ABCDE
ABCDE
ABCDE
ABCDE

4036fs4031c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Paper	Paper is damp.	YES	Change paper to one just unwrapped from its package. Install Paper Dehumidifying Heater.
2		Paper type does not match.	YES	Change the setting.
3	Fusing Unit	Fusing Entrance Guide Plate is dirty.	YES	Clean.
4		Fusing Belt is dirty or scratched.	YES	Change Fusing Unit.
5	[SERVICE MENU] →[ALIGN-MENT] →[FUSER SPEED]	Changing fusing speed eliminates the problem of brush effect and blurred image.	YES	Readjust Fusing Transport Speed.

16.3.24   4-Color: back marking

A. Typical Faulty Images

ABCDE
ABCDE

4036fs4062c0

AA

4036fs4063c0

B. Troubleshooting Procedure
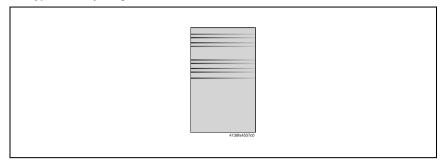
Step	Section	Check Item	Result	Action
1	Transfer Roller	Image Transfer Roller is scratched or dirty.	YES	Change Transfer Roller.
2	Paper path	There is foreign matter on paper path.	YES	Remove foreign matter.
3	Fusing Unit	Fusing Entrance Guide Plate is scratched or dirty.	YES	Clean or change.
4		Lower Fusing Roller is scratched or dirty.	YES	Change Fusing Unit.
5	Transfer Belt	Fingerprints, oil, or other foreign matter is evident on the Transfer Belt.	YES	Clean with specified solvent. (See Maintenance.)
6		The problem has been eliminated through the checks of steps up to 5.	NO	Change Transfer Belt. → Change High Voltage Unit (Image Transfer, Neutralizing).

16.3.25   4-Color: uneven image

A. Typical Faulty Images

4138fs4507c0

B. Troubleshooting Procedure

Step	Section	Check Item	Result	Action
1	Toner Cartridge	The Toner Cartridge of every color is surely installed.	NO	Re-install it.
2	PH Unit	The PH Unit is surely installed.	NO	Re-install it.
3		Uneven pitch occurs in 3.0 mm pitch.	YES	Replace the PH Unit Holder.
4	Toner Cartridge	There is any stain or breakage on the Drive section of the Toner Cartridge.	YES	Clean/replace the Toner Cartridge.
5	Imaging Unit	There is any stain, damage or abrasion on the PC drum.	YES	Replace the Imaging Unit.
6	Transfer Roller	There is any stain, damage, deformation or abrasion on the Transfer roller.	YES	Replace the Transfer Roller.
7	Fusing Unit	There is any stain, damage, deformation or abrasion on the Roller and Drive section of the Fusing Unit.	YES	Replace the Fusing unit.
8		The problem has been eliminated through the check of step 7.	NO	Replace the Transfer Belt.

Appendix

17. Parts layout drawing
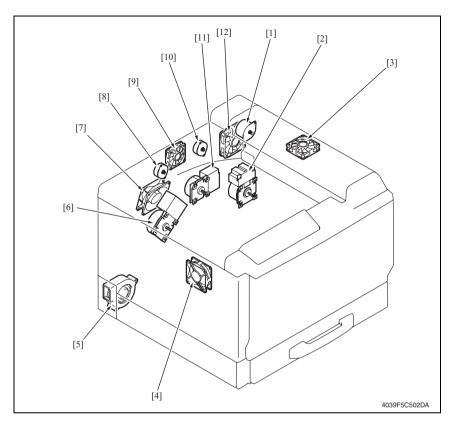
17.1 Main unit

17.1.1 Engine section

4039F5C501DA
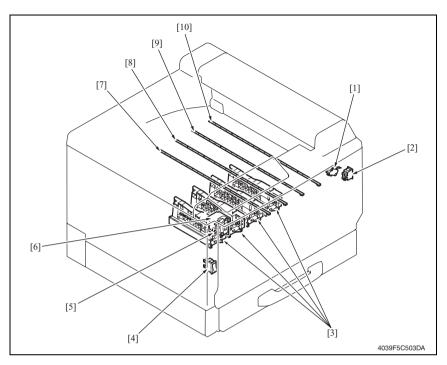
[1]	IDC/Registration Sensor/2 (SE2)	[6]	Controller Board (PWB-P)
[2]	IDC/Registration Sensor/1 (SE1)	[7]	DIMM/0 (WORK0)
[3]	Control Panel (PWB-OP	[8]	RTC Board (PWB-RTC)
[4]	PH Interface Board (PWB-D)	[9]	Mechanical Control Board (PWB-M)
[5]	DC Power Supply (PU1)	[10]	High Voltage Unit (HV1)

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4039F5C502DA
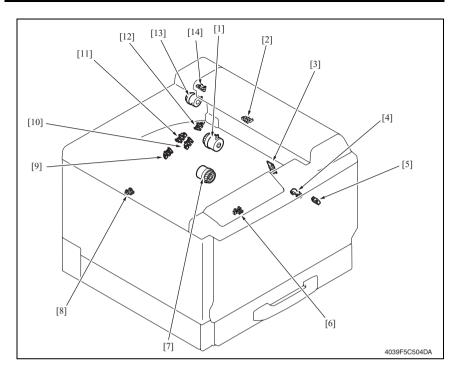
[1]	Fusing Drive Motor (M4)	[7]	Cooling Fan Motor/1 (M12)
[2]	Main Motor (M1)	[8]	Toner Supply Motor Y/M (M6)
[3]	Fusing Cooling Fan Motor/2 (M11)	[9]	Cooling Fan Motor/2 (M22)
[4]	Power Supply Cooling Fan Motor/1 (M8)	[10]	Toner Supply Motor C/K (M7)
[5]	Ozone Ventilation Fan Motor (M14)	[11]	Color PC Drum Motor (M2)
[6]	Color Developing Motor (M3)	[12]	Fusing Cooling Fan Motor/1 (M13)

Appendix

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[1] Right Door Switch (S5)

[2] Primary Interlock Switch (S2)

[3] PH Unit

[4] Main Power Switch (S1)

[5] Front Door Switch/1 (S3)

[6] Front Door Switch/2 (S4)

[7] Main Erase Lamp/Y (LA4)

[8] Main Erase Lamp/M (LA3)

[9] Main Erase Lamp/C (LA2)

[10] Main Erase Lamp/K (LA1)

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Appendix

4039F5C504DA
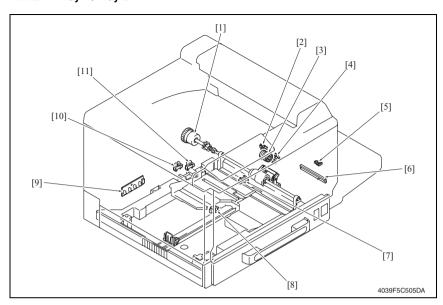
[1]	Developing Clutch/K (CL4)	[8]	Waste Toner Full Sensor (PC8)
[2]	Exit Sensor (PC2)	[9]	Color PC Drive Main Sensor (PC17)
[3]	Temperature/Humidity Sensor (SE3)	[10]	Color PC Drive Sub Sensor (PC18)
[4]	Registration Roller Sensor (PC1)	[11]	Black PC Drive Main Sensor (PC15)
[5]	OHP Sensor (PC4)	[12]	Black PC Drive Sub Sensor (PC16)
[6]	1st Image Transfer Pressure/Retraction Position Sensor (PC6)	[13]	1st Image Transfer Pressure/Retraction Clutch (CL3)
[7]	Registration Roller Clutch (CL1)	[14]	Exit Full Sensor (PC19)

17.1.2   Tray 1 / Tray 2

4039F5C505DA
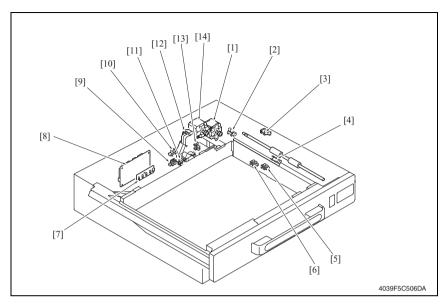
[1]	Tray 2 Paper Feed Clutch (CL2)	[7]	Tray 2 Paper Empty Sensor (PC10)
[2]	Tray 1 Lift-Up Sensor (PC14)	[8]	Tray 2 CD Paper Size Sensor (PC9)
[3]	Tray 1 Paper Feed Clutch (CL5)	[9]	Tray 2 Paper Size Board (PWB-I)
[4]	Tray 1 Pick-Up Solenoid (SL2)	[10]	Tray 2 Paper Near-Empty Sensor (PC11)
[5]	Tray 1 Paper Empty Sensor (PC13)	[11]	Tray 2 Device Detection Sensor (PC12)
[6]	Tray 1 Paper Size VR (UN1)		

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Appendix
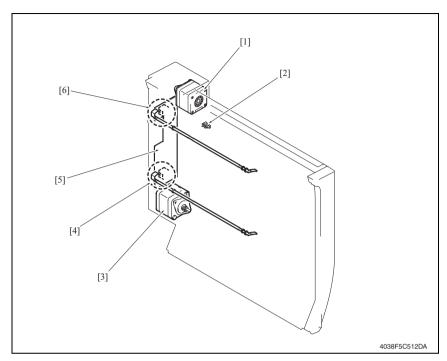
17.2   Lower Feeder Unit (Option)

4039F5C506DA

[1]   Vertical Transport Motor (M2)   [8]   Control Board (PWB-Z)

[2]   Door Set Sensor (PC5)   [9]   CD Paper Size Sensor/1 (PC4)

[3]   Vertical Transport Sensor (PC8)   [10] Set Sensor (PC2)

[4]   Paper Take-Up Sensor (PC9)   [11] CD Paper Size Sensor/2 (PC3)

[5]   Paper Empty Sensor (PC6)   [12] Lift-Up Motor (M3)

[6]   Lift-Up Sensor (PC7)   [13] Paper Near-Empty Sensor (PC1)

[7]   Paper Size Board (PWB-I)   [14] Paper Feed Motor (M1)
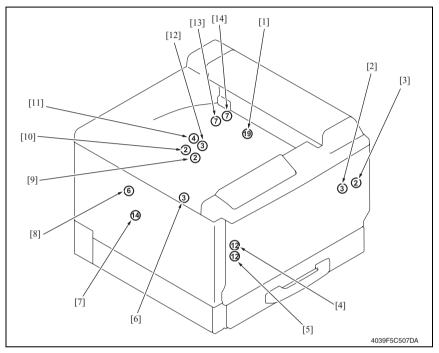
17.3 Duplex Option (Option)

4038F5C512DA
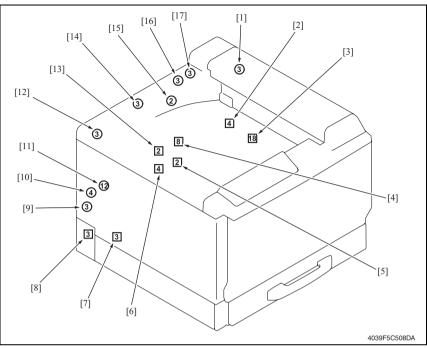
[1]	Duplex Unit Switchback Motor (M1)	[4]	Duplex Unit Transport Sensor 2 (in PWB-A) (PC2)
[2]	Duplex Unit Door Set Sensor (PCI)	[5]	Duplex Control Board (PWB-A)
[3]	Duplex Unit Transport Motor (M2)	[6]	Duplex Unit Transport Sensor 1 (in PWB-A) (PC1)

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Appendix

18. Connector layout drawing

Description

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

1 Not possible to confirm by removing external cover.

4039F5C507DA
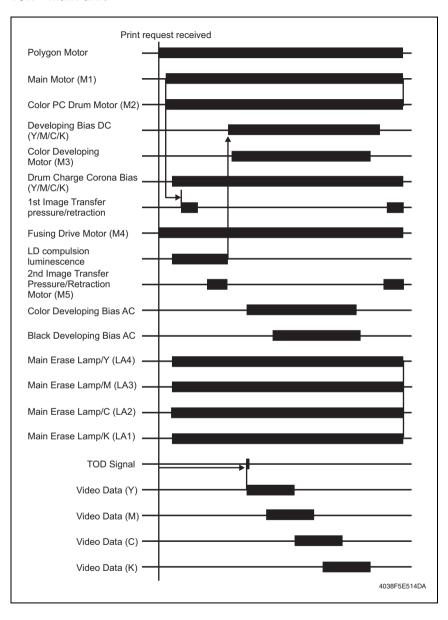
No.	CN No.	Location in the Wiring Diagram	No.	CN No.	Location in the Wiring Diagram
[1]	CN32	E-13 to 14	[8]	CN9	E-2
[2]	CN30	U-6	[9]	CN28	E-9
[3]	CN31	U-6	[10]	CN27	E-9
[4]	CN56	E-17 to 18	[11]	CN22	E-9
[5]	CN55	E-15 to 16	[12]	CN29	E-10
[6]	CN7	E-27	[13]	CN13	O-18 to 19
[7]	CN44	O-21	[14]	CN19	O-19

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No.	CN No.	Location in the Wiring Diagram	No.	CN No.	Location in the Wiring Diagram
[1]	CN14	K-2	[10]	CN18	E-12
[2]	CN8	D-8	[11]	CN17	E-20
[3]	CN6	E-4 to 5	[12]	CN39	E-22
[4]	CN3	E-21	[13]	CN59	K-2
[5]	CN43	E-11	[14]	CN42	K-22
[6]	CN21	E-8	[15]	CN38	E-12
[7]	CN4	E-8	[16]	CN45	K-2
[8]	CN5	D-8	[17]	CN41	K-1
[9]	CN40	E-11			

19.　Timing chart

19.1　Main unit

4038F5E514DA

SERVICE MANUAL

Lower Feeder Unit

Revision history

After publication of this service manual, the parts and mechanism may be subject to change for improvement of their performance.
Therefore, the descriptions given in this service manual may not coincide with the actual machine.

When any change has been made to the descriptions in the service manual, a revised version will be issued with a revision mark added as required.

Revision mark:
- To indicate clearly a section revised, show ⚠ to the left of the revised section.
  A number within ⚠ represents the number of times the revision has been made.

- To indicate clearly a section revised, show ▲ in the lower outside section of the corresponding page.
  A number within ▲ represents the number of times the revision has been made.

NOTE
Revision marks shown in a page are restricted only to the latest ones with the old ones deleted.
- When a page revised in Ver. 2.0 has been changed in Ver. 3.0:
  The revision marks for Ver. 3.0 only are shown with those for Ver. 2.0 deleted.
- When a page revised in Ver. 2.0 has not been changed in Ver. 3.0:
  The revision marks for Ver. 2.0 are left as they are.

Date	Service manual Ver.	Revision mark	Descriptions of revision
2006/05	1.0	—	Issue of the first edition

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Lower Feeder Unit

General

Maintenance

Adjustment / Setting

Troubleshooting

General

1.   Product specifications

A. Type

Name	Paper Take-Up Cabinet
Type	Front loading type 1 way paper take-up device
Installation	Desk type
Document Alignment	Center

B. Paper type

Type	Plain paper	60 to 90 g/m^2 (16 to 24 lb)
	Recycled paper	60 to 90 g/m^2 (16 to 24 lb)
Size	A5R to A3, 5.5 × 8.5R to 11 × 17	
Capacity	Plain Paper (80 g/m^2, 21.25 lb)	500 sheets

C. Machine specifications

Power Requirements	DC 24 V ± 10 % (supplied from the main body)
	DC 5 V ± 5 %
Max. Power Consumption	12 W or less
Dimensions	380 mm (W) × 485 mm (D) × 178 mm (H) 15.0 inch (W) × 19.1 inch (D) × 7.0 inch (H)
Weight	14.8 kg (32.6 lb)

D. Operating environment
Conforms to the operating environment of the main body.

NOTE
• **These specifications are subject to change without notice.**
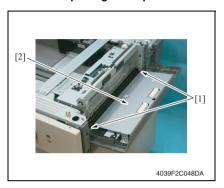
Lower Feeder Unit

General

Lower Feeder Unit

General

Blank Page

Maintenance

2.　Periodical check
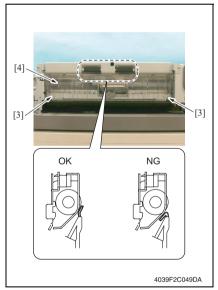
2.1　Maintenance procedure (Periodical check parts)

2.1.1　Replacing the Separation Roller
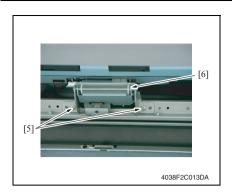
4039F2C048DA

1. Slide out the Tray.
2. Open the Vertical transport door.
3. Remove two Claws [1], and remove the Vertical transport door [2].

OK　　　NG

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4. Remove two Screws [3], and remove the Jam processing cover [4].

NOTE
* **Make sure the position of the Mylar when installing the Jam processing cover.**

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4038F2C013DA

5. Remove two Screws [5] and the Separation Roller installation plate Assy [6].

4038F2C508DA
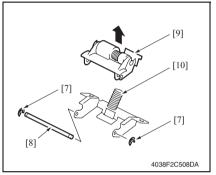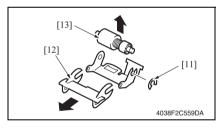
6. Remove two C-rings [7] and the Shaft [8], and remove the Separation Roller fixing plate Assy [9].
NOTE
•   **Use care not to miss the Spring [10].**
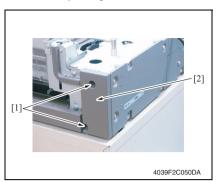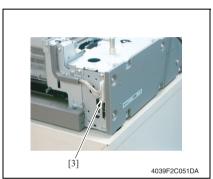
4038F2C559DA

7. Remove the C-ring [11] and Guide [12], and remove the Separation Roller [13].

2.1.2　　Replacing the Feed Roller
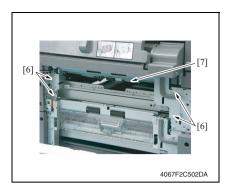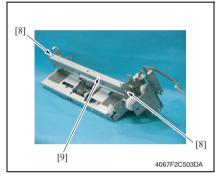
4039F2C050DA

1. Remove the Separation Roller instal-
   lation plate Assy.
- See the procedures 1 to 5 in "Separa-
  tion Roller Assy."
  See P.3
2. Remove two Screws [1] and remove
   the Right Rear Cover [2].
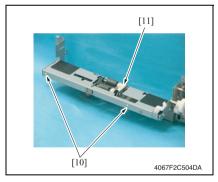
4039F2C051DA

3. Disconnect the Connector [3].

4067F2C501DA

4. Remove the Screw [4] and remove
   the Reinforcement plate [5].

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Maintenance

4067F2C502DA

5. Remove four Screws [6] and remove the Feed Roller Assy [7].

4067F2C503DA
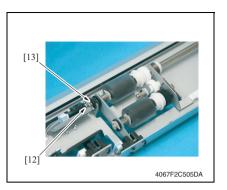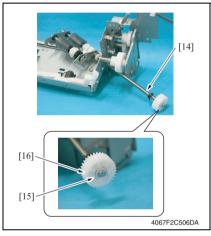
6. Remove two Screws [8] and the Installation flame [9] of the Separation Roller installation plate Assy.

4067F2C504DA

7. Remove two Screws [10] and Feed Roller cover [11].

[13]

[12]

4067F2C505DA
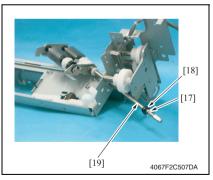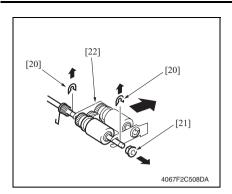
8. Remove the C-ring [12] and Bushing [13].

[14]

[16]

[15]

4067F2C506DA
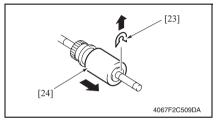
9. Remove the C-ring [15] and Gear [16] while sliding out the Shaft Assy [14] in the direction indicated in left figure.

[18]

[17]

[19]

4067F2C507DA

10. Remove the C-ring [17] and Bushing [18], and remove the Shaft Assy [19].

4067F2C508DA
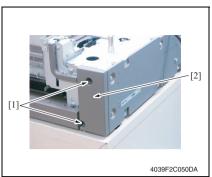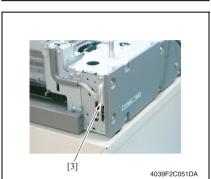
11. Remove two E-rings [20] and Bushing [21], and remove the Pick-up Roller fixing plate Assy [22].

4067F2C509DA
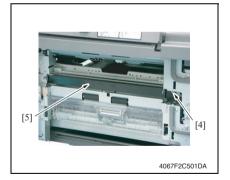
12. Remove the C-ring [23] and Feed Roller [24].

2.1.3   Replacing the Pick-up Roller
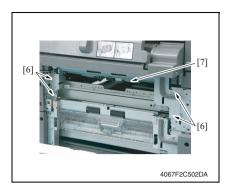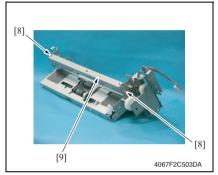
4039F2C050DA

1. Remove the Separation Roller instal-
   lation plate Assy.
* See the procedures 1 to 5 in "Separa-
   tion Roller Assy."
   P.3
2. Remove two Screws [1] and remove
   the Right Rear Cover [2].
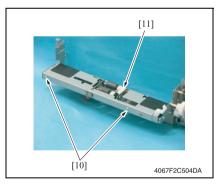
4039F2C051DA

3. Disconnect the Connector [3].

4067F2C501DA

4. Remove the Screw [4] and remove
   the Reinforcement plate [5].

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9

4067F2C502DA

5. Remove four Screws [6] and remove the Feed Roller Assy [7].

4067F2C503DA
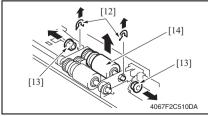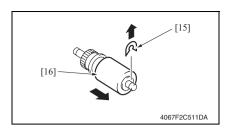
6. Remove two Screws [8], and remove the Separation Roller installation plate Assy [9] together with Frame.

4067F2C504DA

7. Remove two Screws [10] and Feed Roller cover [11].

4067F2C510DA

8. Remove two C-rings [12] and two Bushings [13], and remove the Pick-up Roller Assy [14].

[15]

[16]

4067F2C511DA

9. Snap off the C-ring [15], and remove the Pick-up Roller [16].

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3. Other

3.1 Disassembly/Adjustment prohibited items

A. Screws to which blue paint or green paint is applied
- **Blue paint or green paint is applied to some screws to prevent them from coming loose.**
- **As a general rule, screws to which blue paint or green paint is applied should not be removed or loosened.**

B. Red-painted screws
- **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 "SAFETY AND IMPORTANT WARNING ITEMS" 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.**
- **When it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.**

3.2 Disassembly/Assembly/Cleaning list (Other parts)

3.2.1 Disassembly/Assembly parts list
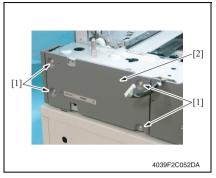
No.	Section	Part name	Ref.Page
1		Rear Right Cover	P.14
2	Exterior parts	Rear Left Cover	P.14
3		Right Rear Cover	P.14
4	Board and etc.	Control Board	P.15
5		Paper Size Board	P.16
6		Lift-Up Motor	P.18
7	Others	Paper Feed Motor	P.18
8		Vertical Transport Motor	P.20

3.2.2 Cleaning parts list
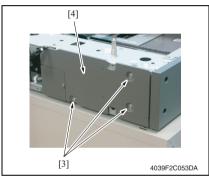
No.	Section	Part name	Ref.Page
1		Feed Roller	P.22
2	Paper feed section	Pick-up Roller	P.22
3		Separation Roller	P.24
4	Transport section	Transport Roller	P.25

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Maintenance

3.3 Disassembly/Assembly procedure

3.3.1 Rear Right Cover/Rear Left Cover

4039F2C052DA
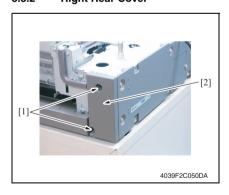
1. Remove four Screws [1], and remove the Rear Right Cover [2].

4039F2C053DA
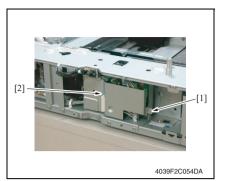
2. Remove three Screws [3], and remove the Rear Left Cover [4].

3.3.2 Right Rear Cover

4039F2C050DA
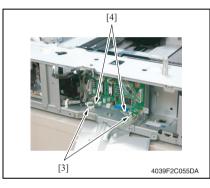
1. Remove two Screws [1], and remove the Right Rear Cover [2].

3.3.3 Control Board (PWB-Z)

4039F2C054DA

1. Remove the Screw [1], and remove the Metal blanking plate [2].

4039F2C055DA
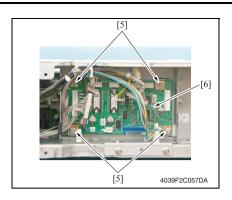
2. Remove the Harness [4] from two Wire saddles [3].

4039F2C056DA
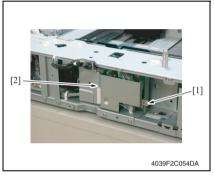
3. Remove all the Connectors on the Control Board.

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4039F2C057DA
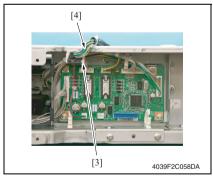
4. Remove four Screws [5], and remove the Control Board [6].
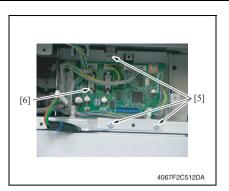
3.3.4 Paper Size Board (PWB-I)

4039F2C054DA

1. Remove the Screw [1], and remove the Metal blanking plate [2].

4039F2C058DA
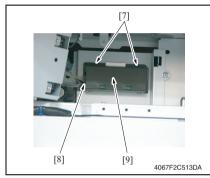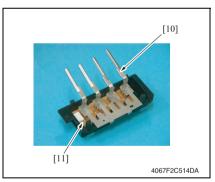
2. Remove the Harness [4] from the Edge cover [3].

4067F2C512DA

3. Remove three Screws [5], and remove the Control Board Assy [6].

[7]

[8]   [9]

4067F2C513DA
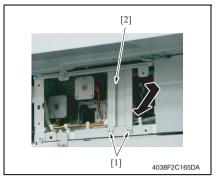
4. Remove two Claws [7] and the Connector [8], and remove the Paper Size Board Assy [9].

[10]

[11]

4067F2C514DA

5. Remove the Lever [10], and remove the Paper Size Board [11].

3.3.5 Lift-Up Motor (M3)

[2]

[1]

4038F2C165DA
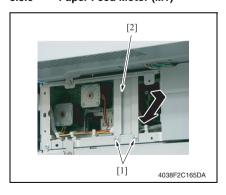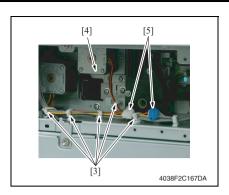
1. Pull out the Tray.
2. Remove the Rear Right Cover.
   See P.14
3. If the optional paper feed cabinet is mounted, remove it.
4. Remove two Screws [1], and remove the Reinforcement plate [2].

[5]   [3]

[4]

4038F2C166DA

5. Disconnect the Connector [3].
6. Remove three Screws [4], and remove the Lift-Up Motor [5].
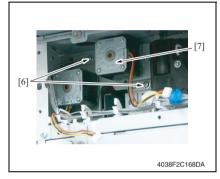
3.3.6 Paper Feed Motor (M1)
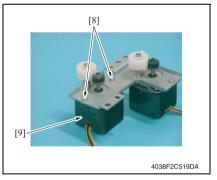
[2]

[1]

4038F2C165DA

1. Pull out the Tray.
2. Remove the Rear Right Cover and the Rear Left Cover.
   See P.14
3. Remove two Screws [1], and remove the Reinforcement plate [2].

4038F2C167DA

4. Remove the Harness of the Motor Assy [4] from five Wire Saddles [3].
5. Disconnect two Connectors [5].

4038F2C168DA

6. Remove two Screws [6], and remove the Motor Assy [7].

4038F2C519DA
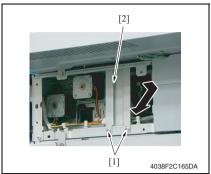
7. Remove two Screws [8], and remove the Paper Feed Motor [9].

3.3.7   Vertical Transport Motor (M2)
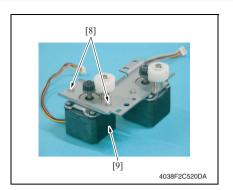
[2]

[1]

4038F2C165DA

1. Pull out the Tray.
2. Remove the Rear Right Cover and the Rear Left Cover.
   See P.14
3. Remove two Screws [1], and remove the Reinforcement plate [2].

[4]   [5]

[3]

4038F2C167DA

4. Remove the Harness of the Motor Assy [4] from five Wire Saddles [3].
5. Disconnect two Connectors [5].

[7]

[6]

4038F2C168DA

6. Remove two Screws [6], and remove the Motor Assy [7].

[8]

[9]

4038F2C520DA
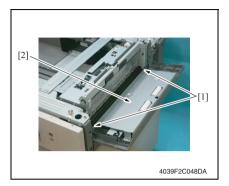
7. Remove two Screws [8], and remove the Vertical Transport Motor [9].

3.4   Cleaning procedure
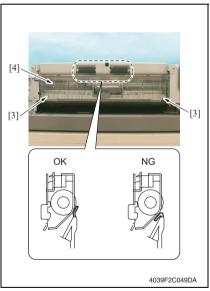
NOTE
• **The alcohol described in the cleaning procedure represents the isopropyl alcohol.**
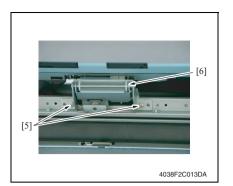
3.4.1   Feed Roller/Pick-up Roller

4039F2C048DA

1. Slide out the Tray.
2. Open the Vertical transport door.
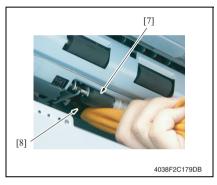3. Remove two Claws [1], and remove the Vertical transport door [2].

4039F2C049DA

4. Remove two Screws [3], and remove the Jam processing cover [4].

NOTE
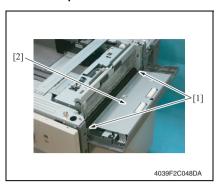• **Make sure the position of the Mylar when installing the Jam processing cover.**

4038F2C013DA

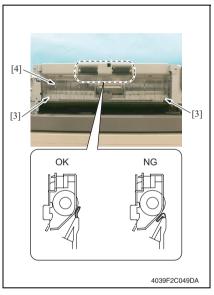5. Remove two Screws [5] and the Separation Roller installation plate Assy [6].

4038F2C179DB

6. Using a soft cloth dampened with alcohol, wipe the Feed Roller [7] and the Pick-up Roller [8].

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3.4.2   Separation Roller

4039F2C048DA
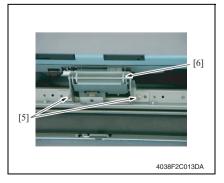
1. Slide out the Tray.
2. Open the Vertical transport door.
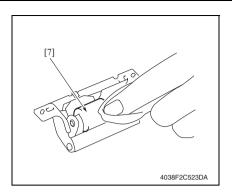3. Remove two Claws [1], and remove the Vertical transport door [2].

4039F2C049DA

4. Remove two Screws [3], and remove the Jam processing cover [4].

NOTE
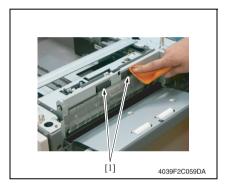- **Make sure the position of the Mylar when installing the Jam processing cover.**

4038F2C013DA

5. Remove two Screws [5] and the Separation Roller installation plate Assy [6].

4038F2C523DA

6. Using a soft cloth dampened with alcohol, wipe the Separation Roller [7].

3.4.3 Transport Roller

[1]   4039F2C059DA

1. Open the Vertical Transport Door.
2. Using a soft cloth dampened with alcohol, wipe the Transport Roller [1].

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Adjustment/Setting

4.   How to use the adjustment section

- "Adjustment/Setting" contains detailed information on the adjustment items and proce-
dures 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 paper 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.**

Adjustment / Setting

Lower Feeder Unit

5.   Sensor check

5.1   Check procedure

• To allow sensors to be checked for operation easily and safely, data applied to the IC on the board can be checked on the panel with the main unit in the standby state (including a misfeed, malfunction, and closure failure condition).

<Procedure>
1. Set to the SERVICE MENU.
• For displaying the SERVICE MENU, see "Adjustment/Setting" in the Main Unit Service Manual.
2. Select [DIAGNOSIS MENU] → [PRINT MENU] → [ELEMENT PAGE].
3. Select [PRINT] and press Menu/Select key.
4. Sensor Information will be displayed at "SENSOR INFORMATION 1, 2 and 5" in hexa-decimal number on the printed Element Information page.
5. Check the Sensor status according to the Bit Allocation chart below.

A.   Allocating the Bit
(SENSOR INFORMATION 1)

BIT	Part Name	Operation Characteristics	
		1	0
0	Tray 2 Set Sensor	In position	Out of position
1	Tray 2 Paper Empty Sensor	Paper not present	Paper present
2	Tray 2 Paper Near-Empty Sensor	Blocked	Unblocked
3	Tray 3 Set Sensor	In position	Out of position
4	Tray 3 Paper Empty Sensor	Paper not present	Paper present
5	Tray 3 Paper Near-Empty Sensor	Blocked	Unblocked
6	Tray 3 Vertical Transport Sensor	Paper present	Paper not present
7	Tray 4 Set Sensor	In position	Out of position
8	Tray 4 Paper Empty Sensor	Paper not present	Paper present
9	Tray 4 Paper Near-Empty Sensor	Blocked	Unblocked
10	Tray 4 Vertical Transport Sensor	Paper present	Paper not present
11	Tray 5 Set Sensor	In position	Out of position
12	Tray 5 Paper Empty Sensor	Paper not present	Paper present
13	Tray 5 Paper Near-Empty Sensor	Blocked	Unblocked

Adjustment / Setting

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(SENSOR INFORMATION 2)

BIT	Part Name	Operation Characteristics	
		1	0
0	Tray 5 Vertical Transport Sensor	Paper present	Paper not present
1	Tray 1 Paper Empty Sensor	Paper not present	Paper present
2	Registration Roller Sensor	Paper present	Paper not present
3	Exit Sensor	Paper present	Paper not present
4	Tray 1 Lift-Up Sensor	At raised position	Not at raised position
5	Duplex Unit Door Set Sensor	Close	Open
6	—	—	—
7	—	—	—
8	OHP Sensor	OHP	Not OHP
9	—	—	—
10	Tray 3 Paper Take-Up Sensor	Paper present	Paper not present
11	Tray 4 Paper Take-Up Sensor	Paper present	Paper not present
12	Tray 5 Paper Take-Up Sensor	Paper present	Paper not present
13	Fusing Loop Detect Sensor	Loop present	Loop not present

(SENSOR INFORMATION 5)

BIT	Part Name	Operation Characteristics	
		1	0
0	1st Image Transfer Pressure/Retraction Position Sensor	Not Retracted	Retracted
1	2nd Image Transfer Pressure Position Sensor	Not Retracted	Retracted
2	—	—	—
3	—	—	—
4	Color PC Drive Main Sensor	Blocked	Unblocked
5	Color PC Drive Sub Sensor	Blocked	Unblocked
6	Black PC Drive Main Sensor	Blocked	Unblocked
7	Black PC Drive Sub Sensor	Blocked	Unblocked
8	—	—	—
9	—	—	—
10	—	—	—
11	Lift-Up Sensor (Tray 3)	At raised position	Not at raised position
12	Lift-Up Sensor (Tray 4)	At raised position	Not at raised position
13	Lift-Up Sensor (Tray 5)	At raised position	Not at raised position

Adjustment / Setting
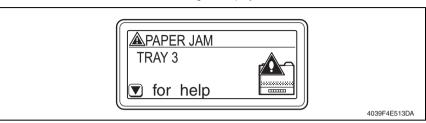
Lower Feeder Unit

Adjustment / Setting

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Troubleshooting

6.   Jam Display

6.1   Misfeed display

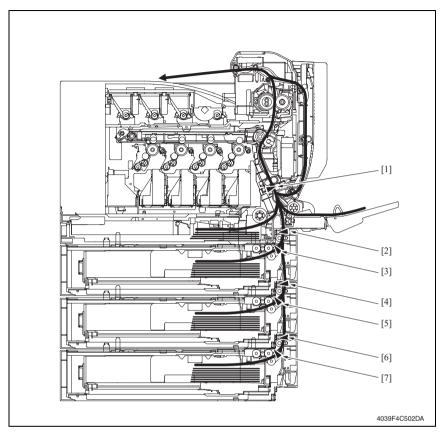• When a media misfeed occurs a message is displayed on the Control Panel.

⚠PAPER JAM
 TRAY 3

▼ for help

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Display		Misfeed Location	Misfeed processing location	Action
LCD 1	LCD 2			
PAPER JAM	TRAY3	• Tray 3 take-up • Vertical Conveyance	• Tray 3 • Tray 3 Right Door	P.34
	TRAY4	• Tray 4 take-up • Vertical Conveyance	• Tray 4 • Tray 4 Right Door	
	TRAY5	• Tray 5 take-up • Vertical Conveyance	• Tray 5 • Tray 5 Right Door	

6.1.1   Misfeed display resetting procedure

• Open the corresponding door, clear the sheet of paper misfeed, and close the door.

6.2 Sensor layout

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[1]   Registration Roller Sensor   PC1   [5]   Paper Take-Up Sensor (Tray 4)   PC9
[2]   Vertical Transport Sensor (Tray 3) PC8   [6]   Vertical Transport Sensor (Tray 5) PC8
[3]   Paper Take-Up Sensor (Tray 3)   PC9   [7]   Paper Take-Up Sensor (Tray 5)   PC9
[4]   Vertical Transport Sensor (Tray 4) PC8

6.3   Solution

6.3.1   Initial check items

• When a paper misfeed occurs, first perform the following initial check items.

Check item	Action
Does paper meet product specifications?	Replace paper.
Is the paper curled, wavy, or damp?	Replace paper. Instruct the user on the correct paper storage procedures.
Is a foreign object present along the paper path, or is the paper path deformed or worn?	Clean the paper path and replace if necessary.
Are the Paper Separator Fingers dirty, deformed, or worn?	Clean or replace the defective Paper Separator Finger.
Are rolls/rollers dirty, deformed, or worn?	Clean or replace the defective roll/roller.
Are the Edge Guide and Trailing Edge Stop at the correct position to accommodate the paper?	Set as necessary.
Are the actuators operating correctly?	Correct or replace the defective actuator.

Lower Feeder Unit

Troubleshooting

6.3.2 Misfeed at Tray 3 to 5 feed, Tray 3 to 5 vertical transport section

A. Detection Timing

Type	Description
Detection of misfeed at Tray 3 to 5 feed section	The leading edge of the paper does not block the Vertical Transport Sensor (PC8) even after the lapse of a given period of time after the Paper Feed Motor (M1) has been energized.
Detection of misfeed at Tray 3 to 5 vertical transport section	The Registration Roller Sensor (PC1) is not blocked even after the lapse of a given period of time after the paper has blocked the Vertical Transport Sensor (PC8).
	Vertical Transport Sensor (PC8) does not transmit the paper even after the lapse of a given period of time after the paper has blocked PC8.
Tray 3 to 5 Vertical Transport section Loop Registration Reversing JAM	Rise timing of load for registration is earlier than the one for making the loop at front of the Registration Roller at feed.
Detection of paper left in Tray 3 to 5	Vertical Transport Sensor (PC8) is blocked when the Main Power Switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
	Paper Take-Up Sensor (PC9) is blocked when the Main Power Switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant Electrical Parts	
Paper Take-Up Sensor (PC9) Vertical Transport Sensor (PC8) Registration Roller Sensor (PC1) Paper Feed Motor (M1)	Control Board (PWB-Z) Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Initial check items	—	—
2	PC9 I/O check, Sensor check	PWB-Z PC PJ6Z PC-8 (ON)	V-22
3	PC8 I/O check, Sensor check	PWB-Z PC PJ6Z PC-11 (ON)	V-22
4	PC1 I/O check, Sensor check	PWB-M CNSEN-3 (ON)	C-3 to 4
5	M1 operation check	PWB-Z PC PJ5Z PC-1 to 4	Q-22
6	Change PWB-Z	—	—
7	Change PWB-M	—	—

Lower Feeder Unit

7.   Trouble code

7.1   Trouble code display

- The printer's CPU performs a self-diagnostics function that, on detecting a malfunction, gives the corresponding malfunction code and service call message on the Control Panel.

SERVICE CALL 0910
TRAY3 LIFT

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7.2   Trouble code list

Code	Item	Description
0900	Tray 4 Elevator failure	• The Lift-Up Sensor is not blocked even after the lapse of a given period of time after the lifting motion has been started.
0910	Tray 3 Elevator failure	• The Lift-Up Sensor is not blocked even after the lapse of a given period of time after the lifting motion has been started.
0950	Tray 5 Elevator failure	• The Lift-Up Sensor is not blocked even after the lapse of a given period of time after the lifting motion has been started.

- To reset a malfunction, turn off the Main Power Switch and turn it on again more than 10 seconds after.

Troubleshooting

7.3 Solution

7.3.1 0900: Tray 4 Elevator failure

7.3.2 0910: Tray 3 Elevator failure

7.3.3 0950: Tray 5 Elevator failure

Relevant Electrical Parts	
Lift-Up Sensor (PC7) Lift-Up Motor (M3)	Control Board (PWB-Z)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the M3 connector for proper connection and correct as necessary.	—	—
2	Check the connector of M3 for proper drive coupling and correct as necessary.	—	—
3	PC7 I/O check, Sensor check	PWB-Z PJ6Z PC-3 (ON)	V-21 to 22
4	M3 operation check	PWB-Z PJ4Z PC-4 to 5	Q-24
5	Change PWB-Z	—	—

SERVICE MANUAL

FIELD SERVICE

Duplex Option

Revision history

After publication of this service manual, the parts and mechanism may be subject to change for improvement of their performance.
Therefore, the descriptions given in this service manual may not coincide with the actual machine.

When any change has been made to the descriptions in the service manual, a revised version will be issued with a revision mark added as required.

Revision mark:
- To indicate clearly a section revised, show ⚠ to the left of the revised section.
  A number within ⚠ represents the number of times the revision has been made.

- To indicate clearly a section revised, show ▲ in the lower outside section of the corresponding page.
  A number within ▲ represents the number of times the revision has been made.

NOTE
Revision marks shown in a page are restricted only to the latest ones with the old ones deleted.
- When a page revised in Ver. 2.0 has been changed in Ver. 3.0:
  The revision marks for Ver. 3.0 only are shown with those for Ver. 2.0 deleted.
- When a page revised in Ver. 2.0 has not been changed in Ver. 3.0:
  The revision marks for Ver. 2.0 are left as they are.

Date	Service manual Ver.	Revision mark	Descriptions of revision
2006/05	1.0	—	Issue of the first edition

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General

1. Product specifications

A. Type

Name	Duplex Unit
Type	Switchback and Circulating Duplex Unit
Installation	Mounted on the right side door of main unit
Document Alignment	Center

B. Paper type

Type	Plain paper	64 to 256 g/m^2 (17 to 68 lb)
Size	A5R to A3 Wide, 5.5 × 8.5R to 12 × 18	
Print paper size	width	139.7 to 311.1 mm (5.5 × 12.25 inch)
	length	148.0 to 457.2 mm (5.75 × 18 inch)

C. Machine specifications

Power Requirements	DC 24 V ± 10 % (supplied from the main unit)
	DC 5 V ± 5 % (supplied from the main unit)
Dimensions	110 mm (W) × 440 mm (D) × 345 mm (H) 4.25 inch (W) × 17.25 inch (D) × 13.5 inch (H)
Weight	3.0 kg (6.5 lb)

D. Operating environment
Conforms to the operating environment of the main unit.

NOTE
• **These specifications are subject to change without notice.**

Duplex Option

General

Duplex Option
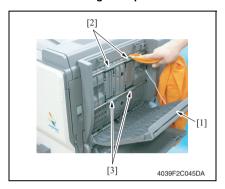
General

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Maintenance

2.   Periodical check

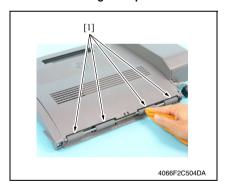### 2.1   Maintenance procedure (Periodical check parts)

NOTE
• **The alcohol described in the cleaning procedure of Maintenance represents the isopropyl alcohol.**

2.1.1   Cleaning Transport Roller / Roll 1, 2

4039F2C045DA

1. Open the Duplex Unit Door [1].
2. Using a soft cloth dampened with alcohol, wipe the Transport Roller / Roll 1 [2], 2 [3] clean of dirt.

2.1.2   Cleaning Transport Roller / Roll 3

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1. Remove the Duplex Unit.
2. Using a soft cloth dampened with alcohol, wipe the Transport Roller / Roll 3 [1] clean of dirt.

2.1.3   Cleaning Ventilation Section

[1]

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1. Using a soft cloth dampened with alcohol, wipe the outside of the Ventilation Section [1] clean of dirt.

[3]

[2]

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2. Open the Duplex Unit Door [2].
3. Using a soft cloth dampened with alcohol, wipe the inside of the Ventilation Section [3] clean of dirt.

3.   Other

3.1   Disassembly/Adjustment prohibited items

A. Paint-locked Screws

NOTE
- **Paint-locked screws show that the assembly or unit secured can only be adjusted or set at the factory and should not be adjusted, set, or removed in the field.**

B. Red Painted Screws

NOTE
- **When the screws are removed, the red paint is coated on the points where read-justment is required.**
- **Once the red painted screw is removed or loosened, you should make adjustment. Accordingly check the adjustment items in this manual and make necessary adjustment.Note that when two or more screws are used on the part in questions, only one representative screw may be marked with 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 "SAFETY AND IMPORTANT WARNING ITEMS" and follow the corresponding removal proce-dures.**
- **The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.**
- **When it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.**
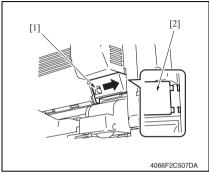
Duplex Option

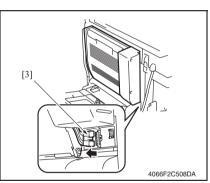Maintenance

3.2   Disassembly/Assembly list (Other parts)

No	Section	Part name	Ref. page
1	Unit	Duplex Unit	P.6

3.3   Disassembly/Assembly procedure

3.3.1   Duplex Unit

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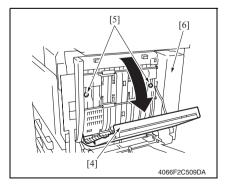
1. Release the tab [1], and remove the Connector Cover [2].

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2. Disconnect the Connector [3].

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3. Open the Duplex Unit Door [4].
4. Remove two screws [5], and remove the Duplex Unit [6].

Adjustment/Setting

4.   How to use the adjustment section

- "Adjustment/Setting" contains detailed information on the adjustment items and proce-
  dures 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.; levleness 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 paper 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.**

Duplex Option

Adjustment / Setting

5.   Sensor check

5.1   Check procedure

• To allow sensors to be checked for operation easily and safely, data applied to the IC on the board can be checked on the panel with the main unit in the standby state (including a misfeed, malfunction, and closure failure condition).

<Procedure>
1. Set to the SERVICE MENU.
• For displaying the SERVICE MENU, see "Adjustment/Setting" in the Main Unit Service Manual.
2. Select [DIAGNOSIS MENU] → [PRINT MENU] → [ELEMENT PAGE].
3. Select [PRINT] and press Menu/Select key.
4. Sensor Information will be displayed at "SENSOR INFORMATION 3" in hexadecimal number on the printed Element Information page.
5. Check the Sensor status according to the Bit Allocation chart below.

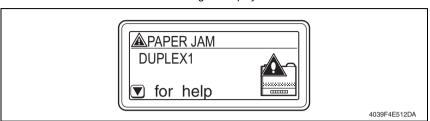### A.   Allocating the Bit
(SENSOR INFORMATION 3)

BIT	Part Name	Operation Characteristics	
		1	0
0	—	—	—
1	Duplex Unit Transport Sensor1	Paper present	Paper not present
2	Duplex Unit Transport Sensor2	Paper present	Paper not present
3	—	—	—
4	—	—	—
5	—	—	—
6	—	—	—
7	—	—	—
8	—	—	—
9	—	—	—
10	—	—	—
11	—	—	—
12	—	—	—
13	—	—	—

Troubleshooting

6.   Jam Display

6.1   Misfeed display

• When a media misfeed occurs a message is displayed on the Control Panel.
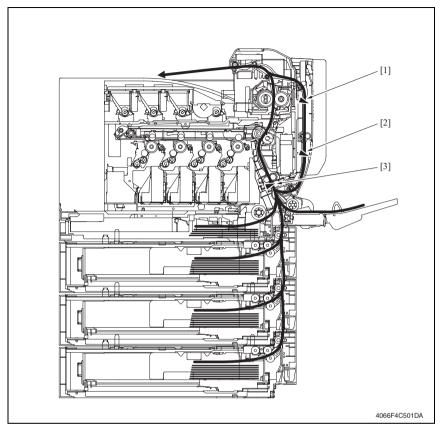

⚠PAPER JAM
DUPLEX1

▼ for help

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Display		Misfeed Location	Misfeed processing location	Action
LCD 1	LCD 2			
PAPER JAM	DUPLEX1	• Duplex transport section	• Duplex Option door	P.13
	DUPLEX2	• Duplex pre-registration section		P.12

6.1.1   Misfeed display resetting procedure

• Open the corresponding door, clear the sheet of paper misfeed, and close the door.

Duplex Option

Troubleshooting

6.2   Sensor layout

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[1]   Duplex Unit Transport Sensor 1   PC1   [3]   Registration Roller Sensor   PC1
[2]   Duplex Unit Transport Sensor 2   PC2

6.3   Solution

6.3.1   Initial check items

- When a paper misfeed occurs, first perform the following initial check items.

Check item	Action
Does paper meet product specifications?	Replace paper.
Is the paper curled, wavy, or damp?	Replace paper. Instruct the user on the correct paper storage procedures.
Is a foreign object present along the paper path, or is the paper path deformed or worn?	Clean the paper path and replace if necessary.
Are the Paper Separator Fingers dirty, deformed, or worn?	Clean or replace the defective Paper Separator Finger.
Are rolls/rollers dirty, deformed, or worn?	Clean or replace the defective roll/roller.
Are the Edge Guide and Trailing Edge Stop at the correct position to accommodate the paper?	Set as necessary.
Are the actuators operating correctly?	Correct or replace the defective actuator.

Duplex Option

Troubleshooting

6.3.2　　Duplex Unit pre-registration section misfeed

A. Detection timing

Type	Description
Detection of misfeed at Duplex pre-registration section	The Registration Roller Sensor (PC1) is not blocked even after the lapse of a given period of time after the Duplex Paper Take-up sequence started.
Duplex Unit Pre-registration section Loop Registration Reversing JAM detection	Rise timing of load for registration is earlier than the one for making the loop at front of the Registration Roller at pre-registration take-up.

B. Action

Relevant electrical parts	
Registration Roller Sensor (PC1)	Duplex Control Board (PWB-A) Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	PC1 I/O, sensor check	PWB-M CNSEN-3 (ON)	C-4
3	PWB-A replacement	—	—
4	PWB-M replacement	—	—

6.3.3   Duplex Unit transport section misfeed

A. Detection timing

Type	Description
Detection of misfeed at Duplex Transport section	The Duplex Unit Transport Sensor 2 (PC2) is not blocked even after the set period of time has elapsed after the Duplex Unit Transport Sensor 1 (PC1) is blocked by the paper.
	The Duplex Unit Transport Sensor 1 (PC1) is not unblocked even after the set period of time has elapsed after the Duplex Unit Transport Sensor 1 (PC1) is blocked by the paper.
	The Duplex Unit Transport Sensor 2 (PC2) is not unblocked even after the set period of time has elapsed after the Duplex Unit Transport Sensor 2 (PC2) is blocked by the paper.
Detection of paper remaining in the Duplex Unit transport section	The Duplex Unit Transport Sensor 1 (PC1) or Duplex Unit Transport Sensor 2 (PC2) are blocked when the Main Power Switch is set to ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant electrical parts	
Registration Roller Sensor (PC1) Duplex Unit Transport Sensor 1 (PC1) Duplex Unit Transport Sensor 2 (PC2) Duplex Unit Switchback Motor (M1) Duplex Unit Transport Motor (M2)	Duplex Control Board (PWB-A) Mechanical Control Board (PWB-M)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	PC1 I/O, sensor check	PWB-M CNSEN-3 (ON)	C-4
3	PC1 I/O, sensor check	—	U-18
4	PC2 I/O, sensor check	—	U-18
5	M1 operation check	PWB-A PJ4A-1 to 4	V-19
6	M2 operation check	PWB-A PJ5A-1 to 4	V-19
7	PWB-A replacement	—	—
8	PWB-M replacement	—	—

Duplex Option

Troubleshooting

Duplex Option

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Troubleshooting

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